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## “DIET AND HEALTH : What’s in store for the Food Industry”

**SUSAN JEBB**

**Head of Human Nutrition Research, MRC**

*Mark: We are very pleased to welcome our next speaker, Dr Susan Jebb, who is head of Human Nutritional Research at the MRC. Susan’s biography is in the pack and hopefully you have all had a chance to have a read of that so rather than repeating ...*

Susan: Boring them!

*Mark: I wasn’t going to say boring, Susan! We are very much looking forward to what you have to say, so thank you.*

Susan Jebb: Thank you very much and lovely to be here with you today. I want to just say a few top line comments about the diet and health agenda and think a little bit about some of the issues which may be in store for the bakers over the next few years.

I usually start these talks with a little collage of recent clippings about food and whilst most of you would agree with me that the long term trend is for the newspapers to be dominated by food issues, it has perhaps been a bit quieter than usual of late but what’s interesting over the last few years is it is not just the media agenda but suddenly food is on the policy agenda in a way which ensures that I, and I’m sure many of you, are kept constantly busy responding to the latest consultation about the latest bright idea emanating from Westminster. So we have seen a whole series of reports and for some reason the Cabinet Office Report which normally sits in the top right has disappeared but we’ll come back to that later.

Why is there such a big emphasis on diet and health? I think that this data from WHO, the World Health Organisation, really helps to make us realise this is not just an issue for the UK or Europe but this is a truly global issue. When they produced their global health report they showed that if you look at the top ten risk factors for global disease in developed countries, six out of ten of them were diet related and so you can see iron deficiency – which I’m not going to talk much more about today, low fruit and vegetables, overweight, cholesterol of course directly related to saturated fat, alcohol, blood pressure with an element of salt consumption in there. So six out of ten of morbidity in developed countries are attributable to diet. What does this mean in the UK? Well let’s put this in context. This is not just a problem for a few people over there who need to worry about what they’re eating, this is truly a public health problem because of the scale of people affected so we have a situation in Britain today where around one in three men and women have hypertension, about two million people in the UK know they have diabetes and there are perhaps about another million who are undiagnosed, deaths from heart disease continue to be one of the biggest causes of premature death and that’s only exceeded by the incidence of cancer, and it is estimated that around a third of cancer may be related to lifestyle factors, of which diet is a large part but of course physical activity is important too. Although I am not going to focus on physical activity at all today I wouldn’t want anybody to go away not believing that physical activity is an important element in the overall mix of getting the nutritional balance of the diet right. Our energy requirements and to some extent some other nutrient requirements are determined by an individual’s level of physical activity and what’s critical, particularly in relation to obesity but actually in many other areas of health, is getting that balance right. But today I am really going to focus in on the dietary issues.

So what does all that mean in a UK context? These are figures that were put together by the Cabinet Office which looked at the premature deaths which could be avoided if we met

some of the key diet and health targets, and you really just need to focus in on the bottom line which is, if you like, the personal cost, the cost to individuals and their families, is around 12% of the deaths each year could be avoided, so 12% of the deaths each year are essentially premature if we could meet the dietary targets and that amounts to over half a million life years lost. When you put it like that, what you will perhaps begin to recognise is that this is not just a cost to individuals, this is a cost to business and to the economy too. Because these are premature deaths many of them are taking years of people's working lives and years off their economic productivity.

So if one wants to take a more financial perspective on this, of course you can do much more detailed cost calculations and I just show you those figures which were put together by the Foresight Obesity Project, based on figures collated by the Health Select Enquiry on Obesity, which looked at the economic costs of obesity on the nation and what you see here is that obesity is estimated to cost the wider economy around about £15 billion. What I should emphasise is that just over £2 billion of that is the direct NHS costs, most of these are the knock on consequences to other parts of the economy and of course as obesity increases, and assuming that present trends continue, the cost by 2050 will be a staggering £50 billion. Right now it is arguable whether the NHS can truly afford the costs of obesity related disease, I am quite sure that if present trends continue it certainly won't be able to afford that.

This is not the cost of treating obesity, this is the cost of the consequences. Think of Type two diabetes. Type two diabetes is the leading cause of renal failure, it's the leading cause of blindness, it's the leading cause of limb amputations, this is an enormous cost, a huge burden, never mind the underlying costs of treating diabetes in the hope we can prevent these complications.

