

# Y Pwyllgor Deisebau

Lleoliad:

Cynulliad  
Cenedlaethol  
Cymru

Ystafell Bwyllgora 1 – y Senedd

National  
Assembly for  
Wales

Dyddiad:



Dydd Mawrth, 24 Chwefror 2015

Amser:

09.00

I gael rhagor o wybodaeth, cysylltwch a:

**Steve George**  
Clerc y Pwyllgor  
0300 200 6565  
[SeneddDeisebau@Cynulliad.Cymru](mailto:SeneddDeisebau@Cynulliad.Cymru)

**Kayleigh Driscoll**  
Dirprwy Glerc y Pwyllgor  
0300 200 6565  
[SeneddDeisebau@Cynulliad.Cymru](mailto:SeneddDeisebau@Cynulliad.Cymru)

## Agenda

- 1 Cyflwyniad, ymddiheuriadau a dirprwyon
- 2 Cyflwyniad, ymddiheuriadau a dirprwyon (Tudalennau 1 – 28)
- 3 Trafod y sesiwn dystiolaeth ar 3 Chwefror, 2015 – Diogelu dyfodol  
Draig FfynCi, Cynulliad Plant a Phobl Ifanc Cymru (Tudalennau 29 – 49)
- 4 Deisebau newydd
- 4.1 P-04-617 Stopiwch y Trosgwyddo Dilyffethair o Lyfrgelloedd Cyhoeddus i'r Sector Gwirfoddol (Tudalennau 50 – 53)
- 5 Y wybodaeth ddiweddaraf am ddeisebau blaenorol

## Iechyd

- 5.1 P-04-408 Gwasanaeth i Atal Anhwylder Bwyta ymysg Plant a Phobl Ifanc (Tudalennau 54 – 59)

- 5.2 P-04-553 Ymchwiliad llawn ac annibynnol i'r risgiau iechyd sy'n gysylltiedig â thechnolegau diwifr a ffonau symudol yng Nghymru, gan gynnwys yr holl ysgolion (Tudalennau 60 – 87)
- 5.3 P-04-586 Holl staff GIG Cymru i gael eu talu ar y gyfradd Cyflog Byw o £7.65 yr awr o leiaf (Tudalennau 88 – 89)
- 5.4 P-04-601 Gwaharddiad Arfaethedig ar Ddefnyddio e-sigaréts Mewn Mannau Cyhoeddus (Tudalennau 90 – 94)
- 5.5 P-04-603 Helpu Babanod 22 Wythnos Oed i Oroesi (Tudalennau 95 – 101)
- 5.6 P-04-608 Ymchwiliad i'r GIG yng Nghymru (Tudalennau 102 – 104)

### **Cyfoeth Naturiol**

- 5.7 P-04-422 Ffracio (Tudalennau 105 – 127)
- 5.8 P-04-536 Rhoi'r Gorau i Ffatrioedd Ffermio Gwartheg Godro yng Nghymru (Tudalennau 128 – 131)
- 5.9 P-04-579 Adfer cyllid ar gyfer monitro Gwylogod Ynys Sgomer (Tudalennau 132 – 135)
- 5.10 P-04-605 Achub Ffordd Goedwig Cwmcarn Rhag Cael ei Chau am Gyfnod Amhenodol neu'n Barhaol (Tudalennau 136 – 145)

### **Addysg**

- 5.11 P-04-458 Cadwch Addysg Bellach yn y Sector Cyhoeddus (Tudalennau 146 – 147)
- 5.12 P-04-566 Adolygu'r Cod Derbyn i Ysgolion (Tudalennau 148 – 151)

### **Gwasanaethau Cyhoeddus**

- 5.13 P-04-540 Stopio rhagfarn ar sail rhyw mewn cam-drin domestig (Tudalennau 152 – 157)

## **Economi, Gwyddoniaeth a Thrafnidiaeth**

- 5.14 P-04-556 Na i gau Cyffordd 41 (Tudalennau 158 – 160)
- 5.15 P-04-562 Canolfan Etifeddiaeth Caernarfon (Tudalennau 161 – 163)
- 5.16 P-04-565 Adfywio hen reilffyrdd segur at ddibenion hamdden (Tudalennau 164 – 165)
- 5.17 P-04-590 Cyllid ar gyfer gwasanaeth bws arfordirol y Cardi Bach (Tudalennau 166 – 169)

## **Culture Sport and Tourism**

- 5.18 P-04-539 Achub Cyfnewidfa Glo (Tudalennau 170 – 173)

## **Cymunedau a Threchu Tlodi**

- 5.19 P-04-573 Galwad ar Lywodraeth Cymru i Ymchwilio i'r System Lesddaliadau Preswyl yng Nghymru (Tudalennau 174 – 176)

## **Cyllid a Busnes Y Llywodraeth**

- 5.20 P-04-577 Adfer Cyllid i'r Prosiect Cyfleoedd Gwirioneddol (Tudalennau 177 – 178)

Mae cyfyngiadau ar y ddogfen hon

## P-04-597 Diogelu dyfodol Draig Ffynsi, Cynulliad Plant a Phobl Ifanc Cymru

### Manylion:

Rydym ni, sydd wedi arwyddo isod, yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i ddiogelu dyfodol Draig Ffynsi, Cynulliad Plant a Phobl Ifanc Cymru, drwy adfer y cyllid craidd. Rhaid i Gymru gael llwyfan cenedlaethol annibynnol ar gyfer plant a phobl ifanc, sy'n cael ei arwain gan ieuengtid a'i ariannu'n gyhoeddus, ac sydd wedi'i ethol yn ddemocrataidd ar lefel leol, er mwyn rhoi cyfle iddyn nhw leisio'u barn a'u safbwytiau, a sicrhau bod Llywodraeth Cymru'n atebol. Rhaid bod gan y llwyfan cenedlaethol hwnnw'r gymr i weithio gyda'r holl Aelodau etholedig i hyrwyddo materion plant a phobl ifanc, ac i adrodd yn uniongyrchol i Bwyllgor y Cenhedloedd Unedig ar Hawliau'r Plentyn, fel y llwyddodd Draig Ffynsi i wneud yn 2008.

Mae'r Ddraig Ffynsi yn parhau i gredu fel a ganlyn:

1. Y dylai pobl ifanc, a etholir yn ddemocrataidd yn lleol, gael llwyfan cenedlaethol i leisio eu safbwytiau a'u barn;
2. Y dylid galw'r llwyfan hwnnw yn Gynulliad Ieuengtid Cymru;
3. Y dylai allu gweithio gyda phob Aelod Etholedig, gan gynnwys Aelodau'r Cynulliad ac Aelodau Seneddol er mwyn datblygu materion pobl ifanc;
4. Y dylid ei gefnogi fel y gall pobl ifanc Cymru adrodd yn uniongyrchol i Bwyllgor y Cenhedloedd Unedig ar Hawliau'r Plentyn.

Dyweddodd Pwyllgor y Cenhedloedd Unedig ar Hawliau'r Plentyn, wrth wneud sylw ar adroddiad diwethaf y DU, (sylw terfynol 33), y dylai fforymau cymorth llywodraethau ar gyfer cyfranogiad plant, fel Senedd Ieuengtid y Deyrnas

Unedig, y Ddraig Ffynsi yng Nghymru a'r Senedd leuenctid yn yr Alban, gael eu gweithredu.

**Prif ddeisebydd :** Catherine Patricia Jones

**Ys tyriwyd am y tro cyntaf gan y Pwyllgor:** 23 Medi 2014

**Nifer y llofnodion:** 1,212 a'r lein a 429 llofnod papur. Cyfanswm 1,641

**Sesiwn Dystiolaeth: P-04-597, ‘Diogelu dyfodol Draig Ffynsi, Cynulliad  
Plant a Phobl Ifanc Cymru’**

**Evidence Session: P-04-597, ‘Protect the future of Funky Dragon, the  
Children and Young People’s Assembly for Wales’**

[3]           **William Powell:** We move now to agenda item 2, which is the evidence session on the petition P-04-597, Protect the future of Funky Dragon, the Children and Young People’s Assembly for Wales. As Members will recall, this petition was submitted by Trish Jones of Funky Dragon. We first considered it back on 23 September, and it had collected 1,641 signatures. We look forward to welcoming our witnesses shortly.

[4]           Bore da. Good morning, all. Welcome to this meeting of the Petitions Committee, addressing petition P-04-597 on the future of Funky Dragon. I’d appreciate it if you’d briefly introduce yourself for the record and also to check that everything’s working correctly.

[5]           **Ms Williams:** Right. I’m Catriona Williams, chief executive of Children in Wales.

[6]           **Mr Janes:** I’m Ed Janes, development officer for participation with Children in Wales.

[7]           **Ms Hill:** And I’m Lynne Hill, one of the policy directors at Children in Wales.

[8]           **William Powell:** Excellent. Well, you’re all most welcome. My colleague Joyce Watson is going to kick off straight away with questions, if

that's in order. Joyce.

[9]           **Joyce Watson:** Thank you. Good morning, all. I want to ask questions around the independent peer-led platform for children and young people and whether you agree, because we've had evidence from Funky Dragon, where they've said, and I quote, that,

[10]          ‘Wales has become the only country in Europe not to have an independent youth parliament.’

[11]          **Ms Williams:** Right. I think one of the issues, really, is around what is an independent youth parliament. If it's an elected body from young people that is representative across Wales, and also if the governance of the organisation is young-people governed—I'm very familiar with Funky Dragon; I actually helped to write the constitution many years ago, in the beginning, and we've been involved throughout—then Wales hasn't got that independent body that is governed by young people and is an elected body.

[12]          **Joyce Watson:** Okay. So, I want to explore, then, whether Children in Wales's work with children and young people is intended to be an independent, youth-led, national platform for children and young people.

[13]          **Ms Williams:** Right. The situation for Children in Wales was that, for many years, we were core funded to do all of our activity, which is the sort of national body to put forward the voices of the children and families sector, and, as the years have gone by, obviously, children and young people's voices have been part of that—the participation agenda in Wales has developed hugely over the past 20 years, really—and so, as far as we're concerned, we bid to the only grant scheme that was available to us to bid to, which was the children and families delivery grant scheme. And within

that, at the time we bid, I was quite hopeful that we could do a partnership, with Funky Dragon as a partner, but fully understanding that each organisation is very independent. And the philosophy of a peer-led organisation, I am familiar with that, because I did take it to the Charity Commission myself, all those years ago. A young-people-led body couldn't possibly be what we were, because we have trustees who are from the professional sector, as well as opportunities for young people, but we're not, you know, definitely young-people governed, because a parliament and, say, 16 to 25-year-olds running an organisation is different. I'm co-chair of Voices from Care with young people, and that structure is young people led, because, at the annual general meeting, the young people have all the power.

[14]       **Joyce Watson:** So, do you think—and this is the final question from me—that there is a need for a platform, as Funky Dragon has stated?

[15]       **Ms Williams:** Where we're at the moment is that the young people from Funky Dragon have asked to meet with us, and they've had a very difficult time, let's face it, over the past few months. We were keen, because, across Wales, as I say, the participation agenda has developed so much that we very much welcome the approach. We want to talk. I think, because Wales is a small country, we need to all work together to get something that is going to work, because, I think, when Funky Dragon started, there was no division between Assembly and Government, and I think that is one of the things that we now—. It's a good time to have a look at how we work together, because, in some specific instances, if you've got a very minority vulnerable group that needs a lot of support to give their voices, it's inevitable—and perhaps Lynne could mention young carers—that it's only a smallish group that would be consulted by various bodies.

[16]       I think the point that we're at is: we know what we bid for, we're giving the support to both the sector, the professionals—. We've got four strands in our work: the voice of young people; support to professionals to

be able to properly engage young people, in other words the skills of how to do it; then we've got the sector's voice, in terms of the workers; and then we've got the representation of what everybody's saying into Government. So, there are four bits to our bid, and so, for instance, if there's an inquiry into young carers, that group of young carers—. We've got over 200 organisational members in touch with children, and they may be asked by the Assembly to give evidence, they may be asked by local government to give evidence and they may be asked by Welsh Government to give evidence. So, I think it's timely for us to be coming together with other groups to actually look at what's best now.

[17]       **William Powell:** We're grateful for that. Would you like to contribute at this point, Ms Hill?

[18]       **Ms Hill:** I can certainly give you an example of how we work with particular groups like young carers. We've been doing that work for probably the past eight to nine years now, in that we work with the workers on a regular basis and then we've been very fortunate that Welsh Government have supported opportunities to enable young carers to come together, to identify what the issues are for them as a group and to work through how they would want to present those issues. Over the years, we've had regular meetings with Gwenda Thomas, when she was Deputy Minister for health and social services, and they went to meet with her and presented the work that they'd worked up. We were always very clear that what they talked about were the issues for young carers, not, 'This is my story'. It was about saying, 'This is a piece of work that we've done across Wales. We've brought together all these views and these are the key issues for us'.

[19]       I have to say, at the last meeting, one of the young carers raised issues about local pharmacies and having challenges in collecting medication, which has been a long-standing issue for young carers. Understandably, pharmacists want to be careful who they give it to, but it

does cause real problems for some families. As a result of that meeting, Welsh Government officials then worked with the royal college of pharmacists to sort of begin to tease out an agreement, which was really, really great for the young carers, and they actually got a letter back from the Deputy Minister saying that.

[20] So, there's a whole process for a relatively small, although a growing, number of young people who care. There's a whole process there about supporting that voice through. We've also done pieces of work like producing videos for them, or leaflets for them, which are still being used. They were very heavily promoted through the carers strategy, saying, 'These are young carers' issues; they mirror the needs of adult carers, and these are where their particular needs are different'. So, that's just an example of the work we do.

[21] **William Powell:** That's helpful. Thank you. Russell George.

[22] **Russell George:** Thank you. Good morning. The Minister's view is that funding awarded to Children in Wales is to fund a national participation model. That's his view. Is that your view as well?

[23] **Ms Williams:** It is a national participation model. It's not an assembly in terms of the model that Funky Dragon was based on. At the time we bid, we thought that Funky Dragon was still going to be there. I think Lynne has demonstrated a very small group. Ed could give examples of more universal engagement. So, in terms of Government, and influencing Government in particular, although we are having discussions with the Assembly about what the young people's youth engagement in the Assembly is doing, because there will be times when we work together, ours is a national participation model, but it's not an organisation, and I think that's the difference. I don't know, Ed, if you want to say—

09:15

[24]       **Mr Janes:** Yes. I think, because you have the Funky Dragon model of participation—the kind of youth Assembly, which is a fantastic model of participation—the model that we have is also a model that we believe will work and that is national, but it is set out in a different way. So, the model that we have focuses on Children in Wales doing work in schools, Children in Wales doing work in empowering the local forum work that's being done by forums—some of the fantastic work that's being done already in the local youth forums and in national youth organisations, as well as with groups like young carers and young disabled people that we've done before, and looked-after children as well. Then, it is using that and, kind of, empowering that work and recognising that work by feeding it into the Welsh Government and then backing that up with the meetings that we want to be arranged with Ministers. So, the bid also included us running meetings between young people and Ministers each year, with the idea being that those young people would have been involved in the different priorities, locally, and then have the chance to, kind of, make sure that it's being fed into the national manner.

[25]       **Russell George:** Right. What I wanted to just also clarify is that, last summer, talking about the grant funding that you had and what it was being used for, on your website, you had a statement saying,

[26]       ‘For clarification, this project is not funded to deliver a National Youth Assembly for Wales.’

[27]       I wonder if you could just talk to what was behind that statement, so we can understand that.

[28]       **Ms Williams:** I think it was exactly—. I think what I've said previously that it's not an elected body of young people who are, sort of, being politically active, as it were, in terms of representing the nation. I mean, we have got partners, as well as our own organisation: we've got ProMo-Cymru, which, in terms of universal engagement of children and young people—. CLIConline has many, many hits and, for instance, we've just put a poverty video onto that to promote a discussion amongst, hopefully thousands, but certainly hundreds of young people, for them to be able to contribute their views there. But it isn't—. I think, the main point is it's not linked to democracy and representation—that's how, as an assembly, we view it—but we are bringing together groups at national level. And also, we've got a model where we've got four regional links to the youth forums, and also we've got our own links to member organisations already that work with a whole range of children and young people.

[29]       So, we're trying to get that sort of loop, for instance, with the child poverty work in Welsh Government. We're in discussions about how we can have an ongoing relationship between children and young people and the policy makers there. So, I think the key difference is it's not an elected body of representatives from each part of Wales. But I think that's probably the discussion that now needs to take place, because, to be honest, the funding was hugely reduced; there wasn't, in terms of this grant round, the funding that had previously supported both Children in Wales and Funky Dragon together: it was virtually half. So, we bid for what we could deliver and I think that's the—. But, it is a model that contributes to national Government policy development.

[30]       **Russell George:** Okay. I've got one last question and I'm conscious that two of my colleagues want to ask questions as well, so it doesn't need a long reply, but I was just curious to know, in your view, who is responsible for ensuring that young people in Wales are also represented at the UK Youth

Parliament and also on a European level.

[31]       **Ms Williams:** Ed can talk to that.

[32]       **Mr Janes:** Thank you. So, that's traditionally been supported by Funky Dragon. Last year, Children in Wales received funding from the Welsh Government as well as John Bercow, through the British Youth Council, to take or to accompany a group of young people from Wales specifically for last year. We're currently in—. Well, the agreement was that it was for last year specifically, with the idea that it would then be looked at in future. We're currently putting together a more detailed report. We've put together a summary, initially, and now we're putting together a more detailed report about the event, about the opportunity, and what the young people got out of it. So, we've been consulting with them, we've been asking them, and we're just putting that report together at the minute.

[33]       **Russell George:** It would be useful to have a copy of that report, wouldn't it, Chair, for our committee, if it's available?

[34]       **Mr Janes:** Yes, okay.

[35]       **Russell George:** Thank you.

[36]       **Mr Janes:** So, that includes the opportunity and what it was like, but also, bearing in mind that it was put together at quite late notice and with a specific amount of funding, we've also asked them to kind of comment on the opportunity, but also how they felt—you know, if they felt there could be more support and more of a process in the run-up to the event, where they could get together and have a chance to kind of discuss

some of the topics and have a chance to get to know each other so that it's more of an ongoing process rather than what we had, which was a meeting a couple of weeks before, where someone from the British Youth Council came out to introduce the work but also to talk through the security and some of the processes around it and then, two weeks later, the actual two-day trip and two-day event.

[37]       **Bethan Jenkins:** Sorry, can I just clarify? Are you carrying on with that work? You say you're talking to young people now about how it worked; I'm just conscious that you say that you're not an assembly or an elected body, so I'm just curious as to if it's continuing and on what basis you would want to continue it, given that you've just explained earlier that you're not that type of organisation.

[38]       **Mr Janes:** Well, that report—. Well, we very much—. That was the first time we'd done it. I led it, I very much enjoyed it, and I think we would be interested in doing it again. The report that we're putting in will be used to decide, I guess, if Wales takes part in it this year and in the future, and whether there will be more, you know, and what the funding will enable us to do that we get for it. We have been working with participation officers and youth forums from all of the local authorities around the future of it. They are very interested in us continuing to do it. Essentially, we are waiting for a decision, but we're also looking at ways to build it into the work that we are doing, the young Wales work, the core work, and whether the campaigns that have been taken on in the wider UK could be built into the campaigns and the priorities that we're going to be doing in Wales. So, it's still being worked out, basically, but the report that we're putting in will be used to work out the best way forward.

[39]       **Ms Williams:** Perhaps I could just add to that: basically, it was not within the grant that we were given. I saw Funky's evidence and they're quite right, they hadn't had funding before to do it, which we were. It was very

much a sort of last-minute, extra piece of work, which we were very pleased to do, but, obviously with devolution as well, you know, if there's only one of the topics that's Wales relevant that they're discussing, and two or three are totally to do with England policy, there is an evaluation and I believe that the funding that the Minister gave for this last round, on the basis of the report we give, that will be reviewed by Welsh Government. But, on who's responsible, I think that's this Parliament and Government interface, which is, I think, underlying the whole of this discussion.

[40]       **William Powell:** Yes. We're very grateful for the candour of those answers. It seems to me that your organisation has been put in quite a difficult position, which is not of your making, and that you've obviously stepped up to the plate, particularly in the context of the international work, which obviously wasn't within the remit. I realise that the arrangements are still at an early stage, but could you give an estimate as to how many children and young people per year will be directly involved in the participation model that you've outlined?

[41]       **Ms Williams:** Well, I'll hand over to my colleagues. The one thing we'll say is that we're hoping to hit the target in terms of the electronic, social media, click online to as many thousands of youngsters in Wales as we can get engaged. And through the school work, we're hoping to move that along. I think then it's almost like participation isn't one thing; there're lots of different levels to it. We started from the position of understanding that there were quite a lot of the most vulnerable, most disadvantaged children who weren't able to get their voice heard. And so there's more in-depth work there. So, I don't know if Lynne and Ed would like to add—.

[42]       **Ms Hill:** I think if I start off and Ed will come in as well. Certainly, at the moment, we are working with all the participation workers and the youth forums across Wales. We have established a team of workers who are making links regionally, so each participation network forum has a link to us,

and we have—. I know we have meetings established with all 22. They haven't all gone through yet, because we started that discussion actually the first week of January; we met with them and talked in great detail about the plan, and they were really on board about engaging. So, there is, first of all, an opportunity for the statutory bodies. Now, there's a bit of a challenge in Gwynedd, because apparently Gwynedd do not have a youth forum at the moment. So, we're looking at how we engage there, but we actually have an office based in Gwynedd and a worker based there who knows the area very well, so we will be making sure—and she also does some work around the youth service—so we'll do that. So, we started that work.

[43] We obviously have—. We've identified that we will do six pieces of work in schools. I think we want to be very clear that that doesn't just mean six schools; that means six pieces of work around different issues, around different concerns. And that will obviously address a very wide age range, because we know that our work is actually, you know, from 0 to 25, not solely youth, although we are very aware that there's a youth sector that feels and felt that they weren't sure where their voices would be heard. So, we need to make sure that we're very clear in supporting them, but we also want to be working in primary schools, looking at where younger people are. We have membership with, and very good links with, all the pre-schools, so there may be pieces of work around pre-school issues and so on. So, we need to be able to spread that sort of work.

[44] Alongside that, as I say, we have a longstanding relationship with young carers. We have a long history of working with young disabled people, and there's been lots of work around that. Last Saturday, we did a training event in Wrexham for young people from across north Wales to be doing a piece of training around understanding the United Nations Convention on the Rights of the Child and knowing their rights and expressing their rights. So, we've got those pieces of work going on, as well as then links with our partner organisations, such as Voices, Barnardo's, Action for Children and Tros Gynnal, so we can link with those as well.

[45] So, in terms of numbers, the answer is 'I don't know', but we estimate we will reach a wide range of people both across the age ranges and across their experiences.

[46] **William Powell:** That's very helpful. I think it's come across loud and clear how deep your experiences of serving the needs of some minority and hard-to-reach and disadvantaged groups are, but, given that when you bid for funding last time round you weren't aware that Funky Dragon wouldn't be on the pitch in terms of its activities, what measures have you been able to put in place or you are intending to put in place to ensure that you are also catering for the needs of the mainstream, as well as the groups for whom you have the particular expertise?

09:30

[47] **Ms Williams:** I'll hand over to Ed in a minute, but I think there are some topics that come through from all groups—bullying, for instance, is one. And I think one of the things in our bid that we were very keen to do was to make sure that there was an impact and an outcome for children and young people through that. So, for instance, the connection between—. I mean, it's widespread. The first children's commissioner raised bullying as a big issue for children. It comes through from all of our groups. Either it's hate bullying, or it's bullying in schools or whatever. So, as a topic identified by children and young people, that's a chunk of work that will be very universal. We have a worker who is linking with some of the forums, but she is also pulling together the workers on anti-bullying work and we're in the policy groups in Welsh Government. So, I'll hand over to Ed, but that's one, like children's mental health; there are some issues that have come through in the past from Funky Dragon, but also from our groups. Children who are hard to reach are not necessarily different in terms of the bigger issues that

affect all children.

[48]       **Mr Janes:** I mean, I would say that all the work that's going on in schools is going to be—. Well, unless we decide to do some work in special schools, all of the work in schools will be with mainstream children and young people. The work with the youth forums and the specialist groups: at the minute, the work we're doing in the youth forums is to go out into each one, find out what the local issues are and that will shape the priorities for the work. So, so far, we've been going out and we've been hearing about issues such as bullying, which has come up in all of them, mental health, and rural transport as well. So, all of those ideas, again, are coming from mainstream children and young people that are in youth forums, and then, as well as that, we will look to continue what we've done before in terms of looked-after children, young carers and disability as well. So, we are very much catering for both. And then, as well as that, at the minute, we are developing the young Wales website for the project or for the programme of work. We are developing social media and other methods for young people that maybe aren't in the schools and the forums and the specific groups that we work with—other ways for them to engage with the project as well. So, I think we have—you know, I'm confident that we will have—a programme of work that will bring in the universal children and young people in the mainstream, as well as the groups that we've maybe in the past more traditionally worked with.

[49]       **William Powell:** Okay. That's reassuring. I'm conscious that my colleague, Joyce Watson, has been showing great patience before coming in. I have a final question for you for now, and that is whether you've given any consideration to a process of electing young people from across Wales to create some form of representative body, and also an issue that's come up in recent days, which is whether you've been involved in any consultation around the impacts that flow from the recent decision by Welsh Government to radically reduce the funding available to the young farmers movement within Wales, given their particular involvement in the same area of work.

[50]       **Ms Williams:** I think, to answer the first question, it's sort of repeating in a way what I said at the beginning that we think it's timely and we have—. You know, we needed to be very sensitive to how upset a lot of the young people were in Funky Dragon. So, we've been in close contact with trustees there, and they now are feeling that it's timely for us. Also, Ed and I have met with Kelly, who's based in the Assembly, in terms of youth engagement. We think it's timely to have a get together to really have a look at whether there is an elected gap. But what we're doing at national level, in the interim, is building a group that is going to advise the whole of our work. Now, that's not elected—that's not an elected structure. I think it's interesting because there are different levels. I mean, I've done a lot of European work and the European youth forum, which is the umbrella, is actually sort of quite old young people; it's between 16 and, in some countries, it is 30-year-olds. There's a difference, and we're actually covering, as Lynne said, zero to 25, basically. So, we want the voices of children and young people. So, that elected model is a youth model, and so I think we feel it's the time to talk with others.

[51]       Ed, do you want to come in?

[52]       **Mr Janes:** The one thing I would say is, in meeting with participation officers and youth forum workers, it's something that they are still very interested in. We are looking at ways of even bringing together young people on a regional level, or maybe, when we hold—well, looking at potential ways of doing it. But, I guess the one thing that we know is the residential approach that was previously done by Funky Dragon isn't something that we can really achieve, to be honest, with the funding that we have.

[53]       **William Powell:** Understood, yes.

[54]       **Mr Janes:** That doesn't mean that we don't like—it doesn't mean that we don't support the idea of, like, an Assembly approach to participation; that's not the case at all.

[55]       **William Powell:** But you are just constrained financially, effectively, yes.

[56]       **Ms Hill:** I was going to say, I think also, what we find now is that many of the local services are also constrained financially, and I think undertaking residential work with young people takes a huge commitment from local staff, and there are often challenges around the time, the travel. It would be a challenge for us on the current project funding, but it would also be a challenge, I think, for many of our partners.

[57]       **Ms Williams:** And I think that sort of goes on to your second question, really, that one of the concerns we have across Wales—well, we have two concerns, actually—is the impact on children's organisations per se, in terms of funding, but also particularly on the participation work in many organisations. Because, you know, it is a little bit of a soft target, unfortunately, at local level as well, in terms of the participation workers, to get good participation, proper, linked to the—and we haven't mentioned the participation standards. We are working with the participation workers now to update—not to change, but to update—and get those out there. But, to actually deliver on those standards at local level, there's got to be the capacity in the organisations—you know, the maintained and the non-maintained organisations—to be able to do the full cycle of informing, working with, listening to children and young people, feeding back, et cetera. That capacity does need to be strengthened, and we certainly have been looking at that.

[58]       **William Powell:** Thank you very much. Bethan Jenkins.

[59]       **Bethan Jenkins:** Just quickly, because I'm conscious we've already run out of time. When Funky Dragon came in, they said that they were concerned about the fact that the Welsh Government, rather than young people, would be identifying the issues that would go out to be discussed, and they were very concerned about that because they were wanting to set the agenda. So, I just wanted your brief response to that.

[60]       **Ms Williams:** Yes, I mean, I think, probably, in fairness to Funky Dragon, they would only have seen what was written down in, sort of, bold on a chart. I think the way it works really is, clearly, what we've been funded to do is to support good policy development in Welsh Government. But, for instance, we wouldn't go out to children and young people, and say, 'This is the latest consultation from Welsh Government; what do you think of it?'. It's more a case of children and young people—and you are probably best speaking to this than me, Ed—identifying what, locally, are really issues to them, and then us—. For instance, if bullying comes up, that means that there's something that can be taken into policy developments across Welsh Government. But, there will be some priority issues that are sort of both Welsh Government priorities—like poverty—and children and young people's issues as well, which marry. I think part of our job is to prioritise what's going to make the best impact—or the young people to prioritise with us.

[61]       **Mr Janes:** As I've said already, we are going to each youth forum. We've been to some already, as Lynne has mentioned, and there are others that we have yet to go in to and we will be doing in the next few weeks. With all of them, we're finding out what their local issues are. Things like mental health, bullying and transport are all coming up, and they will be the basis, with the youth forum work as well as the specific groups like young carers—. Local issues will be the basis of the national priorities that we take on.

[62]       **Bethan Jenkins:** Okay. I'm just concerned, for the record as well, as with Funky Dragon, this will be going back to one place and not getting out—to the Welsh Government but not to anywhere else, and that's been my criticism of Funky Dragon previously. You know, how does that go up from the youth forum to not only the Welsh Government but the wider institution of the Assembly? So, hopefully, your discussions with the Presiding Officer can lead to a wider-based input to what young people are doing. But, just quickly, because I didn't think I was satisfied with the answer, before we end, when you did apply for the children and family grant scheme, you were clearly aware of the situation with Funky Dragon, because, obviously, you were discussing with them. I just want to understand, because I don't think I understood fully from Funky Dragon's response either, where the communication—if it did; I don't want to put words into your mouth—broke down, as in why they did not then fully engage with you putting forward a plan, because, for me, as a person outside of all of this discussion, it would have made much more sense for them to have been on board at that stage so that they could have built in that representative Assembly side in conjunction with your participation side to complement each other. Now I feel that the elected side is very much on the back foot, and that's what I think we're all concerned about in Wales at the moment.

[63]       **Ms Williams:** Yes, thank you for that. I mean, I think, firstly, we're very concerned to work closely with the Assembly, and I think Welsh Government has said that is a good idea—so, in terms of our grant, within that, working with the Presiding Officer. And also, I think it's inevitable that the same groups of children and young people will be supported by us to give evidence in committees as well, particularly those who need more support. Our members, Barnardo's, Action for Children, and our partners, Tros Gynnal, Voices from Care—we'll all be supporting children and young people to give their views, and the wider results we'll put in the public domain. Any of the universal responses to social media campaigns and so on—that will be information available to the Assembly.

[64] I can remember clearly, you know, it was a matter of principle for the young people in Funky Dragon that they—. There was one meeting that I instigated with the chief executive of Funky Dragon, and I said, ‘Look, clearly, there’s only one project going to be funded; we should do this together’, and he said, ‘It’s a matter of principle that we are young people-led, and we don’t really want to be getting so close to an organisation.’ I have to say, in terms of Children in Wales and Funky Dragon, our relationship, long term, has been really good. One of my policy directors has been the chair. You know, it’s been a very difficult situation. But, as a matter of principle, from their point of view, they felt that their youth-led autonomy—. They might be being pushed into a merger, which, actually, wasn’t the case, but their youth-led autonomy was possibly going to be compromised.

[65] **Bethan Jenkins:** But there’s nothing now at all, that’s the thing—

[66] **Ms Williams:** I know, I know.

[67] **Bethan Jenkins:** I mean, it’s all with the benefit of hindsight, of course, but, at the moment we do not have that national elected body for Wales, which is a massive shame really.

[68] **Ms Williams:** I think, on a positive note, certainly the young people on their board—it’s still there as a sort of vestige of an organisation—. That’s where the talking is, and, I think, you know, together we’ve got quite a good opportunity. I mean, actually, one model, going on for many, many years—. Perhaps it is, you know, timely to have a look at what’s best for Wales, because we are small and we do need to work all together so that the voices of young people get into each institution.

[69]        **William Powell:** I think that's a really positive note on which to end. It's been a very useful evidence session from our perspective to gain greater insights into actually what lay behind the events of last summer and early autumn. We will provide you with a full transcript, which I think, in the context of the discussions we've been having, is particularly important, so that you've got the opportunity to check that for accuracy, and also Members, at an early future date, will have the opportunity to consider the evidence that we've just heard. So, thank you very much indeed for coming this morning and for your contributions. Diolch yn fawr.

