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timemark 72:38 to 84:03

screen shot of the pre-download webpage is the final page of this unofficial transcript

UPDATE APRIL 17, 2017:

Evidence document is at

<http://www.parl.gc.ca/content/hoc/Committee/412/HESA/Evidence/EV7945128/HESA58-E.PDF>

Audio link is now at <http://parlvu.parl.gc.ca/XRender/en/PowerBrowser/PowerBrowserV2/20150428/-/1/14440> beginning at timemark 16:42:22

C: = Chair  
D: = Devra Davis  
[ ] = notes from the transcriber  
ct = more than one person speaking  
(??) = transcriber is unsure of the word or spelling

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C: Next up, from the Environmental Health Trust, Ms. Davis, go ahead.

D: Good afternoon. It’s an honour to be here. And I want to thank the Committee for inviting me to talk with you today. I’m going to talk with you about the impact of electromagnetic fields on male and female reproduction from *current* devices. I want to stress that in Safety Code 6 they said they did not include some of the 140 studies because the expose used was not adequate. I’m going to skip with talking to you a great deal about my credentials; they are in the next slide; you have an opportunity to look at them later. Just to say that I did my doctorate the University of Chicago. Did three postdocs—the last one of which was a postdoctoral masters in public health at Johns Hopkins University. And for 10 years I was the Founding Director of the Board on Environmental Studies in Toxicology at the U.S. National Academy of Sciences. I also was a member of the group awarded the Nobel Peace Prize with Al Gore in 2007, for serving as a lead author on several chapters of the report for the United Nations on climate change. I was the Founding Director of the Center for Environmental Oncology at the University of Pittsburgh Institute. And I’ve received various awards, including a lifetime achievement award from Green America, as well as a National Book Award for my first book *When Smoke Ran Like Water*. I’ve worked with officials in the United Nations, in governments in India, Japan, and Canada. And I’m pleased to be here today to try to work with the Committee as it looks for advice on a very important and troubling issue. I want to stress that in my remarks today, I’m going to talk to you about experiments that have been done on male and female animals—but one of those animals happens to be human, and I’ll get to that in a moment—with currently used cellphones at current exposures. I want to stress that. So, what we see is that if you look at the studies that have been done, at the Cleveland Clinic—which I think is well known as an outstanding research centre—at the Australia National Centre for Research on Male Health, and at other institutions around the world, they have all reported similar results to what I’m going to show you here today. They’ve taken sperm from men, and they have put them into two test tubes. One tube gets exposed to cellphone radiation for two hours; the other test tube does not. Now sperm will die, because they’re not supposed to live in a test tube. But the rate that they die, and what happens to them in that two hours, tells you a lot biologically. Let’s look here at the results from Professor John Aiken—Cambridge University trained, and he is in fact a knight, so it’s *Sir* John Aiken. He showed—if you look on the top left—the control—the white box—those are the sperm that lived after

two hours with nothing being done to them. On the right—the lower black box—those are the number of sperm that lived after two hours of being exposed to a normal operating cellphone. On the other right, you see what we call a measure of motility—which is how well the sperm swim, and we need millions of sperm to make one healthy baby, so they have to be good swimmers. And then the bottom... on your bottom left, you see an indication of damage to DNA, and specifically the DNA on the mitochondria of the sperm, which is the mitochondria are the engines of the sperm. And you see that the control sperm—on the bottom left—has very little damage after two hours. The exposed sperm have almost four times more damage as measured by standard laboratory tests conducted, again, by the equivalent of the National Institutes of Health of Australia. Now, my colleague Stan Glantz, who is Professor of Biostatistics at the University of California, San Francisco, has concluded based on *all* of the evidence—and I'm just showing you here one study—that cellphones *do* in fact damage sperm. This is... and it does it at a level that does not produce heat. So the fact that Safety Code 6 repeatedly said there were no proven effects without heat, they did not include these studies. And this is, I think, a very big omission. And I would think all of you here would understand that we have to protect sperm if we want to protect the continuation and the health of the species. The next slide shows you a very interesting study that was done with a... with a laptop directly over the petri dishes of the sperm. And it was insulated so there was no heat—because we know that heat will kill sperm. And this study again shows a significant increase in damage to the sperm that had been exposed to the laptop, as opposed to the control sperm. Now, I think this is very, very important results. Now, you know, nowadays they call them “tablets,” because they belong on tables, they're tested 20 centimetres away from a body. Industry has advice about how to use these things. And I applaud them, because recently they've become more forthright with advice—that I'm going to show you at the end—about how to use these things safely. I think the government's job is to make sure people *know* what advice is buried now, including that a laptop is supposed to be kept 20 centimetres away from the body. And all of these little children with their iPads right next to their bodies, their arms aren't even 20 centimetres long. Now, the next slide is... I recently came from India, where I was working *with* the government—that is, in fact, conducting major research that is quite outstanding and I think would offer some examples to what could be done easily here in Canada. And the Indian government sponsored research on, again, mobile phone radiation—using a computer to generate the mobile phone signal. So it was a standard generated signal. And they exposed middle-aged male rats—maybe an age group of interest to this group—