So as a consequence of all of that, it is not remotely surprising that targets for improving dietary health have become critical, not just in the UK, not just in the EU but up at a global level and I've chosen to put up here the World Health Organisation targets really to illustrate that although sometimes in the UK the food industry feel like they are being particularly got at by the UK government, actually these are simply reflecting global targets and they will be very, very familiar to you: achieving energy balance, limiting energy intake from total fat but in particular swapping from saturated to unsaturated fats, that's critical and eliminating wherever possible trans fats from the food supply; increasing the consumption of fruit and vegetables but that also goes along with legumes, whole grains and nuts; limiting the intake of free sugars or added sugars and limiting salt intake. But what WHO and other health bodies have come to realise is that we cannot hope to achieve these targets simply by exhorting individuals to change their behaviour. For many, many years health promotion has relied on armies of dieticians and health promotion specialists going out there and lecturing people to change their behaviour and actually we've done that pretty well. We've done it so well that pretty much everybody in the country can tell you that we should eat less fat, less sugar, less salt and more fruit and vegetables. They have learned the message pretty well, the problem is they have not changed their behaviour to the same extent. The question is, is that just because they are totally unwilling to do that or is it because, even in part, actually they find it very difficult to put their knowledge into practice and I'd contend that that accounts for at least a proportion of the lack of change that we see in response to healthy eating messages. So if we want to drive change at a much bigger level, beyond the individual; if we want to create an environment in which it is easier for people to make healthy choices so at least the willing can actually make the change, then we have to take a slightly broader approach so increasingly you see this kind of concept being put out that we need of course to put the emphasis on changing consumer behaviour. We have got to drive more people to want to make the change and to be equipped to be able to make that change, whether that is through educational campaigns, whether it's through labelling so that they have the information they need to make healthy choices or whether it is about equipping them with practical skills, whether that's around cooking or other areas in relation to food.

We also need to look at the products that are available, the foods that we are offering to people and of course that is a big interest to the audience here today and I think we also need to consider the wider food environment and I want to quickly run through each of those areas.

If we think first about consumers. Having said that we have done a pretty good job in educating people about the core health goals, I think we recognise that we need to back that up with much more detailed information and more information on changes in behaviour which can help to support those healthy eating targets and I hope that many of you have seen the *Change for Life* campaign which started in January this year and will continue for a couple more years yet. Currently focused on families with children under eleven but the government has already signalled that next year it will be looking to push *Change for Life* out into the adult population, particularly focusing on middle aged adults who are particularly at risk and possibly with some links into the vascular screening programme. What *Change for Life* is about is not only giving people the information they need but also the motivation, the incentive to make dietary changes and really it is the biggest national campaign we've ever seen in relation to healthy lifestyles, some £75 million over three years.

The second element of consumer education which I think has been incredibly important, phenomenally important, is front of pack labelling. I say this because actually some of the changes that we have seen in purchasing have been way beyond anything that dietitians have ever achieved when they have had intensive half hour sessions with their patients. This is some data that was given to me by one of the retailers quite some time ago now and I accept was absolutely in the immediate wake of introducing front of pack labelling. I would expect that the impact has waned somewhat but I would challenge any other health interventionist to show me an individual intervention which had generated effect sizes anywhere near approaching this kind of magnitude. If we can get 5% of people to change their behaviour we think we've doing rather well, never mind up at 30, 40, 50 or more percent bigger change. So giving people the information is a critical element in allowing them to put their knowledge into practice and we need to do more of this.

Many of you will have heard of the plans to roll out the front of pack labelling or overt nutritional labelling in out of home environment and I just show you some of these examples from New York. I think these again are going to be a tremendously important step. My own personal road to Damascus experience in the States recently was discovering that a muffin contained something like 750 calories. Now actually I think probably in my heart of hearts I knew that already but being brought face to face to it at the point of purchase made a pretty dramatic impact on my purchasing behaviour and I think we will see that having ramifications not only for consumers but I hope also for industry and I really exhort you to look particularly at the calorie content in your products and to look at ways that that can be reduced and I want to talk a bit more about portion size shortly.

So let's come on now to what industry might more specifically do in relation to products. Of course the reformulation agenda is very strong and knowing that Tim Smith is going to be speaking at lunch time I am not really going to say anything more about this because this is an area in which the FSA has been doing a huge amount of work over the last three or four years and it's paying off. We've seen impressive reductions in the salt content in bread in recent years and we've seen some really interesting innovations in other areas, whether that is cutting saturated fat, a greater variety of better tasting low sugar options and beginning to see fruit and vegetables incorporated in all kinds of ways, made more convenient, added in to ready meals, all of them very supportive of healthy eating goals but I think the area in which we have seen much less progress, and which I'd argue is at least as important – perhaps on some cases even more so – is around portion size and I really want to spend just a couple of moments reflecting on some portion size, evidence really since I like to try to remember that at heart I'm a scientist and what I'm interested in is what does the evidence tell us in relation to portion size.