09:45

# Eitem 4.1

## P-04-617 Stopiwrch y Trosgwyddo Dilyffethair o Lyfrgelloedd Cyhoeddus i'r Sector Gwirfoddol

Rydym yn galw ar y Dirprwy Weinidog dros ddiwylliant i dderbyn, ar unwaith, argymhelliaid III yn yr Adolygiad Arbenigol o Lyfrgelloedd Cyhoeddus yng Nghymru 2014 (Ni ddylid gweithredu newidiadau i wasanaethau llyfrgelloedd cyhoeddus cyn cynhyrchu dewisiadau wedi'u costio). Ar ben hynny, dylai'r Dirprwy Weinidog bellach fod yn cyngori pob awdurdod lleol yng Nghymru y bydd y gofyniad hwn yn effeithiol ar gyfer newidiadau arfaethedig a gyhoeddir ar ôl dyddiad cyhoeddi'r Adolygiad Arbenigol (22 Hydref 2014) a hefyd ar gyfer cynigion a gyhoeddwyd cyn y dyddiad hwnnw, lle mae ymgynghoriad cyhoeddus yn dod i ben ar ôl 22 Hydref 2014. Mae angen y camau hyn i atal y pentwr o gynigion gan Fro Morgannwg ac awdurdodau lleol eraill yng Nghymru i drosglwyddo ein llyfrgelloedd cyhoeddus i'r sector gwirfoddol heb roi ystyriaeth briodol i opsiynau eraill.

**Prif ddeisebydd:** Adam Riley – Save Rhoose Library

**Ysutyriwyd am y tro cyntaf gan y Pwyllgor:**

**Nifer y llofnodion:** 66



Eich cyf/Your ref P-04-617  
Ein cyf/Our ref KS/00088/15

William Powell AM  
Assembly Member for Mid & West Wales  
Chair - Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

[committeebusiness@Wales.gsi.gov.uk](mailto:committeebusiness@Wales.gsi.gov.uk)  
[Petition@wales.gov.uk](mailto:Petition@wales.gov.uk)

3 February 2015

Dear William,

Thank you for your letter of 20 January regarding the petition received from Adam Riley concerning Recommendation III of the Expert Review of Public Libraries in Wales which I launched in October 2014.

This recommendation relates to a need to produce costed options for any future provision of public library services by a local authority.

My officials at CyMAL have distributed copies of the report and its recommendations to all local authorities in Wales. Representatives from all the authorities have attended an event to disseminate information regarding the report.

In light of the petition, I will write to all local authorities, drawing their attention to this specific recommendation of the Review Report as an example of good practice in undertaking reviews and public consultation on local library services.

Yours ever,

A handwritten signature in black ink, appearing to read "Ken Skates".

**Ken Skates AC / AM**  
**Y Dirprwy Weinidog Diwylliant, Chwaraeon a Thwristiaeth**  
**Deputy Minister for Culture, Sport and Tourism**

**P-04-617 Stop the Wholesale Hiving off Public Libraries – Correspondence from the Petitioner to the Clerking Team, 17.02.15**

Dear Kayleigh

Many thanks for your email from last week. I am very pleased to hear that my petition is to be considered. You asked for my comments in light of recent correspondence. They are as follows.

I am pleased to hear that the Culture Minister is to write to all local authorities, but slightly disappointed to hear that the requirement for costed options appears to be regarded as only an example of good practice, as opposed to a requirement, or as an example of best practice.

The Expert Review was, I believe, published in October 2014. The Culture Minister said in December that he was in agreement with the recommendations, one of which was that all consultation on significant changes to library provision should be done in light of the production of costed options. If the Minister was in agreement with that recommendation I do not see why he could not have written to public authorities three months or more ago, telling them that they should produce costed options. What really concerns me is that the Expert Review will not stem the flow of authorities looking to hive off library provision to the voluntary sector. Since the publication of the Expert Review we have had a number of other council consultations, including the Cardiff case where public opinion appears to have seen off Cardiff Council's ill thought out proposals, at least for the next 12 months. The point is that the Government should be playing a part in seeing off such proposals by requiring them to come up with costed options, not relying on public opinion to force the Councils' hands.

While the Government delays making it a requirement to produce costed options, where the Minister apparently agrees with such a recommendation, this is making it easier for Councils to take the lazy option and close libraries in the name of cost savings, knowing full well that research indicates that such libraries would never re-open. This is a time for the Government to be taking decisive action in support of local library services wherever it can. Telling local authorities that producing costed options is an example of good practice is not what I feel the Expert Review panel would have had in mind for this recommendation. Nor does it appear to implement the panel's recommendation that it be implemented with immediate effect.

Many thanks

Kind regards

Adam Riley

# Eitem 5.1

## P-04-408 : Gwasanaeth i Atal Anhwylder Bwyta ymysg Plant a Phobl Ifanc

### Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i ariannu'r Gwasanaeth i Atal Anhwylder Bwyta ymysg Plant a Phobl Ifanc yng Nghymru i'r un graddau â'r Gwasanaeth i Atal Anhwylder Bwyta ymysg Oedolion yng Nghymru.

Daeth i'm sylw bod symiau gwahanol o arian yn cael eu rhoi i Wasanaethau i Oedolion a Gwasanaethau i Blant a Phobl Ifanc ar gyfer ymdrin ag anhwylder bwyta. Ar hyn o bryd, mae'r Gwasanaeth i Atal Anhwylder Bwyta ymysg Oedolion yn cael £1 filiwn y flwyddyn gan Gynulliad Cymru, yn ogystal â phedwar grŵp darparu a hyfforddwyd gan arbenigwyr. Yn anffodus, mae gwaith ymchwil yn nodi'r ffaith bod pobl yn fwyaf tebygol o gael eu profiad cyntaf o anhwylder bwyta, yn enwedig Anorecsia Nerfosa, yn ystod eu glaslencyndod. Yn hanesyddol, roedd pobl yn cyrraedd glaslencyndod pan oeddent rhwng 12 a 15 oed. Fodd bynnag, bellach, mae hyn yn digwydd pan fydd pobl yn llawer iau ac felly mae'r ystadegau'n dechrau dangos bod mwy o blant iau yn dioddef o Anorecsia Nerfosa. Bydd pobl fel arfer yn dechrau dioddef o Fwlmia Nerfosa pan fyddant rhwng 18 a 25 oed. Fodd bynnag, fel gydag Anorecsia, gall hyn amrywio o berson i berson. Mae'r ffaith mai cymryd camau buan yw'r allwedd i sicrhau gwellhad cyflym mewn perthynas â'r ddau anhwylder, ac, yn ddiau, pob anhwylder bwyta y gellir ei ddiagnosio, sy'n atal goblygiadau ariannol hirdymor i'r Llywodraeth, yn gwneud y cais hwn yn fwy perthnasol. Felly, rwy'n ymbil ar y Cynulliad i ystyried hyn yn flaenoriaeth ar gyfer dadl i gael gwared ar y gwahaniaeth hwn drwy roi'r un swm o arian i'r Gwasanaeth i Atal Anhwylder Bwyta ymysg Plant a Phobl Ifanc Nghymru ag a roddir i'r Gwasanaeth i oedolion.

**Cyflwynwyd y ddeiseb gan:** Helen Missen

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 17 Gorffennaf 2012

**Nifer y llofnodion:** . 246

## P-04-408 Child and Adolescent Eating Disorder Service – Correspondence from the Petitioner to the Committee

Dear Committee

It is now a year since I came to give evidence with regard to my petition; and I am grateful for your on going commitment to seeing change as regards to the disparity between the funding provided for Child and Adolescent Eating Disorder Services in comparison to the Adult Eating Disorder Service.

I am grateful to chair for the enquiry into Child and Adolescent services, Ann Jones, response to your letter. I am only sorry that we were not in time for her to consider this evidence at the time of the enquiry. It may have proved useful.

Only yesterday Norman Lamb brought mental health and the need for early intervention to the forefront of the media and public's mind. He also highlighted the disparity between mental health referrals to specialist services, and physical health referrals. He went on to say that the on going length of time between GP and specialist intervention is in a chronic state in the UK. With this in mind he spoke of how the length of time causes a huge and ongoing strain on the health system, due to illnesses becoming more entrenched as time passes, and therefore harder to treat. He promised to make changes.

It seems to me that he has echoed all of my sentiments over the past two or more years.

Within these last two years many more children have been diagnosed with an eating disorder. Many more families have been thrown into the turmoil of trying to keep their children alive, with little or no specialist support. Families, as well as health providers, and ultimately sufferers of eating disorders have been put under an enormous strain.

Early intervention remains the best provision in the treatment for eating disorders, if caught early and treated by specialists the outcome is good. The length of time 'in the system' is reduced and the long term effects (be they mental or indeed physical) take the strain off the health service.

Mr Drakeford has been helpful in his provision of extra funding for mental health services in the South of Wales, as well as his recent promise of pouring millions into

health in Wales generally. He has spoken of putting an eating disorder specialist in place in South Wales for CAMHS, and is in favour of bringing the New Maudsley treatment in as standard throughout Wales; which I applaud.

It remains that Mr Drakeford has never actually admitted to, nor explained the funding disparity between Adult and Child and Adolescent services.

It remains that £1 million is given, and safeguarded, for the specialist provision of eating disorder services throughout Wales for adults, but not for children and adolescents.

It remains a fact that eating disorders generally begin around puberty, and if not treated successfully with early intervention and specialist psychological and nutritional help, will then go on to have a chronic, life threatening illness that remains into adulthood.

It remains a fact that eating disorders have the highest mortality rate of any mental illness, be this from suicide, heart failure or malnutrition. The long term effects of eating disorders are osteoporosis, heart problems, renal and liver dysfunction, infertility to name a few.

These facts remain.

Mr Drakeford's stance has moved very slightly towards understanding this, but as yet he has not jumped whole heartedly into the issue that I have raised.

I would still like to keep pressure applied at the highest level, as I see this of the utmost importance. Children and Adolescents with eating disorders, either already confirmed or in the future, should be treated promptly with specialist care and the chance to walk free of these debilitating, life threatening illnesses before they become entrenched. Before they become a part of the 'strain' on the health service.

It is the entrenchment of these illnesses that make the difficulties for treatment providers. It is the early intervention that potentially hands the sufferer the golden ticket to a life. A life not entrenched in the thoughts, actions and long term health problems that come from a lack of early response.

Norman Lamb also seems to agree with my prior correspondence where I have posed the physical versus mental disparities of services by comparing eating disorders to broken legs or heart attacks. I would never expect to keep turning up

to my GP with any child of mine who might have a broken leg, I would expect prompt referral to an orthopaedic surgeon. The GP has a certain degree of knowledge, but not the expertise for treatment. Neither would anyone be happy, if on suffering a heart attack, they were not referred immediately to a cardiologist.

It really is the same with mental health, and especially eating disorders. I can't change it, spell it differently, nor dress it up in any other way!

Adults with Eating Disorders may well have suffered since their childhood and adolescence, but this may have been prevented with better resources at the beginning of their illness. We are ultimately letting down future generations by not changing the way care is provided here in Wales for eating disorders.

Thank you once again for keeping this petition alive. I hope that eventually children and adolescents with eating disorders will be seen as a financial viability, not a commodity to keep adult services functioning.

Helen Missen

Sent from my iPad

17 February 2015

Dear Petition committee,

I realise that it is the 17th, and I haven't sent any further arguments/musings to back up or reinvent my petition plea.

However, this is one of many pieces of up to date research that are being produced worldwide. (Please see below) It demonstrates that the longer an eating disorder is left untreated, the harder to treat and more entrenched the illnesses become thus reinforcing the need for early intervention.

This only underlines further the need for funding and specialist care early in the diagnosis of an eating disorder.....childhood and adolescence being the prime area of need.

I cannot, as I say, reinvent my petition plea. However, I can keep badgering Mr Drakeford to wake up and smell the proverbial coffee!

Without early intervention and specialist help, eating disorders become entrenched and last long into adulthood, making the work of the adult services long and arduous, and mostly difficult. The likelihood of recovery becomes less the longer these illnesses are left without the specialist care they require.

As with a swimming pool (bear with me), the ease of recovery from death is somewhat aided by being in the shallow end. The deeper the water: the harder it is for the rescuer to hold the drowning person above water, or for that person in difficulty to swim alone to safety.

Once again, I suggest that the money I am asking for would be well spent in the treatment of eating disorders at CAMHS level across Wales.

Mr Drakeford should be relieved that I haven't started asking for more than is given to adult services year on year!

Perhaps I should be asking for rebate for the money not invested from 2009 to the present day to be invested now? In my reckoning there is a deficit of £6 million unpaid against that invested in adult eating disorder services. Tempting!

If only the foresight had been there then! Many of the adults now being treated may not still be in the service as they may well have had the early intervention required to prevent the chronicity of these illnesses.

I cannot reinvent my plea, but I do stand by it. Mr Drakeford, in my innumerate reckoning, still owes Welsh children £750,000 per annum, for the treatment specifically of eating disorders throughout the rest of Wales.

This would bring the funding to the same as is provided for adult eating disorder services year on year throughout Wales.

Until he sees the error of this shortfall I shall keep asking for it, and I suggest that the petition committee does not let this matter lie dormant. Lives are and will be lost and ruined.

The divide so easily established by the Welsh government, is not so discriminatory in the choice of where a child might geographically live in Wales when first diagnosed.

Thank you for hearing this again. Please do contact me if you would like me to put further pressure onto the government.

<http://www.medicalnewstoday.com/releases/289144.php>

Helen Missen

Sent from my iPad

## Eitem 5.2

**P-04-553 Ymchwiliad llawn ac annibynnol i'r risgiau iechyd sy'n gysylltiedig â thechnolegau diwifr a ffonau symudol yng Nghymru, gan gynnwys yr holl ysgolion**

**Geiriad y ddeiseb:**

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i gynnal ymchwiliad llawn ac annibynnol i effeithiau meysydd electromagnetig a gaiff eu creu a'u hallyrru gan dechnolegau diwifr, mastiau ffôn, ffonau symudol a dyfeisiau eraill sy'n allyrru amledd ac offer domestig, ar iechyd a lles cyffredinol pobl a byd natur. Ceir corff sylweddol o dystiolaeth bellach sy'n dangos y gall amlygiad cyson i draffig modern o ran meysydd electromagnetig fod yn niweidiol, gan achosi niwed i DNA a chelloedd y corff, gan effeithio ar allu'r system imiwnedd i weithio, ac achosi risg uwch o ganser a diffyg ffrwythlondeb – ac mae plant yn arbennig o agored i'r effeithiau niweidiol hyn.

### **Gwybodaeth ychwanegol**

Mae Cyngor Ewrop, Sefydliad Iechyd y Byd, Cyngres Undebau Llafur y DU, Asiantaeth yr Amgylchedd Ewrop, y Comisiwn Rhyngwladol ar gyfer Diogelwch Electromagnetig a llywodraeth Rwsia, llywodraeth yr Almaen a llywodraeth Israel oll am fynd i'r afael â'r risgiau iechyd hyn ac maent am weld mesurau ymarferol yn cael eu cyflwyno, fel defnyddio rhwydweithiau gwifredig mewn ysgolion yn lle technoleg ddi-wifr. Gallai Llywodraeth Cymru hefyd arwain y ffordd yn hyn o beth a diogelu iechyd dinasyddion Cymru yn y dyfodol drwy wneud ei gwaith ymchwil annibynnol ei hun, yn ogystal ag ymgynghori â sefydliadau annibynnol, fel Powerwatch a WiFiinschools, all gynnig corff sylweddol o waith ymchwil ac sy'n cynghori'n gryf y dylid dilyn egwyddorion rhagofalus.

**Prif ddeisebydd:** Cymru Sofren / Sovereign Wales

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 13 Mai 2014

**Nifer y llofnodion:** 11



ELSEVIER

# Immunohistopathologic demonstration of deleterious effects on growing rat testes of radiofrequency waves emitted from conventional Wi-Fi devices

Halil I. Atasoy <sup>a,\*</sup>, Mehmet Y. Gunal <sup>b</sup>, Pinar Atasoy <sup>c</sup>, Serenay Elgun <sup>d</sup>,  
Guler Bugdayci <sup>e</sup>

<sup>a</sup> Departments of Pediatrics, Abant Izzet Baysal University School of Medicine, Bolu 14280, Turkey

<sup>b</sup> Department of Physiology, Yeditepe University School of Medicine, Istanbul 34755, Turkey

<sup>c</sup> Department of Pathology, Kirikkale University School of Medicine, Kirikkale 71100, Turkey

<sup>d</sup> Department of Medical Biochemistry, Ankara University School of Medicine, Ankara 06100, Turkey

<sup>e</sup> Department of Clinical Biochemistry, Abant Izzet Baysal University School of Medicine, Bolu 14280, Turkey

Received 2 October 2011; accepted 28 February 2012

## KEYWORDS

Carcinogenesis tests;  
Infertility;  
Internet;  
Oxidative stress;  
Wireless technology;  
Testes

**Abstract** **Objective:** To investigate effects on rat testes of radiofrequency radiation emitted from indoor Wi-Fi Internet access devices using 802.11.g wireless standards.

**Methods:** Ten Wistar albino male rats were divided into experimental and control groups, with five rats per group. Standard wireless gateways communicating at 2.437 GHz were used as radiofrequency wave sources. The experimental group was exposed to radiofrequency energy for 24 h a day for 20 weeks. The rats were sacrificed at the end of the study. Intracardiac blood was sampled for serum 8-hydroxy-2'-deoxyguanosine levels. Testes were removed and examined histologically and immunohistochemically. Testis tissues were analyzed for malondialdehyde levels and prooxidant–antioxidant enzyme activities.

**Results:** We observed significant increases in serum 8-hydroxy-2'-deoxyguanosine levels and 8-hydroxyguanosine staining in the testes of the experimental group indicating DNA damage due to exposure ( $p < 0.05$ ). We also found decreased levels of catalase and glutathione peroxidase activity in the experimental group, which may have been due to radiofrequency effects on enzyme activity ( $p < 0.05$ ).

\* Corresponding author. Tel.: +90 374 2534656/3454, +905325998953; fax: +90 374 253 46 15.

E-mail addresses: halilibrahimatasoy@gmail.com, atasoy\_h@ibu.edu.tr (H.I. Atasoy), drmygunal@gmail.com (M.Y. Gunal), pinara33@yahoo.com (P. Atasoy), elgun@medicine.ankara.edu.tr (S. Elgun), bugdayci\_g@ibu.edu.tr (G. Bugdayci).

# Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation

Conrado Avendaño, M.S.,<sup>a</sup> Ariela Mata, M.S.,<sup>a</sup> César A. Sanchez Sarmiento, M.D., Ph.D.,<sup>a</sup> and Gustavo F. Doncel, M.D., Ph.D.<sup>b</sup>

<sup>a</sup> Nascentis Medicina Reproductiva, Córdoba, Argentina; and <sup>b</sup> CONRAD, Department of Obstetrics and Gynecology, Eastern Virginia Medical School, Norfolk, Virginia

**Objective:** To evaluate the effects of laptop computers connected to local area networks wirelessly (Wi-Fi) on human spermatozoa.

**Design:** Prospective in vitro study.

**Setting:** Center for reproductive medicine.

**Patient(s):** Semen samples from 29 healthy donors.

**Intervention(s):** Motile sperm were selected by swim up. Each sperm suspension was divided into two aliquots. One sperm aliquot (experimental) from each patient was exposed to an internet-connected laptop by Wi-Fi for 4 hours, whereas the second aliquot (unexposed) was used as control, incubated under identical conditions without being exposed to the laptop.

**Main Outcome Measure(s):** Evaluation of sperm motility, viability, and DNA fragmentation.

**Result(s):** Donor sperm samples, mostly normozoospermic, exposed ex vivo during 4 hours to a wireless internet-connected laptop showed a significant decrease in progressive sperm motility and an increase in sperm DNA fragmentation. Levels of dead sperm showed no significant differences between the two groups.

**Conclusion(s):** To our knowledge, this is the first study to evaluate the direct impact of laptop use on human spermatozoa. Ex vivo exposure of human spermatozoa to a wireless internet-connected laptop decreased motility and induced DNA fragmentation by a nonthermal effect. We speculate that keeping a laptop connected wirelessly to the internet on the lap near the testes may result in decreased male fertility. Further in vitro and in vivo studies are needed to prove this contention. (Fertil Steril® 2012; ■ : ■ - ■. ©2012 by American Society for Reproductive Medicine.)

**Key Words:** Laptop computer, Wi-Fi, sperm quality, fertility, sperm DNA fragmentation

In recent years, the use of portable computers (laptops, connected to local area networks wirelessly, also known as Wi-Fi) has increased dramatically. Laptops have become indispensable devices in our daily life, offering flexibility and mobility to users. People using Wi-Fi may be exposed to radio signals absorbing some of the transmitted energy in their bodies. Portable computers are commonly used on the lap (1–3), therefore exposing the genital area to radio frequency electromagnetic waves (RF-EMW) as well as high temperatures (3, 4).

Infertility is a common worldwide condition that affects more than 70 million couples of reproductive age (5). It has been suggested that male fertility has declined during the past several decades (6). Such decline has been attributed to the direct or indirect exposure to certain environmental factors such as RF-EMW (7).

Extremely low frequency magnetic fields can initiate a number of biochemical and physiological alterations in biological systems of different species (8–12). Many of these effects have been associated with free-radical production

(13, 14). Free radicals are causative factors of oxidative damage of cellular structures and molecules such as lipids, proteins, and nucleic acids. Free radicals react with polyunsaturated fatty acids in cell membranes promoting a process called lipid peroxidation. In human spermatozoa the presence of unesterified polyunsaturated fatty acids is causally associated with the induction of reactive oxygen species (ROS) generation and lipid peroxidation (15). Damage may occur at the membrane level, leading to immotility and cell death, or at the DNA level. DNA integrity is essential to normal conception. Sperm DNA fragmentation has been associated with impaired fertilization, poor embryonic development, high rates of miscarriage, and increased incidence of morbidity in the offspring, including childhood cancer (16, 17). It has been proposed that genetic and

Received June 14, 2011; revised September 9, 2011; accepted October 11, 2011.

C.A. has nothing to disclose. A.M. has nothing to disclose. C.A.S.S. has nothing to disclose. G.F.D. has nothing to disclose.

Reprint requests: Conrado Avendaño, M.S., Nascentis Medicina Reproductiva, Montevideo 359, Córdoba, Córdoba X5000AXA, Argentina (E-mail: [cavendano@nascentis.com](mailto:cavendano@nascentis.com) or [andrologiachubut@yahoo.com.ar](mailto:andrologiachubut@yahoo.com.ar)).

Fertility and Sterility® Vol. ■, No. ■, ■ 2012 0015-0282/\$36.00

Copyright ©2012 American Society for Reproductive Medicine. Published by Elsevier Inc.  
doi:10.1016/j.fertnstert.2011.10.012

Tudalen y pecyn 62

# Modulation of wireless (2.45 GHz)-induced oxidative toxicity in laryngotracheal mucosa of rat by melatonin

Giray Aynali · Mustafa Naziroğlu · Ömer Çelik ·  
Mustafa Doğan · Murat Yarıktaş · Hasan Yasan

Received: 21 January 2013 / Accepted: 27 February 2013  
© Springer-Verlag Berlin Heidelberg 2013

**Abstract** It is well known that oxidative stress induces larynx cancer, although antioxidants induce modulator role on etiology of the cancer. It is well known that electromagnetic radiation (EMR) induces oxidative stress in different cell systems. The aim of this study was to investigate the possible protective role of melatonin on oxidative stress induced by Wi-Fi (2.45 GHz) EMR in laryngotracheal mucosa of rat. For this purpose, 32 male rats were equally categorized into four groups, namely controls, sham controls, EMR-exposed rats, EMR-exposed rats treated with melatonin at a dose of 10 mg/kg/day. Except for the controls and sham controls, the animals were exposed to 2.45 GHz radiation during 60 min/day for 28 days. The lipid peroxidation levels were significantly ( $p < 0.05$ ) higher in the radiation-exposed groups than in the control and sham control groups. The lipid peroxidation level in the irradiated animals treated with melatonin was significantly ( $p < 0.01$ ) lower than in those that were only exposed to Wi-Fi radiation. The activity of glutathione

peroxidase was lower in the irradiated-only group relative to control and sham control groups but its activity was significantly ( $p < 0.05$ ) increased in the groups treated with melatonin. The reduced glutathione levels in the mucosa of rat did not change in the four groups. There is an apparent protective effect of melatonin on the Wi-Fi-induced oxidative stress in the laryngotracheal mucosa of rats by inhibition of free radical formation and support of the glutathione peroxidase antioxidant system.

**Keywords** Melatonin · Larynx · Trachea · Oxidative stress · Wireless devices

## Introduction

Wireless devices usages in industrial, scientific, medical, military and domestic applications, with potential leakage, of such radiation into the environment have increased by leaps and bounds in past decade [1]. From being a luxury and limited to the wealthy, wireless devices especially near 2.45 GHz is indispensable in daily lives [2]. However, every technological advance and its overuse possess possible adverse effects [3].

Exposure to electromagnetic radiation (EMR) induces degenerative effects via two ways, namely directly or indirectly. Direct effects of EMR induce production of reactive oxygen species (ROS), including superoxide anion, hydrogen peroxide, and hydroxyl radicals. The ROS contribute to tissue and DNA damages [1]. Exposure to 2.45 GHz EMR causes an increase in lipid peroxidation levels and a decrease in the activity of enzymes that prevent or protect against lipid peroxidation in tissues [4, 5]. The human cells have nonenzymatic and enzymatic antioxidant systems against degenerative effects of ROS. Glutathione

---

G. Aynali · M. Yarıktaş · H. Yasan  
Ear, Nose and Throat, Head and Neck Surgery Department,  
School of Medicine, Suleyman Demirel University,  
Isparta, Turkey

G. Aynali (✉)  
Modernevler Mah. Çevre Yolu 142. Cad. No. 7 İksir  
Apt D :7, 32200 Isparta, Turkey  
e-mail: giraynali@yahoo.com; giraynali@med.sdu.edu.tr

M. Naziroğlu · Ö. Çelik  
Biophysics Department, School of Medicine, Suleyman  
Demirel University, Isparta, Turkey

M. Doğan  
Ear, Nose and Throat, Head and Neck Surgery Department,  
Isparta State Hospital, Isparta, Turkey

## Effects of Selenium and L-Carnitine on Oxidative Stress in Blood of Rat Induced by 2.45-GHz Radiation from Wireless Devices

Nurhan Gumral · Mustafa Naziroglu · Ahmet Koyu · Kurtulus Ongel · Omer Celik · Mustafa Saygin · Mesud Kahriman · Sadettin Caliskan · Mustafa Kayan · Osman Gencel · Manuel F. Flores-Arce

Received: 23 January 2009 / Accepted: 30 March 2009 /  
Published online: 25 April 2009  
© Humana Press Inc. 2009

**Abstract** The levels of blood lipid peroxidation, glutathione peroxidase, reduced glutathione, and vitamin C were used to follow the level of oxidative damage caused by 2.45 GHz electromagnetic radiation in rats. The possible protective effects of selenium and L-carnitine were also tested and compared to untreated controls. Thirty male Wistar Albino rats were equally divided into five groups, namely Groups A<sub>1</sub> and A<sub>2</sub>: controls and sham controls, respectively; Group B: EMR; Group C: EMR + selenium, Group D: EMR + L-carnitine. Groups B–D were exposed to 2.45 GHz electromagnetic radiation during 60 min/day for 28 days. The lipid peroxidation levels in plasma and erythrocytes were significantly higher in group B than in groups A<sub>1</sub> and A<sub>2</sub> ( $p < 0.05$ ), although the reduced glutathione and glutathione peroxidase values were slightly lower in erythrocytes of group B compared to

---

N. Gumral · A. Koyu · M. Saygin · S. Caliskan  
Department of Physiology, Medical Faculty, Suleyman Demirel University, Isparta, Turkey

M. Naziroglu (✉) · O. Celik  
Department of Biophysics, Suleyman Demirel University, Morfoloji Binasi, Cunur,  
TR-32260 Isparta, Turkey  
e-mail: mnaziroglu@med.sdu.edu.tr

K. Ongel  
Family Medicine, Suleyman Demirel University, Isparta, Turkey

M. Kahriman  
Department of Electronics and Communication Engineering, Suleyman Demirel University,  
Isparta, Turkey

M. Kayan  
Department of Radiology, Isparta State Hospital, Isparta, Turkey

O. Gencel  
Science Institute of Suleyman Demirel University, Isparta, Turkey

M. F. Flores-Arce  
Department of Chemical and Biochemical Engineering, Tijuana Institute of Technology, Tijuana,  
Mexico

Tudalen y pecyn 64

# **Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system**

Magda Havas\*, Jeffrey Marrongelle\*\*, Bernard Pollner\*\*\*,  
Elizabeth Kelley\*\*\*\*, Camilla R.G. Rees\*\*\*\*\*<sup>†</sup>, Lisa Tully\*\*\*\*\*<sup>†</sup>

\* Environmental and Resource Studies, Trent University, Peterborough, Canada

\*\* 1629 Long Run Road, PO Box 606, Schuylkill Haven, PA, USA

\*\*\* Haspingerstrasse 7/2, 6020 Innsbruck, Austria

\*\*\*\* International Commission for Electromagnetic Safety, Venice, Italy

\*\*\*\*\* 350 Bay Street, #100-214, San Francisco, California, 94133, USA

\*\*\*\*\* 27 Arrow Leaf Court, Boulder, Colorado 80304, USA

## **Abstract**

**Aim:** The effect of pulsed (100 Hz) microwave (MW) radiation on heart rate variability (HRV) was tested in a double blind study. **Materials and Methods:** Twenty-five subjects in Colorado between the ages of 37 to 79 completed an electrohypersensitivity (EHS) questionnaire. After recording their orthostatic HRV, we did continuous real-time monitoring of HRV in a provocation study, where supine subjects were exposed for 3-minute intervals to radiation generated by a cordless phone at 2.4 GHz or to sham exposure. **Results:** Questionnaire: Based on self-assessments, participants classified themselves as extremely electrically sensitive (24%), moderately (16%), slightly (16%), not sensitive (8%) or with no opinion (36%) about their sensitivity. The top 10 symptoms experienced by those claiming to be sensitive include memory problems, difficulty concentrating, eye problems, sleep disorder, feeling unwell, headache, dizziness, tinnitus, chronic fatigue, and heart palpitations. The five most common objects allegedly causing sensitivity were fluorescent lights, antennas, cell phones, Wi-Fi, and cordless phones. Provocation Experiment: Forty percent of the subjects experienced some changes in their HRV attributable to digitally pulsed (100 Hz) MW radiation. For some the response was extreme (tachycardia), for others moderate to mild (changes in sympathetic nervous system and/or parasympathetic nervous system). and for some there was no observable reaction either because of high adaptive capacity or because of systemic neurovegetative exhaustion. **Conclusions:** Orthostatic HRV combined with provocation testing may provide a diagnostic test for some EHS sufferers when they are exposed to electromagnetic emitting devices. This is the first study that documents immediate and dramatic changes in both Heart Rate (HR) and HR variability (HRV) associated with MW exposure at levels

Address: Magda Havas BSc, PhD, Environmental and Resource Studies, Trent University, Peterborough, ON, K9J 7B8, Canada - Tel. 705 748-1011 x7882 - Fax 705-748-1569  
E-mail: mhavas@trentu.ca

**well below (0.5%) federal guidelines in Canada and the United States (1000 microW/cm<sup>2</sup>).**

**Key Words:** heart rate variability, microwave radiation, DECT phone, autonomic nervous system, provocation study, sympathetic, parasympathetic, cordless phone, 2.4 GHz, electrohypersensitivity

## Introduction

A growing population claims to be sensitive to devices emitting electromagnetic energy. Hallberg and Oberfeld<sup>1</sup> report a prevalence of electrohypersensitivity (EHS) that has increased from less than 2% prior to 1997 to approximately 10% by 2004 and is expected to affect 50% of the population by 2017. Whether this is due to a real increase in EHS or to greater media attention, is not known. However, to label EHS as a psychological disorder or to attribute the symptoms to aging and/or stress does not resolve the issue that a growing population, especially those under the age of 60, are suffering from some combination of fatigue, sleep disturbance, chronic pain, skin, eye, hearing, cardiovascular and balance problems, mood disorders as well as cognitive dysfunction and that these symptoms appear to worsen when people are exposed to electromagnetic emitting devices<sup>2-7</sup>.

The World Health Organization (WHO) organized an international seminar and working group meeting in Prague on EMF Hypersensitivity in 2004, and at that meeting they defined EHS as follows<sup>8</sup>:

*“. . . a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs) . . . Whatever its cause, EHS is a real and sometimes a debilitating problem for the affected persons . . . Their exposures are generally several orders of magnitude under the limits in internationally accepted standards.”*

The WHO goes on to state that:

*“EHS is characterized by a variety of non-specific symptoms, which afflicted individuals attribute to exposure to EMF. The symptoms most commonly experienced include dermatological symptoms (redness, tingling, and burning sensations) as well as neurasthenic and vegetative symptoms (fatigue, tiredness, concentration difficulties, dizziness, nausea, heart palpitation and digestive disturbances). The collection of symptoms is not part of any recognized syndrome.”*

Both provocation studies (where individuals are exposed to some form of electromagnetic energy and their symptoms are documented) and amelioration studies (where exposure is reduced) can shed light on the offending energy source and the type and rate of reaction.

