

# New Science for A Healthy Future

## A submission to the WA Inquiry into the role of diet in Type 2 diabetes prevention and management

### Introduction

The aim of this submission is to assist the WA Education and Health Standing Committee to achieve its objectives of preventing and managing Type 2 diabetes in its community. This submission does this by presenting information about the underlying causes of the chronic diseases plaguing our communities. The information in this submission is backed by recent scientific evidence but will generally not be immediately accepted by the wider academic and medical professionals for reasons discussed later in the submission.

This submission makes some recommendations. However, if the Committee accepts the science on the causes of the chronically poor health of Australians, then clearly it will have the intellectual horsepower to define how to tackle this problem itself.

The author is not connected with any interest groups and will not be impacted financially whichever way the Committee chooses to proceed. The author is purely motivated by the desire to make a difference to the community. The motivation is born out of seeing both his parents die terrible deaths as a result of diet-related chronic diseases.

While the underlying message in this submission is about the new science of Type-2 Diabetes and Insulin Resistance, only a lay-summary of the science is contained in this submission. Some external references are provided that allow the Committee to establish that the scientific evidence is there to support the claims. The Author anticipates (and recommends) that the Committee independently researches and documents the science before proceeding any further.

The author respectfully requests that the Committee consider how much progress the current approaches have made to curb the ever-increasing rates of obesity and related chronic diseases. Clearly, the time for doing "more of the same" has passed and new thinking is required. New ideas will take time to adjust to. Thankfully, there are now signs that acceptance of the standard approach of more exercise together with calorie control is being questioned by more and more professionals.

The author thanks the Committee for considering this submission.

### The Cause and not the Symptoms

With a third of all Australians obese, another third overweight; with half the population now destined to die of cancer; with our nursing homes and hospitals filling up with people with degenerative diseases of the brain; it is easy to become overwhelmed with dealing with all of these problems. The government could focus on building more hospitals, training more doctors, funding research into better medicines, and that may make some difference, but only at a huge cost and this would most likely be a losing battle as the health budget required would not be able to be supported by the tax payers.

What if the cause of all of these degenerative conditions could be identified and the government's effort could be focused on eliminating (or minimising) the cause. People would stop developing these diseases, they would grow up healthy, they would be able to work and pay taxes, and our hospitals and nursing homes would start to empty out.

Treating the cause would be achievable within the funding base available to government, but treating the symptoms is unlikely to be either affordable or successful.

## Underlying Causes of Obesity and Type-2 Diabetes

What if the cause of obesity and Type-2 Diabetes is already known and is supported by solid scientific studies? What if there was already an effective, safe, low-cost treatment? Imagine that all you had to do was prescribe this effective, safe, low-cost treatment to 'at-risk' people and that they would lose weight over time, their symptoms of degenerative diseases would diminish and disappear, and their health would thus greatly improve.

Which company makes this treatment? Well, surprisingly, the treatment is not a drug, it is not a medical device, it is not a patented chromosome. The treatment is food. Not just any food, but the right food and importantly, the elimination (or large reduction) of the wrong food from the diet of potential and actual sufferers.

Recent science has discovered that the simplistic obesity model of "Calories IN = Calories OUT" is fundamentally wrong and that the body's Hormones control whether food calories are stored and whether calories stored in body fat are burned. Understanding this is fundamental to making a difference in public health because if you still believe that the problem is that people eat too much or are too sedentary and thus have more "Calories IN" than "Calories OUT" then your treatment will not be effective.

We can see the failure of the treatment of the "Calories IN = Calories OUT" problem all around us. We have seen a huge rise in in the DIET industry and the number of gyms. There is good evidence that people have got the message and are eating "better" according to current guidelines and they are even moving more. Even so, we, as a population, are getting fatter and far less healthy. Clearly, treating "Calories IN = Calories OUT" is not the answer. It has failed because it is not the underlying cause.

Currently we 'tell' people that they are fat because (a) they eat too much, (b) they eat too much fat, (c) they don't do enough exercise, and (d) they don't exercise their will power enough. All they have to do is resist the urges to eat so much and do regular exercise. We are telling fat people that they are failures and that it is all their fault. Many people have tried to lose weight using the exercise, will-power and diet approach and most people fail after repeated attempts. They give up and accept that they have failed and are destined to be fat or obese and chronically ill.

