# EDUCATION AND HEALTH
# STANDING COMMITTEE

## INQUIRY INTO THE ADEQUACY AND APPROPRIATENESS OF PREVENTION AND TREATMENT SERVICES FOR ALCOHOL AND ILLICIT DRUG PROBLEMS IN WESTERN AUSTRALIA

**TRANSCRIPT OF EVIDENCE TAKEN**
**AT PERTH**
**TUESDAY, 8 JUNE 2010**

**SESSION ONE**

**Members**

**Dr J.M. Woollard (Chairman)**
**Mr P. Abetz (Deputy Chairman)**
**Ms L.L. Baker**
**Mr P.B. Watson**
**Mr I.C. Blayney**

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**Hearing commenced at 9.30 am**

**BOWER, DR CAROL**
**Researcher, Telethon Institute for Child Health Research,**
**examined:**

[ERROR in transcript: Professor Bower advised the Committee that this transcript of her evidence contains two errors on page 3:

i) the impact of FASD on babies from their mothers drinking alcohol is from moderate drinking, ie 21-40 grams of alcohol per occasion or 3-4 standard drinks NOT the 2 standard drinks she told the Committee.

ii) moderate drinking by mothers isn't associated with speech problems of children, but HIGH levels are.

Prof Bowers has provided the Committee with research paper to substantiate for her claims.]

**The CHAIRMAN**: Good morning, Carol. While you are getting settled, I will read through the preliminary statement that you are familiar with.

On behalf of the Education and Health Standing Committee, I would like to thank you for your interest in and your appearance before us today. The purpose of this hearing is to assist the committee in gathering evidence for its inquiry into the adequacy and appropriateness of prevention and treatment services for alcohol and illicit drug problems. You have been provided with a copy of the committee's specific terms of reference. At this stage I would like to introduce myself, Janet Woollard, and next to me is Mr Ian Blayney and Mr Peter Watson. Mr Peter Abetz will be joining us a little later. On my right is our principal research officer, Dr David Worth, and we have Helen from Hansard.

The Education and Health Standing Committee is a committee of the Legislative Assembly of the Parliament of Western Australia. This hearing is a formal procedure of the Parliament and therefore commands the same respect given to proceedings in the house. Even though the committee is not asking you to provide evidence on oath or affirmation, it is important that you understand that any deliberate misleading of the committee may be regarded as a contempt of Parliament. This is a public hearing and Hansard will be making a transcript of the proceedings for the public record. If you refer to any document or documents during your evidence, it would assist Hansard if you could provide the full title for the record. Before we proceed to the questions we have for you today, I need to ask you a series of questions. Have you completed the "Details of Witness" form?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee and did you receive and read the information for witnesses briefing sheet?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: Do you have any questions in relation to being a witness at today's hearing?

**Dr C. Bower**: No.

**The CHAIRMAN**: Before I ask you to state your full name, I would like to thank you for your submission to this inquiry. Together with the information you provide today your submission will form part of the evidence to this inquiry and may be made public. Possibly not now but at the end of today's proceedings, you may decide that you want to make some amendments to your submission.

Would you now please state your full name and the capacity in which you appear before the committee?

**Dr C. Bower**: Caroline Isabel Bower. I am a researcher. I am an epidemiologist at the Telethon Institute for Child Health Research.

**The CHAIRMAN**: Carol, would you like to, in effect, summarise and then add to your submission for the committee? The committee will then ask you questions.

**Dr C. Bower**: I am involved in research on alcohol in pregnancy and the effects on the foetus. It seemed important to bring that issue before the committee because alcohol has a very detrimental effect on foetal development and there is not a lot of action about that in Australia. We do not count the effects of it very well. Health professionals do not know a lot about it and yet it has devastating effects. We feel that it is really important that the messages about alcohol in pregnancy are understood and acted on.