Several amelioration studies have documented improvements in the behavior of students and the health and wellbeing of teachers<sup>9</sup>, among asthmatics<sup>10</sup>, and in both diabetics and those with multiple sclerosis<sup>11,12</sup> when their exposure to dirty electricity is reduced. Dirty electricity refers to microsurges flowing along electrical wires in the kHz

## Replication of heart rate variability provocation study with 2.4-GHz cordless phone confirms original findings

Magda Havas<sup>1</sup> & Jeffrey Marrongelle<sup>2</sup>

<sup>1</sup>*Environmental and Resource Studies, Trent University, Peterborough, ON, Canada,*  
*and <sup>2</sup>Bioenergimed Metabolic Institute, Schykill Haven, PA, USA*

This is a replication of a study that we previously conducted in Colorado with 25 subjects designed to test the effect of electromagnetic radiation generated by the base station of a cordless phone on heart rate variability (HRV). In this study, we analyzed the response of 69 subjects between the ages of 26 and 80 in both Canada and the USA. Subjects were exposed to radiation for 3-min intervals generated by a 2.4-GHz cordless phone base station ( $3\text{--}8 \mu\text{W/cm}^2$ ). A few participants had a severe reaction to the radiation with an increase in heart rate and altered HRV indicative of an alarm response to stress. Based on the HRV analyses of the 69 subjects, 7% were classified as being "moderately to very" sensitive, 29% were "little to moderately" sensitive, 30% were "not to little" sensitive and 6% were "unknown". These results are not psychosomatic and are not due to electromagnetic interference. Twenty-five percent of the subjects' self-proclaimed sensitivity corresponded to that based on the HRV analysis, while 32% overestimated their sensitivity and 42% did not know whether or not they were electrically sensitive. Of the 39 participants who claimed to experience some electrical hypersensitivity, 36% claimed they also reacted to a cordless phone and experienced heart symptoms and, of these, 64% were classified as having some degree of electrohypersensitivity (EHS) based on their HRV response. Novel findings include documentation of a delayed response to radiation. Orthostatic HRV testing combined with provocation testing may provide a diagnostic tool for some sufferers of EHS when they are exposed to electromagnetic emitting devices. The protocol used underestimates reaction to electromagnetic radiation for those who have a delayed autonomic nervous system reaction and it may under diagnose those who have adrenal exhaustion as their ability to mount a response to a stressor is diminished.

**Keywords:** heart rate variability, mobile phone, tachycardia, arrhythmia, microwave radiation, radio frequency radiation, electrohypersensitivity, autonomic nervous system

### Introduction

Individuals who complain of electrical hypersensitivity experience a myriad of symptoms that may include heart palpitation, arrhythmia, tachycardia, pain or pressure in the chest that may or may not be accompanied by anxiety, dizziness, nausea and headaches (Austrian Medical Association, 2012; Bevington, 2010; McCarty et al., 2011; Eltiti et al., 2007; Johansson, 2006). Since we have technology to measure the activity of

---

Correspondence: Magda Havas, Environmental and Resource Studies, Trent University, Peterborough, ON, Canada. E-mail: mhavas@trentu.ca

# WI-FI ELECTROMAGNETIC FIELDS EXERT GENDER RELATED ALTERATIONS ON EEG

ARGIRO E. MAGANIOTI <sup>1</sup>, CHARALABOS C. PAPAGEORGIOU <sup>2,3</sup>,  
CHRISANTHI D. HOUNTALA <sup>1</sup>, MILTIADES A. KYPRIANOU <sup>3</sup>,  
ANDREAS D. RABAVILAS <sup>3</sup>, GEORGE N. PAPADIMITRIOU <sup>2</sup>,  
CHRISTOS N. CAPSALIS <sup>1</sup>

<sup>1</sup> NATIONAL TECHNICAL UNIVERSITY OF ATHENS, DEPARTMENT OF  
ELECTRICAL ENGINEERING, DIVISION OF INFORMATION TRANSMISSION  
SYSTEMS AND MATERIAL TECHNOLOGY, 9 Iroon Polytecnioy str., Athens, 15773,  
GREECE, Tel: ++30210-7722574, Fax: ++30210-7723520

<sup>2</sup> UNIVERSITY OF ATHENS, 1<sup>ST</sup> DEPARTMENT OF PSYCHIATRY, EGINITION  
HOSPITAL, 74 Vas.Sophias Ave., Athens, 11528, GREECE

<sup>3</sup> UNIVERSITY MENTAL HEALTH RESEARCH INSTITUTE (UMHRI), 2 Soranou tou  
Efesiou (PO Box 66 517) Athens, 15601, GREECE, Tel: ++30210-6536902, Fax: ++30210-  
6537273

## Abstract

The present study investigated the influence of electromagnetic fields, similar to that emitted by Wi-Fi system, on brain activity. Fifteen female and fifteen male subjects performed a short memory task (Wechsler test), both without and with exposure to a 2.4GHz Wi-Fi signal. For each subject, radiation condition and electrode, the amplitude in the frequency domain of the EEG signal was calculated from the recordings of 30 scalp electrodes, using the Fourier transform.

The presence of radiation had no effect on the energies of alpha and beta band of male subjects, while it reduced these energies of female subjects, resulting in significantly lower energies, as compared to those of males.

Delta and theta band energies did not experience any noteworthy effect from gender, radiation condition and their interaction. Conversely, there was a significant interaction effect (gender x radiation) on the energies of alpha and beta rhythms.

Interestingly, this pattern was observed for a number of electrodes, which formed two distinct clusters: one located at right- anterior and the second at occipital brain areas.

The present data support the idea that Wi-Fi signal may influence normal physiology through changes in gender related cortical excitability, as reflected by alpha and beta EEG frequencies.

**ORIGINAL ARTICLE**

## Drosophila oogenesis as a bio-marker responding to EMF sources

Lukas H. Margaritis<sup>1</sup>, Areti K. Manta<sup>1</sup>, Konstantinos D. Kokkaliaris<sup>1</sup>, Dimitra Schiza<sup>1</sup>, Konstantinos Alimisis<sup>1</sup>, Georgios Barkas<sup>1</sup>, Eleana Georgiou<sup>1</sup>, Olympia Giannakopoulou<sup>1</sup>, Ioanna Kollia<sup>1</sup>, Georgia Kontogianni<sup>1</sup>, Angeliki Kourouzidou<sup>1</sup>, Angeliki Myari<sup>1</sup>, Fani Roumelioti<sup>1</sup>, Aikaterini Skouroliakou<sup>2</sup>, Vasia Sykioti<sup>1</sup>, Georgia Varda<sup>1</sup>, Konstantinos Xenos<sup>1</sup>, and Konstantinos Ziomas<sup>1</sup>

<sup>1</sup>Department of Cell Biology and Biophysics, Faculty of Biology, University of Athens, Panepistimiopolis, Athens, Greece and <sup>2</sup>Department of Physics and Chemistry, T.E.I. of Athens, Agiou Spuridonos, Aigaleo, Athens, Greece

**Abstract**

The model biological organisms *Drosophila melanogaster* and *Drosophila virilis* have been utilized to assess effects on apoptotic cell death of follicles during oogenesis and reproductive capacity (fecundity) decline. A total of 280 different experiments were performed using newly emerged flies exposed for short time daily for 3–7 d to various EMF sources including: GSM 900/1800 MHz mobile phone, 1880–1900 MHz DECT wireless base, DECT wireless handset, mobile phone-DECT handset combination, 2.44 GHz wireless network (Wi-Fi), 2.44 GHz blue tooth, 92.8 MHz FM generator, 27.15 MHz baby monitor, 900 MHz CW RF generator and microwave oven's 2.44 GHz RF and magnetic field components. Mobile phone was used as a reference exposure system for evaluating factors considered very important in dosimetry extending our published work with *D. melanogaster* to the insect *D. virilis*. Distance from the emitting source, the exposure duration and the repeatability were examined. All EMF sources used created statistically significant effects regarding fecundity and cell death-apoptosis induction, even at very low intensity levels (0.3 V/m blue tooth radiation), well below ICNIRP's guidelines, suggesting that Drosophila oogenesis system is suitable to be used as a biomarker for exploring potential EMF bioactivity. Also, there is no linear cumulative effect when increasing the duration of exposure or using one EMF source after the other (i.e. mobile phone and DECT handset) at the specific conditions used. The role of the average versus the peak E-field values as measured by spectrum analyzers on the final effects is discussed.

**Introduction**

Wireless communication devices are widely used worldwide at nearly all human activities at home, for entertainment, for education and especially at work. The related devices include the well-known cell phones (nearly 6 billion users globally), the wireless DECT telephones (no records available but apparently their number is considered very high), the wireless local area network routers (no records available), iPads which are increasingly penetrating the market having only Wi-Fi (and not wired) internet access, not to mention the baby monitors and the also newly developed "smart meters". Apart from the above "electromagnetic pollution" sources, there is also direct or indirect radiation exposure of humans by FM and TV broadcast stations, cell phone network mast stations, TETRA police and fire department antennae and many more. Because people may be adversely affected by the environmental impact of such electromagnetic fields (EMFs), it is of great scientific and social interest to explore the

possible health hazards (Behari, 2010) potentially caused by this radiation spectrum. Major research is associated mainly with cell phones, while at the same time the other sources have been neglected with the exception of the epidemiological and partially clinical studies involving DECT phones (Hardell & Carlberg, 2009; Hardell et al., 2004, 2006, 2011; Khurana et al., 2010). Mobile phone-like radiation studies have been performed during the last decades investigating a variety of biological effects, in humans with clinical studies and experimental work with rodents, flies and cell cultures. Assessing the possible link between exposure to electromagnetic fields and genotoxic effects, a number of studies have reported DNA damage, cell malformations, apoptotic cell death, changes in chromatin conformation and micronucleus formation in different cell types or organisms (Lai & Singh, 1996; Lixia et al., 2006; Ruediger, 2009; Zhao et al., 2007). However, in other studies, no genotoxic effects from exposure to EMF were observed (Belyaev et al., 2006; Verschaeve, 2005).

Mobile phone radiation has been also found to cause broad changes in gene and protein expression in certain cell types (Belyaev et al., 2006; Nylund & Leszczynski, 2006; Nylund et al., 2009; Remondini et al., 2006). Our group using

Address correspondence to Lukas H. Margaritis, Department of Cell Biology and Biophysics, Faculty of Biology, Athens University, Panepistimiopolis, 15784 Athens, Greece. E-mail: Loukas.Margaritis@biol.uoa.gr

**Keywords**

Apoptosis, baby monitor, blue tooth, DECT base, DECT handset, Drosophila, EMFs, mobile phones, MW oven, reproduction, Wi-Fi

**History**

Received 31 August 2012  
Revised 2 March 2013  
Accepted 7 April 2013  
Published online 31 July 2013

## Modulator effects of L-carnitine and selenium on wireless devices (2.45 GHz)-induced oxidative stress and electroencephalography records in brain of rat

MUSTAFA NAZIROĞLU<sup>1</sup> & NURHAN GÜMRAL<sup>2</sup>

Departments of <sup>1</sup>Biophysics and <sup>2</sup>Physiology, Medicine Faculty, Süleyman Demirel University, Isparta, Turkey

(Received 8 September 2008; Revised 25 April 2009; Accepted 29 April 2009)

### Abstract

**Purpose:** Electromagnetic radiation (EMR) from wireless devices may affect biological systems by increasing free radicals. The present study was designed to determine the effects of 2.45 GHz EMR on the brain antioxidant redox system and electroencephalography (EEG) records in rat. The possible protective effects of selenium and L-carnitine were also tested and compared to untreated controls.

**Materials and methods:** Thirty rats were equally divided into five different groups, namely Group A<sub>1</sub>: Cage control, Group A<sub>2</sub>: Sham control, group B: 2.45 GHz EMR, group C: 2.45 GHz EMR + selenium, group D: 2.45 GHz EMR + L-carnitine. Groups B, C and D were exposed to 2.45 GHz EMR during 60 min/day for 28 days. End of the experiments, EEG records and the brain cortex samples were taken.

**Results:** The cortex brain vitamin A ( $p < 0.05$ ), vitamin C ( $p < 0.01$ ) and vitamin E ( $p < 0.05$ ) concentrations values were lower in group B than in group A<sub>1</sub> and A<sub>2</sub> although their concentrations were increased by selenium and L-carnitine supplementation. Lipid peroxidation, levels were lower in group C ( $p < 0.05$ ) and D ( $p < 0.01$ ) than in group B where as reduced glutathione levels were higher in group C ( $p < 0.05$ ) than in group A<sub>1</sub>, A<sub>2</sub> and B. However, B-carotene levels did not change in the five groups.

**Conclusions:** L-carnitine and selenium seem to have protective effects on the 2.45 GHz-induced decrease of the vitamins by supporting antioxidant redox system. L-carnitine on the vitamin concentrations seems to more protective affect than in selenium.

**Keywords:** Wireless devices, lipid peroxidation, brain, vitamin E, L-carnitine, selenium, electroencephalography records

**Abbreviations:** ANOVA, analysis of variance; EEG, electroencephalography; EMF, electromagnetic fields; EMR, electromagnetic radiation; GSH, glutathione; GSH-Px, glutathione peroxidase; L-CAR, L-carnitine; LP, lipid peroxidation; LSD, least significance test; ROS, reactive oxygen species; SAR, specific absorption rate; SD, standard deviation; Se, selenium

### Introduction

In present times there is widespread use of 2.45 GHz irradiation-emitting devices in industrial, scientific, medical, military and domestic applications, with potential leakage of such radiation into the environment (Crouzier et al. 2007). Several studies have suggested that biological systems might be sensitive to such form of radiation (Koyu et al. 2005, Köylü et al. 2006). Today there is widespread use of 2.45 GHz radiation from common household devices like microwave ovens, wireless access points, and

computers, which in some cases were shown to be carcinogenic (Omura and Losco 1993).

Reactive oxygen substances (ROS) are produced by a free radical chain reaction, which can also be initiated by ROS (Naziroğlu 2007a). The ROS, i.e. singlet oxygen, superoxide anion radical and hydroxyl radical, contribute to tissue damage (Naziroğlu 2007b). ROS also cause injury by reacting with biomolecules such as lipids, proteins and nucleic acids as well as by depleting enzymatic and/or non-enzymatic antioxidants in the brain (Halliwell 2006, Naziroğlu et al. 2008). Memory and learning

Correspondence: Prof. Dr Mustafa Naziroğlu, Head of Department of Biophysics, Medical (TIP) Faculty, Süleyman Demirel University, Morfoloji Binası, Cunur, TR-32260 Isparta, Turkey. Tel: +90 246 2113310. Fax: +90 246 2371165. E-mail: mnaziroglu@med.sdu.edu.tr

ISSN 0955-3002 print/ISSN 1362-3095 online © 2009 Informa Healthcare USA, Inc.  
DOI: 10.1080/09553000903009530

## 2.45-Gz wireless devices induce oxidative stress and proliferation through cytosolic $\text{Ca}^{2+}$ influx in human leukemia cancer cells

Mustafa Naziroğlu<sup>1</sup>, Bilal Çığ<sup>1</sup>, Salih Doğan<sup>1</sup>, Abdulhadi Cihangir Uğuz<sup>1</sup>, Selin Dilek<sup>2</sup> & Dahdouh Faouzi<sup>1</sup>

<sup>1</sup>Department of Biophysics, Faculty of Medicine, Süleyman Demirel University, Isparta, and <sup>2</sup>Student, Altınbaşak High School, Isparta, Turkey

### Abstract

**Purpose:** Electromagnetic radiation from wireless devices may affect biological systems by increasing free radicals. The present study was designed to determine the effects of 2.45 GHz radiation on the antioxidant redox system, calcium ion signaling, cell count and viability in human leukemia 60 cells.

**Materials and methods:** Twelve cell cultures were equally divided into two main groups as controls ( $n = 6$ ) and irradiated ( $n = 6$ ) and then subdivided into four different subgroups depending on the duration of exposure, namely 1, 2, 12 and 24 hours. The samples were analyzed immediately after the experimental period.

**Results:** The extent of lipid peroxidation, cytosolic free  $\text{Ca}^{2+}$  and cell numbers were higher in 2.45 GHz groups than in the controls. The increase of cytosolic free  $\text{Ca}^{2+}$  concentrations was radiation time-dependent and was highest at 24-h exposure. The reduced glutathione, glutathione peroxidase, vitamin C and cell viability values did not show any changes in any of the experimental groups. 2-aminoethyl diphenylboronate inhibits  $\text{Ca}^{2+}$  ions influx by blockage of the transient receptor potential melastatin 2.

**Conclusions:** 2.45 GHz electromagnetic radiation appears to induce proliferative effects through oxidative stress and  $\text{Ca}^{2+}$  influx although blocking of transient receptor potential melastatin 2 channels by 2-aminoethyl diphenylboronate seems to counteract the effects on  $\text{Ca}^{2+}$  ions influx.

**Keywords:** Wireless devices, oxidative stress,  $\text{Ca}^{2+}$  influx, TRPM2 channels, blood cancer

### Introduction

In present times there is widespread use of 2.45 GHz irradiation-emitting devices in industrial, scientific, medical, military and domestic applications, with potential leakage of such radiation into the environment (Crouzier et al. 2007). Common household devices like microwave ovens, wireless access points, and computers were in some cases shown to be carcinogenic (Omura and Losco 1993). Other studies have

suggested that biological systems might be sensitive to such form of radiation (Naziroğlu and Gümral 2009, Naziroğlu et al. 2012, Gümral et al. 2009).

Reactive oxygen species (ROS) are produced by a free radical chain reaction, which in some cases can be auto-initiated (Naziroğlu 2007a, 2007b). These species cause injury by reacting with lipids, proteins and nucleic acids as well as by depleting antioxidants in cancer cells (Reuter et al. 2010). There are various antioxidant mechanisms in cells that neutralize the harmful effects of ROS. In contrast, exposure to electromagnetic radiation (EMR) results in increases of ROS due to loss of efficiency of antioxidants mechanisms and alterations in mitochondrial electron transfer chain (Kovacic and Somanathan 2008).

Glutathione peroxidase is responsible for the reduction of hydro- and organic peroxides in the presence of reduced glutathione (Whanger 2001). Vitamin C is a free radical scavenger that also transforms vitamin E to its active form (Naziroğlu 2007a). We recently reported that 2.45 GHz radiation induced oxidative stress in brain and blood cells of rats (Naziroğlu and Gümral 2009, Gümral et al. 2009). However, whether 2.45 GHz EMR also induces oxidative stress in cancer cells is still unknown and deserves further study. The homeostasis of  $\text{Ca}^{2+}$  ions is one of the most important factors of cellular physiological function. It is involved in such diverse functions as cellular proliferation, apoptosis, induction of oxidative stress and physiological signal transductions (Putney 2009). The cytosolic free calcium ion concentration [ $\text{Ca}^{2+}$ ]<sub>i</sub> is controlled by a number of membrane-bound ion channels located both in the plasma and intracellular membranes. Transient receptor potential (TRP) channels are a group of non-selective cation channels that play important functions in sensory neurons (Naziroğlu 2011a). One subgroup of TRP melastatin is TRP melastatin 2 (TRPM2), which has two distinct domains with one functioning as an ion channel and the other as an adenosine diphosphate ribose-specific

Correspondence: Prof. Mustafa Naziroğlu, Head of Department of Biophysics, Medical Faculty, Süleyman Demirel University, Cunur, TR-32260 Isparta, Turkey. Tel: + 90 246 2113310. Fax: + 90 246 2371165. E-mail: mnaziroglu@med.sdu.edu.tr

(Received 11 July 2011; revised 28 March 2012; accepted 30 March 2012)



## Melatonin modulates wireless (2.45 GHz)-induced oxidative injury through TRPM2 and voltage gated Ca<sup>2+</sup> channels in brain and dorsal root ganglion in rat

M. Naziroğlu <sup>a,b,\*</sup>, Ö. Çelik <sup>a</sup>, C. Özgül <sup>a</sup>, B. Çığ <sup>a</sup>, S. Doğan <sup>a</sup>, R. Bal <sup>c</sup>, N. Gümral <sup>d</sup>, A.B. Rodríguez <sup>e</sup>, J.A. Pariente <sup>e</sup>

<sup>a</sup> Department of Biophysics, Medicine Faculty, Süleyman Demirel University, Isparta, Turkey

<sup>b</sup> Neuroscience Research Center, Süleyman Demirel University, Isparta, Turkey

<sup>c</sup> Department of Physiology, Medicine Faculty, Fırat University, Elazığ, Turkey

<sup>d</sup> Department of Physiology, Medicine Faculty, Süleyman Demirel University, Isparta, Turkey

<sup>e</sup> Department of Physiology, Science Faculty, Extremadura University, Badajoz, Spain

### ARTICLE INFO

#### Article history:

Received 9 August 2011

Received in revised form 4 October 2011

Accepted 5 October 2011

#### Keywords:

Melatonin

Ca<sup>2+</sup> influx

Dorsal root ganglion neuron

Electroencephalography records

Oxidative stress

TRPM2 channels

Wireless devices

### ABSTRACT

We aimed to investigate the protective effects of melatonin and 2.45 GHz electromagnetic radiation (EMR) on brain and dorsal root ganglion (DRG) neuron antioxidant redox system, Ca<sup>2+</sup> influx, cell viability and electroencephalography (EEG) records in the rat. Thirty two rats were equally divided into four different groups namely group A1: Cage control, group A2: Sham control, group B: 2.45 GHz EMR, group C: 2.45 GHz EMR + melatonin. Groups B and C were exposed to 2.45 GHz EMR during 60 min/day for 30 days. End of the experiments, EEG records and the brain cortex and DRG samples were taken. Lipid peroxidation (LP), cell viability and cytosolic Ca<sup>2+</sup> values in DRG neurons were higher in group B than in groups A1 and A2 although their concentrations were increased by melatonin, 2-aminoethylidiphenyl borinate (2-APB), diltiazem and verapamil supplementation. Spike numbers of EEG records in group C were lower than in group B. Brain cortex vitamin E concentration was higher in group C than in group B. In conclusion, Melatonin supplementation in DRG neurons and brain seems to have protective effects on the 2.45 GHz-induced increase Ca<sup>2+</sup> influx, EEG records and cell viability of the hormone through TRPM2 and voltage gated Ca<sup>2+</sup> channels.

© 2011 Elsevier Inc. All rights reserved.

### 1. Introduction

In present times there is widespread use of 2.45 GHz irradiation-emitting devices in industrial, scientific, medical, military and domestic applications, with potential leakage of such radiation into the environment [1]. Several studies have suggested that biological systems might be sensitive to such form of radiation [2,3]. Today there is widespread use of 2.45 GHz radiation from common household devices like microwave ovens, wireless access points, and computers, which in some cases were shown to be carcinogenic [4].

Reactive oxygen substances (ROS) are produced by a free radical chain reaction, which can also be initiated by ROS [5]. ROS also cause

injury by reacting with biomolecules such as lipids, proteins and nucleic acids as well as by depleting enzymatic antioxidant such as glutathione peroxidase (GSH-Px) and/or nonenzymatic antioxidants such as reduced glutathione (GSH), vitamins A, C, E and β-carotene in the brain and neuronal cells [6]. Pain and brain diseases are impaired in individuals with brain and sensory neuron-related neurodegenerative diseases; this is believed to be, in part, the result of excessive production of ROS [7]. The brain and neurons consume the highest amount of oxygen in the human body [6] although most of the oxygen used in brain tissues is converted to CO<sub>2</sub> and water, small amounts of oxygen form ROS [5]. The existence of polyunsaturated fatty acids which are targets of the ROS in the brain makes this organ more sensitive to oxidative damage [8]. ROS may be involved in the action of cell phone-induced electromagnetic radiation (EMR) on biological systems [2,9–11].

Neuropathic pain states severely limit the quality of life. There are several types of sensory neurons in dorsal root ganglion (DRG) neurons with responsiveness to different kinds of external and internal stimuli. These stimuli such as nociceptive, thermal and mechanical activate different receptors and ion channels that are present in the nerve terminals at the sensory receptive fields. Their expression in selective subsets of DRG neurons determines the response profile of individual neurons to a given stimulus [12]. Ca<sup>2+</sup> homeostasis is one of the most important factors of cellular physiological function. It

**Abbreviations:** 2-APB, 2-aminoethylidiphenyl borinate; DRG, dorsal root ganglion; EEG, electroencephalography; EMF, electromagnetic fields; EMR, electromagnetic radiation; FFA, flufenamic acid; GSH, glutathione; GSH-Px, glutathione peroxidase; LP, lipid peroxidation; ROS, reactive oxygen species; SAR, specific absorption rate.

\* Corresponding author at: Department of Biophysics, Medical Faculty, Süleyman Demirel University, Dekanlık Binası, TR-32260 Isparta, Turkey. Tel.: +90 246 2113310; fax: +90 246 2371165.

E-mail addresses: mnaziroglu@med.sdu.edu.tr (M. Naziroğlu), omercelik.vm@gmail.com (Ö. Çelik), cmlozgl@gmail.com (C. Özgül), bilalcig@gmail.com (B. Çığ), salihd46@gmail.com (S. Doğan), rbal1969@gmail.com (R. Bal), n\_gumral@hotmail.com (N. Gümral), moratino@unex.es (A.B. Rodríguez), pariente@unex.es (J.A. Pariente).

## ORIGINAL ARTICLE

**Protective effects of melatonin against oxidative injury in rat testis induced by wireless (2.45 GHz) devices**T. Oksay<sup>1</sup>, M. Naziroğlu<sup>2</sup>, S. Doğan<sup>2</sup>, A. Güzel<sup>1</sup>, N. Gümral<sup>3</sup> & P. A. Koşar<sup>4</sup><sup>1</sup> Department of Urology, Suleyman Demirel University, Faculty of Medicine, Isparta, Turkey;<sup>2</sup> Department of Biophysics, Suleyman Demirel University, Faculty of Medicine, Isparta, Turkey;<sup>3</sup> Department of Physiology, Suleyman Demirel University, Faculty of Medicine, Isparta, Turkey;<sup>4</sup> Department Medical Biology and Genetics, Suleyman Demirel University, Faculty of Medicine, Isparta, Turkey**Keywords**

Melatonin—oxidative stress—rat—testis—wireless devices

**Correspondence**

Taylan Oksay, MD, Suleyman Demirel University, Faculty of Medicine, Department of Urology, 32260, Çünür/Isparta, Turkey.  
 Tel.: +90 246 2119258;  
 Fax: +90 246 2370240;  
 E-mail: drtaylanoksay@yahoo.com

Accepted: September 27, 2012

doi: 10.1111/and.12044

**Summary**

Wireless devices have become part of everyday life and mostly located near reproductive organs while they are in use. The present study was designed to determine the possible protective effects of melatonin on oxidative stress-dependent testis injury induced by 2.45-GHz electromagnetic radiation (EMR). Thirty-two rats were equally divided into four different groups, namely cage control (A1), sham control (A2), 2.45-GHz EMR (B) and 2.45-GHz EMR+melatonin (C). Group B and C were exposed to 2.45-GHz EMR during 60 min day<sup>-1</sup> for 30 days. Lipid peroxidation levels were higher in Group B than in Group A1 and A2. Melatonin treatment prevented the increase in the lipid peroxidation induced by EMR. Also reduced glutathione (GSH) and glutathione peroxidase (GSH-Px) levels in Group D were higher than that of exposure group. Vitamin A and E concentrations decreased in exposure group, and melatonin prevented the decrease in vitamin E levels. In conclusion, wireless (2.45 GHz) EMR caused oxidative damage in testis by increasing the levels of lipid peroxidation and decreasing in vitamin A and E levels. Melatonin supplementation prevented oxidative damage induced by EMR and also supported the antioxidant redox system in the testis.

**Introduction**

There is widespread use of 2.45-GHz irradiation emitting wireless devices in industrial, scientific, medical, military and domestic applications, in the recent century. Therefore, the leakage of irradiation into the environment is inevitable (Wang *et al.*, 2005; Crouzier *et al.*, 2007). Studies had already shown the effects of 2.45-GHz electromagnetic radiation on different body parts like nervous system, body weight, tissue morphology and histology, blood biochemical parameters, hormones, immune system and reproductive system (Aweda *et al.*, 2003; Hossmann & Hermann, 2003; Kim *et al.*, 2007; Naziroğlu & Gümral, 2009; Kumar *et al.*, 2011a; Saygin *et al.*, 2011). There is a consequence that exposure to electromagnetic radiation (EMR) is with enhanced production of reactive oxygen species (ROS), including superoxide anion, hydrogen peroxide and hydroxyl radicals (Murphy *et al.*, 1993; Aweda *et al.*, 2003). These species and/or other free radicals may be involved in the interactions of EMR on biological systems, but the cellular and molecular mecha-

nisms involved in this process are not totally clear (Kim & Rhee, 2004; Gümral *et al.*, 2009; Naziroğlu & Gümral, 2009). Some studies showed exposure to 2.45-GHz EMR may cause an increase in lipid peroxidation levels and a decrease in antioxidant enzymes that prevent or protect against lipid peroxidation (LPO) in reproductive tissues of male rats (Kumar *et al.*, 2011b).

Melatonin (N-acetyl-5-methoxy-tryptamine) is synthesised mainly by the pineal gland and has been considered a potent antioxidant, even more potent than vitamin E, which detoxifies a variety of ROS in many pathophysiological states (Pieri *et al.*, 1994; Ekmekcioglu, 2006). The direct effects of melatonin on the male reproductive system and testosterone synthesis from Leydig cells have also been examined in studies on animals. Because melatonin binding sites have been detected in the reproductive system of different species, it seems reasonable to assume that melatonin exerts its actions not only as an antioxidant but also through direct interaction with the steroidogenic cells of the reproductive organs (Oner-Iyidogan *et al.*, 2001; Armanag *et al.*, 2006).

## EFFECTS OF WI-FI SIGNALS ON THE P300 COMPONENT OF EVENT-RELATED POTENTIALS DURING AN AUDITORY HAYLING TASK

CHARALABOS C. PAPAGEORGIOU\*,†, CHRISSANTHI D. HOUNTALA†,§,  
ARGIRO E. MAGANIOTI†, MILTIADES A. KYPRIANOU†,  
ANDREAS D. RABAVILAS†, GEORGE N. PAPADIMITRIOU\*  
and CHRISTOS N. CAPSALIS†

\*University of Athens, 1<sup>st</sup> Department of Psychiatry  
Eginition Hospital, 74 Vas.Sophias Ave  
Athens, 11528, Greece

†National Technical University of Athens  
Department of Electrical Engineering  
Division of Information Transmission Systems and Material Technology  
9 Iroon Polytecnico str., Athens, 15773, Greece

‡University Mental Health Research Institute (Umhri)  
2 Soranou tou Efesiou (PO Box 66 517) Athens, 15601, Greece  
§cchountala@teemail.gr

Received 25 September 2010

Accepted 7 February 2011

The P300 component of event-related potentials (ERPs) is believed to index attention and working memory (WM) operation of the brain. The present study focused on the possible gender-related effects of Wi-Fi (Wireless Fidelity) electromagnetic fields (EMF) on these processes. Fifteen male and fifteen female subjects, matched for age and education level, were investigated while performing a modified version of the Hayling Sentence Completion test adjusted to induce WM. ERPs were recorded at 30 scalp electrodes, both without and with the exposure to a Wi-Fi signal. P300 amplitude values at 18 electrodes were found to be significantly lower in the response inhibition condition than in the response initiation and baseline conditions. Independent of the above effect, within the response inhibition condition there was also a significant gender X radiation interaction effect manifested at 15 leads by decreased P300 amplitudes of males in comparison to female subjects only at the presence of EMF. In conclusion, the present findings suggest that Wi-Fi exposure may exert gender-related alterations on neural activity associated with the amount of attentional resources engaged during a linguistic test adjusted to induce WM.

*Keywords:* Wi-Fi; P300 ERP component; Hayling; gender; EMF.

### 1. Introduction

Concern of health effects due to EMF, specifically radiofrequency (RF) exposure is currently arising. Numerous studies have investigated the potential effects of EMF,

§Corresponding author.