We now know that the body's Hormones control how calories from food are processed and stored. Hormones are chemicals secreted by the body that can control how cells behave. While there are many Hormones involved in human digestion the major player is Insulin.

Insulin is the "food storage" hormone. When Insulin is elevated, calories from food are stored. When Insulin is lower, stored calories become available to the body to use. Importantly, when Insulin is elevated, the body's stores of calories become locked up and not accessible to the body. This is a greatly simplified description of the science but functionally correct. There are many

references that describe the new science. Some recent presentations of the new science of obesity and Type-2 Diabetes are:

- Dr. Ted Naiman - 'Insulin Resistance'<sup>1</sup>
- Dr. Jason Fung - 'A New Paradigm of Insulin Resistance'<sup>2</sup>

The author strongly recommends that readers take the time to watch the presentations which last 30 minutes each. The links are in the References.

Why do we get fat? We get fat because we have chronically elevated Insulin levels in our blood. Our bodies respond to this as previously described – we store and lock up calories – ultimately as body fat. When our body is full of stored calories, we become Insulin Resistant (and generally fat). When our body is over-full of stored calories, we become a Type-2 Diabetic (and often obese).

We do not need to reach for a drug to treat the chronically elevated Insulin level because, in many cases, Insulin can be very well controlled by what we eat. If we avoid foods that cause elevated Insulin, then Insulin levels drop, calories in our bodies are no longer locked-up and we can lose weight. As we lose weight, we empty out our calorie storage and generally regain Insulin sensitivity – we stop being a Type-2 Diabetic – we stop being Insulin Resistant.

Now we come to the cause. If we eliminate the dietary elements that cause the chronically elevated Insulin levels then we have eliminated the fundamental cause of both obesity and Type-2 Diabetes.

The primary cause of both obesity and Type-2 Diabetes is a high-carbohydrate diet.

Obviously, this must be wrong. It can't be that simple – can it? Well, yes, it really is that simple. Carbohydrates in the diet stimulate the secretion of Insulin. Remove the carbohydrates and Insulin is reduced. Scientific fact.

We have become a fat and obese society because, over decades, we have increased our consumption of carbohydrates and also greatly refined those carbohydrates to cause them to have an even greater effect on our Insulin levels. Public nutrition policy of the 1970's era steered people away from animal products (which contained 'bad' saturated fats) and towards 'healthy' carbohydrates. Well, we are now reaping what we sowed as the unintended consequences of that policy are chronically elevated Insulin levels, obesity and Type-2 Diabetes. Science has now shown that saturated fats were never a public health problem<sup>3</sup> and that refined carbohydrates actually are a critical public health problem.

The treatment for the cause of obesity and Type-2 Diabetes is to enact policies that promote a diet that is low in refined carbohydrates and that discourage the consumption of refined carbohydrates.

## Industry Politics

If the answer is so simple and so clear, then why isn't it just being adopted? Good question.

Food is BIG business. Even minor changes in what we eat can significantly affect company profits. History has taught us that big companies generally do not work in the public interest – rather they

## What are Refined Carbohydrates

will take measures to maintain and expand market share and shareholder profits. We only have to look at the measures that the Tobacco industry took to confuse the science and maintain their profits.

Recently, old evidence has emerged that the Sugar industry paid scientists to effectively shift the blame for heart disease off sugar and on to saturated fat<sup>4</sup>. Analysis of the study and its findings were well covered in the New York Times in September 2016<sup>5</sup>. The New York Times has also published an article that “revealed that Coca-Cola, the world’s largest producer of sugary beverages, had provided millions of dollars in funding to researchers who sought to play down the link between sugary drinks and obesity.”<sup>6</sup>

Even as early as 1972, a British professor named John Yudkin was ostracised and hounded to his deathbed for raising concerns about sugar in a book titled “Pure, White and Deadly”<sup>7</sup>. The industry treatment of Yudkin served as a warning to other doctors and scientists seeking to go against Big Food Industry.