**The CHAIRMAN**: I see that you work with a good group on this.

**Dr C. Bower**: It is quite a good one, yes; it is a national collaboration.

**The CHAIRMAN**: In terms of that group and your comments about this being an area that has had little attention, what would be the key messages that you would like to give us in relation to the work you have done with those people?

**Dr C. Bower**: The key message is that no alcohol consumption during pregnancy is the safest option—that is in fact now the NHMRC guideline—and that message needs to be heeded. A lot of women continue to drink during pregnancy and health professionals in general do not routinely ask women about their alcohol intake during pregnancy or advise them about it—that is, about not drinking alcohol while pregnant. That information is not recorded and therefore when we are looking at children with problems later, it is very difficult to know whether alcohol is an issue. That has not been considered either. There needs to be a greater awareness of the potential for alcohol to be an issue, because that is helpful in terms of not only prevention in the first instance, but also the provision of the services and support needed for children who are affected by alcohol. There is very little of that as well.

**Mr P.B. WATSON**: Carol, you say that it is very hard to get the message out. Are there other countries that get the message out better through either practitioners or through advertising?

**Dr C. Bower**: Yes. We have surveyed health professionals in Western Australia based on similar studies in Canada and the United States where health professionals are much better informed and where their practise includes giving that message to women. Overseas studies of women show that many more of them are aware of the issue—mostly in North America.

**Mr P.B. WATSON**: Do the stats show that there is an improvement in children's health?

**Dr C. Bower**: Not really, no. But that is a very difficult here because we do not count foetal alcohol syndrome, and since we have had this interest in the research —

**The CHAIRMAN**: What do you mean by "we do not count"?

**Dr C. Bower**: We do not know how common the condition is. Sorry, we do have data, but we know that it is under-diagnosed and underreported. Since we have had this research interest, and therefore the messages have been filtering out to the community—at least to the professional community—we have seen the rates of foetal alcohol syndrome go up in Western Australia. I do not think that is because there is more of it; it is more recognised and more reported.

**Mr P.B. WATSON**: Do the overseas stats show a drop in incidence when there is better education?

**Dr C. Bower**: Not really, no. There is a little bit of evidence that there is some improvement, but not a lot. It might not be the best way—I do not think that we know the best way—to get that message out.

**Mr P.B. WATSON**: Is it about small amounts of alcohol—for example, someone just has a wine with their meal—or is it about consistent drinking?

**Dr C. Bower**: There is no identified safe level. There is not a lot of evidence of severe effects being caused by the consumption of low amounts of alcohol, but there are some suggestions of problems with low amounts of alcohol. There is very definite evidence of harm being done with more—even moderate amounts of—alcohol intake.

**The CHAIRMAN**: When you say "moderate", how many standard drinks do you mean?

**Dr C. Bower**: Two or more standard drinks per occasion.

**The CHAIRMAN**: What effects can two or more standard drinks have?

**Dr C. Bower**: It can affect language development in children, and later anxiety and depression in children —

**The CHAIRMAN**: So two or more drinks per day can affect —

**Dr C. Bower**: Per occasion.

**The CHAIRMAN**: So not even per day! Two or more drinks on an occasion —

**Dr C. Bower**: On a drinking occasion, yes.

**The CHAIRMAN**: Can that drinking occasion be once a week or once a fortnight?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: So two or more drinks —

**Dr C. Bower**: It is really important. A lot of the research in this area is very messy because of how you determine what the exposure is to the alcohol.

[9.40 am]

It is often averaged so that someone sits down and drinks half a dozen or seven drinks, and if that is averaged over a week, it is only one a day, and in epidemiological terms, if we are looking at people who have an average of only one drink a day, there will be people in that group who truly do have only one drink a day and those who have seven on one occasion, so the effect might be diluted. Obviously the higher the level of blood alcohol, it crosses the placenta quite freely. There are no restrictions, so the foetus has the same alcohol concentration as the mother.

