Herman Brot Low Carbohydrate Bread Embraces the Health of a Nation

– Julie Albrecht, Consultant Dietitian, B.Sc. Nut. Diet. A.P.D.

Obesity is a complex disease that now transverses the globe throughout all cultures and socioeconomic levels. It is a disease of the modern age, that is influenced by our *life-styles* and the cultural, economic, socio-economic, behavioural and environmental drivers that influence our decision making.

The prevalence of overweight and obesity has increased particularly over the last three decade and from times long ago where the cultural view of carrying extra body fat was seen as advantageous in times of increased labour demand and food shortages.

In 2011-12 the prevalence of overweight and obesity in Australian adults was 60% and more than 25% of this group were classified as obese (1). A report, in 2009 by the Organisation for Economic Co-operation and Development (OECD), predicted that there would be continued increases in overweight and obesity levels across all age groups during the next 10 years to around 66% of the population (1). Disturbingly in 2010, 43 million preschool children throughout the world were overweight and obese and 92 million were at risk of becoming overweight. With current trend, it is envisaged that this will increase to 60 million of the preschool population by 2020 (3).

At current rates by 2025, over two thirds of Australians will be overweight and a third will develop type 2 diabetes during their lifetime (1). At present 280 Australians develop diabetes every day and over 100,000 Australian's have developed diabetes in the past year, with almost 1.1 million Australians being diagnosed with diabetes (2). The total number with diabetes and pre-diabetes is estimated at 3.2 million (2).

Type 2 diabetes, with associated co-morbidities, has been always considered a serious health condition that people have to manage throughout their lives and that would inevitably worsen over time (6). However, research undertaken in the UK, in 2011 has shown that type 2 diabetes is not inevitably progressive and life-long (6).

Obesity is a complex disease which does not have to be inevitable, though rather can be preventable through *life-style* behaviour change. One of the key components to the prevention and management of this disease is to influence the key stakeholders with respect to cultural, economic and socio-economic components which are the motivational drivers of our behaviour.

Dietary behaviour is influenced by our *life-styles*, which has resulted in a higher consumption of food volume, and a greater consumption low nutrient higher energy foods and beverages.

The area of weight loss and weight management continues to be a hot topic of discussion with the modalities of management tending to cycle over time. One aspect that is common across all modalities is that weight and body fat loss occurs when an energy deficit is created. Ideally, weight reducing regimen should fall under the umbrella of the optimization of health and well-being from a population and individual perspective. This is demonstrated in our Australian Dietary Guidelines (4).

Research has identified that diet is the single most important behavioural risk factor that can be improved to have a significant impact on health (5). The Australian Dietary Guidelines, through two systematic reviews have supported that the higher quality of diet was associated with a 10 – 20% reduction in morbidity (4).

The Australian Dietary Guidelines have identified that most of the burden of disease is due to poor nutrition in Australia is association with an excess of energy-dense and relatively nutrient-poor

foods, high in energy, saturated fat, added or refined sugars or salt, and or an inadequate intake of nutrient dense foods including vegetables, fruit and wholegrain cereals (4).

Over time, research and clinical practice have demonstrated to us that no one management regimen fits all, identifying that there are many modalities that are effective. The key here is to be guided by credible research that enhances people's ability to be effective in their weight loss and health management.

With respect to diabetes, researchers in the UK in 2011, Taylor et al, demonstrated that in people who have had type 2 diabetes for 4 years or less, major weight loss returns their insulin secretion to normal (6). Taylor et al identified that the basic mechanisms which leads to type 2 diabetes, is too much fat within liver and pancreas, preventing normal insulin action and preventing normal insulin secretion. Both of these defects are reversible by substantial weight loss (6).

Taylor et al, identified that there appears to be a crucial point, that individuals have different levels of tolerance of fat within liver and pancreas (6). Only when a person has more fat than they can cope with does type 2 diabetes develop (6). In other words, once a person crosses their personal fat threshold, type 2 diabetes develops (6). Once they successfully lose weight and go below their personal fat threshold, diabetes will disappear (6).