There can be little doubt that the big commercial food industry stakeholders are actively engaged in protecting their business and are funding “science” that sets out to support their products and/or create a state of confusion (“the science is unclear”).

Insulin is BIG business. Dr Jason Fung recently described the Diabetes industry as follows “By 2015 sales of diabetes drugs had reached \$23 billion...”<sup>8</sup>. Big pharmaceutical companies have a vested interest in maintaining their consumer base of sick, obese patients.

The current use of Insulin to treat Type-2 diabetes illustrates how Big Industry influences science and clinical practice. We know that Insulin is the “calorie storage” hormone. Type-2 diabetics generally don’t produce too little Insulin, they are already producing dangerously high levels of Insulin. They have just run out of space to store more calories as fat. Using externally administered Insulin to try to push even more fat into already overflowing fat stores does not make sense to the author. “By 2015 sales of diabetes drugs had reached \$23 billion”.

Personal Reputation and Professional Standing. Many scientists and nutrition experts have promoted high-carbohydrate diets for many years and their reputation, status and their financial position is effectively linked to the old paradigm. The recent trial of Tim Noakes in South Africa<sup>9</sup> has clearly demonstrated that this group will take active measures to protect their reputation, status and financial position.

Closer to home, Tasmanian Surgeon Gary Fettke has been ‘bullied’ and gagged by AHPRA<sup>10 11</sup> for giving dietary advice to his obese patients<sup>12</sup>. He was dismayed by the number of amputations he

Carbohydrates are one of the main sources of food calories, the others being protein and fat. Both proteins and fats are also essential building blocks used to construct and repair the body whereas carbohydrates are essentially just fuel.

The carbohydrate-rich foods that cause elevated Insulin levels are the starchy and/or sweet (sugary) foods that contain concentrated and refined carbohydrates.

These include any food based on cereals, wheat, grains, starchy root vegetables or sugar.

Foods such as vegetables contain carbohydrates but do not have such a big effect on insulin levels due to the much lesser amount in each serving.

Some fruits have been ‘bred’ over decades to be very sweet or very starchy and do have a significant effect on Insulin levels, particularly when served in concentrated forms such as juice. Yes, fruit juice can be bad for you.

was performing: “Twenty years ago in northern Tasmania I was treating diabetes complications with amputations of toes, heels, feet and below the knee once every five to six months. Now I am amputating every week and this year, twice some weeks.”

Reputation of Professional Bodies. Many professional bodies provide advice that is clearly at odds with the new science of the dietary causes of obesity and Type-2 Diabetes. For example, diabetes advice and support groups are still promoting lots of carbohydrates in sufferer’s diets. Clearly their reputation would suffer significantly if the advice was shown to be doing even more harm.

Any government efforts to change consumer dietary preferences will be strongly resisted by these and many other vested interest groups using multiple layers of defensive tactics. It is important to be upfront and acknowledge that this “interference” will occur and will probably be repackaged as support and assistance. The public good will not be assisted by these vested interest groups.

## The Tide Is Turning against Carbohydrates

Despite the best efforts of Big Industry and other vested interest groups, there has been progress on bringing our diets back to where they belong. One of the worst carbohydrates is refined sugar. Initially, back when Robert Lustig<sup>13</sup> called out the dangers of sugar in our diets, he was attacked on all fronts. Now, it is becoming harder to find people who do not believe that refined sugar is bad for you.

## Implementation Difficulties

While the dietary cause of chronic diseases such as obesity and Type-2 diabetes is now well established, shifting consumer behaviour to eating significantly fewer carbohydrates and more protein and fats will not be simple nor straightforward. Some challenges are identified below.

Shelf-Life of Foods. Carbohydrates generally have a long shelf life and most don’t require refrigeration. Proteins and Fats generally have a short shelf life and require refrigeration. This is a significant issue for remote (aboriginal) communities where food is shipped in and power to run refrigeration is supplied by diesel generators.

Cost and Affordability of Food. Carbohydrates are cheap – very cheap. A person can make a pasta or rice meal for a few dollars. Making a meal of protein and fat will be significantly more expensive. Yes, the carbohydrates have the large added healthcare costs down the track, but this is unlikely to affect purchasing decisions of people on lower incomes.