**Mr P.B. WATSON**: It goes through the placenta?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: So two drinks for a pregnant mother is binge drinking?

**Dr C. Bower**: It is not called binge drinking but we think the safest option is that if one does not drink alcohol during pregnancy, there will not be an effect. The problem is that epidemiology is a bit of a blunt instrument at the lower levels of exposure. It is a lot easier to measure effects at higher levels of exposures, but there is good experimental evidence as well to show that there are effects at much lower levels of exposure.

**The CHAIRMAN**: Did you say speech is affected?

**Dr C. Bower**: Yes, and anxiety and depression.

**The CHAIRMAN**: So children whose mothers have drunk two standard drinks on the odd occasion are more likely to be born with speech problems and to develop anxiety problems?

**Dr C. Bower**: I can provide the committee with references for that, yes.

**The CHAIRMAN**: The research? Thank you. By way of supplementary information, you will provide the committee with the research that shows the link between what some people would

consider low alcohol intake—two standard drinks—and difficulties with speech and anxiety for children.

**Dr C. Bower**: Developmental problems, yes. I think the other difficulty is knowing what a standard drink is, because it is really not very much; a glass of wine is often one and a half, or more, standard drinks.

**The CHAIRMAN**: Two, in some cases.

**Dr C. Bower**: Yes, so that is another problem, I think, for women who might think they are just having a glass of wine when in fact they are having two glasses of wine.

**The CHAIRMAN**: Not realising they are drinking two.

**Dr C. Bower**: Yes.

**Mr P.B. WATSON**: Some women do not realise they are not pregnant until well into —

**Dr C. Bower**: Yes, about 50 per cent do not.

**Mr P.B. WATSON**: Yes. How early in the pregnancy can the damage be done?

**Dr C. Bower**: Early. Birth defects are one of the effects of alcohol, and those occur very early in the pregnancy.

**The CHAIRMAN**: In the first trimester?

**Dr C. Bower**: Absolutely.

**The CHAIRMAN**: Can it affect growth? It could be the reason, possibly, why so many women abort in the first trimester.

**Dr C. Bower**: There is some evidence to show that alcohol can cause a miscarriage, yes.

**The CHAIRMAN**: With the women in the group you are working with, do you think that the social impact of alcohol on women and children has got better or worse over the past 10 years?

**Dr C. Bower**: In what way?

**The CHAIRMAN**: Does your research show that there are more women who are drinking more and more children who are being born with developmental problems because of the mother's alcohol intake? Are you seeing more now?

**Dr C. Bower**: There certainly does not seem to be any reduction in alcohol intake amongst women of childbearing age and women in pregnancy. Almost 60 per cent of women, in the study we have done in Western Australia, drink alcohol during pregnancy. They decrease their alcohol intake over pregnancy; we do not know whether that is because they do not feel like it or because they are doing it for health reasons. As I say, we do not have good measures of the effects; we do not have comprehensive measures of the effects of alcohol on children over time, so we cannot really say what is happening with the trends over time, but it is worrying that there is an increase in binge drinking, for example, and the risk of unintended pregnancy.

**Mr I.C. BLAYNEY**: Foetal alcohol syndrome is more like a collection of symptoms, is it not? Is there a genetic test?

**Dr C. Bower**: There is no test; there are criteria on which the diagnosis of alcohol exposure is based. There are characteristic facial features, growth restriction and neurological damage. Those are the characteristics.

**Mr I.C. BLAYNEY**: Can it be tested for in utero?

**Dr C. Bower**: No.

**Mr I.C. BLAYNEY**: So it is only after the child is born?

**Dr C. Bower**: Yes.

**Mr P.B. WATSON**: Is it the same effect with drugs as with alcohol?

**Dr C. Bower**: Some drugs can affect the foetus, but usually in somewhat different ways.

**Mr P.B. WATSON**: It does not go through the system in the same way that alcohol does?

**Dr C. Bower**: Some of them do, but others metabolise before they reach the baby.

**The CHAIRMAN**: I see that your team of researchers are from various universities, the Western Australian Drug and Alcohol Office and the Australian Paediatric Surveillance Unit. I notice that the Child Development Service, which is the umbrella for all community child health services, is not represented. It comes under the Department of Health. It has a centre at Rheola Street.