## 2.45 GHz Microwave Irradiation-Induced Oxidative Stress Affects Implantation or Pregnancy in Mice, *Mus musculus*

Saba Shahin · Vineet Prakash Singh · Ritesh K. Shukla ·  
Alok Dhawan · Ravi Kumar Gangwar ·  
Surya Pal Singh · Chandra Mohini Chaturvedi

Received: 17 August 2012 / Accepted: 27 December 2012 /  
Published online: 22 January 2013  
© Springer Science+Business Media New York 2013

**Abstract** The present experiment was designed to study the 2.45 GHz low-level microwave (MW) irradiation-induced stress response and its effect on implantation or pregnancy in female mice. Twelve-week-old mice were exposed to MW radiation (continuous wave for 2 h/day for 45 days, frequency 2.45 GHz, power density=0.033549 mW/cm<sup>2</sup>, and specific absorption rate=0.023023 W/kg). At the end of a total of 45 days of exposure, mice were sacrificed, implantation sites were monitored, blood was processed to study stress parameters (hemoglobin, RBC and WBC count, and neutrophil/lymphocyte (N/L) ratio), the brain was processed for comet assay, and plasma was used for nitric oxide (NO), progesterone and estradiol estimation. Reactive oxygen species (ROS) and the activities of ROS-scavenging

---

S. Shahin · V. P. Singh · C. M. Chaturvedi (✉)  
Department of Zoology, Banaras Hindu University, Varanasi 221005, India  
e-mail: cmcbhu@gmail.com

S. Shahin  
e-mail: shahin07saba@gmail.com

V. P. Singh  
e-mail: vineet22bhu@gmail.com

R. K. Shukla · A. Dhawan  
Indian Institute of Toxicology Research, Lucknow 226 001, India

R. K. Shukla  
e-mail: ritesh.shukla26@gmail.com

A. Dhawan  
e-mail: dhawanalok@hotmail.com

R. K. Gangwar · S. P. Singh  
Department of Electronics Engineering, Indian Institute of Technology, Banaras Hindu University,  
Varanasi 221005, India

R. K. Gangwar  
e-mail: ravi8331@gmail.com

S. P. Singh  
e-mail: suryapal\_s@yahoo.co.in

enzymes—superoxide dismutase, catalase, and glutathione peroxidase—were determined in the liver, kidney and ovary. We observed that implantation sites were affected significantly in MW-irradiated mice as compared to control. Further, in addition to a significant increase in ROS, hemoglobin ( $p<0.001$ ), RBC and WBC counts ( $p<0.001$ ), N/L ratio ( $p<0.01$ ), DNA damage ( $p<0.001$ ) in brain cells, and plasma estradiol concentration ( $p<0.05$ ), a significant decrease was observed in NO level ( $p<0.05$ ) and antioxidant enzyme activities of MW-exposed mice. Our findings led us to conclude that a low level of MW irradiation-induced oxidative stress not only suppresses implantation, but it may also lead to deformity of the embryo in case pregnancy continues. We also suggest that MW radiation-induced oxidative stress by increasing ROS production in the body may lead to DNA strand breakage in the brain cells and implantation failure/resorption or abnormal pregnancy in mice.

**Keywords** Microwave radiation · Reactive oxygen species (ROS) · Nitric oxide · Antioxidant enzyme activity · Implantation failure

## Introduction

Microwaves (MW) are non-ionizing electromagnetic radiation (EMR) (wavelength ranging from 1 mm to 1 m and frequency between 0.3 and 300 GHz), which unlike ionizing radiation, do not contain sufficient energy to break the bond or chemically change the substances by ionization. In general, non-ionizing radiations are associated with two major potential hazards, i.e., electrical and biological. In recent times, the level of EMR in our environment has increased manifold due to a large-scale expansion of communication networks such as mobile phones, base stations, WLAN, Wi-Fi, Wi-MAX, etc. Radiations emitted from these modern devices are reported to induce various types of biological effects which are of great concern to human health due to its increased use in daily life. MW radiation primarily increases the temperature of the biological system, i.e., thermal effects [1], but its nonthermal effects have also been noted and studied in detail [2–8]. Nonthermal effects occur when the intensity of the MW radiation is sufficiently low so that the amount of energy involved would not significantly increase the temperature of a cell, tissue, or an organism, but may induce some physical or biochemical changes [9]. Prolonged exposure to low intensity 2.45 GHz microwave radiation may affect the cholinergic activity in the rat [2], brain development in mice [10], DNA breakage in rat brain [11], and histone kinase activity in rat [12], which results in neurological problems and reproductive disorders [13–15], in addition to changes in hematopoiesis of pregnant mice [16] and micronucleated erythrocytes in rats [17]. The International Agency for Research on Cancer has also kept radiofrequency electromagnetic fields in the list of factors causing cancer to humans. Some studies performed in this context suggest that people heavily exposed to these radiations are more prone to nonmalignant tumors [18]. It has been reported that mobile phone or cell phone radiation (a type of MW radiation) causes changes in cognitive function [19]. A German study has indicated an increase in cancer around base stations. Mobile phones use electromagnetic radiation in a microwave range (2G—900/1,800 MHz, 3G—2,100 MHz frequency band) which some believe may be harmful to human health. People living close to 2G and mostly 3G mobile phone masts or base stations frequently report symptoms of electromagnetic hypersensitivity such as dizziness, headaches, skin conditions, allergies, and many other problems. Hardell and groups [20, 21] have reported the health implications of mobile phone exposure (800–2,200 MHz). They found that cell phone users had an increased risk of

Tudalen y pecyn 76

## Selenium and L-Carnitine Reduce Oxidative Stress in the Heart of Rat Induced by 2.45-GHz Radiation from Wireless Devices

Yasin Türker · Mustafa Naziroğlu · Nurhan Gümral ·  
Ömer Çelik · Mustafa Saygın · Selçuk Cömlekçi ·  
Manuel Flores-Arce

Received: 29 December 2010 / Accepted: 2 February 2011 /  
Published online: 1 March 2011  
© Springer Science+Business Media, LLC 2011

**Abstract** The aim of this study was to investigate the possible protective role of selenium and L-carnitine on oxidative stress induced by 2.45-GHz radiation in heart of rat. For this purpose, 30 male Wistar Albino rats were equally divided into five groups namely controls, sham controls, radiation-exposed rats, radiation-exposed rats treated with intraperitoneal injections of sodium selenite at a dose of 1.5 mg/kg/day, and radiation-exposed rats treated with intraperitoneal injections of L-carnitine at a dose of 1.5 mg/kg/day. Except for the controls and sham controls, the animals were exposed to 2.45-GHz radiation during 60 min/day for 28 days. The lipid peroxidation (LP) levels were higher in the radiation-exposed groups than in the control and sham control groups. The lipid peroxidation level in the irradiated animals treated with selenium and L-carnitine was lower than in those that were only exposed to 2.45-GHz radiation. The concentrations of vitamins A, C, and E were lower in the irradiated-only group relative to control and sham control groups, but their concentrations were increased in the groups treated with selenium- and L-carnitine. The activity of glutathione peroxidase was higher in the selenium-treated group than in the animals that were irradiated but received no treatment. The erythrocyte-reduced glutathione and  $\beta$ -carotene concentrations did not change in any of the groups. In conclusion, 2.45-GHz

---

Y. Türker

Department of Cardiology, Medical Faculty, Suleyman Demirel University, Isparta, Turkey

M. Naziroğlu (✉) · Ö. Çelik

Department of Biophysics, Medical Faculty, Suleyman Demirel University, 32260 Isparta, Turkey  
e-mail: mnazirolu@med.sdu.edu.tr

N. Gümral · M. Saygın

Department of Physiology, Medical Faculty, Suleyman Demirel University, Isparta, Turkey

S. Cömlekçi

Electronics and Communication Engineering, Suleyman Demirel University, Isparta, Turkey

M. Flores-Arce

Department of Chemical and Biochemical Engineering, Tijuana Institute of Technology, Tijuana, Mexico

Tudalen y pecyn 77

electromagnetic radiation caused oxidative stress in the heart of rats. There is an apparent protective effect of selenium and L-carnitine by inhibition of free radical formation and support of the antioxidant redox system.

**Keywords** 2.45-GHz electromagnetic radiation · Oxidative stress · Antioxidant enzymes · Antioxidant vitamins · L-Carnitine · Selenium

## Introduction

Many devices that emit 2.45-GHz radiation are in use for industrial, scientific, medical, military, and domestic purposes present a potential health and environmental problem [1]. Several studies have suggested that biological systems could exhibit a specific sensitivity to 2.45-GHz electromagnetic radiation [2–4]. Other studies were extended to electromagnetic radiation (EMR) generated from common household devices like microwave ovens, wireless access points, and computers which were also shown to have negative health effects, and that antioxidants showed a protective effect on 900-MHz mobile phone emissions [5, 6].

These types of radiation positively correlate to generation of oxygen-derived radicals (ROS) such as superoxide radical ions. The heart is the organ that consumes the greatest amount of oxygen, which makes it at greatest risk of oxidative stress and, in consequence, most susceptible to oxidative damage [1, 6, 7]. Superoxide ion radicals and other free radical species may be involved in the interactions of EMR on biological systems, but the cellular and molecular mechanisms involved in this process are still poorly understood [8, 9].

Exposure to 2.45-GHz EMR caused an increase in lipid peroxidation levels and a decrease in the activity of enzymes and vitamins that prevent or protect against lipid peroxidation in blood [8] and brain [9].

The body has enzymatic and non-enzymatic antioxidant systems. Enzymatic antioxidants neutralize excessive ROS, preventing them from damaging the cellular structure. Among those are superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-Px) [10, 11]. In particular, GSH-Px is a selenium (Se)-containing enzyme responsible for the reduction of hydro- and organic peroxides in the presence of reduced glutathione (GSH) [12]. Se is also required for the catalytic activity of another critical antioxidant enzyme, mammalian thioredoxin reductase (TR). Along with vitamins C and E, Se is widely recognized as an essential part of the antioxidant system [11–13].

L-Carnitine (L-Car) is a low molecular weight compound obtained from the diet or biosynthesized from lysine and methionine. It has been identified in a variety of mammalian tissues and has an essential role in the mitochondrial oxidation of long-chain fatty acids through the action of specialized acyltransferases. Other roles for carnitine include buffering of the acyl coenzyme A/coenzyme A ratio, branched-chain amino acid metabolism, removal of excess acyl groups, and peroxisomal fatty acid oxidation [14]. L-Car has also been found to attenuate free radical-induced oxidative stress in various pathological conditions of heart [15]. The growing body of evidence about carnitine function in heart has led to increased understanding and identification of heart disorders associated with altered carnitine metabolism. However, there is no report on L-Car and 2.45 GHz-induced antioxidant redox system in heart.

There are no reports on the effects of wireless devices emitting 2.45 GHz radiation in the heart of experimental animals. The aim of the present study was to investigate the effects of

**Tudalen y pecyn 78**

## Wi-Fi technology – an uncontrolled global experiment on the health of mankind

Marko Markov<sup>1</sup> & Yuri G. Grigoriev<sup>2</sup>

<sup>1</sup>*Research International, Williamsville, NY, USA*, and <sup>2</sup>*Russian National Committee of Non-Ionizing Radiation Protection, Moscow, Russia*

The twenty-first century is marked with exponentially increasing development of technologies that provide wireless communications. To the pollution of the atmosphere with radio and TV signals, not only satellite communications but also any varieties of the Wi-Fi networks are added. By 2010 in the USA, 285 million mobile phone subscribers have been registered (for a little bit more than 300 million inhabitants). The estimate for the world is more than 5 billion mobile phone users at approximately 7 billion people living on this planet. Approximately 2 years ago, the International Agency of Research on Cancer (IARC) classified the electromagnetic fields used in mobile communication as a possible carcinogen. This paper discusses the potential health hazard and lack of scientific assessment and regulatory actions in protection of the life on the planet.

**Keywords:** WiFi, pollution, hazard, Radiofrequency electromagnetic fields

### The problem: Ionizing versus nonionizing radiation

Contemporary science is increasingly using and investigating two physical factors such as ionizing and nonionizing radiation, with an attempt to search for common mechanisms of action and evaluation of the public benefit and health hazard. What is common here is the word “radiation.” However, from the viewpoint of physics, these are two different factors that might be found in an environment. Importantly, they act simultaneously, but are discussed separately, entirely neglecting the existing background of the other factor.

It has been well established that ionizing radiation usually provokes effects based on energetic mechanisms and ionization of tissues. This action is characterized with threshold levels and could develop within short time after irradiation. Speaking on ionizing radiation, scientists and public health experts, based on decades of investigation, have come to know about a large variety of unfavorable, potentially harmful effects that developed hours (sometimes days) after irradiation. This was well confirmed in the evaluation of health effects and care for personnel and population after Chernobyl accident a quarter of century ago (Grigoriev, 2012a,b; Sage, 2012). Throughout the world, interest was also excited by the recent Fukushima disaster in March 2011.

---

Correspondence: Marko Markov, Research International, Williamsville, NY, USA  
E-mail: msmarkov@aol.com



Contents lists available at ScienceDirect

# Journal of Microscopy and Ultrastructure

journal homepage: [www.elsevier.com/locate/jmau](http://www.elsevier.com/locate/jmau)



## Review

# Why children absorb more microwave radiation than adults: The consequences



L. Lloyd Morgan <sup>a,\*</sup>, Santosh Kesari <sup>b</sup>, Devra Lee Davis <sup>a</sup>

<sup>a</sup> Environmental Health Trust, USA

<sup>b</sup> University of California, San Diego, USA

## ARTICLE INFO

### Article history:

Received 4 April 2014

Received in revised form 3 June 2014

Accepted 24 June 2014

Available online 15 July 2014

### Keywords:

Tumors

Myelin

Carcinogen

Fetus

Children

Latency

## ABSTRACT

Computer simulation using MRI scans of children is the only possible way to determine the microwave radiation (MWR) absorbed in specific tissues in children. Children absorb more MWR than adults because their brain tissues are more absorbent, their skulls are thinner and their relative size is smaller. MWR from wireless devices has been declared a possible human carcinogen. Children are at greater risk than adults when exposed to any carcinogen. Because the average latency time between first exposure and diagnosis of a tumor can be decades, tumors induced in children may not be diagnosed until well into adulthood. The fetus is particularly vulnerable to MWR. MWR exposure can result in degeneration of the protective myelin sheath that surrounds brain neurons. MWR-emitting toys are being sold for use by young infants and toddlers. Digital dementia has been reported in school age children. A case study has shown when cellphones are placed in teenage girls' bras multiple primary breast cancer develop beneath where the phones are placed. MWR exposure limits have remained unchanged for 19 years. All manufacturers of smartphones have warnings which describe the minimum distance at which phone must be kept away from users in order to not exceed the present legal limits for exposure to MWR. The exposure limit for laptop computers and tablets is set when devices are tested 20 cm away from the body. Belgium, France, India and other technologically sophisticated governments are passing laws and/or issuing warnings about children's use of wireless devices.

© 2014 Saudi Society of Microscopes. Published by Elsevier Ltd. All rights reserved.

## Contents

1. Introduction.....	198
1.1. Computer simulation.....	198
1.2. Children's greater absorption of MWR.....	198
1.3. Microwave radiation is a Class 2B (possible) carcinogen .....	198
1.3.1. Children are at increased risk when exposed to carcinogens.....	198
1.4. Exposure limits .....	199
1.4.1. The 19 year old IEEE and 17 year old ICNIRP exposure limits are based on a false premise .....	199

**Abbreviations:** MRI, magnetic resonance imaging; MWR, microwave radiation; CNS, central nervous system; FDTD, finite-difference, time-domain; GBM, glioblastoma multiforme (also called glioblastoma); cm, centimeter.

\* Corresponding author at: Environmental Health Trust, P.O. Box 58, Teton Village, WY 83025, USA. Tel.: +1 510 841 4362.  
E-mail address: [Lloyd.L.Morgan@gmail.com](mailto:Lloyd.L.Morgan@gmail.com) (L.L. Morgan).

1.4.2. FCC compliance requirements do not comport with current testing systems .....	199
1.4.3. There is a 20 cm distance rule for tablets and laptop computers.....	199
2. Materials and methods .....	199
3. Results.....	199
3.1. Early development .....	199
3.1.1. Fetal exposures.....	199
3.1.2. Myelination.....	200
3.2. Children and adolescents .....	200
3.2.1. Breast cancers resulting from placement of cellphones in bras .....	200
3.2.2. Parotid gland tumors .....	200
3.2.3. Sperm damage.....	201
3.3. Tumor latency times .....	201
4. Discussion.....	201
4.1. Wireless device exposure limit certification.....	201
4.2. Cellphone manual warnings and 20 cm distance rule .....	202
4.3. Increasing brain cancer incidence .....	202
4.4. Selling toys for infants and toddlers .....	202
4.5. Digital dementia.....	202
4.6. Governmental warnings .....	203
5. Conclusions .....	203
Acknowledgements.....	203
References .....	203

## 1. Introduction

Here we discuss: how the amount of MWR can be calculated, children's greater absorption of MWR compared to adults' adsorption, MWR's listing as a Class 2B (possible) carcinogen, the existing legal limits for human exposure to MWR, and that the existing legal limits do not incorporate the greater exposure to children.

### 1.1. Computer simulation

The finite-difference, time-domain (FDTD) computer algorithm has been the best way to simulate the amount of absorbed MWR in tissues for many decades. In 1997 the U.S. Federal Communications Commission (FCC) stated, "Currently, the finite-difference time-domain (FDTD) algorithm is the most widely accepted computational method for SAR modeling. This method adapts very well to the tissue models that are usually derived from MRI or CT scans. FDTD method offers great flexibility in modeling the inhomogeneous structures of anatomical tissues and organs. The FDTD method has been used in many far-field electromagnetic applications during the last three decades. With recent advances in computer technology, it has become possible to apply this method to near-field applications for evaluating handsets" [1].

### 1.2. Children's greater absorption of MWR

There are multiple studies showing that children absorb more MWR than adults. In 1996 a study reported that the absorbed MWR penetrated proportionally deeper into the brain of children age 5 and 10 compared to adults' brains [2].

In 2008 Joe Wiart, a senior researcher for French telecom and Orange reported that the brain tissue of children absorbed about two times more MWR than adults' brain tissue [3].

A 2009 study reported the CNS absorption by children is "significantly larger ( $\sim 2\times$ ) because the RF [MWR] source is closer and skin and bone layers are thinner", and "bone marrow exposure strongly varies with age and is significantly larger for children ( $\sim 10\times$ )" [4].

In 2010, Andreas Christ and team reported children's hippocampus and hypothalamus absorbs 1.6–3.1 times higher and the cerebellum absorbs 2.5 times higher MWR compared to adults'; children's bone marrow absorbs 10 times higher MWR radiation than in adults, and children's eyes absorb higher MWR than adults [5]. These calculations were based on porcine measurements taken from sacrificed animals.

### 1.3. Microwave radiation is a Class 2B (possible) carcinogen

After 30 experts from 14 countries reviewed the science, the World Health Organization's (WHO's) International Agency for Research on Cancer (IARC) declared that RF-EMF [MWR] is a Class 2B (possible) carcinogen [6]. It was a near unanimous declaration (one dissenter).

Including MWR, there are 285 agents listed by WHO's IARC as Class 2B carcinogens [7]. Exposures to almost all of these agents are regulated. Some of the commonly recognized agents are: carbon black, carbon tetrachloride, chloroform, DDT, lead, nickel, phenobarbital, styrene, diesel fuel, and gasoline.

Like these other Class 2B Carcinogens, should anyone, particularly children, be exposed to MWR?

#### 1.3.1. Children are at increased risk when exposed to carcinogens

Children are at greater risk from exposure to carcinogens than adults, and the younger the child, the higher the risk [8–10].

#### 1.4. Exposure limits

In 1996, the FCC adopted the IEEE 1991 [11] standard with some details from the 1986 NCRP Report [12] as exposure limits in the United States. Nineteen years after the FCC exposure limits were published, based on documents published 24 and 29 years previously, the legal exposure limit has remained unchanged. Yet during these decades an enormous body of scientific studies was published reporting risk well below the legal exposure limit.

The Institute of Electrical and Electronic Engineers (IEEE) is an industry professional organization, as is the National Council on Radiation Protection (NCRP). Neither organization had medical or public health expertise.

In European countries and a few other countries, the exposure limits are based on the 1998 “Guidelines” of the International Commission for Non-Ionizing Radiation Protection (ICNIRP) [13]. These “Guidelines” were based on publications from 1984, 1987, 1991, and 1993 [page 494]. That is the “Guidelines” were based on publications up to 31 years ago. Similar to the IEEE and NCRP, ICNIRP is an organization without medical or public health expertise. It is accountable to no government and its funding sources are not transparent.

##### 1.4.1. The 19 year old IEEE and 17 year old ICNIRP exposure limits are based on a false premise

The exposure limits are premised on an assumption that the only biological effect from MWR exposure is acute (short-term) heating sufficient to cause tissue damage. There is no consideration of the effects from chronic (long-term) exposures. There are many scientific papers that report biological impacts tied with non-thermal (no measurable temperature change) effects. Indeed, the 480-page IARC Monograph 102 that documents the science that led to the declaration that MWR is a Class 2B (possible) carcinogen is a virtual compendium of such papers [14].

##### 1.4.2. FCC compliance requirements do not comport with current testing systems

The FCC requires “For purposes of evaluating compliance with localized SAR guidelines, portable devices should be tested or evaluated based on normal operating positions or conditions” [15]. But phones are not tested in pants or shirt pockets. As a result every cellphone manual has warnings that the phone should be kept at various distances from the body otherwise the human exposure limits can be exceeded.

Here are two of many examples:

- (1) The BlackBerry Torch 9800 Smart Phone warns, “keep the BlackBerry device at least 0.98 in. (25 mm) from your body (including the abdomen of pregnant women and the lower abdomen of teenagers).” “Lower abdomen” is an oblique reference to testicles and “abdomen of pregnant women” is an oblique reference to the fetus.
- (2) The iPhone 5’s manual is embedded within the phone: Users must go to “Settings,” and scroll down to “General,” then scroll to the bottom to “About,” go to “Legal,” scroll down to “RF [MWR] Exposure” where it reads, “To

reduce exposure to RF energy, use a hands-free option, such as the built-in speakerphone, the supplied headphones, or other similar accessories. Carry iPhone at least 10 mm away from your body to ensure exposure levels remain at or below the as-tested [exposure limit] levels.”

#### 1.4.3. There is a 20 cm distance rule for tablets and laptop computers

“For purposes of these requirements mobile<sup>1</sup> devices are defined by the FCC as transmitters designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between radiating structures and the body of the user or nearby persons” [16].

Clearly, this 20 cm rule contradicts the “normal operating position” regulation in the description “a separation distance of at least 20 cm is normally maintained.” Indeed, “laptop” computer directly implies that it is to be placed on a lap which is not 20 cm distant from the user.

The growing use of tablets by young children in schools contradicts these normal tested conditions as well, as these children have shorter arms that do not allow them to hold devices 20 cm from their bodies.

## 2. Materials and methods

We have performed a review of the peer-reviewed cell-phone exposure epidemiology from 2009 to 2014, and cellphone dosimetry since the 1970s from a previous paper [17], along with relevant governmental and other policy documents, manufacturers’ manuals and similar documents.

## 3. Results

### 3.1. Early development

Here we present evidence of harmful effects from exposure to MWR during early developmental stages both in animals and in humans.

#### 3.1.1. Fetal exposures

A study from Yale University School of Medicine exposed mice in utero to MWR [18]. The study reported that these mice were hyperactive and had impaired memory “due to altered neuronal developmental programming. Exposed mice had dose-responsive impaired glutamatergic synaptic transmission onto layer V pyramidal neurons of the prefrontal cortex.” During pregnancy the mice were irradiated by a cellphone positioned above each cage positioned over the feeding bottle at a distance of 4.5–22.3 cm from each mouse depending on the location of the mouse within the cage. Controls were under the same condition but the phone was not active. The observed effects were

<sup>1</sup> The FCC defines laptop computers, tablets and similar devices as “mobile devices” in comparison to “portable devices” which are cell and cordless phones and similar devices; the former falls under the 20 cm rule, the latter has no such rule.

similar to attention deficit hyperactivity disorder (ADHD) in children.

A Turkish study reported on a 900 MHz in utero exposure of rats [19]. "The results showed that prenatal EMF exposure caused a decrease in the number of granule cells in the dentate gyrus of the rats ( $p < 0.01$ ). This suggests that prenatal exposure to a 900 MHz EMF affects the development of the dentate gyrus granule cells in the rat hippocampus."

A Chinese study investigated effects of MWR emitted by cellphones on rat CNS, *in vitro* (cortical neuronal cells) and *in vivo* (rat's brain) [20]. Neuronal cells had a significantly higher death rate at power densities of  $0.05 \text{ mW/cm}^2$  and above. *In vivo* results show increased apoptosis with DNA fragmentation.

### 3.1.2. Myelination

A myelin sheath covering neurons acts as an insulation of the electrical activity of neurons. In human embryos, the first layer develops from mid-gestation to 2 years of age and continues into adolescence [21]. Myelination of the brain is not complete until early adulthood.

There are two studies with reported degeneration of the myelin sheath after MWR exposure:

A 1972 study from Poland reported myelin degeneration and glial cell proliferation in guinea pigs and rabbits from a 3 GHz exposure [22].

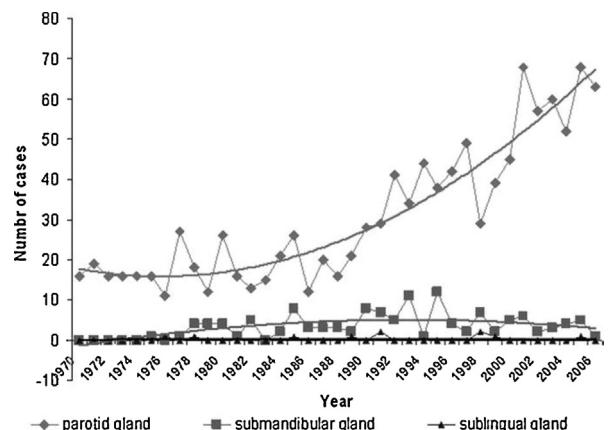
In 1977 Switzer & Mitchell reported a 2.45 GHz exposure in rats increased myelin degeneration in rat brains at 6 weeks after exposure. They concluded "The results of our study and related investigations by others indicated that exposures to low-intensity MW irradiation can result both in transient and in long-term structural anomalies in CNS tissue and may result in various hematologic irregularities" [23].

### 3.2. Children and adolescents

Aydin et al. in a study of cellphone use by children and adolescents (median age 13 years), reported a significant risk of brain cancer and a significant exposure-response relationship for  $>2.8$  years since first cellphone subscription, OR = 2.15, CI = 1.07–4.29,  $p$ -trend = 0.001 for increasing risk with increasing time since first subscription with operator recorded use data (billing records) [24]. Yet the study's conclusion states, "The absence of an exposure-response relationship either in terms of the amount of mobile phone use . . . argues against a causal association." It is unclear why the conclusion directly contradicts the published results. The study was funded in part by cellphone companies.

A Swedish study reported when first cellphone use began as a teenager or younger there was a significant ipsilateral risk of brain cancer, OR = 7.8, CI = 2.2–28,  $p < 0.01$ , and an almost identical ipsilateral risk from cordless phone use, OR = 7.9, CI = 2.5–25,  $p < 0.001$  [9].

A Korean study found risks for ADHD in first grade (ages 7–8) children and followed them to ages 12–13 [25]. "The ADHD symptom risk associated with mobile phone use for voice calls but the association was limited to children exposed to relatively high [blood] lead [levels]." With an average time per cellphone call of  $\frac{1}{2}$  to  $<1$  min, OR = 5.66,



**Fig. 1.** Increase of parotid gland tumors relative to other salivary gland tumors in Israel.

CI = 1.31–24.51 and for 1+ minutes per call, OR = 7.20, CI = 1.37–37.91,  $p$ -trend = 0.02. For children playing games for 3+ minutes/day a significant risk for ADHD, OR = 1.94, CI = 1.30–2.89,  $p < 0.001$ , and  $p$ -trend  $< 0.001$  in the lower blood lead level group.

Elsewhere it has been shown the low-level exposures to MWR increases the permeability of the blood–brain barrier [26–28]. This suggests children exposed to lead who use cellphone might have increased blood lead levels in the brain.

### 3.2.1. Breast cancers resulting from placement of cellphones in bras

A case study reported 4 women who placed cellphones in their bras. Two were diagnosed at age 21, with one who had begun placing her cellphone in her bra at age 15. This resulted in multiple primary breast cancers immediately beneath where the cellphone were placed [29].

### 3.2.2. Parotid gland tumors

The parotid gland is a large salivary gland in the cheek immediately next to where a cellphone is held to the ear.

A Chinese study reported statistically significant increased risks of 10- to 30-fold [30]. With more than 10 years since first use of a cellphone, the risk of epithelial parotid gland cancer, OR = 10.631, CI = 5.306–21.300,  $p < 10^{-10}$ ; similarly the risk for mucoepidermoid carcinoma, OR = 20.72, CI = 9.379–45.821,  $p < 10^{-13}$ , and for average daily use of  $>3.5$  h, OR = 30.255, CI = 10.799–90.456,  $p < 10^{-10}$ .

An Israeli Interphone study found significant risk of parotid gland tumors [31]. "For ipsilateral use, the odds ratios in the highest category of cumulative number of calls and call time without use of hands-free devices were 1.58 (95% confidence interval: 1.11, 2.24) and 1.49 (95% confidence interval: 1.05, 2.13), respectively."

Another Israeli study showed that among the 3 salivary glands, the only increase was the parotid gland [32]. "The total number of parotid gland cancers in Israel increased 4-fold from 1970 to 2006 . . . whereas two other salivary gland cancers remained stable." Fig. 1 illustrates the enormous

increase in parotid gland tumors relative to other salivary gland tumors.

A newspaper in Israel reported “[S]alivary gland cancer, which researchers suspect to be linked to cellphone use, was disproportionately common among young patients. One fifth of those patients were under 20” [33].

### 3.2.3. Sperm damage

Perhaps more than any other adverse health effect from exposure to MWR, damage to sperm is the most documented including in vitro, in vivo and human epidemiological studies.

A 2005 study with data collection from November 2002 to March 2004 examined the motility of sperm. “The proportion of slow progressive motile sperm increased with increase of the duration of the daily transmission time  $p < 0.01$ ” [34].

A study of cellphone usage among men who attended an infertility clinic concluded, “Use of cell phones decrease the semen quality in men by decreasing the sperm count, motility, viability, and normal morphology. The decrease in sperm parameters was dependent on the duration of daily exposure to cell phones and independent of the initial semen quality” [35].

A Japanese study reported “This study has indicated significant decrease in sperm count [ $p = 0.004$ ] and motility [ $p = 0.003$ ] . . . because of exposure to MP [Mobile Phone] emission, respectively” [36].

An Australian study investigated how sperm cells are damaged by cellphone MWR. Its conclusions stated “RF-EMR [Radio Frequency-Electro Magnetic Radiation] in both the power density and frequency range of mobile phones enhances mitochondrial reactive oxygen species generation by human spermatozoa, decreasing the motility and vitality of these cells while stimulating DNA base adduct formation and, ultimately DNA fragmentation. These findings have clear implications for the safety of extensive mobile phone use by males of reproductive age, potentially affecting both their fertility and the health and well-being of their offspring” [37].

Professor Stanton A. Glantz is a Professor of Medicine at the University of California, San Francisco Medical School. He is also author of a renowned graduate level statistics textbook, *Primer of Biostatistics, Seventh Edition* [38]. Referring to the above four studies on sperm damage from MWR he concludes:

“Taking all the information we have discussed on cell phones and sperm allows us to confidently conclude that exposure to cell phones adversely effects sperm.”

A study of temperature controlled human sperm placed 3 cm beneath a laptop computer connected to Wi-Fi for 4 h [39] reported, “Donor sperm samples, mostly normozoospermic [normal sperm], exposed ex vivo during 4 h to a wireless internet-connected laptop showed a significant decrease in progressive sperm motility and an increase in sperm DNA fragmentation.” The study concluded “Ex vivo exposure of human spermatozoa to a wireless internet-connected laptop decreased motility and induced DNA fragmentation by a nonthermal effect. We speculate that



**Fig. 2.** SAM Phantom. The red devices are clamps to hold the cellphone in a specified location. “CTIA” is the Cellular Telecommunications Industry Association.  
Source: Speag Phantom Product Flyer.

keeping a laptop connected wirelessly to the internet on the lap near the testes may result in decreased male fertility.”

### 3.3. Tumor latency times

The average time between exposure to a carcinogen and the diagnosis of a resultant solid tumor is 3 or more decades. Brain tumors, like lung cancer and many other solid tumors have, on average, long latency times [8,40]. Therefore, it may be several decades before tumors induced by current MWR exposures in children are diagnosed. For example, the Israeli study showing brain tumor risk was inverse with age had long latency times [8]. In contrast the Aydin et al. study had relatively short latency times [24].

## 4. Discussion

### 4.1. Wireless device exposure limit certification

The FCC has approved two processes to certify that a wireless device meets the required exposure limit:

- (1) The computer simulation process, and
- (2) The Specific Anthropomorphic Mannequin (SAM) process.

The computer simulation process is discussed above.

The SAM process is based on a plastic mannequin representing the top 10% largest U.S. military recruits in 1989. Any head smaller than SAM will absorb more MWR (~97% of the U.S. population) [17]. A liquid with the average adult absorption properties of the 40 tissues of the head is poured into a hole at the top of this head. A robotic arm with an electric field probe is positioned within the mannequin such that the location of the highest electric field is located within any one cubic centimeter volume. A cellphone to be certified is clamped to either side of SAM (see Fig. 2). The electric fields values are used to calculate the maximum spatial peak Specific Absorption Rate (SAR) for any 1 g of

**Table 1**

A comparison of the capability to measure SAR using the computer simulation certification process or the SAM certification process for various exposures.

Attribute	SAM process	FDTD process	Comments
Children's exposure	No	Yes	Multiple ages
Pregnant women's exposure	No	Yes	1, 3 and 9 months
Female exposure	No	Yes	
Specific tissue parameters	No	Yes	
3-D resolution	~1 cm <sup>3</sup>	<1 mm <sup>3</sup>	
Relative cost	Higher	Lower	
Medical implant exposure	No	Yes	
Testicle exposure	No	Yes	
Female breast exposure	No	Yes	With and without wire frame bra
Eye exposure	No	Yes	With and without wire frame eyeglasses
Thyroid gland exposure	No	Yes	With and without metal necklace
Parotid gland exposure	No	Yes	With and without dental braces

Adapted from Gandhi et al. [17].

tissue (equivalent to 1 cm<sup>3</sup> volume). If the maximum SAR is at or below the U.S. exposure limit of 1.6 W/kg the phone is certified for sale without regard to the ±30% tolerance of the SAM certification process [41].