Industry Impact. Many industries, some very important to Australia, would be impacted by policies that shift consumption away from refined carbohydrates.

- Farmers that grow sugar or grains would likely be badly affected unless alternative uses or markets for domestic products are found. Flow on affects will be significant to other areas of the supply chain.
- Additional meat production would require land to be repurposed or existing exports redirected to domestic markets.
- Additional vegetable production would also require land to be repurposed.

Population sustainability. Australia would probably be able to sustain its own population via domestic production of foods based on protein and fats, though the studies would have to be done. Worldwide is a different issue. It is extremely unlikely that the world population can be sustained

without the consumption of carbohydrates unless new food production technologies are developed. That doesn't make carbohydrates a healthy choice, but it may be the only choice for some countries' populations.

**Social movements.** Many social movements have a strong bias against protein and fat sourced from animals. Animal rights groups would resist the raising and slaughter of more meat animals. Environmental groups would argue that more animals would result in more CO<sub>2</sub> and methane and this would affect the climate.

**Religious Prohibitions.** Some people have religious views that would resist more (or any) consumption of animal proteins.

**Food Preferences.** Many people can be very defensive of what they eat and will strongly resist changing. Try telling someone that they should avoid bread, potato chips or soft-drink and they will make take your arm off.

**Convenience.** High carbohydrate foods are much more convenient than low carbohydrate foods. With many, you only need to open a packet and you can start eating. Many low-carbohydrate foods require cooking. Our modern 'busy' lifestyles will cause some consumers to choose high-carbohydrate foods – at least for some meals.

None of these factors change the fact that refined carbohydrates should not be consumed if you want to avoid obesity and Type-2 Diabetes. They will, however, make the process of addressing the cause of obesity and Type-2 Diabetes more challenging.

## Particularly Disadvantaged Communities

### Aboriginal and Torres Strait Islanders.

Prior to the arrival of white European settlers, the indigenous peoples of Australia and Torres Strait lived a hunter gatherer existence and did so continuously for tens of thousands of years<sup>14</sup>. By all accounts the indigenous people were very healthy and fit<sup>15</sup>.

It is highly likely that the harsh reality of natural selection resulted in a people with a genetic makeup ideally suited to this hunter gatherer existence. However, the indigenous genome has not been exposed to natural selection for life on a western diet – nor could it be (or should it be!) with modern medical intervention. In indigenous Australians, we have a people that due to their very low carbohydrate hunter-gather existence, have become very sensitive to the effects of Insulin. This makes sense as a survival trait, as any carbohydrate (= energy) that was found would be stored and locked away until those carbohydrates became scarce again.

It is only since we have introduced our indigenous peoples to western diets that their health has deteriorated to its current woeful state<sup>16</sup>. Diets high in carbohydrates likely have a pronounced effect on indigenous peoples with a hunter gatherer genome. This leads to chronically high Insulin levels and the resultant chronic diseases at 5-7 times the rate of that found in people of western origin.

Aboriginal and Torres Strait islanders often reside in disadvantaged and/or remote communities. Government has struggled to provide adequate services to these communities for various reasons outside the scope of this submission. Suffice to say that many indigenous people do not have access to quality foods high in protein and fat because of financial and geographic disadvantage. Many live on cheap, sugary and starchy foods that behave like a slow-acting poison in their system. They are

unintentionally killing themselves through their diet. [Yes, this is a strong statement to make but demonstrably true in the author's opinion.]

The government provides health care to these communities at a huge financial cost – currently treating the symptoms (diabetes, heart disease, kidney failure etc). There is a strong financial (and moral) incentive for government to act to correct the underlying cause of this sad situation. The recommendations section below contains specific recommendation for indigenous people.

### Socially Disadvantaged Areas of Western Australia

If you understand the new science of obesity, then you can see why this is so. Financially disadvantaged people will generally, and necessarily, shop for cheaper foods because of their limited budget. As cheap foods are generally high in carbohydrates, their consumption leads to obesity and associated chronic diseases.

A number of general recommendations and some specific recommendations are made below that address this group of people.

