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# SUBMISSION TO THE INQUIRY INTO OBESITY IN AUSTRALIA

House Standing Committee on Health and Ageing

***It's the sugar stupid***


Submission by:

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I was about 40kg overweight, and had struggled with my weight for as long as I could remember. I had tried most things, from reducing fat in my diet to not eating to regularly attending the gym and walking the dog. Sometimes I had had limited success (a few kilograms here and there), but it was mostly small backward steps on my ever-accelerating journey to obesity and beyond.

As I searched for answers, I happened across early work which suggested that fructose might be an unusually dangerous element in our diets. And that it had not been present in any sort of quantity until the 20th century.

I am a lawyer by training and the case against fructose started to build very quickly. Study after study seemed to be pointing to the inescapable conclusion that the fructose part of sugar was fat (and disease) inducing in animals, and in humans as well. Worse still, it seemed to be complicit in making us want to eat more food in general. I stopped eating it and the 40kg fell off like it had never been there. I was convinced more than ever fructose was guilty of a litany of crimes against humanity.

In 1910, just over one in five US adults was overweight and less than one in five of those people were obese (one in 25 for the whole population). Less than a century later, two out of every three US adults are overweight and half of those people are now obese (one-third of the whole population).

In less than 100 years, the chances of a given US adult being overweight have gone from very unlikely to highly probable, and the trend is accelerating. It took half a century to double the percentage of overweight people in the US population. Forty years later, it had almost doubled again.

If the obesity epidemic continues at its current pace, four out of five of the US Generation X (born 1966–1975) will be obese (not just overweight – obese) by age 70, in around 2036.

In Australia, our statistics are just as shocking. By the year 2000, just over 60 per cent of the Australian adult population was overweight or obese. In 2000, one in five adults in Australia was clinically obese. Just two decades earlier, only one in 14 Australian adults was obese. We aren't yet at the US benchmark of one in three, but we are eating hard to get there.

We have one primary appetite-control centre in our brain called the hypothalamus. It reacts to four major appetite hormones. Three of them (insulin, leptin and CCK) tell us when we have had enough to eat and one of them (ghrelin) temporarily inhibits the effect of the other three and tells us that we need to eat. Every piece of food we consume will stimulate the release of one or more of the 'enough to eat' hormones once we have had enough to eat.

There is one substance that will not stimulate the release of any of the 'enough to eat' hormones. That substance is fructose. Fructose skips the fat-creation control mechanism in the liver (PFK-1) and is

directly converted to fatty acids (and then body fat) without passing through either of our major appetite control gateways (insulin or CCK). Fructose is also invisible to our built-in calorie counter (the hypothalamus).

We can eat as much fructose as we can shove down our throats and never feel full for long. Every gram of the fructose we eat will be directly converted to fat. There is no mystery to the obesity epidemic when you know those simple facts. It is impossible not to get fat on a diet infused with fructose.

In 1870, the only way anyone could eat any significant amount of fructose was either to be the king of England (or a close relative), or to come into the small fortune required to buy sugar (50% fructose) or honey (40% fructose). Alternatively, you could buy a lot of fruit and juice it yourself. Whichever way you cut it, money was required.

There was no cheap or easy way to eat fructose in any kind of quantity. But 130 years later, the average American was eating 33kg of fructose every single year just from sugar, HFCS and fruit juices. And that was before you started counting consumption from honey and syrups (together a further kilo per annum).

Statistics on Australian fructose consumption are harder to come across. We don't have an equivalent of the US Department of Agriculture fastidiously compiling 'food disappearance data'. But from the data we do have, our consumption is significantly lower than in the US.

In 1999, every person in Australia ate just under 38kg of sugar. This lower amount seems mostly to be related to the fact that we drink only half as much carbonated soft drink as our American friends. But we are catching up fast. Soft-drink consumption increased by 30 per cent in the 90s alone.

Add the fructose from the sugar (19kg) to the 3.5kg we were getting from juices, and it means Australians were consuming about 22.5kg of fructose by the turn of the 21st century. It's not as bad as the 33kg the Americans were guzzling, but it's still an awful lot more than the less than zero kilos of added fructose we were eating 130 years before that.

Some diseases are directly related to increased body mass, such as osteoarthritis and fractures (due to increased pressure on joints and bones), hernia and sleep apnoea (the treatment for which is becoming a huge industry), but these are relatively insignificant when compared with the mass murderers of modern society.