One of the reasons why I think portion size is so very important is that if we constrain portion size, even by just 5%, we not only make a cut in calorie intake but we cut saturated fat, we cut sugar and we cut salt all at the same time, all in one go. A great deal easier I'd argue

than huge efforts which are going in to renovation over some of the products, which actually are going to have a relatively small impact. For some product categories I would argue that the emphasis should be on portion size rather than perhaps on reformulation. That's both for technical reasons and also for quality reasons, some foods taste better with fat and sugar but perhaps we all have to learn that we need to eat a little bit less of them.

So the question is, which size is right? I thought I'd pick a sausage roll example and show you what the energy content of a whole range of different sausage rolls actually looks like. Now to put that in context, this is 20% of a woman's GDA, 400 calories out of her 2000 GDA allowance and what you can see is that the standard sized sausage roll provides more than 15% of your total energy intake for the day in a single food item, a single food item commonly consumed as a snack I would put to you. By the time you get up to the king and the giant sized, you are talking about a single food item providing more than a third, round about a third of your energy and I'd argue there are very, very, very few people who have an energy expenditure such that they can afford to spend such a large proportion of their calorie allowance on a single food item. Most of us like to eat rather more foods than that in the course of a day.

What about the evidence with portion size. The experimental evidence, done I grant you in laboratory settings but where we can control and standardise the conditions, is absolutely convincing. Larger portions encourage over consumption. If you give people a larger packet of spaghetti, they will cook more spaghetti. When they have cooked more spaghetti they'll eat more spaghetti. When you put more on the plate they'll eat more and it is an incredibly reproducible and consistent phenomenon. What's even more important is that having consumed more food, people don't report feeling any more full and at the next meal they don't decrease their intake to compensate for having had that extra large bowl of spaghetti earlier. Perhaps the best experiment of all was done using popcorn in a very experimental but moderately realistic cinema setting where they invited volunteers to come to the cinema and they gave them small, medium or large servings of popcorn and they observed how much they consumed. What they then did is repeat the experiment with stale popcorn and what they showed is that although everybody said 'this popcorn's stale and I didn't like it very much' when they gave it to them in a large portion they ate a great deal more of it than when they gave it to them in a small portion. The portion size phenomenon is very, very powerful and I would argue, underpins a phenomenon that we and others have called passive over-consumption. This isn't people who set out to eat a lot, they just eat what's there. You might argue they are not over eating but they are certainly being over served.

Here's a bit of the data. This is taking young children, six year olds given macaroni cheese for lunch. They were given a small, medium or large portion and allowed to eat as much or as little as they wanted. What you see is that as the portion size increased, the amount they consumed increased. I should say, even on the small portion they didn't eat it all so they were eating as much as they wanted to. Here's another bit of data in adults, a bit more complicated but just concentrate on the top two lines. What they did here over two days was to manipulate the portion size offered at every single meal over a two day period and what the top line shows you if you like is the 100% portion size, the second line dine is a  $\frac{3}{4}$  sized portion. People again were allowed to eat as much or as little as they wanted. Consistently at every single meal they ate less when they were offered a smaller portion and critically they didn't make up for it later, they didn't eat more at the next meal. What's interesting, as a bit of an aside, is this also shows the energy density and it shows that by reducing energy density, essentially calories per bite which you can achieve by cutting fat, cutting sugar, boosting fruit and vegetables, actually you get an additive effect with portion size. So you can get additional benefits if you do both but portion size is very, very important.

Now encouragingly we are seeing some innovation in the industry around portion size. We are seeing more of the so called 'treat sized' ranges, we are seeing calorie controlled portions and we are seeing labelling which clearly indicates the number of calories in serving – all important innovations. There is only one on this slide that I lose some sleep over and that's this one here. This for me is a classic lesson for nutritionists in be careful what you wish for. What we have been asking is that we should have smaller sized portions, we

should have mini versions. My concern is that if you have mini flapjacks, mini brownies, mini anything else in a bucket sized portion, that what one does is to drive frequency. Now that might work very well for your business model but it works less well for my public health model and although that is purely speculation I am actually concerned that we have very little research evidence which tells us how these are integrated and incorporated into people's diet and whether these are actually a great success in terms of innovation on portion size without actually having undermined some of the frequency messages.

I think it is also a reminder to all of us that there is no one approach that is going to solve this problem overnight. We need a combination of strategies and they need to be coherent and fit together. We need to work on the frequency with which people are eating, we need to work on the amount, the portion size that people are eating and we need to work on the type of food that people are consuming, and that is the reformulation agenda. That's my FAT acronym – frequency, amount and type.