### Looking Beyond Diabetes

The author acknowledges that the Committee is primarily focussed on the disease of Type-2 diabetes, however, the same government programs recommended below could deliver significant additional health benefits because many “western diseases” are the result of the same poor diet advice we have been following for the last 4 decades. Some of the highlights are discussed below.

Prevent Vascular damage, atherosclerosis, blindness and general organ failure. If you have a diet (like the standard western, high-carbohydrate diet) that promotes chronically high insulin levels, then you have a diet that promotes degenerative changes to the body's blood vessels<sup>17 18</sup>. The small/fine blood vessels are affected the most (due to the fine tolerances), but all will succumb eventually. While you may initially think that the real concern is with major blood vessels, think about what the finer ones do:

- You brain cells are supplied by a huge network of fine blood vessels – what happens if you stop feeding parts of your brain?
- All organs are hugely vascular and organ failure is a common condition associated with insulin resistance and diabetes. Kidney failure is just such a common condition, particularly in our indigenous populations.
- What about the retina of the eye – tiny blood vessels that, if damaged, will lead to loss of eyesight.

Prevent Alzheimer's. The next big health epidemic, beyond Type 2 diabetes, is that of degenerative brain diseases that are all associated with chronic high insulin levels<sup>19</sup>. Many in the scientific community have started to refer to Alzheimer's disease as Type-3 diabetes.

Prevent incidence of many cancers. Many cancers have a strong association with chronically high insulin levels<sup>20 21</sup>. If you remove the high insulin levels you can expect a significant reduction in new cancer cases, as well as an increased chance for survival for those that do get the disease.

## Recommendations

### General Recommendations

Little or no progress can be made unless the actual cause of the problem is acknowledged by government. Acknowledgement enables new policies to be developed to treat the cause and not the symptoms. As there are many professional people who are wedded to the old way of thinking: (a) “Calories IN = Calories OUT” and (b) fat is bad and (c) carbohydrates are healthy, a number of steps must be taken to re-educate them and have them working cooperatively to address the problem.

The current situation is that the state government is responsible for dealing with the chronic health problems from ever tighter health budgets. However, the dietary guidelines that currently support high-carbohydrate consumption are federally delivered from the National Health and Medical Research Council (NHMRC) and the Department of Health and Ageing. Clearly, any progress would be problematic without changes being endorsed and promoted at the federal level.

Recommendation 1. That government (state/federal) establish a scientific group, that is demonstrably independent of vested interest groups and commercial funding, to establish the scientific foundation on which action can be taken.

There is a strong scientific basis for the need to significantly reduce carbohydrate consumption. However, it needs to be brought together into a government sponsored and endorsed document.

Additionally, caution must be exercised to ensure that the status-quo on dietary advice is not allowed to prevail through organisational inertia and closed minds.

There may be advantages to the state government sponsoring the initial work of establishing the scientific basis and then working with the federal government to overcome any resistance in federal departments.

Recommendation 2. That government (state/federal) develop an evidence-based document that presents the scientific basis for dietary treatment of chronic diseases such as obesity and Type-2 diabetes.

Recommendation 3. That state government undertake a program of re-education of healthcare professionals to ensure that they deliver services in a manner that is consistent with the new approach to treating chronic diseases such as obesity and Type-2 diabetes.

Recommendation 4. That state government undertake a program of re-education of education professionals to ensure that they educate students on the actual causes of chronic diseases such as obesity and Type-2 diabetes and how dietary choices can deliver a healthy future for them.

Recommendation 5. That the government undertake a program to educate the public, in general, on the actual causes of chronic diseases such as obesity and Type-2 diabetes and how dietary choices can deliver a healthy future for them.

Recommendation 6. That government (state/federal) develop policies that discourage the consumption of refined carbohydrates. One option would be to build in the downstream healthcare costs into the purchase price via appropriate taxation measures.

Recommendation 7. That government (state/federal) develop policies that support the uptake of higher-cost food alternatives to the cheap carbohydrates. For example:

- a. Low income supplementation

- b. Tax incentives to lower production (and supply) costs

Recommendation 8. That government (state/federal) develop policies that discourage the consumption of cheap carbohydrate foods.