**Table 1** compares the capabilities of the two cellphone certification processes.

As can be seen in **Table 1** the SAM process is not capable of determining the MWR absorption as measured by SAR in every category except the relative cost and volume resolution. Nevertheless, the SAM process has been exclusively used to certify every cellphone to date.

#### 4.2. Cellphone manual warnings and 20 cm distance rule

In spite of an FCC regulation “For purposes of evaluating compliance with localized SAR guidelines, portable devices should be tested or evaluated based on normal operating positions or conditions” [15], this regulation is ignored by the FCC. Holding a cellphone at a defined distance from your body is not “based on normal operating positions”!

For laptop computers, tablets and similar devices, an exposure limit that begins at a distance of 20 cm is not “based on normal operating positions.” Indeed the very term “laptop” computer defines the normal operating position, which when placed on the lap is not 20 cm distant.

#### 4.3. Increasing brain cancer incidence

There are studies showing an increased risk of brain cancer from wireless phone use. It is a current problem. The worst brain cancer, glioblastoma, has increased in the United States, and Denmark. Brain cancer incidence has increased in Australia in recent years. These results are based on brain cancer incidence from each country’s cancer registries.

A United States study examined 3 cancer registries (Los Angeles County, California and SEER 12<sup>2</sup>) [42]. It examined incidence rates between years 1992–2006 and reported the Average Percent Change (APC) during those years. “RESULTS: Increased AAIRs [Age-Adjusted Incidence Rates] of frontal (APC +2.4–3.0%, p ≤ 0.001) and temporal (APC

+1.3–2.3%, p ≤ 0.027) lobe glioblastoma multiforme (GBM) tumors were observed across all registries . . . The AAIR of cerebellar GBMs increased according to CCR (APC +11.9%, p < 0.001).”

The Danish Cancer Registry issued a press release that stated, “The number of men who are diagnosed with the most malignant form of brain cancer (glioblastoma), has almost doubled over the past ten years” [43].

The Australian study reported, “an overall significant increase in primary malignant brain tumors was observed over the study period from 2000 to 2008 (APC, 3.9; 95%CI, 2.4–5.4), particularly since 2004 (overall AAPC, 3.9; 95% CI, 2.6–5.2)” [44].

#### 4.4. Selling toys for infants and toddlers

The iPad, tablets, laptop computers and cellphones are not children’s toys. Within 20 cm of the device, the exposure limit can be exceeded with iPads and laptop computers. **Figs. 3–5** are examples of toys for sale (there are many more similar toys).

#### 4.5. Digital dementia

Digital dementia also referred to as FOMO (Fear Of Missing Out) is a real concern. A science publication’s review



**Fig. 3.** An iPad placed within a rattle. Note the device is immediately over the boy’s testicles.

<sup>2</sup> SEER 12 is cancer registry data maintained by the National Cancer Institute (NCI) using 12 States of the United States.



**Fig. 4.** 2-in-1 iPotty with Activity Seat for iPad.



**Fig. 5.** An iPad for entertaining a baby.

article describes the problem in great depth [45]. An empirical study of the problem was published in 2013 [46].

#### 4.6. Governmental warnings

Many countries have issued warning about children's cellphone use. Some examples are:

Turkey 2013:

Governor Aksoy Huseyin, of the Samsun province announced he would launch a cellphone campaign to bring awareness of their hazards.

Belgium 2013:

The Public Health Minister bans cellphone sales for children under 7 years old. Advertisements are also banned during children's TV programs.

Australia 2013:

The federal government created a fact sheet providing citizens ways to reduce exposure from wireless devices. The agency advises parents to limit children's exposure to cellphones.

France, 2010

Laws make advertising cellphones to children under the age of 12 illegal.

## 5. Conclusions

The risk to children and adolescent from exposure to microwave radiating devices is considerable. Adults have a smaller but very real risk, as well.

- (1) Children absorb greater amount of microwave radiation (MWR) than adults;
- (2) MWR is a Class 2B (possible) carcinogen as is carbon black, carbon tetrachloride, chloroform, DDT, lead, nickel, phenobarbital, styrene, diesel fuel, and gasoline. It seems clear that we would not expose children to these other agents, so why would we expose children to microwave radiation?
- (3) Fetuses are even more vulnerable than children. Therefore pregnant women should avoid exposing their fetus to microwave radiation.
- (4) Adolescent girls and women should not place cellphones in their bras or in hijabs.
- (5) Cellphone manual warnings make clear an overexposure problem exists.
- (6) Wireless devices are radio transmitters, not toys. Selling toys that use them should be banned.
- (7) Government warnings have been issued but most of the public are unaware of such warnings.
- (8) Exposure limits are inadequate and should be revised such that they are adequate.

## Acknowledgements

Barb Payne for her special proof reading skills and Mary Redmayne for her advice and guidance.

## References

- [1] Cleveland Jr RF, Sylvan DM, Ulcek JL. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions. Supplement C (Edition 97-01) to OET Bulletin 65 (Edition 97-01). Federal Communications Commission Office of Engineering & Technology; 2014. p. 16.
- [2] Gandhi OP, Lazzi G, Furse CM. Electromagnetic absorption in the human head and neck for mobile telephones at 835 and 1900 MHz? IEEE Trans Microw Theory Tech 1996;44(10):1884–97.
- [3] Wiart J, Hadjem A, Wong MF, Bloch I. Analysis of RF exposure in the head tissues of children and adults. Phys Med Biol 2008;53(13):3681–95.
- [4] Kuster N. Past, current, and future research on the exposure of children. Foundation for Research on Information Technology in Society (IT'IS), Foundation Internal Report; 2009. [http://www1.itis.ethz.ch/index/index\\_itis.html](http://www1.itis.ethz.ch/index/index_itis.html) [accessed 08.12.10].
- [5] Christ A, Gosselin M-C, Christopoulou M, Kuhn S, Kuster N. Age-dependent tissue-specific exposure of cell phone users. Phys Med Biol 2010;55:1767–83.
- [6] Baan R, Grosse Y, Lauby-Secretan B, El Ghissassi F, Bouvard V, Benbrahim-Tallaa L, et al. Carcinogenicity of radiofrequency electromagnetic fields. Lancet Oncol 2011;12(July (7)):624–6.
- [7] Wikipedia. List of IARC Group 2B carcinogens; 2014. [http://en.wikipedia.org/wiki/List\\_of\\_IARC\\_Group\\_2B.carcinogens](http://en.wikipedia.org/wiki/List_of_IARC_Group_2B.carcinogens) [accessed 10.03.14].
- [8] Sadetzki S, Chetrit A, Freedman L, Stovall M, Modan B, Novikov I. Long-term follow-up for brain tumor development after childhood exposure to ionizing radiation for *Tinea capitis*. Radiat Res 2005;163:424–32.
- [9] Hardell, Carlberg. Mobile phones, cordless phones and the risk for brain tumours. Int J Oncol 2009;35(July (1)):5–17.
- [10] Hegmann KT, Fraser AM, Keaney RP, Moser SE, Nilasena DS, Sedlars M, et al. The effect of age at smoking initiation on lung cancer risk. Epidemiology 1993;4(September (5)):444–8.
- [11] IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz. The Institute of Electrical and Electronics Engineers, Inc.; 1991.
- [12] NCRP REPORT No. 86, Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic fields. Recommendations of the

- National Council on Radiation Protection and Measurements, Issued April 2; 1986.
- [13] ICNIRP Guidelines. Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz). International Commission on Non-Ionizing Radiation Protection. *Health Phys* 1998;74(April (4)):494–522.
- [14] Non-ionizing radiation. Part 2: Radiofrequency electromagnetic fields, vol. 102. Lyon, France: International Agency for Research on Cancer; 2013. <http://monographs.iarc.fr/ENG/Monographs/vol102/index.php> [accessed 10.03.14].
- [15] Cleveland Jr RF, Sylvar DM, Ulcek JL. Federal Communications Commission, Office of Engineering & Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields OET Bulletin 65, Edition 97-01, August; 1997. p. 42.
- [16] Cleveland Jr RF, Sylvar DM, Ulcek JL. Federal Communications Commission, Office of Engineering & Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields OET Bulletin 65, Edition 97-01, August; 1997. p. 15.
- [17] Gandhi OP, Morgan LL, de Salles AA, Han YY, Herberman RB, Davis DL. Exposure limits: the underestimation of absorbed cell phone radiation, especially in children. *Electromagn Biol Med* 2012;31(March (1)):34–51.
- [18] Aldad TS, Gan G, Xiao-Bing G, Hugh S, Taylor HS. Fetal radiofrequency radiation exposure from 800–1900 MHz-rated cellular telephones affects neurodevelopment and behavior in mice. *Sci Rep* 2012;2:312.
- [19] Odaci E, Bas O, Kaplan K. Effects of prenatal exposure to a 900 MHz electromagnetic field on the dentate gyrus of rats: a stereological and histopathological study. *Brain Res* 2008;1238(October):224–9.
- [20] Zhu Y, Gao F, Yang X, Shen H, Liu W. The effect of microwave emission from mobile phones on neuron survival in rat central nervous system. *Prog Electromagn Res* 2008;82:287–98.
- [21] Rathus SA. Childhood voyages in development. 5th ed. Belmont, CA, USA: Publisher Wadsworth; 2014.
- [22] Baranski S. Histological and histochemical effects of microwave irradiation on the central nervous system of rabbits and guinea pigs. *Am J Physiol Med* 1972;51:182–90.
- [23] Switzer WG, Mitchell DS. Long-term effects of 2.45 GHz radiation on the ultrastructure of the cerebral cortex and hematologic profiles of rats. *Radio Sci* 1977;12:287–93.
- [24] Aydin D, Feychtung M, Schütz J, Tynes T, Andersen TV, Schmidt LS, et al. Mobile phone use and brain tumors in children and adolescents: a multicenter case-control study. *J Natl Cancer Inst* 2011;103(August (16)):1264–76.
- [25] Byun Y-H, Ha M, Kwon H-J, Hong Y-C, Leem J-H, Sakong J, et al. Mobile phone use, blood lead levels, and attention deficit hyperactivity symptoms in children: a longitudinal study. *PLOS ONE* 2013;8(3).
- [26] Salford LG, Brun AE, Eberhardt JL, Malmgren L, Persson BR. Nerve cell damage in mammalian brain after exposure to microwaves from GSM mobile phones. *Environ Health Perspect* 2003;111(June (7)):881–3.
- [27] Eberhardt JL, Persson BR, Brun AE, Salford LG, Malmgren LO. Blood-brain barrier permeability and nerve cell damage in rat brain 14 and 28 days after exposure to microwaves from GSM mobile phones. *Electromagn Biol Med* 2008;27(3):215–29.
- [28] Nitby H, Grafström G, Eberhardt JL, Malmgren L, Brun A, Persson BR, et al. Radiofrequency and extremely low-frequency electromagnetic field effects on the blood-brain barrier. *Electromagn Biol Med* 2008;27(2):103–26.
- [29] West JG, Kapoor NS, Liao SY, Chen JW, Bailey L, Nagourney RA. Case report, multifocal breast cancer in young women with prolonged contact between their breasts and their cellular phones. *Case Rep Med* 2013;2013:354682.
- [30] Duan Y, Zhang HZ, Bu RF. Correlation between cellular phone use and epithelial parotid gland malignancies. *Int J Oral Maxillofac Surg* 2011;40(September (9)):966–72.
- [31] Sadetzki S, Chetrit A, Jarus-Hakak A, Cardis E, Deutch Y, Duvdevani S. Cellular phone use and risk of benign and malignant parotid gland tumors—a nationwide case-control study. *Am J Epidemiol* 2008;167(February (4)):457–67.
- [32] Czerninski R, Zini A, Sgan-Cohen HD. Risk of parotid malignant tumors in Israel (1970–2006). *Epidemiology* 2011;22(January (1)):130–1.
- [33] Even D. Israeli study sees link between oral cancer, cell phones. July 16; 2009. <http://www.haaretz.com/print-edition/news/israeli-study-sees-link-between-oral-cancer-cell-phones-1.280073> [accessed 15.03.15].
- [34] Fejes I, Závaczki Z, Szöllősi J, Koloszár S, Daru J, Kovács L, et al. Is there a relationship between cell phone use and semen quality? *Arch Androl* 2005;51:385–93.
- [35] Agarwal A, Deepinder F, Sharma RK, Ranga G, Li J. Effect of cell phone usage on semen analysis in men attending infertility clinic: an observational study. *Fertil Steril* 2008;89(January (1)):124–8.
- [36] Salama N, Kishimoto T, Kanayama HO. Effects of exposure to a mobile phone on testicular function and structure in adult rabbit. *Int J Androl* 2010;33(February (1)):88–94.
- [37] De Iuliis GN, Newey RJ, King BV, Aitken RJ. Mobile phone radiation induces reactive oxygen species production and DNA damage in human spermatozoa in vitro. *PLoS ONE* 2009;4(July (7)).
- [38] Glantz SA. Primer of biostatistics. 7th ed. San Francisco: The McGraw Hill Companies; 2012. p. 247.
- [39] Avendaño C, Mata A, Sanchez-Sarmiento CA, Doncel GF. Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation. *Fertil Steril* 2012;97(January (1)):39–45.e2.
- [40] SadamoriN, Shibata S, Mine M, Miyazaki H, Miyake H, Kurihara M, et al. Incidence of intracranial meningiomas in Nagasaki atomic-bomb survivors. *Int J Cancer* 1996;67:318–22.
- [41] IEEE Std 1528™-2003. IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques, 19 December. The Institute of Electrical and Electronics Engineers, Inc.; 2003. p. 55.
- [42] Zada G, Bond AE, Wang YP, Giannotta SL, Deapen D. Incidence trends in the anatomic location of primary malignant brain tumors in the United States: 1992–2006. *World Neurosurg* 2012;77(March–April (3–4)):518–24.
- [43] Danish Cancer Registry Press Release 2 Nov. 2012 Google translation English Translation; 2012. <http://www.cancer.dk/Nyheder/nyhedsartikler/2012kv4/Kraftig+stigning+i+hjernesvulster.htm> [accessed 13.03.14].
- [44] Dobes M, Khurana VG, Shadbolt B, Jain S, Smith SF, Smee R, et al. A multicenter study of primary brain tumor incidence in Australia (2000–2008). *Neuro Oncol* 2011;13(7):783–90.
- [45] Dossey L. FOMO, digital dementia, and our dangerous experiment. *Explore J Sci Heal* 2014;10(March (2)):69–73.
- [46] Przybylski AK, Murayama K, DeHaan CR, Gladwell V. Motivational, emotional, and behavioral correlates of fear of missing out. *Comput Hum Behav* 2013;29(4):1841–8.

## Eitem 5.3

**P-04-586 Holl staff GIG Cymru i gael eu talu ar y gyfradd Cyflog Byw o £7.65 yr awr o leiaf .**

**Manylion:**

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i gydnabod y gwaith hanfodol a wneir gan staff sy'n gweithio i'r GIG yng Nghymru. Rydym hefyd yn annog Llywodraeth Cymru i weithredu'r argymhelliaid a wnaed gan gorff adolygu cyflogau'r GIG, a sicrhau bod holl staff GIG Cymru yn cael eu talu ar y gyfradd Cyflog Byw o £7.65 yr awr o leiaf.

**Gwybodaeth ychwanegol:**

Mae staff y GIG yn gwneud rhai o'r swyddi anoddaf yn y byd – arbed bywydau, gofalu am bobl, a'n helpu i gadw'n iach. Mae'n hanfodol bod staff y GIG yn cael eu gwobrwyd yn briodol am y gwaith y maent yn ei wneud gan eu bod yn ddi-os yn ei haeddu. Mae llywodraeth y DU wedi penderfynu peidio â gweithredu'r argymhelliaid a wnaed gan y Corff Adolygu Cyflogau (PRB) ac mae UNSAIN yn credu bod hyn yn sarhad i staff yn Lloegr. Rydym yn credu y dylai'r Cynulliad Cenedlaethol a Llywodraeth Cymru wneud popeth o fewn eu gallu i sefyll dros weithwyr y GIG yng Nghymru, ac mae'n rhaid i hynny gynnwys dyfarnu argymhelliaid y PRB i staff a sicrhau eu bod yn cael eu talu ar y gyfradd Cyflog Byw fesul awr o leiaf.

**Prif ddeisebydd:** UNISON Cymru/Wales

**Ys tyriwyd am y tro cyntaf gan y Pwyllgor:** 23 Medi 2014

**Nifer y llofnodion:** 174

**P-04-586 All NHS Wales staff to be Paid at Least the Hourly Living Wage Rate of £7.65. – Correspondence from the Petitioner to the Committee, 06.02.15**

Dear Kayleigh

My apologies for the oversight in not responding to your initial e-mail.

This matter has now been resolved with Welsh Government through negotiations which led to a Wales only agreement on pay in the Welsh NHS. This agreement gave our members a lump sum payment of £187 (pro rata) for 2015/15, the implementation of the Living Wage from 1st January 2015 and a consolidated 1% uplift on all pay points from 1st April 2015. In addition, UNISON and the other Health trade unions have agreed to co-operate with the work of the Independent Review of the NHS Workforce which will be looking at future pay strategy for those staff paid under Agenda for Change terms and conditions.

We thank the Health Minister for his response to our concerns around the issue of pay for NHS Workers. We believe there is still much to do to redress the loss of value in our members' pay since 2010. However, we are committed to continue working with Welsh Government to find ways of addressing this and in contributing to the work of the Independent Review of the NHS Workforce.

A handwritten signature in black ink, appearing to read "Julie Bowley".

# Eitem 5.4

## P-04-601 Gwaharddiad Arfaethedig ar Ddefnyddio e-sigaréts Mewn Mannau Cyhoeddus Manylion

Rydym yn galw ar Lywodraeth Cymru i beidio â bwrw ymlaen â'u gwaharddiad arfaethedig ar ddefnyddio e-sigaréts mewn mannau cyhoeddus caeedig, mannau cyhoeddus sylweddol gaeedig, a gweithleoedd yng Nghymru. Ni all y cynnig hwn, os caiff ei weithredu, ond arwain at ostyngiad yn y nifer a fydd yn defnyddio e-sigaréts a chynnydd yn y nifer a fydd yn ysmgygu sigaréts.

### Gwybodaeth ychwanegol:

Mae 100,000 o bobl yng Nghymru yn defnyddio e-sigaréts eisoes. Mae'r rhain yn ysmgygu llai o sigaréts neu nid ydynt yn ysmgygu sigaréts o gwbl; dylai hyn fod yn achos dathlu, nid yn achos pryder. Yn ôl arolwg a gynhaliodd y BBC yn ddiweddar, mae 62% o'r cyhoedd yn gwrthwynebu gwahardd defnyddio e-sigaréts yn gyhoeddus. Yn Sbaen, lle gwaharddwyd defnyddio e-sigaréts yn gyhoeddus, bu gostyngiad o 70% yn y defnydd o e-sigaréts a chynnydd yn y nifer a oedd yn ysmgyu. Rydym yn ofni y bydd yr un peth yn digwydd yng Nghymru os bydd Llywodraeth Cymru yn rhoi eu gwaharddiad arfaethedig ar waith. O gofio y bydd hysbysebu a hyrwyddo e-sigaréts yn cael ei wahardd yn fuan ar ôl pasio'r Gyfarwyddeb Cynhyrchion Tybaco, ble fydd ysmgwyr yn cael gwybodaeth am e-sigaréts, yn enwedig os ydynt yn cael eu gwahardd mewn mannau cyhoeddus? Mae angen i ysmgwyr weld pobl yn defnyddio e-sigaréts yn gyhoeddus, mae angen iddynt fedru mynd at y rhai sy'n defnyddio e-sigaréts i siarad â nhw a chael rhagor o wybodaeth ac yna dewis defnyddio sigaréts mwy diogel, gobeithio

Prif ddeisebydd: Simon Thurlow

Ysityriwyd am y tro cyntaf gan y Pwyllgor: 7 Hydref

Nifer y llofnodion: 1,196 llofnod a'r lein

**Mark Drakeford AC / AM**  
**Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol**  
**Minister for Health and Social Services**



---

Llywodraeth Cymru  
Welsh Government

Eich cyf/Your ref P-04-601  
Ein cyf/Our ref MD/00122/15

William Powell AM  
Assembly Member for Mid & West Wales  
Chair - petitions committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

committeebusiness@Wales.gsi.gov.uk

2 February 2015

*Dear William,*

Thank you for your recent letter regarding Petition P-04-601 - Proposed ban on E-Cigarettes in enclosed public spaces, and for sight of the correspondence from Mr Simon Thurlow on behalf of the Save E-cigs Campaign.

I am grateful to you for forwarding this for my attention as I believe it is important that we continue to look at all the available information in relation to this matter.

The petitioner has recently met with my officials to discuss the issues raised in his letter. They have explained the legislative process, and so he is aware of the opportunities for continuing dialogue on this matter.

*Best wishes,*

*Mark.*

**Mark Drakeford AC / AM**  
**Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol**  
**Minister for Health and Social Services**

Bae Caerdydd • Cardiff Bay  
Caerdydd • Cardiff  
CF99 1NA

*Wedi'i argraffu ar bapur wedi'i ailgylchu (100%)*  
*Fudalen y pecyn 91*

English Enquiry Line 0845 010 3300  
Llinell Ymholaethau Cymraeg 0845 010 4400  
Correspondence.Mark.Drakeford @wales.gsi.gov.uk

*Printed on 100% recycled paper*

**P-04-601 Proposed Ban on the Use of e-cigarettes in Public Places – Correspondence from the Petitioner to the Committee, 13.02.15**

William Powell AM  
Assembly Member for Mid & West Wales  
Chair Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff CF99 1NA

Dear Mr Powell,

I would like to thank you and the Petitions Committee for continuing to keep myself and my colleagues at the Save E-cigs campaign informed as to the progress of our petition against the proposed ban on vaping in enclosed public places.

We would like to put on record our extreme disappointment regarding the Health Minister's response to your Committee's latest letter. It is dismissive at best and fails to tackle any of the substantive points raised by Save E-cigs or your Committee.

We remain deeply concerned that Mr Drakeford and his officials are pushing ahead with this proposal without regard to the evidence. This is in stark contrast to the Scottish Government who, like the Welsh Government, also proposed a ban on vaping in enclosed public places. The Scottish Government chose to engage with the vaping community from the outset of their consultation process including the holding of at least one round-table meeting. Having listened to all the evidence, we have been informed that the Scottish Government will not now be pursuing their proposal to ban vaping in enclosed public places.

You may also be aware that there has been a debate taking place in Westminster as to whether or not MPs, Peers, staff, and visitors can vape in the Palace of Westminster. The initial view, reported in the press, was that vaping should be banned. However, like the Scottish Government, they chose to engage with interested parties on all sides of this debate and agreed to allow vaping. Vaping is now allowed in dedicated areas in Portcullis House, offices, and the Stranger's bar (the main bar in the Palace of Westminster).

We would also like to bring to your committee's attention a debate that took place in the House of Lords on e-cigarettes. During this debate the Health Minister The Earl Howe said, "The levels of toxicants in e-cigarette vapour were very much lower than those found in

conventional cigarette smoke and not considered to pose any significant passive inhalation risk.”

It is extremely disappointing, not to mention rather worrying, that Mr Drakeford refuses time and time again to engage with the evidence. In all the letters that both your committee and Save E-cigs has sent him he has not once engaged with the independent expert evidence that we have provided. Perhaps this is because it does not suit his agenda? More importantly, we feel that Mr Drakeford’s conduct to date reflects badly on the Welsh Government when compared to the examples highlighted above from Scotland and Westminster. This should be of concern to all those with an interest in Welsh politics.

The one body that Mr Drakeford continues to quote as supporting his proposed ban on vaping in enclosed public places is the World Health Organisation. Interestingly the Scottish Government, the Department of Health in England, and the Palace of Westminster authorities chose to discount the WHO’s advice on public vaping. On the subject of the WHO we would like to draw your committee’s attention to a significant intervention from Robert West, Professor of health psychology and director of tobacco studies at University College London’s department of epidemiology and public health, in relation to the WHO’s advice relating to e-cigarettes. He said, and I quote, that it was “a shocking piece of deception” and that “Someone at the top in the organisation needs to get a grip on this.”

As your committee will be aware, we have met with AMs from right across the political spectrum to discuss our concerns regarding this issue and have found all of them supportive of these concerns and in total agreement with our viewpoints. This has included meetings with Kirsty Williams, Elin Jones, and Darren Millar – all of whom are responsible for health issues within their respective parties.

No doubt when your committee meets there will be pressure to close our petition. We feel strongly that this would be the wrong thing to do. Whilst Mark Drakeford continues to demonstrate a failure to engage with the actual evidence, we feel that it is your committee’s duty to pursue this issue.

Each and every time we communicate with your committee we are able to provide you with fresh and independent evidence in support of our petition. When faced with the arguments from both sides of this debate the Scottish Government chose not to pursue a ban on public vaping. When faced with the arguments from both sides of this debate the Westminster authorities chose not to ban vaping. When faced with the arguments from both sides of this debate the UK Government concluded that passive vaping did not pose a significant risk. This

is in stark contrast to the Welsh Government who has chosen not to fully engage with the vaping community or the significant amount of evidence that has been provided.

The Petitions Committee must therefore continue to pursue our petition. If not Mark Drakeford will have essentially been allowed to simply ignore the views of the 1,196 vapers who signed our petition. The petitions process was designed to give the Welsh electorate a voice and a platform to raise their concerns. Whilst we cannot expect Mark Drakeford to agree with everything we say, we can at the very least, expect him to engage with us and your committee in a constructive manner. If Mark Drakeford is simply allowed to dismiss our petition and the extensive evidence that we have provided then we are left with little option but to ask what is the point of this committee?

Finally, I would like to bring to your attention the fact that Professor Linda Bauld (University of Stirling, UK Centre for Tobacco and Alcohol Studies (UKTAS) and Cancer Research UK) will be addressing a breakfast meeting for AMs on the 25<sup>th</sup> of March 2015. She will be speaking specifically on the topic of e-cigarettes. Professor Linda Bauld is one of the key advisers to the aforementioned Scottish Government consultation. As a campaign we would urge all members of your committee (and indeed all AMs) to attend this important meeting as it will be a wonderful opportunity to hear from a leading authority on the subject of e-cigarettes.

Yours sincerely

Simon Thurlow  
On behalf of the Save E-cigs Campaign

## P-04-603 Helpu Babanod 22 Wythnos Oed i Oroesi.

### Manylion

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i:

- newid y canllawiau fel bod babanod sy'n cael eu geni ar ôl 22 wythnos ac sy'n dangos arwyddion o fywyd yn cael y gofal meddygol priodol; ac
- wrth newid y canllawiau hynny yn sicrhau y bydd Pediatregydd yn pwysio a chadw golwg ar bob baban sy'n cael ei eni ar ôl 22 wythnos sy'n dangos arwyddion o fywyd yn union wedi'r enedigaeth er mwyn i glinigwyr wneud penderfyniadau ar sail gwybodaeth ynghylch cyfle'r baban i oroesi

**Prif ddeisebydd:** Emma Jones

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:**

**Nifer y llofnodion:** 2,543 llofnod a'r lein 216 llofnod papur. Cyfanswm:  
2,579



Eich cyf/Your ref P-04-603  
Ein cyf/Our ref MD/00088/15

William Powell AM  
Assembly Member for Mid & West Wales  
Chair - petitions committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

committeebusiness@Wales.gsi.gov.uk

31 January 2015

Dear William,

Thank you for your letter of 9 January regarding Emma Jones's petition in relation to the care of babies born after 22 weeks gestation.

This is of course a very sensitive issue, and I am not aware of all the details of Emma Jones's case, beyond those she has provided in her letters. I would like to clarify my earlier comments to explain that clinically speaking resuscitation describes the need to support breathing where a baby is unable to continue breathing unaided. The details provided suggest that her child was unable to continue breathing independently and would therefore have required resuscitation, and that is why I referred to resuscitation in my previous letter.

To expand on my letter of the 31 October, whilst the care of the mother and her baby will always need to be individualised, clinicians are guided in their judgements by current guidance, in this case that would be the British Association of Perinatal Medicine and the Nuffield Council Guidelines. These guidelines are based on extensive evidence and set out current best practice, and they are reviewed and updated to take account of improvements in clinical care. Both guidelines consider that resuscitation of babies below 23 weeks should only be carried out in exceptional circumstances.

An appointment has been offered for Emma to discuss these issues with the Welsh Government Professional Adviser for Maternal and Child Health, Dr Heather Payne, but no response to this offer has so far been received. This offer of course still stands and I would encourage Emma to take up this offer. Of course, the clinicians involved in the delivery of

Bae Caerdydd • Cardiff Bay  
Caerdydd • Cardiff  
CF99 1NA

Wedi'i argraffu ar bapur wedi'i ailgylchu (100%)  
Tudalen y pécyn 96

English Enquiry Line 0845 010 3300  
Llinell Ymholaethau Cymraeg 0845 010 4400  
Correspondence. [Mark.Drakeford@wales.gsi.gov.uk](mailto:Mark.Drakeford@wales.gsi.gov.uk)  
Printed on 100% recycled paper

Emma's baby would be best placed to discuss the precise issues relating to that birth, and the decisions made subsequently.

In response to your enquiry on behalf of the committee, as to whether "medical assistance should be given to babies born alive and breathing", my view is that for babies born before 23 weeks of gestation the position is both difficult and nuanced. I consider that decisions need to be made by the clinicians involved, in discussion with the parents whilst taking account of the current best guidance practice.

Best wishes,

Mark.

**Mark Drakeford AC / AM**

Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol  
Minister for Health and Social Services

**P-04-603 Helping Babies Born Under 22 Weeks to Survive –  
Correspondence from the Petitioner to the Chair, 11.02.15.**

Chair of the Petitions Committee, William Powell

This is my response to the health minister Mark Drakeford's recent letter dated 31/01/15. I will start with saying I agree that this is a sensitive issue and this is the whole reason why I am asking for change. The guideline as it is set is not in the interest of the baby when the baby is born breathing, it is uncertain to say whether or not any baby born before 23 weeks will or will not survive but when it is born independently breathing it should be given the chance and not immediately left to die because of sadistic or seen as a percentage. There is no fact that that baby wouldn't survive, that baby could be the low percentage but no one will know until each baby is given that chance. If each baby born independently breathing at or after 22 weeks they should be seen as a full term baby, just because that baby has sadly been born early at no fault of its own does not mean it has any less right to be medically helped or have its rights taken away from them.

As the health minister has explained resuscitation is set on the guideline as to been seen by medical professionals as when a baby needs support to continue breathing, meaning the baby will need resuscitation to stay alive. If this is true then how long does a baby need to be independently breathing before given help? As the committee know the reason I began this petition was because of my personal loss, my son was born breathing at 22+3 days and breathing, he breathed independently for 83 minutes with no help. We were told he couldn't have any help because of his gestation, the fact that he was breathing was of no interest to them. No higher medical staffs were called apart from the midwives on that ward, no one came and discussed any options or the outcome with me. The midwives just referred to the guideline as it was set in stone.

What are exceptional circumstances? When is a baby seen as valuable enough to be helped? How long before help is given after a baby is born and struggling to stay alive. My son lasted 83 minutes but he was not seen as an exceptional circumstance for even the paediatricians to come down before he finally gave up!

As the minister states in his letter each mother and baby needs to be individualised. This is not the action taken in these hospitals, I was not individualised and neither was my son.

He says the situation will always need to be individualised by clinicians; they should be guided by current guidance. They are not seeing this guideline as guiding them but as a set guideline, they are not using it to make a decision for a baby but as that's how it is and that's its attitude. I know this from not only my own experience in the hospital but from parents contacting me with their stories on how their baby was treated and left to die. Since starting this petition I have been contacted various ways by families who have lost their baby from not being helped after being born before 23 weeks but breathing independently. I have all these saved and have the support of families for this petition. What is going on? How can all these babies before 23 weeks be left to die because of its age. If the baby is fighting for a chance the baby should be given help each time, it is that babies decision whether or not it'll live not the midwives at that time of labour.

It is frustrating to hear the health minister say the guideline does include 'exceptional circumstances' what do these babies born breathing have to do to be an exceptional circumstance. What qualifies the baby chosen to be helped, to be given the chance that each baby should have. It is as if the guideline is a lucky baby guideline, one lucky baby gets chosen to be given help. My son was not even looked at, so how do we know he wasn't that baby who'd survive out of your percentage! Babies no matter how small should never be seen as a percentage.

For us parents who have suffered the loss of a premature baby in the hands of medical staff are taking a stand and I will not let other parents go through this in the future, our son like many others should not be seen as a possible death but as hope and hope that that baby survives. Until each baby is given that chance is born with signs of life we will not know which baby will pull through or which baby will sadly die but each needs the help to have that chance to be the baby that survives. Leaving a baby breathing to die is not in the best interest of the baby or the mother, the baby fights till the end and is given no hope and the mother will always wish the medical staff there that day helped her baby and why their baby wasn't chosen to be saved. I will be fighting for each baby to be that one baby given the chance of hope and medical assistance he/she needs. Leaving a baby to die is murder and there is no other word the letting a baby die other than that.