**Dr C. Bower**: Yes, it is.

**The CHAIRMAN**: It is not part of your group?

**Dr C. Bower**: It certainly is.

**The CHAIRMAN**: It is? It is not listed in the list of groups.

**Dr C. Bower**: Yes, we should have listed it. Not all the groups are listed, but it is certainly involved.

**The CHAIRMAN**: Your submission makes mention that earlier studies showed that only 12 per cent of health professionals in Western Australia knew the diagnostic features of FAS and 97 per cent were not prepared to deal with FAS. This committee has done quite a lot of work looking at the Child Development Service and I am wondering about this 12 per cent of health professionals. Did that include community health nurses?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: The committee is well aware of the fact that we are short at least 100 community health nurses in Western Australia. Are community health nurses involved in education with parents? What effect do you think there might be in having a decrease in numbers of nurses who very much work with young families?

**Dr C. Bower**: They provide a fantastic service and are a point of contact for providing information about alcohol and pregnancy. In fact, just a couple of weeks ago I spoke at their in-service day about alcohol. They have received materials that we have developed as a follow-up to a survey. They frequently refer children to the Child Development Service, so they are identifying children that have developmental problems, but information about alcohol consumption is not accompanying those children to the Child Development Service. I think number 11 of the projects in the submission is actually reviewing what the staff at the Child Development Service knew about alcohol in pregnancy, so we have actually surveyed them. Now we have done some training with them and there are now two paediatricians there who are trained in the diagnosis of foetal alcohol syndrome. They are attempting to set up a service. That is difficult because of constraints on funding and so on, and the diagnosis really requires a multidisciplinary team. In places where there are special centres or clinics for the diagnosis of foetal alcohol syndrome with the whole spectrum of foetal alcohol effects, they have a multidisciplinary team. It is a little time consuming, but that sort of thing does not happen in Australia at all yet.

[9.50 am]

**The CHAIRMAN**: Are you preparing, or have you prepared, a package for all health professionals?

**Dr C. Bower**: Yes, we have. We have sent it out. This is a revision. I can leave a copy with you. There is a booklet that has a lot of information and a card that we hope will be a quick reference point for health professionals. Little wallet cards are also handed out. We have evaluated the use of wallet cards; they are frequently used by health professionals. They are really for the woman. They

state that women should say no to alcohol when they are pregnant. They give the women a few things that they can say.

**The CHAIRMAN**: The committee will accept a copy of that by way of supplementary information.

**Mr P.B. WATSON**: Did you ask the Australian Medical Association to see whether it would help distribute those to doctors?

**Dr C. Bower**: The AMA assisted us in doing that; it provided addresses through a mailing house. The Drug and Alcohol Office is going to take over the production and distribution—the managing of it.

**Mr P.B. WATSON**: We are going up north to look at the Indigenous population. I am sure that there would be very little awareness of it in the north.

**Dr C. Bower**: In fact, Indigenous populations tend to be a lot more aware, it seems to me, of the problems with alcohol, particularly foetal alcohol syndrome.

**Mr P.B. WATSON**: Is that just up north or is it statewide?

**Dr C. Bower**: It has mostly been in the north.

**Mr P.B. WATSON**: I am from Albany. There are a lot of issues and problems in my area, but they do not get the same publicity as the issues and problems in the north.

**Dr C. Bower**: Aboriginal women in Fitzroy Crossing, as I am sure you know, have been very active in getting action. We have collaborated with the women of the community to look at children's development.

**Mr I.C. BLAYNEY**: Is it too early to tell whether there has been a reduction of the incidence of foetal alcohol syndrome in places in which bans have been introduced?