### Recommendations specifically for Aboriginal and Torres Strait Islanders

Recommendation 9. That government (state) provide targeted education programs to all remote indigenous communities to enable them to understand the effect of carbohydrate consumption on the health of themselves and their children.

Recommendation 10. That government (state) provide additional support to remote indigenous communities to enable them to have access to foods that are appropriate for their genetic disposition. The type of support to be provided should include:

- a. remote area power systems to support refrigeration requirements;
- b. community refrigeration systems for their perishable non-carbohydrate food;
- c. logistic support to ensure that perishable foods are made available in sufficient quantity and quality to meet the communities' needs; and
- d. support to establish local businesses to locally supply some fresh foods and meats.

### Recommendations specifically for Socioeconomically Disadvantaged Areas of Western Australia

Recommendation 11. That government (state/federal) consider additional support to welfare recipients to enable them to access more expensive foods that are lower in refined carbohydrates. This could be via cashless welfare cards or other means to ensure that additional support actually goes to its intended use.

### Recommendations specifically for Children

Giving children a healthy start. Giving children a healthy start in life, begins with ensuring that both the children and the parents are educated on the effects of high carbohydrate consumption.

Recommendations 4 and 5 address this topic adequately.

## What about Exercise?

No doubt a controversial position, but the author of this submission does not support a primary focus on exercise. While exercise is, without doubt, good for health and fitness, its ability to change the health of the general public is significantly less than that which a change to a low carbohydrate diet can accomplish. A focus on exercise ("Calories OUT") is a hangover from "Calories IN = Calories OUT" thinking and exercise is not very effective because obesity is a hormonal issue and must be treated as such.

Certainly, if the government does not adopt the dietary recommendations in this submission, then ingraining daily exercise in the lives of high-carbohydrate consumers is an important way to partially counteract the effects of the poor diet. However, experience has proven that gym membership does not correlate with lower population obesity levels.

## Low-hanging Fruit

As discussed in this submission, the process of shifting eating patterns will have its difficulties and take some time. However, there are some low-hanging fruit that will provide easier and quicker wins:

**Sugar.** Sugar is a pure, highly refined carbohydrate. Sugar consumption has risen a lot in recent years as more sugar is added into foods and beverages to make them hit the “bliss point”<sup>22</sup> and boost sales. The Australian Health Survey<sup>23</sup> found that in 2011-12:

- average sugar consumption across all Australians was 60 grams per day (14 teaspoons)
- teenage males consumed much more – 92 grams per day; with the top 10% consuming at least 160 grams per day of sugar
- “the majority (81%) of free sugars were consumed from the energy-dense, nutrient-poor ‘discretionary’ foods and beverages.”
- “Just over half (52%) of free sugars in the diet were consumed from beverages, with the leading beverages being soft drinks, electrolyte and energy drinks (19%), fruit and vegetable juices and drinks (13%) and cordial (4.9%). “
- “The leading foods were confectionary and cakes/muffins (each contributing 8.7%) “

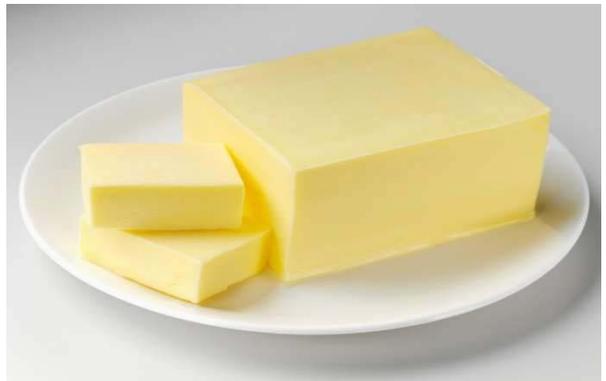
Taking sugar out of the diet really is the low-hanging fruit and will allow government to make quick inroads into treating the cause of obesity and Type-2 Diabetes.

Sugar is already “on the nose” and generally accepted as “bad for you”. Public policies that limit consumption will be much easier to implement and could serve as a stepping stone towards limiting other carbohydrates.

Recommendation 6 above is particularly appropriate to sugar, though all recommendations have their place in removing sugar from the diet, as sugar is just a refined carbohydrate (though arguably the worst offender).