The biggest killer in Australia today is cardiovascular disease (CVD). In Australia, 48,000 people will die from a CVD this year, over 30 times as many as will die in a car accident and over 300 times as many as will die from AIDS. MI was almost nonexistent as a cause of death in 1900 and caused no

more than 3000 deaths per year by 1930 (in the US). Dr Paul Dudley White, who introduced the electrocardiograph machine to America, said during a 1956 American Heart Association televised fund-raiser: 'I began my practice as a cardiologist in 1921 and I never saw an MI patient until 1928.' By 1960, there were at least half a million MI deaths per year in the US.

The prevalence of type II diabetes is now increasing so rapidly that the Centers for Disease Control have characterised it as an epidemic. The International Diabetes Federation estimated that in 2003 about 194 million people worldwide, or 5.1 per cent of the adult population, had diabetes, and that this will almost double to 333 million by 2025.

The number of people with confirmed insulin resistance was estimated at 314 million in 2003 and is expected to increase to 472 million by 2025. In less than two decades, almost one billion people worldwide will be affected by a potentially life-threatening disease that was virtually unheard of less than 30 years ago. What's worse is that these figures are likely to be underestimates (they have already been revised upwards by 11 per cent since the predictions were first made in 2001).

Pulling all of this together, we have a universal theory for what has been observed in a multitude of studies in the last three decades. Fructose increases circulating fatty acids, particularly LDL cholesterol. Increased fatty acids lead directly to heart disease and stroke. Increased fatty acid levels also reduce the effectiveness of insulin in clearing the blood of glucose. Increased blood glucose leads to type II diabetes and feeds cancer.

We spend a lot of money fixing and treating (with varying degrees of success) the damage done by fructose. The Australian Institute of Health and Welfare has developed a sophisticated data-collection and analysis methodology for health-system cost measurement.

According to AIHW numbers, in 2001, Australia spent $5.5 billion on CVDs, just short of $1 billion treating type II diabetes, another $2.9 billion on cancers, $3.4 billion on oral health (no wonder the government is keen on fluoride) and $1.5 billion on osteoarthritis. In addition to the $14.3 billion of annual direct costs, we spent at least that amount in lost productivity and other employment-related indirect costs to the economy.

In the same year, we spent only $4 billion treating injuries and $3.7 billion on mental disorders (mostly Alzheimer's and dementia treatment in nursing homes). The amount directly spent on fructose induced disease in 2001 was just a little bit less than Australia spent on defence in 2005, even after paying for some less than cheap ongoing military deployments in Iraq, Timor and Afghanistan.

Drug companies love type II diabetes in particular. In Australia, 25 cents in every health dollar spent on diabetes goes directly into their pockets. In the US in 2001, $3.5 billion was spent on drugs aimed at managing type II diabetes and it is easily the fastest-growing pharmaceutical market.

The drugs do not cure the disease; they simply slow its progression (so the patient or, in Australia the government, has to buy the drugs over a longer period). The drugs generally either stimulate the pancreas to produce more insulin or increase insulin sensitivity.

The real irony is that of all the diseases I've looked at, type II diabetes is the one that can be cured simply by not eating fructose (as long as it has not progressed to the point of destroying the islets of Langerhans). Drug companies prefer to promote a slightly different message. Their message is that you can manage your insulin resistance by stimulating the pancreas to produce more insulin. Much like fluoridation, it is an attack on the symptom rather than the cause.

Australia spends more than 60 per cent of its health-care budgets on the treatment and 'prevention' of symptoms and diseases that the evidence shows is caused by fructose. And the demand is accelerating. The largest direct beneficiaries of this spending are the drug companies. Forty cents in every dollar spent on pharmaceuticals is for drugs used in the management of metabolic syndrome (CVDs and type II diabetes), chiefly blood pressure and cholesterol-lowering drugs, and insulin and drugs to enhance the effect of insulin. Much of the remainder relates to drugs used in the treatment of various cancers.

The definition of insanity is to continue doing the same thing and expect a different outcome. We have been belting people over the head with the eat less fat, do more exercise message for four decades. And we have listened, with fat consumption (as a percentage of total calories) falling consistently and fitness emerging as the business success story of the last decade. But in that time the number of obese people in the population has tripled.

The research is in and it is unequivocal. Stop feeding people fructose and we will make a giant step towards being able to afford a health system 20 years from now. Fructose is not a vital sweetener it is just a cheap one. With almost no effort, the processed food industry could switch to glucose sweetened food quicker than it would take to draw up the legislation requiring them to do so. ***It's time to think and act outside the box on obesity.***