**Dr C. Bower**: Yes. I go back to the original problem, which is not knowing how common it was before the bans came in. The other thing is that foetal alcohol syndrome is a condition that is not usually diagnosed at birth. The median age of diagnosis is around three. It will be a while before the effects of foetal alcohol are seen. The survey that is being planned in the Fitzroy Valley should have a good measure of the prevalence of foetal alcohol syndrome.

**The CHAIRMAN**: One-third of the referrals received from child and adolescent development services come from community health nurses. Hopefully the information that is being provided to that group will assist in identifying, particularly when the government addresses the shortfalls in staffing. I refer to the 100 community health nurses that are lacking at the moment.

**Dr C. Bower**: It would be fantastic if it were able to assess whether alcohol exposure is a possible reason and if the assessment of alcohol exposure could be recorded on the midwives form.

**The CHAIRMAN**: So you would like better recording of it?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: You said that foetal alcohol syndrome is usually diagnosed at the age of three-plus and that research now shows that women who drink two standard drinks—be that once a week or once or fortnight—run the risk of having children who have speech and/or anxiety problems, which affects their development. You have presented serious statistics to the committee. Have you undertaken research to show how many women in the metropolitan area and how many women in regional areas are aware of the fact that two standard drinks—whether they have those drinks once a week or once a fortnight—can have such a devastating effect on their foetus?

**Dr C. Bower**: We have done a random sample survey of women across Australia, including women in Western Australia, of course. I would need to go back and look at that to answer the question specifically. About a third of them, as I recall—it will be better for me to get you the data—were not aware of that. I think it is in the documents that I have in front of me. About one-third were

unaware of the adverse effects of alcohol on the foetus, but whether they were aware of the level of alcohol intake, I am not sure.

**The CHAIRMAN**: I think the level is the key factor.

**Dr C. Bower**: I am not sure in what detail we asked about exposure to alcohol, but I can check that.

**The CHAIRMAN**: But the message that you are hoping to send to pregnant women through doctors, nurses and community health nurses is that as soon as they become pregnant, they should say no to alcohol.

**Dr C. Bower**: If a woman is planning a pregnancy, she should say no to alcohol and as soon as she discovers she is pregnant, she should stop drinking.

**Mr I.C. BLAYNEY**: Is it one of those things that is switched on and switched off?

**Dr C. Bower**: Are you asking whether there is a threshold or whether it has increased?

**Mr I.C. BLAYNEY**: Yes. Does more exposure make it worse?

**Dr C. Bower**: Yes, probably more exposure is worse. The other important thing is that some women will not be able to act on that message because they are addicted to alcohol. I do not think that that is as well recognised as it should be. In addition to being told that it is not a good idea to drink during pregnancy, some women will need more help and support.

**The CHAIRMAN**: Some women are addicted to alcohol and may not consider one or two drinks a day as an addiction, even during their pregnancy. Can the speech and anxiety problems that a child may develop be rectified if those problems are identified early enough? Can those problems be rectified so that the child can expect a normal growth pattern?

**Dr C. Bower**: Yes, for some of them. There are management plans and therapies to assist those who suffer from full-blown foetal alcohol syndrome to ensure that they achieve as much as they can.

[10.00 am]

In the US certainly—the situation may be the same here—these children come in contact with the justice system and their life is chaotic unless there are good structures around to provide them with appropriate support.

**The CHAIRMAN**: What I would like to know, and then I will hand over to Peter, is that you have said yes, they can be assisted, so from the research in other countries then, if they can be assisted, are there standards in terms of a child who has developed this speech difficulty because of the mother's drinking one or two standard drinks on an occasional basis during pregnancy? How many years might it take that child with even speech therapy, if the child is identified at the age of three, for the child to have the same abilities in relation to speech compared with a child from a mother whose child did not develop those speech problems because that mother did not drink?