## What Does a Low Carbohydrate Diet Look Like?

Take out the refined, concentrated sugars and starches and you are left with real food.



The author considers it quite likely that the Committee will receive feedback that eating this sort of food is dangerous and will be shown “science” that supports these claims. Pure, common sense

should be enough to show that the foods that our ancestors ate before there was Big Industry are the foods that we are genetically programmed for and what we should be eating.

## Conclusion

The key message of this submission is:

Making significant progress in public health requires a new understanding of the reasons why we get fat and subsequently sick.

If we continue with the old paradigm of “Calories IN = Calories OUT” then we will inevitably fail to improve the health of Australians.

The author highly recommends that readers invest 30 minutes watching the first presentation by Dr Ted Naiman and a further 30 minutes on the second presentation by Dr Jason Fung. These two presentations stand out to the author as being able to lay the foundation of understanding of the science. You may well have your “light bulb” moment and all will become clear.

It is clear from the Western Australian government’s information page about this Inquiry<sup>24</sup> that the Committee has already acknowledged the potential role that a “restrictive” diet could play. The author commends the Committee for having seen past the current dogma and for being open to considering new approaches. Clearly the time for “more of the same” is past, though the Committee will no doubt receive strong representation from vested interest groups to do exactly that.

The only way to make a real difference in Australians’ lives is to adopt an approach that treats the cause and not the symptoms. Eliminate (or greatly reduce) the cause, and the health burden will ease over time. The results will take some years to manifest but they will come if the government is actively persistent in delivering programs that support a real healthy diet for Australians. The alternative is a social and financial disaster.

In closing, the author again thanks the Commission for considering the information contained in this submission.

(SIGNATURE)

Ronald W Bareis

3<sup>rd</sup> September 2017

## About the Author

Ron Bareis, BE (Hons) RMIT, is a retired Professional Engineer. Ron spent nearly 14 years in the military undertaking diverse tasks such as Test & Evaluation of military aircraft and Software Engineering. Ron spent a further 6 years in government working in the Intelligence Community before holding various engineering roles in the private sector for further 10 years. Before retiring, Ron, as a General Manager within Telstra, developed and led a cyber operations team and a secure communication operations team.

During his career, Ron was always noted for his ability to solve complex problems and to get things done. Ron does not like to sit by and wait for the solution.

Ron lost both of his parents to diet-related degenerative diseases and witnessed first-hand the terrible suffering involved for the patient and for family and friends.

Ron has researched health and nutrition for 15 years and has developed a good understanding of the science, though he is not a scientist, nor a doctor.

Ron currently resides near Bundaberg, Queensland – one of the most socially disadvantaged towns in Queensland. Bundaberg also sits near the top of the list for the most Obese town in Australia.

## Acknowledgements

While this submission is entirely the work of the author, the author acknowledges that the contents of this submission have been built on the hard work and dedication of many medical and scientific professionals, some of which are listed as resources below.

## Disclosures

The author maintains a Facebook page and a self-funded website “Ron Says So”<sup>25</sup> that promotes a low-carbohydrate lifestyle to his friends and family.

Ron is personally motivated to see changes in public policy that will improve the life of the members of his community. He has no other motivations, funding or incentives.

## Resources

The Commission might find it useful to call on experts in the field of low carbohydrate as a treatment for chronic diseases. The following abridged list of experts may be able to assist, though the author has not approached them individually.