Emma Jones

Mae cyfngiadau ar y ddogfen hon

## Eitem 5.6

### P-04-608 Ymchwiliad i'r GIG yng Nghymru

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i gynnal ymchwiliad llawn a chynhwysfawr i'r GIG yng Nghymru. Bydd yr ymchwiliad diagnostig hwn yn sicrhau yr eir ati i nodi pob mater sy'n peri pryder, ymdrin ag ef, a gwella safonau'r gwasanaeth iechyd yng Nghymru yn barhaus, er lles staff a chleifion y GIG a phobl Cymru.

**Prif ddeisebydd:** PJ Vanston

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 9 Rhagfyr 2014

**Nifer y llofnodion:** 146



Eich cyf/Your ref P-04-608  
Ein cyf/Our ref MD/00172/15

William Powell AM  
Chair - Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

committeebusiness@Wales.gsi.gov.uk

5 February 2015

*Dear William,*

Thank you for your further letter on behalf of the Petitions Committee regarding petition P-04-608 which calls for a 'full and comprehensive inquiry into the Welsh NHS'.

All health systems, both in the UK and internationally, are facing up to the same pressures and challenges of how to manage increasing demand caused by a growing older population, the development of chronic conditions and an increasing development of new technologies, clinical practices and drugs at a time when we have a responsibility to manage within our resources. Despite these pressures and challenges surveys and patient feedback consistently demonstrate a high level of satisfaction with the NHS in Wales.

I would again stress that the Welsh NHS is the most closely inspected and scrutinised health service of all the four nations in the UK, with more bodies charged with ensuring quality and safety standards are maintained for patients. Despite this, where problems are identified or concerns raised the NHS and the Welsh Government will, and has, acted. The publication of the Trusted to Care report last year is clear evidence of such action. Although this dealt with concerns in two hospitals, all-Wales action has been taken in response, including a comprehensive programme of unannounced spot check visits to every acute hospital in Wales. The findings from these visits have been published for all to see.

It is also important to set in context that the Keogh report was based on the review of a small number of trusts in England; it was not an inquiry into the English NHS.

Inquiries by their very nature focus on looking back and can hinder any progress with ongoing continuous improvement. They are also very costly, with the inquiry into Mid

Staffordshire NHS Foundation Trust having cost over £13 million as one example.  
Ultimately, any penny spent on an inquiry is a penny less for frontline care.

Best wishes,

Mark

**Mark Drakeford AC / AM**

Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol  
Minister for Health and Social Services

## P-04-422 : Ffracio

### Geiriad y ddeiseb

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Gweinidog yr Amgylchedd a Datblygu Cynaliadwy i lunio Datganiad Polisi Cynllunio Mwynau Interim Gweinidogol, yn ogystal â nodyn cyngor technegol newydd, i gryfhau'r egwyddor ragofalus ynglŷn â cheisiadau cynllunio ar gyfer olew a nwy ar y tir, gan gynnwys ffracio. Rhaid dileu pob amheuaeth wyddonol resymol bod risg o effeithiau niweidiol, a rhaid rhoi'r ystyriaeth gryfaf i'r angen brys i liniaru'r newid yn yr hinsawdd.

**Prif ddeisebydd:** Cyfeillion y Ddaear Cymru

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 2 Hydref 2012

**Nifer y llofnodion:** Tua 1000



Eich cyf/Your ref P-04-422  
Ein cyf/Our ref CS/00060/15

William Powell AM  
Chair Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

27 January 2015

Dear Bill,

Thank you for your letter dated January 2015 which seeks my views on the document "All that glitters..." and the related "petition" against fracking submitted to the Petitions Committee by Gareth Clubb.

I understand that the petition comprised around 2,080 signatories on postcards and petition papers referencing Friends of the Earth Cymru, Friends of the Earth and Frack Free Wales. A further 44 signatures were received on petition papers from Frack Free Llantrisant.

It is important to note that oil and gas matters are not devolved to Wales and remain the responsibility of the UK Government. However, detailed policy advice on shale gas, as well as other forms of unconventional oil and gas projects, is contained in national planning policy, specifically Minerals Planning Policy Wales. The policies set out a precautionary approach and identify the environmental impacts that must be addressed by planning authorities to ensure that any proposed development does not impact adversely on the environment, communities or wider society.

On the 8<sup>th</sup> July I issued a Clarification Letter (CL-04-14) to Chief Planning Officers in Wales. The letter reinforces the relevant national planning policies and their application for onshore unconventional oil and gas development. This is available online at: <http://wales.gov.uk/topics/planning/policy/policyclarificationletters/2014/cl-04-14/?lang=en>

It should be noted that planning permission, which will be required for each separate stage of unconventional oil and gas activities, (exploration, appraisal and extraction,) is one aspect of the rigorous regulatory consent and permitting regime. Natural Resources Wales, the environmental regulator for Wales and a statutory consultee in the planning process in Wales, has responsibility for issuing permits to ensure the protection of the environment. In addition, the Health and Safety Executive regulate and monitor industry practice and operation for the purposes of public safety.

The Welsh Government has worked with the Office for Unconventional Gas and Oil on the production of a regulatory roadmap for onshore oil and gas exploration for Wales, which was published in December 2013. This regulatory roadmap sets out the regulatory and permissions process for exploratory work in oil and gas development onshore in Wales. This is available at: <https://www.gov.uk/government/publications/regulatory-roadmap-onshore-oil-and-gas-exploration-in-the-uk-regulation-and-best-practice>.

We will continue to consider all the available evidence as it emerges including, where necessary bespoke Wales based studies to determine the potential impact on the Welsh environment and the people of Wales.

Yours sincerely

A handwritten signature in black ink, appearing to read "CS".

**Carl Sargeant AC / AM**  
Y Gweinidog Cyfoeth Naturiol  
Minister for Natural Resources



Ein cyf/Our ref:  
Eich cyf/Your ref:

Ty Cambria / Cambria House  
29 Heol Casnewydd / 29 Newport Road  
Caerdydd / Cardiff  
CF24 0TP / CF24 0TP

Ebost/Email:  
[Emyr.roberts@cyfoethnaturiolcymru.gov.uk](mailto:Emyr.roberts@cyfoethnaturiolcymru.gov.uk)  
[Emyr.roberts@naturalresourceswales.gov.uk](mailto:Emyr.roberts@naturalresourceswales.gov.uk)

Ffôn/Phone:  
0300 065 4444

William Powell AM  
Chair, Petitions Committee  
National Assembly for Wales  
Cardiff Bay  
Cardiff  
CF99 1NA

Dear William,

**Petition: P-04-422 Fracking**

Thank you for the opportunity to provide our views on the petitioner's document 'All that glitters' (June 2014) and on the specific comments about the lack of guidance provided by Natural Resources Wales.

The petitioner's document covers a range of themes and over-arching issues, many of which, such as national energy policy, planning and access rights, are within the remit of other bodies to consider and address. The attached document, Appendix 1, sets out the specific role of Natural Resources Wales in relation to unconventional onshore oil and gas activities and processes in Wales.

In discharging our role and duties we recognise that the prospect of exploiting any potential unconventional onshore oil and gas reserves in Wales is of considerable interest to Welsh citizens and, as an organisation, we aim to ensure that our evidence base and decision making process is robust and transparent.

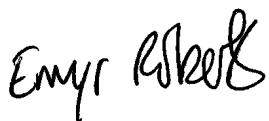
As outlined in our response to your Committee on 20 May 2014, we believe that our regulatory and enforcement roles help to ensure that onshore oil and gas operations in Wales are managed in a way that protects public health and the environment. We are clear on our approach to the regulation of exploratory

activity and the range of permits, consents and licences required by developers (see attached document – Annex 1). We have met with the majority of the companies who hold the 24 PEDL licences across Wales to discuss and confirm our regulatory approach.

To date, NRW has received five applications for a permit in relation to onshore oil and gas exploratory activity. We are thereby able to provide bespoke advice and guidance to operators and decision makers on how best to satisfy regulatory requirements.

We are therefore confident that the current approach to environmental regulation is appropriate for protecting public health and the environment from the risks associated with exploratory onshore oil and gas activity in Wales. As the industry develops and moves to appraisal testing and full scale commercial production other issues may emerge which may require revisions to our approach or new legislation.

I hope the information I have provided with this letter assures you that Natural Resources Wales is clear on its role, remit and approach to environmental regulation of onshore oil and gas development in Wales. If you have any further queries, please do not hesitate to contact me or Ceri Davies the Executive Director of Knowledge, Strategy & Planning who leads on this technical area for NRW.



Yours sincerely  
**Emyr Roberts**

**Prif Weithredwr**

## Chief Executive

### Appendix 1

## Unconventional Onshore Oil and Gas Activities and Processes and the role of Natural Resources Wales

## Summary of unconventional onshore oil and gas activities and processes

The process of testing, delineation and drilling are integral to all forms of hydrocarbon reservoir development. Oil and gas are moved to the surface from underground reservoirs either through natural pressure or through induced pressure by means of pumps or hydraulic fracturing (fracking).

The distinction between conventional and unconventional oil and gas reflects differences in how the oil or gas is held underground, either freely in an underground reservoir (conventional) or within rocks (unconventional).

Unconventional gas can take a number of forms:

- Shale gas – natural gas trapped in fractures and pore spaces within fine grained sedimentary shale rocks;
- Coal bed methane (CBM) – methane held within the coal by adsorption;
- Underground Coal Gasification (UCG) – igniting and partially combusting coal in situ and extracting the gasification products (known as syngas).

The regulatory regime covering conventional and unconventional oil and gas is exactly the same. For ease of explanation we use the term “onshore oil and gas” rather than draw the distinction between conventional and unconventional oil and gas.

The technologies used to extract the gas require the drilling of boreholes. Where there is insufficient natural permeability, both shale gas and coal bed methane extraction can be enhanced by using a technique known as hydraulic fracturing or “fracking”. Fluid<sup>1</sup> is pumped into the borehole at pressure to create and increase fractures in the shale to release gas and in coal beds to release methane.

Underground coal gasification requires the drilling of two boreholes into the coal seam. Through one borehole water/steam and oxygen are injected and ignited to partially combust the coal. The syngas (the resulting gases) are extracted through the second borehole.

---

<sup>1</sup> A combination of water, sand and chemicals.

Shale gas and coal bed methane techniques have been widely deployed in America. Underground coal gasification has been deployed in Australia, India and Scotland. Application of these technologies in the UK has been very limited, and unconventional gas is not yet contributing to the UK energy mix. The technology is being applied in an exploratory way to determine the availability of resource.

There are a number of phases in the development of onshore oil and gas, although not all phases may apply to underground coal gasification:

- Licensing
- Exploration – likely to involve the drilling of one borehole to assess the level of resource available at the specific site.
- Appraisal – likely to include a small element of production with an increase in the number of boreholes, to assess the technical feasibility and costs of extracting the oil or gas at the specific site.
- Production – full scale commercial production. This is likely to require a large number of boreholes and associated surface operations.
- Abandonment and site remediation.

At each stage, the developer will be required to secure separate planning permissions, environmental permits and other notifications. The cumulative environmental impact at each phase is likely to be different. Should a developer receive permissions and permits for the exploratory phase of work, the cumulative impact will be considered when determining whether to issue permissions and/or permits for the appraisal or production phase.

Activity across Wales is currently focused on exploration for shale gas and coal bed methane.

### **Overview of current regulatory tools and advice**

The regulatory framework governing onshore oil and gas is complex, and requires licensing and permissions from a number of organisations (see Annex 1, the

required consents and Annex 2 for a list of regulators and other bodies). The Department of Energy and Climate Change (DECC) control the extent and pace of onshore oil and gas development across England and Wales through the issue of Petroleum Exploration and Development (PEDL)<sup>2</sup> licences under the Petroleum Act 1989. This matter is not devolved to Welsh Ministers. Once a developer has secured a PEDL licence they must seek additional permissions from the local planning authorities, Natural Resources Wales, Coal Authority, British Geological Society and HSE before exploratory work can start. The full list of permissions required is set out in Annex 1.

The UK Government has published the UK Regulatory Roadmap<sup>3</sup> which provides a useful overview of the process for shale gas and coal bed methane. The road map highlights the regulatory and other statutory bodies, relevant legislation and regulations, and identifies required actions and best practices for onshore oil and gas exploration in the UK. The Roadmap provides the whole picture on the current UK exploratory regulatory regime.

On 22 January 2014, the European Commission published a Recommendation<sup>4</sup> setting out minimum principles for the regulation of high volume hydraulic fracturing used in hydrocarbon exploration and production. The purpose of the Recommendation is to ensure that the public health, climate and environment are safe-guarded, and that the public is appropriately informed, should unconventional onshore gas resources be exploited across the EU.

NRW has been working closely with Welsh Government, DECC (Office of Unconventional Oil & Gas) and DEFRA in addressing and responding to the Recommendation. In particular, we have undertaken a detailed review of how the current regulatory regime addresses the Recommendations. The Commission will review the effectiveness of the Recommendation eighteen months after its

---

<sup>2</sup> <https://www.gov.uk/oil-and-gas-petroleum-licensing-guidance>

<sup>3</sup> <https://www.gov.uk/government/publications/regulatory-roadmap-onshore-oil-and-gas-exploration-in-the-uk-regulation-and-best-practice>

<sup>4</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014H0070>

publication (August 2015), at which point it will decide whether to propose new legislation.

Our regulation, compliance and enforcement roles help to ensure that onshore oil and gas operations in Wales are managed in a way that protects public health and the environment. In addition to a PEDL, an Underground Coal Gasification (UCG) licence where appropriate, planning permission from the relevant Local Planning Authority (LPA), confirmation from the HSE that well designs and operating procedures are satisfactory, any operator would also require environmental permits from Natural Resources Wales before any operations could start. The precise nature of the permits required depends on the activities proposed and site specific circumstances. There are potentially eleven permits, consents and permissions required from Natural Resources Wales for onshore oil and gas activities in Wales (see Annex 1).

In common with other industry sectors there is no specific regulation for UOSOG. However, Natural Resources Wales is satisfied our existing regulatory tools will help ensure that exploratory onshore oil & gas activities are managed in a way that protects public health and the environment. This position will be reviewed over time as new information and data is generated.

### The role of NRW regarding unconventional onshore oil and gas

Natural Resources Wales undertakes five main roles in relation to unconventional onshore oil & gas activities:

**Advisory:**

We give advice and guidance to developers on the potential environmental and landscape impacts at a site, which may need to be addressed in a permit application and/ or an Environmental Impact Assessment; we are a statutory consultee to planning authorities on planning permissions for surface operations at a site; and we provide advice on consenting activities which may have an impact on the integrity of designated sites.

**Regulatory:**

As an environmental regulator we will assess individual onshore oil & gas proposals against a number of different pieces of legislation, and if appropriate, issue permits, licences & consents. In issuing these permits Natural Resources Wales will have to screen for and carry out a Habitats Regulation Assessment for any consents that are likely to have a significant impact on Natura 2000 (N2K<sup>5</sup>) sites.

**Monitoring and Compliance:**

Monitor compliance at each site to ensure that the environmental risks are properly managed through audits, site inspections, spot check monitoring and reviewing operator records and procedures.

**Incident management:**

We have a role in managing pollution incidents, responding to pollution events and acting to minimise potential impacts on residents and the local environment.

**Land owner and manager:**

We own land in various parts of Wales where exploration may take place. We are also the land manager of the Welsh Government Woodland Estate which may fall within the boundaries of the PEDL licences issued by DECC. The PEDL licences are issued by DECC as part of a competitive leasing round and allow the holder rights to explore and produce conventional and/or unconventional sources of oil and gas.

---

<sup>5</sup> [http://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/index_en.htm)

If any new proposals come forward for land managed by Natural Resources Wales, we will ensure that there is clear separation of duties, clarity of role and transparency in the way which we administer our functions (as we do for other regimes where we have dual roles).

### **Our approach to regulation to support natural resource management**

Natural Resources Wales is the regulatory authority in Wales for a wide range of environmental legislation. We are responsible for more than 40 different types of regulatory regimes across a wide range of activities. Across these regimes, including the regulation of onshore oil and gas, we are committed to the principles of better regulation, the Regulators' Code and our Regulatory Principles<sup>6</sup>. This necessitates a risk based, outcome focused and evidence led approach to advising and regulating onshore oil and gas developers. Further information on these principles can be found in Annex 3 and the foot notes.

### **Directives and UK legislation.**

We continue to work with Welsh Government, the Environment Agency and SEPA as well as the Office of Unconventional Oil & Gas at DECC to ensure that we are aware of any emerging issues that may require a change in our regulatory approach.

In Wales there is limited opportunity for shale gas exploration due to the local geology. There are greater opportunities for coal bed methane and underground coal gasification exploration. As activity across Wales is focused on the exploration phase, and is currently limited to only a small number of sites, we are able to meet with individual developers to confirm our regulatory approach and understand their plans for developing sites in Wales. This approach enables NRW to fully familiarise itself with site specific issues, how the industry may develop

---

<sup>6</sup> <http://naturalresourceswales.gov.uk/content/docs/pdfs/how-we-regulate-you/our-approach-to-regulation-to-support-natural-resource-management.pdf?lang=en>

over time, and how to best deploy our regulatory tools. We are thereby able to provide bespoke advice and guidance to operators on how best to satisfy regulatory requirements.

We have written to the ten companies who hold the twenty-four PEDL licences across Wales, and have already met with the majority of them. To date NRW has received only five applications for a permit in relation to onshore oil and gas exploratory activity.

Following these discussions, we are confident that our current approach to environmental regulation is appropriate for protecting public health and the environment from the risks associated with exploratory onshore oil and gas activity in Wales. As the industry develops, and if it moves to appraisal testing and full scale commercial production, we will review our approach based on the best available information.

## Summary

- We believe that our current regulatory tools are appropriate for the regulation of exploratory onshore oil and gas activities.
- We have appropriate access to existing guidance and expertise to enable effective regulation of the exploratory phase (and whenever appropriate, we will publish or link available guidance on our external website).
- We will review the requirement to evolve our regulatory approach should developers wish to attain authorisation for appraisal and production phases.
- We will continue to work with the UK and Welsh Governments and the respective agencies to consider the emerging science on unconventional gas, to ensure that our approach to regulation is based on the best available evidence.

**Annex 1 – List of Consents, Licences and Permissions potentially required from  
Natural Resources Wales (NRW) for exploration of onshore oil and gas activities.**

There are potentially eleven licences or consents required from NRW, five of which fall under the Environmental Permitting (England & Wales) Regulation 2010 (as amended) (EPR). The list as follows but not limited;

### Types of Permits

#### Groundwater Activity

### Conditions

Unless we are satisfied that there is no risk of inputs to groundwater

#### Mining Waste Activity

Likely to apply in all circumstances

#### Industrial Emissions Activity

When the Operator intends to flare more than 10 tonnes of gas per day). If it is less than 10 tonnes of gas per day it is subject to Mining Waste Activity.

#### Radioactive Substances Activity

Likely to apply in all circumstances where oil and gas is produced.

#### Water Discharge Activity

If surface water run-off becomes polluted, for example due to a spill of diesel fuel

### Licences

#### European Protected Species

### Conditions

May be required where there is potential to have adverse effects. May also be subject to assessment under the Conservation of Habitats

and Species Regulations 2010.

### Water Abstraction License

If the Operator plans to abstract more than 20m<sup>3</sup>/day for their own use, rather than purchasing water from a public water supply utility company

### Consents

#### Groundwater Investigation Consent

### Conditions

To cover drilling and test pumping where there is the potential to abstract more than 20m<sup>3</sup>/day in the production process

#### Flood Risk Consent

If the proposed site is near a watercourse or main river

#### Site of Special Scientific Interest (SSSI's)

Consent required where there is potential to impact these sites

May also be subject to assessment under the Conservation of Habitats and Species Regulations 2010

### Permission

Operators must serve a notice to NRW under Section 199 of the Water Resources Act 1991 to "construct a boring for the purposes of searching for or extracting minerals"

## **Annex 2 – Role of others Regulators and bodies**

As well as NRW there are a number of other regulators involved in the control of onshore oil & gas exploration operations;

### **Department of Energy & Climate Change (DECC)**

DECC is responsible for issuing the Petroleum Exploration & Development Licence (PEDL). This licence gives an operator exclusive rights to prospect for all petroleum types (conventional and

unconventional oil & gas) in a licensed area. The licence confers exclusivity in a defined area against other exploration companies, but does not confer any exemption from other legal/regulatory requirements. Licence holders are also obliged to seek DECC's permission before they start any well operations.

#### **Local Planning Authority (LPA)**

LPA is responsible for granting planning permission (under the Town and Country Planning Act 1990) for surface related development. It may require operators to submit an Environmental Impact Assessment (EIA), Habitats Regulation Assessment (HRA) and Waste Management Plan with the applications. NRW is a statutory consultee to planning applications.

#### **Health and Safety Executives (HSE)**

HSE has a primary responsibility for ensuring safe practices in well design, integrity and construction at given location. They regulate the safety aspects of the drilling work. Operators need to provide HSE with details of the proposed well design that has been examined by an independent, competent well examiner. They must also notify HSE

of their intention to drill (minimum 21 days notice).

### **Coal Authority**

Coal Authority consent is needed for any activity which intersects disturbs or enters coal seams. The Coal Authority is part of DECC. Underground Coal Gasification licences are issued by the Coal Authority

### **British Geological Survey (BGS)**

BGS requires information on: any borehole that is intended to penetrate to a depth greater than 100 feet; or on the deepening of an existing well. Operators are required to keep a record in the form of logs and cores or fragments for a period of six months and must allow authorised officers of BGS to access at all reasonable times

### **Annex 3 – Our approach to regulation to support natural resource management**

The Regulators' Code is part of a package of measures to improve the relationship between regulators and those they regulate and to overcome barriers to growth, by improving the way regulation is delivered.

The Code states that:

- Regulators should carry out their activities in a way that supports those they regulate to comply and grow.
- Regulators should provide simple and straightforward ways to engage with those they regulate and hear their views.
- Regulators should base their regulatory activities on risk.
- Regulators should share information about compliance and risk.

- Regulators should ensure clear information, guidance and advice is available to help those they regulate meet their responsibilities to comply.
- Regulators should ensure that their approach to their regulatory activities is transparent.

This Regulators' Code is not statutory in Wales, although Welsh Government requires us to have regard to it in discharging our regulatory functions. Therefore, we will adopt the Regulators' Code resulting in this being embedded into our regulatory approach.

Our delivery of this Regulators' Code provides a mechanism to deliver a number of our own Regulatory Principles:

1. **Deliver outcomes** – We seek to deliver environmental outcomes, not just deliver regulation, seeking to deliver shared outcomes where we can.
2. **Prepared to challenge** – We will challenge and address barriers where they don't contribute to the environmental outcome.
3. **Be flexible** – We seek to be flexible and tailor the approach to the needs of the recipient, using innovation and novel approaches where appropriate and learning from past experience.
4. **Be intelligent** – We should use all available evidence from a range of sources and seek to ensure the data we collect from those we regulate contributes to the evidence to inform action to deliver outcomes.
5. **Use the full range of tools available** – We seek to apply a wide range of tools, chosen for their effectiveness in delivering outcomes. This includes using the law to deal with those who act illegally, to protect honest business, society and the environment.
6. **Bring the right skills / expertise together** – We seek to ensure we have the skills to use the right tools effectively, or seek access to and work with those who do.
7. **Be clear on what we do and why** – We will seek to ensure everyone understands the role and purpose of the regulator and what our outcomes

are, in such a way that it is easy to see the link between what we are doing and why and to embed a consistent approach.

8. **Be efficient and effective** – We will seek to deliver in an efficient and effective way, working with others where we can, and where this is a good thing to do.

**P-04-422 Fracking – Correspondence from the Petitioner to the Clerking Team, 13.02.15**

Hi Kayleigh,

I think the ground has shifted rather on this issue. However, the petition relates to onshore oil and gas, which includes coal bed methane and underground coal gasification. Perhaps the Committee would like to refocus its efforts on these forms of unconventional gas now that shale gas fracking has been subject to a moratorium?

Gareth

# Eitem 5.8

## P-04-536 Rhoi'r Gorau i Ffatrioedd Ffermio Gwartheg Godro yng Nghymru

Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i ddiweddu Polisi Cynllunio Cymru a dogfennau cynllunio perthnasol eraill, fel Nodyn Cyngor Technegol 6: Cynllunio ar gyfer Cymunedau Gwledig Cynaliadwy, er mwyn sicrhau na chaiff ffermydd gwartheg godro dan do ar raddfa fawr eu creu er elw byrdymor ac, o bosibl, ar draul llawer o ffermydd bach. Wrth gymeradwyo'r fferm yn y Trallwng yn ddiweddar, cyfeiriodd Cyngor Sir Powys yn benodol at baragraff 7.2.2 o Bolisi Cynllunio Cymru gan ddweud ei fod yn "...(c)ydabod y bydd y manteision economaidd weithiau'n gwrthbwys o'r ystyriaethau cymdeithasol ac amgylcheddol", ac rydym o'r farn y dylid adolygu hyn ar frys, gan na ddylai'r posibilrwydd o greu nifer fach o swyddi newydd wrthbwys o'r buddion economaidd hirdymor a ddaw yn sgîl pori, sy'n ased digonol, effeithlon a chynaliadwy, ac mae llawer o ffermwyr godro yng Nghymru yn cydnabod hynny'n llwyr.

Mae ffatrioedd ffermio gwartheg godro dan do ar raddfa fawr wedi'u cynllunio i gadw buchod dan do, yn hytrach nag allan ar dir pori, a gwelwyd enghreifftiau eisoes o sut y gallant gynyddu niwed i'r amgylchedd, gwneud y gymuned leol yn dlotach, effeithio'n ddifrifol ar les anifeiliaid a bod yn faich ariannol ar yr ardal gyfagos. Yn dilyn penderfyniad Llywodraeth Cymru i gymeradwyo'r fferm yn y Trallwng, credwn ei bod yn hollbwysig cynnal adolygiad o ddeddfwriaeth gynllunio er mwyn sicrhau bod Cymru yn cyflawni ei dyhead i fod yn wlad wirioneddol gynaliadwy.

**Prif ddeisebydd:** World Society for the Protection of Animals

**Ysyytiwyd am y tro cyntaf gan y Pwyllgor:** 18 Chwefror 2014

**Nifer y llofnodion:** 9246



Eich cyf/Your ref P-04-536  
Ein cyf/Our ref RE/00040/15

William Powell AM  
Assembly Member for Mid & West Wales  
Chair Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

↳ February 2015

*Dear William,*

Thank you for your letter to the Minister for Natural Resources about the petition *P-04-536 Stop Factory Dairy Farming in Wales* which has been passed to me to reply. Carl Sargeant AM, Minister for Natural Resources, has previously responded to the issues raised by the petitioner.

The petitioner has not provided a clear definition of “factory dairy farming” and it is unclear whether the petitioner wishes to limit the size of a dairy herd (number of animals per farm unit), the management system under which the cows are kept (housed for more than six months in the year) or perhaps a combination of both these factors.

The Welsh dairy industry is extremely diverse with enterprises that vary in size, production systems and herd numbers. For example, there are some relatively small herds in Wales that have high output per cow and use robotic milking machines and others with more than 500 cows which operate a grazing system with a relatively short housing period.

There are small efficient farms making a profit and large inefficient farms making a loss so it is not correct to say large farms in Wales put smaller farmers out of business. It is important to note that the Welsh dairy industry does not operate as a market on its own but is influenced by the wider UK and international markets.

We have an excellent record of animal husbandry and promote the highest standards of welfare regardless of the size of the enterprise. The Welsh Government have all necessary legislation and reporting procedures in place to protect both animal welfare and the environment.

*Yours,  
Rebecca*

**Rebecca Evans AC / AM**  
Y Dirprwy Weinidog Ffermio a Bwyd  
Deputy Minister for Farming and Food

**P-04-536 Stop Factory Dairy Farming in Wales – Correspondence from the Petitioner to the Clerking Team, 17.02.15.**

Dear Kayleigh,

Many thanks for your email of 11th February regarding Petition P-04-536 (Stop Factory Dairy Farms in Wales), and the specific communication from the Deputy Minister for Farming and Food.

When the petition was submitted 12 months ago it highlighted why a review of planning legislation was of critical importance to ensure Wales fulfils its aspiration to become a truly sustainable country.

Our definition of “factory dairy farming” within the petition itself is detailed as being “large scale indoor dairy farms”. In simple terms, our concerns surround intensive indoor farms where cows have very limited or no access to pasture. Due to their operating requirements, and to achieve ever greater yields, these farms are very often large-scale farms, but that does not mean that the petition is aiming to place a limit on the size of dairy herds per say.

We agree with the Deputy Minister that in general Wales has as an excellent record of animal husbandry and promotes the highest standards of farm animal welfare. However, our concern is that Wales and the rest of the UK risks allowing intensive indoor dairy farms to alter that proud record, by restricting the natural behaviour of cows, and by pushing cows to and beyond the limits of their physical tolerances.

We are concerned that we appear to be sleepwalking into a nightmare scenario that other countries have already experienced that will ultimately be bad for dairy farmers, consumers, the environment and for cow welfare. We continue to support the call in Petition P-04-536 for an urgent inquiry to be undertaken to assess current and future risks, to ensure the planning system is able to prevent the negative impacts that can arise from intensive indoor dairy farms.

Kind regards,

Ian Woodhurst

# Eitem 5.9

P-04- P-04-579 Adfer cyllid ar gyfer monitro Gwylogod Ynys Sgomer

## Manylion

Mae Cyfoeth Naturiol Cymru wedi torri'r cyllid blynnyddol o £12,000 y mae'n ei ddarparu ar gyfer y gwaith sy'n mynd rhagddo o fonitro Gwylogod Ynys Sgomer. Mae'r astudiaeth hon yn un hynod o bwysig sy'n rhoi mewnwelediad gwerthfawr i fywyd adar môr a'r hyn sy'n effeithio ar eu poblogaethau. Nid yn unig yw dod â set ddata sydd wedi cael ei chasglu cyhyd (ac sydd, felly, yn werthfawr) i ben yn drueni, ond ni allai'r toriad fod wedi dod ar adeg waeth, o ystyried effaith enfawr y stormydd diweddar ar boblogaethau adar môr (gyda 25,000 o farwolaethau ar hyn o bryd, a disgwyli'r i'r rhif hwnnw gynyddu). Mae hwn yn benderfyniad gwael iawn gan Cyfoeth Naturiol Cymru, a hoffem ei weld yn cael ei ddiwygio.

**Prif ddeisebydd** Cardiff University Ornithological Society

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 23 Medi 2014

**Nifer y llofnodion:** Deiseb gysylltiedig 1,687 o llofnodion

**P-04-579 Reinstate Funding for Skomer Island's Guillimot monitoring –  
Correspondence from the Petitioner to the Clerking Team, 09.02.15**

Dear Kayleigh,

My response is as follows:

Firstly may I say that we are very disappointed with this response. Whilst guillemots on Skomer are indeed increasing in number, they remain the best barometer of the quality of the marine environment around the island, chiefly because they can be monitored more accurately than any other seabird on Skomer. To say that the JNCC's continued monitoring of the guillemot population is in any way reassuring is missing the crucial point, as highlighted by Professor Birkhead in his 2011 report to the Trust and JNCC, which showed that the data collected under JNCC contract is flawed and has produced erroneous results. I am assured he would not have fought so strongly against the funding cut if he were confident the JNCC's monitoring was sufficient.

As I have said, we at the Ornithological Society and Professor Birkhead himself are very disappointed by this response. All we are asking is that the Assembly, and Natural Resources Wales, understand that only a thorough study of the guillemot population such as that carried out by Professor Birkhead and his team all these years is sufficient to gain any meaningful understanding of the guillemot population and the precious marine environment of which they are a key indicator.

I do hope you will reconsider.

Yours sincerely,

Jamie Kingscott-Edmunds  
Cardiff University Ornithological Society



Eich cyf/Your ref P-04-579  
Ein cyf/Our ref CS/05188/14

William Powell AC  
Cadeirydd y Pwyllgor Deisebau  
Tŷ Hywel  
Bae Caerdydd  
Caerdydd  
CF99 1NA

21 Hydref 2014

Annwyl William

Diolch i chi am eich llythyr dyddiedig 30 Medi ynghylch deiseb Cymdeithas Adareg Prifysgol Caerdydd am y cyllid ar gyfer monitro gwylogod ar Ynys Skomer.

Mae ardaloedd bridio pwysig yng Nghymru ar gyfer adar môr, gan gynnwys gwylogod, ac rwy'n cydnabod pwysigrwydd monitro'r amrywiadau ym mhoblogaethau'r adar hyn. Mae gan Cyfoeth Naturiol Cymru gcontract gyda'r Cyd-bwyllgor Cadwraeth Natur i gynnal arolygon blynnyddol o'r adar môr ar Ynys Skomer, gan gynnwys gwylogod.

Gwn fod Cyfoeth Naturiol Cymru wedi penderfynu, yn gynharach eleni, peidio ag adnewyddu contract penodol gyda Phrifysgol Sheffield i gynnal arolwg o'r gwylogod ar Skomer. Oherwydd y cynnydd hirdymor yn niferoedd y gwylogod ar yr ynys, a'r ffaith bod y rhywogaeth hon yn mynd i gael ei monitro o hyd o dan gcontract y Cyd-bwyllgor Cadwraeth Natur, rwy'n dawel fy meddwl na fydd diffyg data na gwybodaeth am yr adar hyn. Wrth gwrs, bydd CNC yn parhau i fonitro ac adolygu'r anghenion a gofynion yn hyn o beth.