**Dr C. Bower**: I do not know the answer.

**The CHAIRMAN**: You do not know the answer?

**Dr C. Bower**: No, but I could find out, I think.

**The CHAIRMAN**: Could you?

**Dr C. Bower**: Yes.

**The CHAIRMAN**: That would be very useful, particularly because as a committee we have been looking at child development services and what funding goes in there and what programs they are running. So we would be interested in that.

**Dr C. Bower**: Yes.

**The CHAIRMAN**: I go back to one last question for the record on training programs, and then I will hand over to Peter. Are you involved or how does your group interact with the training of medical professionals, nursing professionals, speech therapists—all the health professionals? Does someone from your group go and talk to each of these different health professionals? Has your group looked at the curriculum? How are you ensuring that the message is going through, certainly to all the health professionals who are currently students who will be the practitioners of tomorrow?

**Dr C. Bower**: We lecture to or are involved in training programs. Some of those we have not done in a very consistent way, like in saying we could provide the service because actually we cannot because we are researchers on research money and that is what we are funded to do. We are very happy to help when we can but we cannot plan a curriculum, or at least that would have to be taken on as a special activity.

**The CHAIRMAN**: So who do you think should have that responsibility then?

**Dr C. Bower**: The people who write curricula, I guess. We are very happy to provide materials, and we do. One of our group does a regular training session with nurses. As I say, I spoke very recently with child health nurses; that is, in-service training, not students. And midwives, again we have been invited to speak to midwives. We are providing information out to the health professional community. We ran a series of seminars for health professionals a couple of years ago, produced a video, and that was distributed as well.

**The CHAIRMAN**: Could we possibly have a copy of that video?

**Dr C. Bower**: Sure.

**The CHAIRMAN**: If you could provide that by way of supplementary information.

**Dr C. Bower**: You are keeping a very long list of things that I am going to provide; are you?

**Mr P.B. WATSON**: They have got a list over here.

**Dr C. Bower**: I am a member of—I am not sure if it still exists actually—the intergovernmental committee on drugs working party for foetal alcohol spectrum disorder. And through that working party we assembled some information on what was in medical student curricula around the country about alcohol. Again I am pretty sure I have got that information; I have not got it at my fingertips, though. I think I can. I am not sure actually. I would have to check whether I can release that. I expect I can.

**The CHAIRMAN**: If you are able to release that, then we would appreciate having a copy of it.

**Dr C. Bower**: Yes. So I think this information certainly could be incorporated more into training. I think in some of the surveys we have done of health professionals, it is not something they necessarily feel very comfortable about, asking about alcohol. So, there are some standard questions and it would be very good if they had training in applying those questions so that it was just a routine thing and they did not feel that women might feel anxious about it. Women, on the other hand, feel that health professionals should be asking them these things. I think it is a health professional thing that they feel anxious about asking or concerned about stigmatising those sorts of people.

**Mr P.B. WATSON**: Carol, I was interested, as Janet said before, about getting to children once it is realised that the parents have alcohol problems. But say the health professionals go to help a woman who has just had a child realising that she has alcohol problems, how early can they monitor the child to find out if some of these problems are going to be ahead?

**Dr C. Bower**: That is a really good question and I think it points to the importance of actually asking about alcohol consumption during pregnancy, because then you are already alert to the fact that there could be problems and you can keep a close watch on those children; and the earlier the intervention, the better. There is certainly evidence for that.

**Mr P.B. WATSON**: So, how early can you pick it up in some of them?

**Dr C. Bower**: Some of these kids are fractious and do not grow right from the start. They often have poor postnatal growth as well as prenatal growth, and their milestones might be delayed. There are things that you might be able to pick up quite early, and you can also provide an enriched environment that will support those kids, like it does for all children, of course, but that might be even more important in these situations.

**Mr I.C. BLAYNEY**: If there was one initiative that the state government could do, what would that be, to make a difference?