- a. Robert H. Lustig, MD, UCSF Professor of Paediatrics in the Division of Endocrinology was among the pioneers of understanding the role hormones play in human dietary diseases. He particularly highlighted the damaging effects of sugars, particularly fructose.
- b. Associate Professor Grant Brinkworth PhD, MBA, is currently a Principal Research Scientist in Clinical Nutrition and Exercise Science at CSIRO – Health & Biosecurity. He has a PhD and expertise in diet, nutrition and exercise science and is an internationally in nutrition, particularly in the area of dietary patterns and lower carbohydrate dietary patterns for weight management and metabolic health. He has more than 16 years experience leading large-scale, multidisciplinary clinical research teams and studies evaluating the effects of dietary patterns, foods, nutritional components and physical exercise on weight loss, metabolic disease risk management, and physical and mental function and performance in healthy and clinical populations. A/Prof Brinkworth has particular interests in developing effective lifestyle solutions for achieving optimal weight, metabolic health and diabetes management and understanding the role of lower carbohydrate dietary patterns for health management.  
A/Prof Brinkworth has published over 70 peer-reviewed research papers on the topic of diet and lifestyle management of obesity and related diseases and is a regular invited speaker at national and international meetings on this topic. He was a contributing author to the CSIRO Total Wellbeing Diet book series aimed at minimizing health risk through better nutrition and lifestyle change that have collectively sold over 1 million copies in Australia.
- c. Theodore Naiman MD is a Family Medicine physician who has used diet and exercise to treat thousands of patients.
- d. Dr Jason Fung grew up in Toronto, Canada and completed both medical school and an internal medicine residency at the University of Toronto. He headed to the University of California, Los Angeles completing his fellowship in nephrology (kidney disease specialist). He now has both a hospital and office based practice in Toronto, and is the current chief of the Department of Medicine at The Scarborough Hospital, General Division. He established the Intensive Dietary Management Program to provide patients with a unique treatment focus on diet rather than medications. The program treats conditions related to the metabolic syndrome, including obesity, type 2 diabetes, obstructive sleep apnea and fatty liver with great success. It now provides guidance both locally and to international patients from as far as New Zealand to the United Kingdom to South Africa.
- e. Dr. JEFF VOLEK is an Associate Professor in the #1 ranked Department of Kinesiology at the University of Connecticut where he teaches and leads a research team that explores the physiologic impact of various dietary and exercise regimens and nutritional supplements. Dr. Volek's most significant line of work has been a series of studies performed over the last 15 years aimed at better understanding what constitutes a well formulated low carbohydrate diet and their impact on obesity, body composition, adaptations to training and overall metabolic health.
- f. Dr. STEPHEN PHINNEY is a physician scientist who has spent 35 years studying diet, exercise, fatty acids, and inflammation. He has held academic positions at the Universities of Vermont, Minnesota, and California at Davis; and leadership positions at Monsanto, Galileo

Laboratories, and Efficas. He received his MD from Stanford University, PhD in Nutritional Biochemistry from MIT, and did post-doctoral research at Harvard. He has designed, completed, and published data from more than 20 clinical protocols involving foods, diets, exercise, oxidative stress, and inflammation. His recent work in the private sector has resulted in several issued and pending patents. He has authored more than 70 peer-reviewed papers and book chapters on a wide variety of topics, including the effects of diets and specific nutrients on inflammation, the interaction between diet and exercise and their effects on obesity, body composition, physical performance, and cellular membrane structure.

- g. Dr Eric C. Westman, MD, MHS, and Chair of the KE Diet® Scientific Advisory Board, is the author of *A Low Carbohydrate, Ketogenic Diet Manual*. He often recommends this “No-Sugar, No-Starch Diet” to his patients at Duke Lifestyle Medicine Clinic, where he serves as Director. Dr. Westman’s low-carb, ketogenic eating plan is also used by Dr. Oliver Di Pietro, founder of the 10-day KE Diet, as a follow-up program for his patients who have undergone one or more cycles of the KE Diet.
- h. Dr Timothy David Noakes is a South African scientist, and an emeritus professor in the Division of Exercise Science and Sports Medicine at the University of Cape Town. He is also a member of the National Research Foundation of South Africa, who list him as one of their highest-rated members. He is the author of several books on exercise and diet. He is known for his support of a low-carbohydrate, high-fat (LCHF) diet, as set out in his book *The Real Meal Revolution*.
- i. Gary Taubes is an investigative science and health journalist and co-founder of the non-profit Nutrition Science Initiative (NuSI.org). He is the author of *The Case Against Sugar* (2016), *Why We Get Fat and What to Do About It* (2011) and *Good Calories, Bad Calories*.
- j. Nina Teicholz is an American investigative journalist, science writer and author. She is noted for her New York Times and International bestseller *The Big Fat Surprise: Why Butter, Meat & Cheese Belong in a Healthy Diet*. It documents the way industry has shaped food and nutrition policy worldwide.

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