Yn ddiweddar, rhoddais fy sêl bendith i estyn ffiniau'r tair Ardal Gwarchodaeth Arbennig ar gyfer adar môr sy'n bridio a diweddarwr rhestr o rywogaethau perthnasol. Mae'r Ardaloedd Gwarchodaeth bellach yn cynnwys yr ardaloedd morol sy'n hanfodol bwysig ar gyfer bwydo, llyfnu ac ymddygiadau eraill yn ystod tymor bridio'r adar. Erbyn hyn, mae'r môr wrth ymyl yr ardaloedd nythu'n mwynhau'r un lefel o warchodaeth â'r safleoedd nythu eu hunain, a bydd hyn yn siŵr o gynnal twf poblogaeth y gwylogod ac adar môr eraill. Yn ogystal, bydd estyn yr Ardaloedd Gwarchodaeth Arbennig hyn yn gwella profiad ymwelwyr yn y dyfodol, yn

enwedig y rheini sy'n mynd ar dripiau i fwynhau bywyd gwylt y mannau hynod hyn.

Yn gywir



**Carl Sargeant AC / AM**  
Y Gweinidog Cyfoeth Naturiol  
Minister for Natural Resources

# Eitem 5.10

## P-04-605 Achub Ffordd Goedwig Cwmcarn Rhag Cael ei Chau am Gyfnod Amhenodol neu'n Barhaol

### Manylion

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i wyrdroi penderfyniad Cyfoeth Naturiol Cymru i gau Ffordd Goedwig Cwmcarn am gyfnod amhenodol o 2 Tachwedd 2014 ymlaen

### Gwybodaeth Ychwanegol

Mae Cyfoeth Naturiol Cymru wedi datgan y bydd Ffordd Goedwig Cwmcarn ar gau am gyfnod amhenodol ym mis Tachwedd a bod hyn yn angenrheidiol oherwydd haint y llarwydd Siapaneaidd yn y goedwig. Nid wyf wedi fy argyhoeddi, oherwydd bod anghysondebau yn null Cyfoeth Naturiol Cymru. Mae digon o ffyrdd cynhaeaf y gellir eu defnyddio i hwyluso'r gwaith o gael gwared ar y coed. Gellir symud y pethau sydd angen eu symud ar y ffordd yn ystod y cyfnod pan mae'r ffordd ar gau yn flynyddol yn ystod y gaeaf; fod bynnag, mae Cyfoeth Naturiol Cymru yn dweud na fydd y gwaith o symud y coed yn cael ei gwblhau tan 2018 ac, ar ôl hyn, mae'n bosibl na fydd y ffordd yn ailagor oherwydd materion cyllido. Dim ond ychydig iawn o amhariad i'w cyfleusterau y mae parciau coedwig eraill yn ei wynebu o ganlyniad i symud coed. Mae canolbwytio ar ddefnyddwyr y ffordd yn annheg ac yn ddianghenraig pan fydd defnyddwyr eraill dim ond yn wynebu amhariad dros dro. Dylem achub y ffordd ar gyfer ei defnyddwyr, y mae llawer ohonynt yn hŷn, yn anabl ac yn dod o'n cymunedau lleiafrifoedd ethnig a mewnfudwyr. Mae hyn yn amddifadu'r bobl hynny sydd fwyaf difreintiedig o'u prif gyfleuster ar gyfer iechyd a lles.

**Prif ddeisebydd:** Robert Jeffrey Southall

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:**

**Nifer y llofnodion:** 2,392 llofnod a'r lein a 602 llofnod papur

**P-04-605 Save Cwmcarn Forest Drive - Correspondence from the Petitioner to the Committee, 11.02.15**

## **Friends of Cwmcarn Forest Drive**

Petitions Committee  
National Assembly for Wales  
Cardiff Bay  
Cardiff  
CF99 1NA

Dear Sir/Madam,

Many thanks for your communication of 5th February 2015. Firstly I would like to briefly update you on the current progress being made by NRW at Cwmcarn. The felling of the diseased trees in the Cwmcarn Forest has still not started and local people have been very saddened and upset about the way in which the facilities on the drive were decommissioned, likening this to mindless vandalism. Our new organisation, the Friends of Cwmcarn Forest Drive, has been keenly pursuing the stakeholder meetings on the future of the drive proposed by NRW, however there has been no indication to date that these will commence in the near future.

While I understand the Petitions Committee would now like to close my petition I feel that, given its high number of signatories, it should be kept open, and possibly returned to from time to time, in order to ensure that NRW are fulfilling their promise to complete the felling quickly in order to re-open the Drive to cars. There is another possible course of action that the Petitions committee could take if passes a request to the relevant Assembly Committee(s) to regularly monitor the work to ensure the speedy completion of the felling. It could also work with stakeholders to explore all possibilities for the re-opening of the Drive to private cars.

We feel that any other alternative would be grossly unfair and discriminatory to the many people, including elderly and disabled people, who are only able to access the Drive with its fantastic scenery via motor transport. The minibus service on the Drive for the mountain bikers continues but there seems no likelihood that this, or similar transport, will be made available to the wider public. As a rambler I can walk the Drive and the many hills and valleys locally, however there are many people who cannot and I feel it that it is in the best interests of these that the drive re-opens as soon as possible. NRW may need encouragement to do this and, as our representatives, the National Assembly is obviously best placed to do this and to regularly monitor progress towards this goal.

I have also attached our submission to the Committee, dated 10 December 2014, on the matter of the closure along with this letter. I hope that the Petitions Committee will be able to take both of these documents into consideration when discussing the future of our sadly missed Forest Drive.

Regards

A handwritten signature in black ink, appearing to read "Rob Southall".

Rob Southall  
Chair, Friends of Cwmcarn Forest Drive

## P-04-605 Save Cwmcarn Forest Drive - Correspondence from the Petitioner to the Committee, 10.12.14

### Submission to the National Assembly for Wales Petitions committee

**Regarding the petition titled:** Save the Cwmcarn Forest Drive from Indefinite or Permanent Closure

**Petition Text:** We call upon the National Assembly for Wales to urge the Welsh Government to reverse the decision of Natural Resources Wales to close the Cwmcarn Forest Drive indefinitely on 2nd November 2014

**Statement:** I first heard of Natural Resources Wales proposal to close the Cwmcarn Forest Drive around March–April of this year and initially thought nothing of it assuming it to be temporary and a matter of felling the trees quickly and transporting them out of the valley. I did, however make a mental note at this time to contact NRW's Heritage and Conservation Officer Rosalind Watkins (formerly Codd) to seek reassurance that the felling would not threaten sensitive environmental and archaeological areas. I thought this as I am currently researching the history of the lost farms of Mynydd Maen it seemed a sensible precaution to take. This is especially the case since the careless destruction by forest contractors a few years earlier of the ruins of Ty'n y Waun farm, near Cwmfelinfach in the lower Sirhowy valley.

In mid to late August I happened to chat to Robert Cole who as the contract warden was employed on a contract basis by NRW to man the pay lodge at the entrance of the Forest Drive. It was he who first informed me of the full extend of the closure. Mr Cole informed me that the drive was to close indefinitely with a caveat that it would take at least six years to complete the felling and that due to lack of funds the drive might never re-open to cars. This was corroborated later by Mrs Barbara White who lives a Ty'n y Ffynnon farm which is actually situated just off the drive in the heart of the Nant Carn valley. Mrs White also told e that she had been told by local NRW employees that

the sculptures were to be removed and transported to other locations, the children's playground was to be dismantled and given away and the barbeques were to be demolished. Mrs White also told me that she had not been informed of any of NRW's plans officially in spite of being directly affected by them. Needless to say I was appalled and decided to set up the Facebook group to fight NRW's decision. This group picked up nearly 500 members in its first hour which gave me some indication of people's opposition to NRW's proposal.

Following this I wrote an e-mail to Peter Cloke, a senior manager within NRW's south Eastern region, to get an official response on the closure from him. That same evening I also wrote to First Minister Carwyn Jones AM in opposition to the NRW's closure plans, copying in a number of local AMs, including Lynne Neagle AM, Jocelyn Davies AM and William Graham AM and Gwyn Price AM. The first three responded over the next few days. That same evening I set up the Facebook group 'Campaign to Save the Cwmcarn Forest Drive' and was quite amazed to find that after just over an hour over five hundred people had joined. 4936 people are currently members of this group.

In the following days I received a confirmation from Peter Cloke that the information I had received initially about the closure was correct and I queried the need for an indefinite and/or permanent closure of the Drive. I felt that NRW were being intentionally vague and evasive. I was also finding that the information NRW were putting out was inconsistent. I contacted the South Wales Argus about this and it elicited several articles over the following weeks. I also contacted Iolo ap Dafydd, Environment correspondent for BBC Wales about this. Initially he was not minded that the press releases were inconsistent, but after further consideration he came back to me in full agreement with the points I had made. Several NRW managers and employees had put out statements and press releases that didn't seem to correspond to one another -some said the Drive was closing for a period of time and others confirmed the closure of the Drive would be permanent.

The main thrust of my argument was that the closure of the Drive to private cars was, and remains, discriminatory. In the course of the

campaign I have found that many people; a number of carers use the Drive almost daily to take clients, and elderly family members, out to enjoy the fresh air and fantastic views the drive affords. One of our society's leading activists, Mrs Sharon Peck, is a professional self employed child minder who uses the Drive and lake area daily.

The main reason I believe the closure is discriminatory is that the drive is only being closed to private cars. The cyclists can continue to use the Drive and the various cycle trails (and public footpaths!) within the valley, in addition the minibus and trailer service (Cwmdown) that ferries cyclists and their bikes up to the top of the downhill trail (at the very top of the Drive) is being allowed to continue, with only minor and temporary limitations. As a walker I can also continue to walk the Drive –and would fully intend to do so if walkers were barred.

A group of concerned people came together around the Facebook page and, at the beginning of September; we formed a loose society called 'the Friends of Cwmcarn Forest Drive' to take the campaign forward. The Friends will become a constituted society at the beginning of 2015. Our society is here to stay as we fully intend to continue to press to get the Drive re-opened to cars.

Around mid September I arranged a meeting at Crosskeys RFC club house with Andy Schofield who is regional land manager for NRW. The meeting was held in good spirits by all concerned and Andy provided several specialist maps featuring sensitive environmental and archaeological areas and hydrological features. He also informed us at this point that the larch around the Drive would now be felled over the first two years of a six year local felling plan and following the two years NRW would look at options for re-opening the Drive to private cars. I received a letter from Lynne Neagle AM dated 8th October which included a response from Carl Sargeant AM which outlined the reasons for the closure, talked about the revised felling plan and reiterated that the Cwmcarn Forest Drive would now only be closed for two years –I have an electronic copy of this and would be happy to forward it to the Petitions Committee

We held a public meeting at the Cwmcarn Institute on Wednesday 16 October. This was attended by Andy Schofield and Jo-Anne Anstey on behalf of NRW and they presented on their organisation's plans. Both NRW managers re-iterated that the Drive would now only be closed for two years while the felling was in progress and after this NRW would endeavour to re-open the facilities to cars. Interestingly when I asked Jo-Anne Anstey if the sculptures from around the Drive were to remain at Cwmcarn she responded by saying that most would be moved to the sculpture trail at Fforest Fawr near Castell Coch. I asked again if any where to remain at Cwmcarn and received what I considered to be an intentionally vague and evasive answer. Later I contacted Mike Owen, the manager of the Cwmcarn Forest Drive Visitor centre, to ask if any had been offered to the local authority which runs this facility. He responded to me the following day, copied in to Jo-Anne Anstey, to say that none had been offered but they would be delighted to receive some if asked by NRW. This email was followed by an email from Jo-Anne Anstey telling him that they were available if the local authority could arrange transport. I understand the Caerphilly County Borough Council now plans to install some of these sculptures in the lake area which is managed by them and therefore remaining open.

Around 50 people attended and many of these asked questions of NRW. Gwyn Price AM (Lab-Islwyn) ad Jocelyn Davies AM (Plaid-SE Wales) also attended along with a BBC Wales Radio journalist and a South Wales Argus Reporter. On the afternoon of the closure (Sunday 2<sup>nd</sup> November) our society held a rally on the Drive which was attended by at least 20 other cars -it would have been more but we had to bring it forward from 3.00 to 2.00pm to keep NRW happy. However this was not an issue because the rally was merely symbolic and I hope it reiterated to NRW that our society is here to stay and we fully expect the Drive to re-open to cars in two years once the felling is complete.

In responding to Carl Sargeant AM's recent letter I have to say I am a little surprised that he seems to be backtracking on a statement he made in his letter dated 28 September to Lynne Neagle AM which runs as follows "Officials are in contact with Natural Resources Wales on this matter and have been assured that there is no intention to

permanently close the route. I understand that the route will be closed for approximately two years to allow for the safe and efficient felling and extraction of the infected trees". The Friends of Cwmcarn Forest Drive intend to hold NRW and the Welsh government to their promise and would certainly welcome involvement in plans for the future of the Drive –this has so far only been mentioned informally. We look forward to meetings with NRW to discuss this involvement in the New Year.

Robert J Southall  
Chair, Friends of Cwmcarn Forest Drive



Eich cyf/Your ref  
Ein cyf/Our ref CS/05273/14

William Powell AM  
Chair Petitions Committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

44 November 2014

Dear Bill

Thank you for your letter of 15<sup>th</sup> October with regard to the petition against the decision by Natural Resources Wales (NRW) to close Cwmcarn Drive.

I am of the view that the closure of Cwmcarn Drive is an unfortunate but necessary step as part of the nationwide strategy to reduce the risk of the further spread of *Phytophthora ramorum* (Larch disease). Cwmcarn forest is predominantly larch (50%) with a concentration of 74% along the Drive itself. This is a much higher proportion of Larch than in other woodland areas in Wales.

Health and safety concerns, difficult terrain and the use of specialised heavy machinery were some of the key factors behind the decision by NRW to close the route. The removal of around 50,000 tonnes of larch from the area using the Drive (which is not a public highway but rather a forest road covered in a thin layer of tarmac) will have a significant impact on its condition.

I am informed that it will take approximately £2.5 million to re-instate the route. NRW officers are of the view that this would be the most expensive and least creative option for re-opening the route. They, in partnership with local residents, Welsh Government and Caerphilly County Council will be working to find a better, more appropriate alternative. I understand that Mr Southall has been invited to participate in this process.

Welsh Government officials have made it clear to NRW that least restrictive access to this site should be a priority once the felling operation has been completed.

Yours sincerely

A handwritten signature in black ink, appearing to read "Carl Sargeant".

**Carl Sargeant AC / AM**  
Y Gweinidog Cyfoeth Naturiol  
Minister for Natural Resources

# Eitem 5.11

## P-04-458: Cadwch Addysg Bellach yn y Sector Cyhoeddus

### Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i sicrhau:

1. Y caiff addysg bellach, ynghyd ag asedau sy'n cael arian cyhoeddus, eu cadw o fewn y sector cyhoeddus.
2. Y bydd colegau'n parhau i ymrwymo i gytundebau cenedlaethol o ran Addysg Bellach, fel y graddfeydd cyflog cenedlaethol.
3. Y caiff contract Cymru gyfan ei gyflwyno ar gyfer darlithwyr ym maes Addysg Bellach
4. Na fydd Gweinidogion Cymru yn diddymu colegau na rhoi'r gallu i golegau drosglwyddo eiddo, hawliau a chyfrifoldebau i gorff arall.

**Prif ddeisebydd:** UCU Crosskeys Branch

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 19 Chwefror 2013

**Nifer y llofnodion:** 246

**P-04-458 Keep Further Education in the Public Sector – Correspondence  
from the Petitioner to the Clerking Team, 08.02.15**

Dear Kayleigh

We have nothing further to comment on.

Best wishes

Ian

# Eitem 5.12

## P-04-566 Adolygu'r Cod Derbyn i Ysgolion

### Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i adolygu'r Cod Derbyn i Ysgolion gan nad yw'n addas i'r diben.

Nid yw'r Cod Derbyn i Ysgolion yn addas i'r diben oherwydd;

Mae'n esgus cefnogi confensiwn y Cenhedloedd Unedig ar Hawliau'r Plentyn ond nid oes gofyn bod ymgynghori â phlant wrth wneud penderfyniadau sy'n effeithio arnynt. Mae'n esgus cefnogi'r Ddeddf Cydraddoldeb, ond nid oes gofyn bod Asesiad o'r Effaith ar Gydraddoldeb;

Nid yw'n ddigon penodol ac felly mae hynny'n arwain at wahaniaethau wrth ei weithredu; mae rhai er gwell a rhai er gwaeth;

Mae'r hawl i rieni a chyrff llywodraethu apelio i Lywodraeth Cymru yn gyfyng iawn. Yn benodol, mae cyrff llywodraethol a ystyrir yn ymgynghoreion statudol, ac eto sydd wedi eu cyfyngu o ran yr amgylchiadau penodol iawn y mae modd iddynt apelio ynddynt;

Mae geiriad y Cod Derbyn i Ysgolion yn amwys ac nid yw'n hawdd ei ddefnyddio i'r rhai y mae'n rhaid iddynt wneud hynny;

Nid yw'r Cod Derbyn i Ysgolion yn diffinio "rhesymol" yng nghyd-destun cyfnodau ymgynghori;

Oherwydd yr holl resymau uchod, nid yw'r Cod Derbyn i Ysgolion yn briodol wrth ymdrin â newidiadau sylweddol, fel newidiadau i dalgylchoedd.

**Prif ddeisebydd:** Jane Chapman

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 17 Mehefin 2014

**Nifer y llofnodion:** 156



Eich cyf/Your ref P-04-566  
Ein cyf/Our ref HL/01616/14

William Powell AC

committeebusiness@Wales.gsi.gov.uk

6 Awst 2014

Annwyl William

Diolch am eich llythyr diweddar yn gofyn am fy marn ar ddeiseb a ddaeth i law gan Jane Chapman ynghylch y Cod Derbyniadau Ysgol ("y Cod").

Hoffwn ymdrin â phob un o'r pwyntiau fel a ganlyn.

**Nid yw'r Cod yn addas at y diben oherwydd:**

- It plays lips service to the United Nations Rights of the Child as there is no requirement to consult with children in decisions that affect them.**

Er nad yw'r Cod ei hun yn nodi bod yn rhaid ymgynghori â phlant am unrhyw agwedd benodol ar dderbyniadau ysgol, mae angen i awdurdodau derbyniadau ystyried sut byddai unrhyw benderfyniadau ganddynt yn effeithio arnynt. Un o egwyddorion allweddol y Cod yw bod yn rhaid bod gweithdrefnau derbyniadau yn deg ac yn gyfartal i bob grŵp o blant.

Cyn cynnal yr ymgynghoriad statudol ar y Cod, rhoddodd fy swyddogion ystyriaeth ddyledus i Gonfensiwn y Cenhedloedd Unedig ar Hawliau'r Plentyn. Dosbarthwyd fersiwn addas o'r ddogfen ymgynghori i blant a phobl ifanc. Cafwyd 117 o ymatebion gan blant a phobl ifanc a helpodd i lywio'r Cod. Dylid cofio bod y gyfraith ar dderbyniadau yn rhoi hawl i rieni fynegi eu dymuniad, a gellir disgwl, pan fydd rhieni'n ystyried pa ddymuniadau y maent am eu mynegi, y byddant yn ystyried barn eu plant.

- It plays lip service to the Equality Act as there is no requirement to undertake an Equality Impact Assessment.

Er nad yw'r Cod ei hun yn nodi bod yn rhaid gwneud Asesiadau o'r Effaith ar Gydraddoldeb, mae dyletswydd ar bob awdurdod derbyniadau i sicrhau eu bod yn cydymffurfio â deddfwriaeth gydraddoldeb wrth gyflawni eu cyfrifoldebau. Nodir hyn yn glir yn Atodiad E y Cod.

- It is not prescriptive enough so leads to differences in implementation, some good, some bad.

Mae'r Cod yn cyfeirio at ofynion statudol presennol ac yn gosod gofynion gorfodol y mae'n **rhaid** i gyrrf rhagnodedig gydymffurfio â nhw. Lle mae'r Cod yn gosod gofynion gorfodol, nodir bod yn **rhaid** i'r cyrrf perthnasol gydymffurfio â'r gofyniad neu'r ddarpariaeth benodol. Os yw'r Cod yn gwahardd arferion, nodir **na ddylai** y corff neu'r cyrrf perthnasol ddefnyddio'r arfer hwn.

Mae'r Cod hefyd yn cynnwys canllawiau y dylai'r cyrrf perthnasol eu dilyn oni bai y gallant ddangos bod cyfiawnhad dros beidio â gwneud hynny. Lle mae'r canllawiau'n cyfeirio at arfer da, mae'r Cod yn nodi y **dylai** y cyrrf perthnasol ddilyn y canllawiau penodol. Ar y llaw arall, lle mae'r canllawiau'n cyfeirio at gamau gweithredu sydd fel arfer yn cael eu cyfrif yn arfer gwael, mae'r Cod yn nodi **na ddylid** defnyddio'r arfer, er y gallai fod amgylchiadau eithriadol lle mae cyfiawnhad drosto.

Os na fydd awdurdod neu gorff yn cydymffurfio â'r darpariaethau gorfodol yn y Cod, gallai hyn arwain at wrthwynebiad statudol neu gwŷn i Weinidogion Cymru. Hefyd gallai methu dilyn canllawiau'r Cod arwain at gefnogi gwrthwynebiad neu gwŷn os na all awdurdodau derbyniadau gyfiawnhau'r ffaith eu bod wedi gwyro oddi wrth y canllawiau hynny.

Nid yw'n bosibl i'r Cod roi canllawiau hollgynhwysfawr oherwydd y byddai'n amhosibl rhagweld pob sefyllfa. Awdurdodau derbyniadau, yng ngoleuni ystyriaeth fanwl o amgylchiadau achosion unigol, sydd yn y safle gorau i wneud dyfarniadau pan fydd angen.

- There is very restricted rights of appeal for parents and governing bodies to Welsh Government in particular governing bodies who are considered statutory consultees and yet are restricted to very specific circumstances in which they can appeal.

Cynhaliodd fy swyddogion ymgynghoriad 14 wythnos ar y Cod cyn iddo gael ei gwblhau. Ni chododd yr un corff llywodraethu ysgol na rhiant y mater o hawl apelio cyfyngedig ar unrhyw adeg yn ystod y cyfnod hwn. Gall cyrrf llywodraethu wrthwynebu i'r nifer o dderbyniadau a bennir ar gyfer eu hysgolion, ac nid oes gwrthwynebiad o'r fath wedi codi yn y blynnyddoedd diwethaf. Nid oes yr un corff llywodraethu wedi gwneud sylw y dylai fod mwy o hawl iddynt wrthwynebu i drefniadau derbyniadau. Gall rhieni wrthwynebu mewn amgylchiadau cyfyngedig eraill, a phrin iawn yw gwrthwynebiadau o'r fath.

- **The wording within the School Admissions Code is ambiguous and is not easy to penetrate by those who are forced to use it.**

Y bwriad yw bod ymarferwyr yn defnyddio'r Cod, er enghraifft awdurdodau lleol a chyrrf llywodraethu. Mae'n rhaid i'r cyrff hyn "weithredu yn unol" â'r agweddau statudol ar y Cod a chydymffurfio â'r canllawiau oni bai bod rheswm pwysig dros wyro oddi wrthynt. Mae fy swyddogion wrthi'n llunio canllaw hawdd ei ddefnyddio i rieni yngylch derbyniadau ysgol ac apeliadau derbyniadau ysgol. Bydd hyn yn destun ymgynghoriad maes o law.

- **The School Admissions Code does not define "reasonable" with regards to consultation periods.**

Cyfrifoldeb awdurdodau derbyniadau yw diffinio'r hyn sy'n "rhesymol" o ran cyfnodau ymgynghori. Wrth wneud hynny, dylent sicrhau bod y cyfnodau hynny yn deg ac yn synhwyrol fel bod modd iddynt amddiffyn eu safbwyt os byddant yn cael eu herio.

- **The School Admissions Code, for all of the above reasons, it not appropriate when dealing with significant changes such as changes to catchment areas.**

Mater i awdurdodau derbyniadau yw trefn dalgylchoedd. Mae'r Cod yn darparu eu bod yn rhesymol ac yn cael eu diffinio'n glir lle caint eu defnyddio. Os bydd yn rhaid gwneud newidiadau sylweddol, bydd yn rhaid ymgynghori arnynt, gan eu pennu a'u cyhoeddi yn yr un ffordd â threfniadau derbyniadau eraill. Mae'r Cod yn nodi hyn yn glir.

Cyhoeddwyd y Cod ym mis Gorffennaf 2013 yn dilyn cyfnod ymgynghori, ac ar ôl ei osod gerbron Cynulliad Cenedlaethol Cymru i'w ystyried heb unrhyw wrthwynebiad. Nid oes unrhyw fwriad i ddiwygio'r Cod ymhellach ar hyn o bryd, ond bydd y pwytiau a godir yn y ddeiseb yn cael eu cadw i gyfeirio atynt yn y dyfodol a'u hystyried adeg yr adolygiad nesaf.

Rwy'n gobeithio y bydd yr wybodaeth hon yn ateb pryderon y deisebydd. Hefyd hoffwn nodi'n glir, er ei bod yn bwysig bod strwythurau'n cael eu gosod mewn perthynas â derbyniadau i ysgolion, mae'n holl bwysig hefyd ein bod yn ymdrechu i hyrwyddo gwelliant mewn ysgolion fel bod plant yn cael y ddarpariaeth orau bosibl ym mha bynnag ysgol a ddewisir ar eu cyfer.

Yn gywir

**Huw Lewis AC / AM**

Y Gweinidog Addysg a Sgiliau  
Minister for Education and Skills

# Eitem 5.13

## P-04-540 Stopio rhagfarn ar sail rhyw mewn cam-drin domestig

### Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i roi diwedd ar Gam-drin Domestig drwy ei drin fel ffenomenon cyffredin i or ddau ryw ac yn ffenomenon dynol lle y bydd llawer o ddynion a menywod yn dioddef cymaint a'i gilydd ac yr un mor gyfrifol a'i gilydd amdano.

Rhaid bod yn ymarferol, NID yn wleidyddol

Mae'r cynnig cyfredol yn beio dynion, a dynion yn unig, am bob traist ac yn rhoi blaenoriaeth i ragfarn ar sail rhywedd o flaen gwir anghenion menywod, dynion a phlant a phle nad yw 97 y cant o ddynion yn ffitio'r proffil hwn.

Ni chafwyd anghydweld agored a llafar yn hyn o beth yng Nghymru oherwydd diffyg cyhoeddusrwydd ac ofni ôl-effeithiau.

Mae'r ddeiseb hon yn cynnig dull gweithredu amgen sy'n cydnabod bod dynion a menywod yn gyfrifol am 86 y cant o gam-drin domestig. Mae hefyd yn cynnig mwy o amddiffyniad i blant ac yn cael gwared ar y gwahaniaethu sy'n digwydd dim ond oherwydd rhagfarn radical ar sail rhyw yn erbyn y bobl hynny sydd mewn perthnasoedd benywaidd o'r un rhyw.

**Prif ddeisebydd:** Healing Men

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 11 Mawrth 2014

**Nifer y llofnodion:** 238

**P-04-540- stop sexism in domestic abuse – Correspondence from the Petitioner to the Clerking Team, 05.02.15**

Dear Steve,

It occurred to me that the original request from the Committee to Welsh Women's Aid (WWA) almost a year ago has not been dealt with by WWA at all.

On the 30th April 2014 the Committee requested of WWA " ... your views on statistics provided by the petitioner ..." and "...We would also be grateful for any other views you may have on the petition". Unfortunately the Supporting Information, containing the references and full documentation to the petition was not, in fact, attached as indicated in the Committee's letter and WWA only received and responded to the Title of the Petition and not the substance (see copy email – text in blue below). Subsequent events only served to create further confusion as set out in copy correspondence.

I only have a record of two items of correspondence from WWA:

- 1 A letter dated 19th June 2014 "Our response was based on the ... [Title of the petition] ... as this was the entirety of what we received". (per WWA letter dated 19th June and received 9th July 2014)
- 2 A letter undated in October 2014 that responded only to a letter from Healing Men.

Neither of these letters addresses the Committee's initial request to have a response from WWA concerning the substantive and substantiated case made in the Supporting Information to the petition and this request by the Committee remains unanswered by WWA to the best of my knowledge.

A complete copy of the petition and all the Supporting Information was sent to WWA on the 1st August 2014 and confirmation received that no further information or clarification was required was eventually received on the 31st October 2014.

WWA has had the full details supporting the petition since 1st August 2014 and has confirmed no further information is needed. I respectfully suggest that a detailed and considered response to the evidence presented in the Supporting Information to the petition would be helpful to the Committee in carefully considering the above petition especially when this has been specifically asked for by representatives of the Assembly and asked of the premier and overwhelmingly dominant agency dealing with domestic abuse and violence in Wales and where substantial issues of

concern for the ongoing safety of current and future generations boys and girls in Wales have been raised.

A synopsis of relevant correspondence follows.

Kind regards,  
Tony Stott  
HealingMen

#####

**Sent:** Friday, October 31, 2014 2:07 PM

Dear Mr Stott,  
Thank you for your email. We have submitted a reply through the Petitions Committee and do not require any further information at this time.  
Regards,  
On behalf of **Tina Reece**

**Sent:** 30 October 2014 17:21

Dear Ms Owens,  
Please let me know if Welsh Women's Aid (WWA) requires any any further information, explanation or clarification in order for WWA to respond to the content of Healing Men's petition as detailed below.  
Regards,  
Tony Stott, Healing Men

**Sent:** Friday, August 01, 2014 2:59 PM

**Subject:** Re: Petitiuon P-04-540m- stop sexism in domestic abuse.

Dear Ms Owens,  
Thank you very much for your prompt response to my 2nd request and for the clarification as below. .... ....For the sake of clarity I attach a complete set of documents covering Healing Men's petition, including the supporting information from which the statistics you have quoted below were extracted and which are referenced within the supporting information.  
I would very much welcome any views or comments that Welsh Women's Aid may wish to make. Please let me know as soon as possible if I can provide any further information or clarification.  
Yours sincerely,  
Tony Stott, Healing Men

**Sent:** Friday, August 01, 2014 10:03 AM

Dear Mr. Stott,

Our apologies, this was sent a few weeks ago but your email address was misspelt. Please see Gill's response below.

Best wishes,

**Emma Harris**

PA to the Chief Executive

Dear Mr Stott,

Thank you for your email below dated 11<sup>th</sup> of July.

In response to your initial query I can assure you that as Director of Operations for WWA I was indeed aware of the request for information from the Petitions Committee which was addressed to our Public Affairs Manager, and the final response submitted.

In regard to your request for clarification on the figures provided to us by the Committee for comment, they were as follows:

"We call upon the National Assembly for Wales to urge the Welsh Government to stop Domestic Abuse (DA) by treating it as a gender inclusive and human phenomenon in which many men and women share both suffering and responsibility. Practical NOT Politics. The current proposal blames men, and only men, for all violence and puts a radical gender based prejudice before the real needs of women, men and children and where 97% of men do NOT fit this profile. Fear of repercussions and lack of publicity in Wales have prevented open and vocal dissent. This Petition invites an alternative approach that recognises that 86% of DA is the responsibility of both women and men. It also offers greater protection to children and removes the discrimination that arises solely from radical gendered prejudice against those people in same sex female relationships."

**Our response was based on the above as this was the entirety of what we received.**

Yours Sincerely,

Gill Owens

15.02.2015

Dear Mr George,

Ms Erin Pizzey was one of the very first signatories to support our Petition in March 2013 and would very much like to take this opportunity to bring her support for this petition to the attention of the Minister, Mr Leighton Andrews AM.

Ms Pizzey has sent the following letter by email and we would very much appreciate if the Committee would kindly agree to forward this directly to the Minister together with the latest letter from Healing Men to solicit the Minister's views and comments. Ms Pizzey's email address is shown above.

Thank you very much indeed for your kind consideration in this matter.

Yours sincerely,  
Tony Stott  
Healing Men

Mr Leighton Andrews AM

Minister for Public Services

February 2015

Dear Mr Andrews,

My name is Erin Pizzey and I founded the first women's refuge in Chiswick, London in 1971. I now have the campaign [www.whiteribbon.org](http://www.whiteribbon.org). The campaign invites everyone to contribute to the now universal truth: ***Domestic violence is not and never has been a gender issue.***

A cynical financially driven war by radical feminists has mislead governments and the general public into believing that men have been the perpetrators of all violence. For over forty years men have been demonised and pushed out of family life, often separated from their boys and girls, and many men have killed themselves so bereft that they saw no other way out.

For me it is recognising that violence in the family is a generational issue. Children born to dysfunctional families, marinated in violence and sexual abuse will often grow up to repeat these patterns. I have always advocated that all victims of

domestic violence need a therapeutic approach in order to find their way out of violence.