That moves me finally to environment and I only want to say a very couple of words about two aspects of this. The first is that we all have to recognise that the food environment in which we live and work and do our shopping influences the food choices that we make and I think it won't be any surprise to anybody here that the food habits of people who are shopping in this kind of environment are different to the food habits of the people shopping here and we need to understand in a much, much clearer way how the food environment shapes the choices that people are making and respond accordingly.

I think the second aspect of the environment which I can't possibly avoid mentioning is the issue of marketing and of course advertising to children is the sensitive touchstone in this. This is data which was put together before the restrictions on advertising came in to place but I think it shows very, very clearly that the balance of advertising that we were all exposed to but perhaps children particularly, had no resemblance to the healthy eating guidelines that we were espousing on the one hand and what was being seen displayed on the other, was very, very different. It seems to me that if we truly want to shift societal norms we have got to look to the nature of the food that is being promoted and advertised and however uncomfortable that message may be, I think it is one that is undeniable.

That is not to say that restrictions on advertising are a simple quick fix which would change the eating habits of a nation. I have never believe that and I have never suggested that, what I do believe is that they are part of the overall mix. This comes back to my point that we have got to put strategies together so this is a sort of concept which I have lifted from some work that we did with the Foresight Obesity Project which looks at how we can combine different interventions. What we argued in Foresight is it's great if you can do focused initiatives, where you can go in and you can change something but it is naïve to imagine you can do that in every single bit of every single person's life every single time they are about to eat something so reformulation for example is going to be helpful but we cannot hope to reformulate every single product in every single bit of people's diet. So focused initiatives are great where they act but they simply don't have the scale and reach to give us the wholesale population impact that we need.

So we need a range of enabling initiatives. These are things which are mostly based around knowledge or skills, often around education and they are important to underpin and continue the impact of these focused initiatives. They are necessary but they are not sufficient on their own. What we need in the end is what we described as amplifying initiatives and in this context I think the amplifiers very much relate to the food environment because the amplifiers are the things which set the cultural and the social norms in which people purchase their food and consume their food and until we begin to address those wider issues, I think we won't be able to get the system wide change which is so necessary if we are to improve public health.

What I've given you I hope is the public health case but it seems to me that there is also a pretty strong business case as to why change has got to be high up on the agenda. Consumers do increasingly want products which are going to support a healthy lifestyle, all the consumer attitude surveys tell us that. It is also clear that trust in business is absolutely critical and consumers want their food companies to do the right thing. I'd argue that

businesses have a duty of care to their customers but certainly to the most disadvantaged groups and particularly to their employees so there is a corporate responsibility in that sense and finally, and this I guess is the stick in all of this, that without greater progress, without moving further and faster in some of the areas that I've set out, I think the pressure for greater regulation will increase and to back that up, I think it's worth reflecting on the ladder of intervention that the Nuffield Council proposed in their report on Bio-ethics in Public Health. What they basically set out was a model in which one could gradually escalate the level of intervention balanced against the risk, so the greater the risk the more justified one would be in getting further up the ladder.

Now if we think about where are we with diet and health, well I think we are beyond just monitoring the situation, we have actually done very well in providing information and we've also done pretty well in enabling choice. It's certainly possible for people now to choose a healthier diet than they might ever have wished to consume previously. The question is, is that enough? I am not yet persuaded that it is and I think because of that, the case for moving higher up the ladder is going to continue to be pressing on the agenda and I just encourage you to ponder what some of the other interventions might look like as one goes further up that ladder and would suggest to you that progress on a voluntary basis is going to be a great deal more palatable than any further regulatory intervention.

So finally, if that challenge wasn't enough, I also have to say to you that passionate as I am about moving forward on the public health agenda, what I also recognise is that that must be absolutely tied in to wider changes in the whole system of food production, supply and distribution. This is a time of wholesale change in the food industry, you don't need me to tell you that. Indeed you know it better than I do but what's important is that we take that moment of change and we ensure that as we change we embed public health goals alongside issues of food security and sustainability. Whilst food security and sustainability issues may perhaps arguably be at the top of the agenda right now, that will change over time and so if we are going to change my suggestion is absolutely in line with the Cabinet Office that we should change once and for all and try to hit these goals simultaneously. Thank you.

**[Applause]**

*Mark: Susan, many thanks for your presentation, certainly on the portion size it was very thought provoking. We are actually going to move straight into the panel session where you can put any questions to Susan so can I now ask the panel members to take their seat on the stage please and I'll hand over to Julian Hunt who will chair the panel. Thank you.*