**Dr C. Bower**: I think, unfortunately, there are two and I will tell you them both anyway. I think there are two really important things. One is to have the facility to diagnose the problems and to manage the children so identified in an appropriate way. That just is not happening. The other is prevention, and that is of course —

**Mr P.B. WATSON**: That is the most important.

**Dr C. Bower**: It is the most important for future children, but what is important is that it is not doing anything for the current children; so, I really think that they deserve a guernsey as well.

**The CHAIRMAN**: Again I go back to when I had my children; the data was not there that two drinks just once a week or once a fortnight could be damaging. So for these pregnant girls and women who have a drink of alcohol and have the two drinks that could cause damage, how long does the alcohol then last? We know that different drugs have a half life and how many hours they are in the body. What is the life of alcohol in the body from those two standard drinks when the damage is occurring?

**Dr C. Bower**: The same as any other time. Alcohol is fairly rapidly excreted from the body and, as I say, it crosses the placenta quite freely, so it will be excreted from the foetus at the same rate as it is excreted from the mother. There are a lot of other factors that might be important in whether children of women who have two drinks are affected and how well nourished they are. There are all sorts of other aspects that might have an effect on that.

[10.10 am]

Also, just going back to something you said about—it has gone, sorry.

**The CHAIRMAN**: That is all right, I have those moments all the time; I need pen and paper. Take your time. Was it this question?

**Dr C. Bower**: It was related to this question but nevermind. It might come back.

**The CHAIRMAN**: If not, you can advise us by way of supplementary information when you read through the transcript.

**Mr I.C. BLAYNEY**: It is not reversible, is it?

**Dr C. Bower**: Foetal Alcohol Syndrome, no.

**Mr P.B. WATSON**: So there is no safe—some women will say, "I like a drink —

**Dr C. Bower**: Yes, I know what it was. It was the continuum. I think you asked is there a sort of threshold effect or is it a continuum. We do not really know, but it does not seem like there is a threshold effect but what affects that continuum, we are not sure. Just because you knock off a few IQ points with a few drinks of alcohol, you might not be able to detect that. It may be difficult to detect those effects but we know that at the heavier end of alcohol intake there are devastating effects and we can see some effects as you come down —

**The CHAIRMAN**: As it comes down to the two drinks. Mind you, a lot of women will think that speech and anxiety problems are devastating effects.

**Dr C. Bower**: Indeed, but again in an individual person you might not be able to say that that is the cause and effect because there might be non-specific outcomes; you cannot say that this has definitely been caused by alcohol. The last thing you want to do is make everyone anxious about —

**Mr P.B. WATSON**: That is the scare tactic.

**Dr C. Bower**: Yes, it really needs to be a message of "here is something we can do" —

**The CHAIRMAN**: Health promotion—do not drink alcohol in pregnancy.

**Mr P.B. WATSON**: But some people say, "Look, I drank during my pregnancy and my children are perfectly all right" but there are different body weights and all sorts of things.

**Dr C. Bower**: All those sorts of things and no-one says it is 100 per cent.

**Mr P.B. WATSON**: Why take the risk?

**Dr C. Bower**: You can be exposed to all sorts. You can smoke all your life and not get lung cancer, but that does not mean to say that it does not cause it.

**Mr P.B. WATSON**: That was great, thank you very much.

**The CHAIRMAN**: Carol, thank you so much. It has been wonderful having you along this morning and we thank you for your evidence before the committee. A transcript will be forwarded to you for correction of minor errors. Any such corrections must be made and the transcript returned within 10 days from the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed to be correct. New material cannot be added via these corrections and the sense of your evidence cannot be altered. However, should you wish to provide additional information or elaborate on particular points, please include, along with all the extra things we have asked you for, a supplementary submission for the committee's consideration when you return your corrected transcript.

Once again, thank you very much for coming along this morning.

**Hearing concluded at 10.13 am**

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