I signed a Welsh petition urging the Welsh Government to take a more inclusive and humane approach in dealing with domestic violence. I urge the Welsh Government in the very strongest possible terms to feel for the human suffering and put the needs of the people and the boys and girls of Wales above personal fear, corrupt radicalised ideology and misleading misinformation and adopt the principles of the petition as its policy and in forming new legislation.

I pledge to join with everyone who cares about this issue to continue to publish the truth.

Yours,

Erin Pizzey

# Eitem 5.14

## P-04-556 Na i gau Cyffordd 41

### Geiriad y ddeiseb:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i beidio â chau Cyffordd 41 ar yr M4 am y rhesymau a ganlyn: 1. Byddai cau'r gyffordd yn niweidiol i fasnachwyr a busnesau yng nghanol y dref. 2. Byddai cau'r gyffordd yn creu anhhrefn ar ffyrdd y dref wrth i'r trigolion geisio cyrraedd y draffordd. 3. Ni chafwyd ymgyngħoriad digonol â phobl y dref. 4. Mae angen ymchwilio rhagor i ddulliau eraill o ddatrys y broblem. 5. Ni all yr or saf drenau newydd fod yn ganolfan drafnidiaeth os nad yw'n hawdd ei chyrraedd. 6. Bydd yn amharu ar y gwaith o ailddatblygu'r dref.

Testun ychwanegol: Unwaith eto, mae anghenion gyrwyr yn bwysicach nag anghenion pobl Port Talbot. Cafodd y dref ei hanrheithio pan adeiladwyd y draffordd yn wreiddiol ac mae disgwyl i ni'n awr ddioddef y llygredd wrth i draffig deithio drwy'r dref ar y ffordd i rywle arall! Y draffordd, nid y gwaith dur, sy'n creu'r llygredd mwyaf yn y dref, ac eto ni fydd y rhai sy'n anadlu'r llygredd yn gallu cyrraedd y draffordd. Bydd y cynlluniau i anfon traffig y dref drwy'r strydoedd yn creu rhagor o lygredd traffig ac yn creu anhhrefn. Mae pobl y dref yn deall y problemau n ymwneud âr draffordd ond maent yn galw am ymgyngħoriad go iawn ynghylch y posibiliadau eraill. Rhowch gyfle i ni ddiogelun tref.

**Prif ddeisebydd:** Rose David

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 13 Mai 2014

**Nifer y llofnodion:** 1652, Cyflwynwyd deiseb bapur gysylltiedig a chasglwyd 22,467 o lofnodion.

**P-04-556 No to Junction 41 Closure – Correspondence from the Petitioner to the Clerking Team, 05.02.15**

Dear Kayleigh,

Thanks for your timely reminder concerning my petition against the closure of Junction 41. The trial has been in place for some months now and during this time I have been part of the group of local residents who have met with representatives of the WAG and NPTCBC.

My observations to date are :

**1. Data Collection**

The effects of the part time closure on the town centre businesses are particularly noticeable

after 3.30 pm as people leave the town prior to the closures. I am not sure that the collection of footfall data is reflecting this. In addition, there are ongoing issues with the methods of footfall data collection in terms of accuracy. Results to date do not reflect the statistics collected by the more sophisticated system employed by the Aberfan shopping centre.

The car park ticketing statistics are also only providing a skewed picture of town traffic. The vast majority of shoppers and those accessing the town for 1-2 hrs use Tesco's car park rather than the expensive car parks. Tesco's have reported a drop in footfall after 3.30 PM.

I understand that we are looking at general trends but still feel that these should be based upon solid statistics.

**2. It has been reported that traffic at J 41 is moving more freely on the M4. This would appear to be at the expense of J42. Traffic is a nightmare there as cars join the M4 at this crossover junction. This will be exacerbated by the traffic from the Coed D'Arcy development and with the traffic from the new quays/Baglan Energy Park link bridge as highlighted by The Chief Executive. Is this junction being monitored effectively as part of the trial?**

**3. I would like to see the effect of the new 50 mph Average Speed Cameras on the westbound junction without the closure. I feel that this should have been considered prior to the junction closure.**

**4. That the use of hard shoulder running was discounted on grounds of expense is truly galling when the cost of this trial is considered. The health and safety rationale is also spurious as there are other examples of hard shoulder running under the Smart Motorways initiatives – eg. M1 j10-13.**

5. The chaos caused on local roads during the closures is creating havoc in some parts of the town. The mitigation measures are unable to stop drivers from 'rat running' which, again, causes problems which are not being properly monitored.

These are some of my ongoing concerns with regard to the closure. I hope that the committee will give consideration to these very real problems.

Many thanks,

Rose David

## P-04-562 Canolfan Etifeddiaeth Caernarfon

### Geiriad y ddeiseb:

Rydym ni sydd wedi arwyddo isod yn galw ar Lywodraeth Cymru i ariannu Canolfan Etifeddiaeth yng Nghaernarfon. Mae'r dref hon yn haeddu canolfan i ddangos ein hanes, hanes y bobol, y diwydiant, yr iaith a'r celfyddydau mewn adeilad pwrpasol a deniadol o fewn tref Caernarfon a bod yn gartref i'r trysorau sydd wedi eu cymryd o'n Tre.

Mae bron i fil o bobol Caernarfon, yr ardal ac ymwelwyr yn galw am adnodd o'r fath yn un o'r trefi mwy hynafol a phwysig yng Nghymru. Mae ymwelwyr sydd yn dod ar fy nheithiau o amgylch tref Caernarfon<sup>www.drodre.co.uk</sup> yn gofyn, "Where is the Town Museum?" ac mae'n rhaid ateb nad oes dim yn y dref bellach! Ac maent i gyd yn gweld hyn yn anhygoel gan fod hanes o'u cwmpas ym mhob man.

**Prif ddeisebydd:** Caernarfon Civic Society

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 17 Mehefin 2014

**Ken Skates AC / AM**  
**Y Dirprwy Weinidog Diwylliant, Chwaraeon a Thwristiaeth**  
**Deputy Minister for Culture, Sport and Tourism**



**Llywodraeth Cymru**  
**Welsh Government**

Ein cyf/Our ref KS/00044/15

William Powell AM  
Chair - petitions committee

committeebusiness@Wales.gsi.gov.uk

23 January 2015

Dear William Powell AM,

Thank you for your letter to Cadw's Director about petition P-04-562 Caernarfon Heritage Centre and subsequent correspondence from the petitioner. I am responding as Heritage is within my portfolio.

I have already provided a response to a previous request through the Petition's Committee on the 24<sup>th</sup> of October. In the response I noted that significant investment and activity has and is continuing through Cadw and key partners in developing, improving and enhancing the heritage offer within Caernarfon. This of course includes innovative projects such as the recently successful grant funding bid by Gwynedd Council to the Arts Council of Wales to develop the Ideas, People Places programme, whereby the arts and regeneration activity will be integrated in partnership with the local community to try and interpret local heritage in new and exciting ways.

As previously outlined, although I would be supportive of the development of a new heritage centre in Caernarfon, this would have to be locally led and funded in order for such a venture to have long term financial sustainability.

Relevant officials in Cadw and CyMAL who have experience and knowledge of Caernarfon and relevant key developments will be available to meet and provide advice and guidance should the Civic Society wish to pursue this. The appropriate contacts to arrange such a meeting are Linda Tomos, Director of CyMAL (telephone: 0300 062 2098) and Laurence Smith, Heritage and Regeneration manager for North Wales (telephone: 01286 662314). I would suggest that the Civic Society also invite relevant Gwynedd Council officials to any proposed meeting.

Yours ever,

**Ken Skates AC / AM**  
**Y Dirprwy Weinidog Diwylliant, Chwaraeon a Thwristiaeth**  
**Deputy Minister for Culture, Sport and Tourism**

# Pennaeth Economi a Chymuned Head of Economy & Community

Sioned E. Williams

Gofynnwch am/Ask for: Sioned E Williams

01286 679547

Ein Cyf / Our Ref: SEW/gh

Eich Cyf / Your Ref: P-04-562

[SionedEWilliams@gwynedd.gov.uk](mailto:SionedEWilliams@gwynedd.gov.uk)

28 Ionawr, 2015

Mr. William Powell, AC/AM,  
Cadeirydd Pwyllgor Deisebau Llywodraeth Cymru,  
Cynulliad Cenedlaethol Cymru,  
Bae Caerdydd,  
Caerdydd. CF99 1NA

([Stephen.George@wales.gov.uk](mailto:Stephen.George@wales.gov.uk))

Annwyl William Powell AC, ([Stephen.George@wales.gov.uk](mailto:Stephen.George@wales.gov.uk))

## Deiseb 04-04-562: Canolfan Treftadaeth i Gaernarfon

Diolch i chi am eich llythyr a dderbyniwyd ar 13 Ionawr, 2015 ar ran Pwyllgor Deisebau Cynulliad Cenedlaethol Cymru ynghylch deiseb i sefydlu Canolfan Treftadaeth i Gaernarfon a'r wybodaeth ychwanegol oedd wedi ei dderbyn gan y deisebydd.

Fel a nodais yn fy llythyr blaenorol, ers rhai blynnyddoedd bellach mae cynlluniau wedi eu trafod a'u gweithredu i wella dehongli treftadaeth Caernarfon ac mae Cyngor Gwynedd yn gefnogol iawn i'r egwyddor o ddatblygu Caernarfon fel cyrchfan treftadaeth a diwylliant o'r ansawdd orau.

Mae cydweithio agos rhwng y Cyngor, Cadw ac adrannau Llywodraeth Cymru'n gyffredinol, yn ogystal â phartneriaid yn nhref Caernarfon ac mae cynlluniau cyffroes yn cael eu datblygu ar hyn o bryd trwy Raglen Adfywio Lleoedd Llewyrchus Llywodraeth Cymru a chynllun Creu Cymunedau Cyfoes y Cyngor Celfyddydau yn ogystal â ffynonellau ariannu eraill. Gallai bod cyfleon trwy'r cynlluniau hyn i edrych yn greadigol ac yn arloesol ar y ffordd mae Caernarfon yn cael ei ddehongli yn ei chyfarwydd.

Byddai angen i Gyngor Gwynedd ystyried cais y deisebydd yng nghyd-destun y cynlluniau sy'n cael eu datblygu ar hyn o bryd gan bartneriaid yng Nghaernarfon a phe byddai cynlluniau'n cael eu datblygu ar gyfer canolfan treftadaeth, byddai'n rhaid iddi brofi ei bod yn hyfw ac yn gynaliadwy er mwyn derbyn cefnogaeth y Cyngor.

Mae Cyngor Gwynedd yn fodlon trafod ymhellach gyda'r deisebydd a phartneriaid lleol a chenedlaethol. A fyddch chi felly'n fodlon gyrru manylion cyswllt y deisebydd ymlaen ataf os gwelwch yn dda.

Yr eiddoch yn gywir,

Sioned E Williams

**Pennaeth Economi a Chymuned**

# Eitem 5.16

P-04-565 Adfywio hen reilffyrdd segur at ddibenion hamdden.

**Geiriad y ddeiseb:**

Dylai Llywodraeth Cymru ystyried troi'r cannoedd o filltiroedd o hen reilffyrdd segur (a gafodd eu cau o dan Beeching) yn llwybrau beicio/cerdded o safon uchel. Mae'r rheilffyrdd hyn i'w cael ym mhob cwr o Gymru a byddai'r cynllun hwn: yn annog gweithgareddau iach a ffyrrdd iach o fyw; yn cynnig llwybr teithio diogel i'r rhai sy'n chwilio am ffyrrdd gwyrdd o fyw; yn cynnig llwybr beicio diogel i blant ac yn eu hannog i'w defnyddio i deithio i'r ysgol, clybiau ac ati; lleihau traffig ar ein ffyrrdd; hybu twristiaeth yng Nghymru, yn arbennig o ran beicwyr a cherddwyr; yn hwyluso sefydlu nifer fawr o fusnesau bach, amrywiol ar hyd y llwybrau, fel siopau, darpariaeth gwely a brecwast ac ati. Bydd hyn o fudd i ardaloedd gwledig. Mae'r lles posibl i iechyd pobl Cymru a'i heconomi yn ddiderfyn a gellir deall yr enillion a geir o'r buddsoddiad hwn cyn iddo ddechrau, hyd yn oed.

**Prif ddeisebydd:** Albert Fox

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 17 Mehefin 2014

**Nifer y llofnodion:** 14

**P-04-565 Revive Disused Railway Lines for Leisure – Correspondence from the Petitioner to the Clerking Team, 09.02.15**

Dear Kayleigh,

Thank you for your email and the letter from the Minister. Sadly I am unable to assist in producing a business case as I do not have the resources or the necessary expertise to produce a robust business case for the Committee to consider.

I would, however, encourage the Minister to commission research into utilising the disused railway lines as I believe they have a future for promoting and encouraging tourism in Wales; with the subsequent financial and fitness benefits to Wales and the rural areas.

During my military career as a helicopter instructor, I spent many hours flying around Wales and was heartbroken to see the many railways lines going to waste. I truly believe that the benefits to the people of Wales would justify serious consideration to using these routes for tourism and encouraging healthy activities.

Yours sincerely,

Albie Fox  
Sqn Ldr RAF Retired.

# Eitem 5.17

## P-04-590 Cyllid ar gyfer gwasanaeth bws arfordirol y Cardi Bach

### Manylion:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i adfer y cyllid ar gyfer gwasanaeth bws arfordirol y Cardi Bach yng Ngheredigion.

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i adfer y cyllid ar gyfer gwasanaeth bws arfordirol y Cardi Bach yng Ngheredigion.

### Gwybodaeth ychwanegol

Bydd gwasanaeth bws arfordirol y Cardi Bach, sy'n rhedeg rhwng Aberteifi a Cheinewydd, yn dod i ben ar 30 Medi oherwydd diffyg cyllid. Roedd y gwasanaeth yn derbyn rhywfaint o arian gan Lywodraeth Cymru o dan y Cynllun Datblygu Gwledig 2007–2013.

Mae cynnydd amlwg wedi bod yn nifer yr ymwelwyr i'r ardal hon, yn enwedig cerddwyr, ers agor Llwybr Arfordir Cymru yn 2012. Mae'r gwasanaeth bws arfordirol wedi galluogi ymwelwyr i fynd i'r trefi a'r pentrefi ar hyd y llwybr.

Mae'r gwasanaeth bws yn dod â chwsmeriaid i fusnesau lleol.

Mae'n boblogaidd gyda cherddwyr ar Lwybr Arfordir Cymru, gan ei fod yn eu galluogi i fwynhau teithiau cerdded llinellol.

Mae'n rhoi dewis arall i breswylwyr ac ymwelwyr, ar wahân i'r car.

Bydd rhai ardaloedd gwledig, yn arbennig, yn dioddef anghyfleustra os bydd y gwasanaeth bws yn dod i ben. Er enghraifft, mae Cwmtudu yn bentref poblogaidd ar y llwybr yr arfordir, hanner ffordd rhwng Ceinewydd a Llangrannog. Os bydd rhywun am gael bws o fan hyn, byddai'n rhaid iddo gerdded 4 milltir i'r llwybr bws agosaf. Byddai'n cael anhawster yn ffonio am

dacsi gan nad oes blwch ffôn cyhoeddus, a gan fod y signal ffôn symudol yn wael iawn- Bydd gwasanaeth bws arfordirol y Cardi Bach, sy'n rhedeg rhwng Aberteifi a Cheinewydd, yn dod i ben ar 30 Medi oherwydd diffyg cyllid. Roedd y gwasanaeth yn derbyn rhywfaint o arian gan Lywodraeth Cymru o dan y Cynllun Datblygu Gwledig 2007–2013.

Mae cynnydd amlwg wedi bod yn nifer yr ymwelwyr i'r ardal hon, yn enwedig cerddwyr, ers agor Llwybr Arfordir Cymru yn 2012. Mae'r gwasanaeth bws arfordirol wedi galluogi ymwelwyr i fynd i'r trefi a'r pentrefi ar hyd y llwybr.

Mae'r gwasanaeth bws yn dod â chwsmeriaid i fusnesau lleol.

Mae'n boblogaidd gyda cherddwyr ar Lwybr Arfordir Cymru, gan ei fod yn eu galluogi i fwynhau teithiau cerdded llinellol.

Mae'n rhoi dewis arall i breswylwyr ac ymwelwyr, ar wahân i'r car.

Bydd rhai ardaloedd gwledig, yn arbennig, yn dioddef anghyfleustra os bydd y gwasanaeth bws yn dod i ben. Er enghraifft, mae Cwmtudu yn bentref poblogaidd ar y llwybr yr arfordir, hanner ffordd rhwng Ceinewydd a Llangrannog. Os bydd rhywun am gael bws o fan hyn, byddai'n rhaid iddo gerdded 4 milltir i'r llwybr bws agosaf. Byddai'n cael anhawster yn ffonio am dacsi gan nad oes blwch ffôn cyhoeddus, a gan fod y signal ffôn symudol yn wael iawn

**Prif ddeisebydd :** Janet Richardson

**Ysityriwyd am y tro cyntaf gan y Pwyllgor:** 23 Medi 2014

**Nifer y llofnodion:** 1,084 llofnod bapur a 121 a'r lein. Cyfanswm 1,205



Eich cyf/Your ref P-04-590  
Ein cyf/Our ref EH/00203/15

William Powell AC  
Cadeirydd - Pwyllgor Deisebiadau

committeebusiness@Wales.gsi.gov.uk

27 Ionawr 2015

Annwyl William

Diolch am eich llythyr a ddaeth i law ar 15 Ionawr ynghylch trafodaethau pellach eich Pwyllgor ar ariannu y Cardi Bach.

Rwyf wedi penderfynu darparu cyllid i Gyngor Sir Ceredigion i adfer y gwasanaeth Cardi Bach am gyfnod o 12 mis.

Roeddwn yn falch o nodi bod grŵp sy'n weithgar yn y gymuned yn awyddus i hyrwyddo'r gwasanaeth i drigolion lleol ac ymwelwyr. Byddaf yn gofyn i Gyngor Sir Ceredigion drafod gyda'r grŵp hwn y trefniadau y maent yn eu gwneud i ddisodli gwasanaeth Cardi Bach. A fydd ech cystal â threfnu i'r tîm clercio anfon y manylion cyswllt angenrheidiol ymlaen i'm swyddfa.

*Edwina Hart*

**P-04-590 Funding for the Cardi Bach Coastal Bus Service – Correspondence from the Petitioner to the Committee, 06.02.15**

I would like to thank the Petitions Committee for their attention to our petition.

I am delighted at the Minister's response. Money has been found to fund the Cardi Bach coastal bus service for a year but it is hoped there will eventually be money to fund it indefinitely.

I would appreciate it if the Petitions Committee were to see fit to keep this petition open until a more permanent solution has been found.

Janet Richardson

# Eitem 5.18

## P-04-539 Achub Cyfnewidfa Glo Caerdydd

### Geiriad y ddeiseb:

Mae'r ddeiseb hon yn gofyn am ymrwymiad gan Lywodraeth Cymru i sefydlu ymchwiliad cyhoeddus i'r digwyddiadau o amgylch y Gyfnewidfa Lo ac i gefnogi'r farn gyhoeddus sy'n ceisio diogelu a gwarchod yr adeilad.

Mae'r Gyfnewidfa Lo yn un o adeiladau pwysicaf Caerdydd ac yn un o'r adeiladau mwyaf godidog yng Nghymru. Yn y Gyfnewidfa Lo y cafodd y cytundeb miliwn o bunnoedd cyntaf ei wneud yn ystod oes aur ddiwydiannol y ddinas (mae hyn yn cyfateb i dros £100 miliwn heddiw). Fodd bynnag, yn hytrach na pharchu'r adeilad arbennig hwn, mae Cyngor Caerdydd yn cynnig dymchwel prif gorff yr adeilad, gan gadw dim ond y ffasadau.

Os bydd hyn yn digwydd, yna bydd y tu mewn godidog gyda'i arwyddocâd hanesyddol aruthrol yn cael ei golli am byth. Mae'r adeilad gradd 2\* rhestredig hwn yn haeddu gwell, ac mae'n rhaid i farn y cyhoedd gael ei chlywed.

Mae'r Cyngor wedi bod yn dweud ers blwyddyn ei fod ar fin cwympo. Nid oes unrhyw waith wedi cael ei wneud, ond nid oes unrhyw dystiolaeth amlwg bod yr adeilad ar fin cwympo. Mae yna amheuaeth a fyddai Cyngor Caerdydd yn gallu defnyddio pwerau adran 78 o dan y Ddeddf Adeiladu i ddatblygu'i gynlluniau, ac mae angen ymchwilio hyn yn agored.

Mae cymaint o dreftadaeth gymdeithasol ac adeiledig Bae Caerdydd wedi cael ei dinistrio.

Mae'n aneglur pam mae'r cyngor yn gwrthod gweld y gwerth o adfer y Gyfnewidfa Lo i warchod yr adeilad eiconig hwn ar gyfer defnydd a mwynhad cenedlaethau'r dyfodol.

Mae'r materion hyn o ddiddordeb mawr i'r cyhoedd, ac mae'n hanfodol bod ymgynghoriad cyhoeddus agored yn digwydd i adolygu'r materion.

**Prif ddeisebydd:** Jon Avent

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 11 Mawrth 2014

**Nifer y llofnodion:** TBC

**Ken Skates AC / AM**  
**Y Dirprwy Weinidog Diwylliant, Chwaraeon a Thwristiaeth**  
**Deputy Minister for Culture, Sport and Tourism**



Ein cyf/Our ref KS/00047/15

William Powell AM  
Assembly Member for Mid & West Wales  
Chair - petitions committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

committeebusiness@Wales.gsi.gov.uk

23 January 2015

Dear William Powell AM,

Thank you for your recent letter regarding the petition to save the Coal Exchange, Cardiff.

The Committee asks about the role of the Welsh Government now that the holding company has gone into liquidation and in the light of the building's listed status.

The Cardiff Exchange is one of the most historically important commercial buildings in Wales and its deteriorating condition is the cause of significant concern. As such, officials from across the Department of Economy, Science and Transport have been in discussion over options for the potential preservation and reuse of the building.

Any work would be carried out in association with stakeholders and would help inform and clarify the Welsh Government's future role and support for the re-use of the building.

Yours ever,

**Ken Skates AC / AM**  
**Y Dirprwy Weinidog Diwylliant, Chwaraeon a Thwristiaeth**  
**Deputy Minister for Culture, Sport and Tourism**

**P-04-539 Save the Coal Exchange – Correspondence from the Petitioner to the Clerking Team, 12.02.15**

Kayleigh

Many thanks for the reply.

It is promising that Welsh Government is discussing options for the building, although it is vitally important that this does not progress in the way Cardiff Council did in previous years, with a complete veil of secrecy and apparently no consultation with stakeholders, local residents and local business and simply appearing to follow their own pre-determined hidden agenda.

It would be assumed that, in contrast to Cardiff Council's approach, appropriately qualified consultants will be selected for the study via an open and transparent process.

I must stress that the petition's aims remain as strong as ever, and I repeat from my petition as follows:-

***This petition seeks a commitment from the Welsh Government to set up a public enquiry into the events surrounding the Coal Exchange and to support public opinion which seeks to protect and conserve the building.***

Significant funds have been spent by Cardiff Council, and apparently continue to be spent (temporary fencing, staff costs??, lost parking revenue.....etc..) It would seem that this is now well in excess of £1m of which almost none appears to have been spent on protecting the building. The ***public enquiry*** is considered essential as a means of demonstrating accountability of our politicians, rather than the current situation of apparent cover-up and protection.

I would reiterate that the offer of a visit and tour of the Coal Exchange to the petition's committee is in place and trust this offer will now be discussed on the 24<sup>th</sup> Feb, and will be taken up in the near future.

Thank you again for your ongoing assistance with this. It is greatly appreciated.

Regards

Jon

# Eitem 5.19

## P-04-573 Galwad ar Lywodraeth Cymru i Ymchwilio i'r System Lesddaliadau Preswyl yng Nghymru

### Manylion:

Rydym ni sydd wedi llofnodi isod yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i ddechrau ymchwiliad i'r ffordd y caiff y system lesddaliadau preswyl ei gweithredu yng Nghymru er gwaetha'r newidiadau a wnaed yn sgîl y Ddeddf Diwygio Cyfraith Lesddaliad ac i ystyried a ddylid cael terfyn ar godiadau mewn cytundebau lesddaliad yng Nghymru.

Gwybodaeth Ychwanegol: Cafodd y ddeiseb hon ei chyflwyno yn sgîl pryder preswylwyr ar ystâd Elba yn Nhre-gŵyr, oherwydd cynnydd o hyd at 5000% mewn rhent tir blynnyddol y mae Cyngor Abertawe yn gofyn i'r lesddeiliaid ei dalu.

**Prif ddeisebydd Residents of Elba Estate**

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 15 Mehefin 2014

**Nifer y llofnodion:** 583

Lesley Griffiths AC / AM  
Y Gweinidog Cymunedau a Threchu Tlodi  
Minister for Communities and Tackling Poverty



Llywodraeth Cymru  
Welsh Government

Eich cyf/Your ref P-04-573  
Ein cyf/Our ref LG/00080/15

William Powell AM  
Chair - petitions committee  
Ty Hywel  
Cardiff Bay  
Cardiff  
CF99 1NA

committeebusiness@Wales.gsi.gov.uk

27 January 2015

Dear Bill,

You again wrote regarding petition P-04-573 - *Call on the Welsh Government to Investigate the Residential Leasehold System in Wales.*

You asked me to respond to the issues raised by two pieces of correspondence. Byron Davies AM wrote regarding the concerns of his constituent. He actually wrote a similar letter to me, the response to which I enclose with this letter. In summary, though this matter is of a concern for his constituent and her family, it is not the same issue as the case involving the residents of the Elba estate, so should not be regarded as such.

The original petitioner, Ken Douglas, also wrote with further concerns following the decision by Swansea Council to reduce the levels of ground rents from those originally proposed. I am glad the Council have seen sense, and the ground rents have been applied at a more affordable level.

At the end of his letter, Mr Douglas calls for recourse against Local Authorities raising ground rents above an affordable or reasonable level. As I have previously stated to the Committee, the route for recourse is there, and has always been there throughout this process, through the Leasehold Valuation Tribunal.

Regards  
Lesley

Lesley Griffiths AC / AM  
Y Gweinidog Cymunedau a Threchu Tlodi  
Minister for Communities and Tackling Poverty

Bae Caerdydd • Cardiff Bay  
Caerdydd • Cardiff  
CF99 1NA

Wedi'i argraffu ar bapur wedi'i ailgylchol gan 100% pectyn 175

English Enquiry Line 0845 010 3300  
Llinell Ymholaeth Cymraeg 0845 010 4400  
Correspondence.Lesley.Griffiths@wales.gsi.gov.uk

Printed on 100% recycled paper

Lesley Griffiths AC / AM  
Y Gweinidog Cymunedau a Threchu Tlodi  
Minister for Communities and Tackling Poverty



Llywodraeth Cymru  
Welsh Government

Ein cyf/Our ref LG/05389/14

Byron Davies AM  
Assembly Member for South Wales West

[Byron.Davies@wales.gov.uk](mailto:Byron.Davies@wales.gov.uk)

23 November 2014

*Dear Byron*

Thank you for your letter of 6 November, regarding a constituent who owns the lease on a house where City and County of Swansea is the freeholder.

Whilst I have sympathy with the circumstances you have outlined, the situation is very different to that of residents of the Elba estate. There is a clause in the lease allowing the freeholder to review and potentially increase rents on a periodic basis. Your constituent is coming close to the end of her lease and has been offered a lease extension or the option to buy the freehold.

Lease extensions are a very complex area and I would suggest your constituent contact the Leasehold Advisory Service (LEASE) who can offer her free, impartial advice. LEASE can be contacted on (029) 2078 2222, or by email: [wales@lease-advice.org](mailto:wales@lease-advice.org).

LEASE, though, are not able to represent individuals, so your constituent may also want to take her own legal advice in these particular circumstances.

I will ensure LEASE are made aware of the circumstances of this particular case, though I reiterate this is not a comparable issue to the ground rent increases levied upon the residents of the Elba estate.

*Regards  
Lesley*

Lesley Griffiths AC / AM  
Y Gweinidog Cymunedau a Threchu Tlodi  
Minister for Communities and Tackling Poverty

Bae Caerdydd • Cardiff Bay  
Caerdydd • Cardiff  
CF99 1NA  
*Wedi'i argraffu ar bapur wedi'i ailgylchu (100%)*

Tudalen y pecyn 176

English Enquiry Line 0845 010 3300  
Llinell Ymholaeth Cymraeg 0845 010 4400  
Correspondence.Lesley.Griffiths@wales.gsi.gov.uk  
*Printed on 100% recycled paper*

## P-04-577 Adfer Cyllid i'r Prosiect Cyfleoedd Gwirioneddol

### Manylion:

Rydym yn galw ar Gynulliad Cenedlaethol Cymru i annog Llywodraeth Cymru i adfer cyllid i'r prosiect Cyfleoedd Gwirioneddol a ariannwyd yn flaenorol gan Gronfa Gymdeithasol Ewrop yng Nghymru, neu brosiect tebyg newydd sydd â'r un gwerthoedd â'r prosiect Cyfleoedd Gwirioneddol. Mae'r prosiect yn hanfodol i helpu pobl ifanc rhwng 14 a 19 oed sydd ag anableddau dysgu neu anhwylder ar y sbectrwm awtistig i feithrin sgiliau bywyd a bod yn annibynnol.

### Gwybodaeth ychwanegol:

Mae'r prosiect Cyfleoedd Gwirioneddol yn caniatáu i bobl ifanc rhwng 14 ac 19 oed sydd ag anabledd dysgu neu anhwylder ar y sbectrwm awtistig ddatblygu sgiliau sy'n hanfodol wrth iddynt symud i addysg golegol yn ogystal â'u galluogi hwy i symud i'r byd gwaith a datblygu sgiliau bywyd sylfaenol sy'n hollbwysig i'w hannibyniaeth. Mae'r prosiect wedi helpu dros 1700 o oedolion ifanc sydd ag anableddau dysgu neu anhwylder ar y sbectrwm awtistig ac mae wedi helpu i hyfforddi dros 1000 o fentoriaid cymheiriad gyda'r bwriad o wella integreiddio rhwng disgyblion ysgolion prif ffrwd a'r rheini sydd mewn unedau anghenion arbennig. Mae gwerthoedd y prosiect hwn yn hanfodol i'r bobl ifanc hyn a all fod ag ychydig iawn o ymwybyddiaeth, os o gwbl, o hylendid personol ac ati ar y dechrau, ac sydd, erbyn y diwedd, yn ymwybodol o'u hylendid personol ac wedi cwblhau cymwysterau Agored Cymru na fyddent wedi gallu eu sicrhau fel arall.

**Prif ddeisebydd** Aled Davies

**Ysytyriwyd am y tro cyntaf gan y Pwyllgor:** 15 Gorffennaf 2014

**Nifer y llofnodion:** 25 – Casglodd ddeiseb gysylltiedig 226 o lofnodion.



Eich cyf/Your ref P-04-577  
Ein cyf/Our ref JH/00024/15

William Powell AC  
Aelod Cynulliad dros Ganolbarth a Gorllewin Cymru  
Cadeirydd y Pwyllgor Deisebau  
Tŷ Hywel  
Bae Caerdydd  
Caerdydd  
CF99 1NA

committeebusiness@cymru.gsi.gov.uk

30 Ionawr 2015

*Anysgyl holltwr.*

Diolch am eich llythyr a dderbyniwyd ar 12 Ionawr, gan gynnwys sylwadau pellach gan Mr Aled Davies, y Deisebydd i'r Pwyllgor, ynghylch y Fenter Trawsnewid i Gyflogaeth AAA Rhanbarthol (prosiect Cyfleoedd Gwirioneddol), a gafodd gymorth drwy gronfeydd yr UE 2007-2013.

Rwy'n falch bod Mr Davies wrthi'n trafod â Chyngor Caerffili am eu cynnig ar gyfer prosiect dilynol i gael cymorth cronfeydd yr UE. Mae fy swyddogion yn Swyddfa Cyllid Ewropeaidd Cymru (WEFO) wedi rhoi sicrwydd imi eu bod yn parhau i weithio gyda Chyngor Caerffili i wneud yn siŵr bod y cais am gymorth cronfeydd yr UE yn mynd rhagddi, ac maent yn disgwyl derbyn drafft cyntaf o'r Cynllun Busnes erbyn diwedd y mis hwn.

Er fy mod yn gwerthfawrogi'r gwaith ardderchog sy'n cael ei wneud gan 'The Mix, nid yw yn rhinwedd fy'r rôl fel Gweinidog i gymeradwyo na dethol cynigion prosiectau ar gyfer cymorth ariannol yr UE. Yn sgil hynny, ni fyddai cynnal cyfarfod â Mr Davies - pe dymunai wneud cais am gymorth ariannol yr UE neu geisio cael cymorth ariannol arall y tu allan i brosiect dilynol Cyfleoedd Gwirioneddol - yn briodol ar hyn o bryd. Pe dymunai'r Mix archwilio cyfleoedd cymorth ariannol yr UE yn annibynnol i brosiect Cyfleoedd Gwirioneddol, yna byddwn yn parhau i awgrymu bod Mr Davies yn cysylltu â WEFO yn uniongyrchol am gyngor.

*In ynguru  
Jane*

Jane Hutt AC / AM  
Y Gweinidog Cyllid a Busnes y Llywodraeth