(others laughing)

D: ... for cellphone radiation for two hours a day. Well, you'd rather... all right... for two hours a day for just 45 days. And at the end of that they did sophisticated biochemistry and found increased DNA, lower testosterone, and lower fertility in... when the animals were allowed to breed. And if you looked at the testis—which they did here—you see that the normal testis—you see that nice, round, regular barrier, that's what we need—cells stay(??) intact, to have a nice membrane around them. Cellphone radiation, as Dr. Herbert just said very eloquently, can damage membranes. It can disrupt the integrity of the cell. And the damage testis you see on the right comes from the animals that were exposed. The ones on the left were not. Now I want to show you a study that I think may explain some of what Dr. Herbert's results suggest. And I want to stress: what I'm showing you here is one study, there are many of this type. And they're done by, in this case, a laboratory in Turkey, sponsored by NATO. NATO sponsored this research for years, because the research is on radar. Radar, of course, is a form of microwaves. Cellphones emit microwave radiation as a two-way radio. The term used to describe that radiation is “radiofrequency energy.” It is not a precise term. It is in fact a form of... a small form of radar; it is a form of microwave radiation. And none of these terms—microwave or radiofrequency radiation—is a precise term. This study done by Turkey, and I say it's exemplary of others, took two

groups of animals and exposed one group prenatally to a computer-generated signal to mimick a current cellphone. And the results, I think, are quite stunning. If you look on the left, you will see what are healthy cells; you see all those nice round little circles, those membranes are intact, on the left, and you're seeing them magnified and the control. If you look on the right and look at the top, you see fewer cells and more damage. Now, I want to stress: this *could* explain part of what Dr. Herbert is talking about, because what we're seeing here is alterations in DNA and membrane damage caused by prenatal exposure to cellphones. We don't know what's behind this epidemic of autism; we don't. But certainly this is an important hypothesis that needs to be fully explored and not... and can be done so. Now, the next slide shows you the results of Dr. Hugh Taylor's work at Yale—which I know Dr. Herbert is quite aware of—and that study found prenatally exposed animals produced offspring with significant behavioural problems as measured by standard assays that had been replicated in animals studies—essentially a form of hyperactivity in the animals. Dr. Taylor says the animals were literally bouncing off the walls. And this could be an example. We talked about Dr. Suleyman Kaplan's work on the brain; this may be showing you the consequences of that. Finally, new data—that I'm sharing here with the Committee for the first time—comes from the Korean government. Their Ministry of Science has released these numbers showing rapid growth in smartphone addiction rate—and I need not tell you that there is an addiction going in—and an addiction classified by physicians and others as needing treatment, by the way, and a change in the number of dementia patients under age 65; when dementia is really only thought to occur in inherited cases of risk. So where are we now? We... as... as the opening comments made... several other speakers have indicated, we must act on facts and we must take precaution. Now let's talk about certainty. We asked about how certain we were about health effects. We can't be certain, because epidemiology—which I do—predicts nothing. It only proves the past. Epidemiology can tell you about the past. It cannot, and should not, be used to try to set public policy. We can't wait for proof of dead bodies or sick people, at this point. We've got to act on what we know, to prevent harm. Now, several different governments have taken steps, and I will just mention a few of them to you. In Belgium, France, and Taiwan it is against the law, literally, to give a phone to a child aged two; and in Belgium and France it's age seven. They're not allowed; there's actually a law was passed, a national law. Information on this can be found on our website. India has informally advised *nobody* to use a phone more than an hour a day, in government policy. So Health Canada's document actually supports this statement. And I commend Health Canada. And I commend Safety Code 6, because it did announce a different... it did announce that we should take special steps for children. And that is, in fact, a policy decision. Because we don't want to treat our children, or the rest of us, like lab rats in a experiment with no controls. And just to give you what the industry has done: Lloyds of London and Swiss Re will not cover... will not cover health damages from cellphones. Will not. And all the warnings appear now inside these devices. What you... the Bill that is proposed here would give those warnings and make them available publicly. We have done that on a website called ShowTheFinePrint.org. And you can find that and more information on our website and that of C4ST. In short: it's better to be safe than sorry. Be glad to take your questions.

C: Thanks very much.

[end of partial transcript]



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Event Information

General Information

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**Location** The Valour Building - 228  
**Event Date** Tuesday, Apr 28, 2015  
 3:30 PM - 5:20 PM  
 1 Hour 50 Minutes  
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**Actual End Time** Tuesday, Apr 28, 2015 5:20 PM  
**Actual Duration** 1 Hour 50 Minutes  
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