Researchers, headed by the CSIRO in Australia, have also explored dietary interventions in overweight and obese individuals with Type 2 Diabetes (5). Tay et al, 2013, explored the effects of a Very Low Carbohydrate, Low Fat diet (LC), to the High Unrefined Carbohydrate, Low Fat (HC) diet on glucose control and cardiovascular disease (CVD) risk factors in Type 2 diabetes (5).

The prescription of each of the LC and HC diets were energy matched to allow comparable weight loss between groups, removing the potential confounders, enabling the differences between groups to be attributed to the differences in macronutrient profiles (5).

The LC diet comprised 14% (50g) carbohydrate, 28% protein, 58% fat, where less than 10% was saturated, MUFA 15%, PUFA 13% (5). The HC diet comprised of carbohydrate 53%, protein 17%, fat <30%, MUFA 15%, PUFA 9% and < 10% saturated (5).

The diets were individually tailored to produce a moderate energy restriction of between 200 – 1000kcal per day, with the introduction of specific foods (5). Each individual also undertook a 60 minute, structured, exercise class on three consecutive days per week, incorporating moderate intensity aerobic/resistance exercises, consistent with the diabetes management guidelines (5).

Researchers identified that both the LC and HC energy reduced low saturated fat dietary regimen produced substantial improvements in glycemic control and several cardiometabolic markers in obese adults with T2DM (5). However the greatest improvements were seen in the LC diet group, with respect to their blood glucose control, blood glucose profile, reduction in diabetic medication requirement (5). There was also a more favourable CVD profile with greater increases in HDL-C and reductions in TG with comparable reductions in LDL-C (5). These results were more evident where participants had greater metabolic derangements (5).

These results suggest that LC with a high unsaturated fat, low saturated fat content can improve primary clinical diabetic targets beyond conventional lifestyle management strategies and weight loss (5).

There is also consistent scientific evidence for the role of whole grains, and suggestive evidence for the role legumes play, in protecting against cardiovascular disease, type 2 diabetes, certain cancers and obesity (6). The disease risk reduction from just three serves of wholegrain foods a day is in the order of 20-30%, which could translate to health expenditure saving s of over $1.2billion a year (6). While the scientific literature for legumes is not as extensive as that for cereal grains, there is nevertheless consistent evidence from epidemiological studies that legumes can play a role in preventing chronic disease (6).

The 2013 Australian Dietary Guidelines recommend Australians eat a variety of grain foods, 'mostly whole grain &/or high cereal fibre varieties'. This emphasis on whole grain gives consistent messages on whole grain content of foods (6). The Whole Grain Daily Target Intake is 48 grams per day (6).

A consumer survey, commissioned by the Grain & Legumes Nutrition Council, conducted by Colmar Brunton in 2011, identified that Australians consume the majority of their grains as bread, with the level of bread consumption falling between 2009 -2011 by the equivalent of one slice per day per person (6). The survey also found that men, women and children in Australia are eating less breakfast cereal, pasta and noodles. Indeed, on average Australian eat only 3.2 serves of core grain-based foods such as rice, pasta and breakfast cereal, rather than the recommended four-plus daily serves (6). This reduction has also been further exacerbated by the surge of interest in higher protein, "low carb" diets, where many Australians have removed almost all of their carbohydrate containing foods, including whole grains and high fibre grain foods to facilitate fast weight loss.

With the increasing prevalence of life-style related disease and the spiralling associated financial and personal costs, health authorities in Australia and around the world identify the need for a call to action, encouraging individuals to address their health and dietary life styles, to re-align their focus to increase their intake of whole grains and legumes, fruit and vegetables and reduce their intake of saturated fats.

There is now evidence for those who are overweight and have type 2 diabetes, that the adoption of a low carbohydrate, low saturated fat diet can improve their blood glucose control and cardiovascular risk factors. The positive benefit associated with adopting this style of eating behaviour would be enhanced through incorporating whole grain cereal and legumes.

Herman Brot Bread, is a unique, *low carbohydrate, high protein, wholegrain,* which emerged out of the pursuit to provide, a 'speciality' bread for people who are overweight and those with diabetes. The development of this bread fits with the increasing demand for food that is not only tasty, but is also functional with respect to health and wellbeing.

Herman Brot Bread, is a great tasting, low carbohydrate, high protein, high fibre, Low GI bread. The bread was evaluated by Sydney University's Glycemic Index Research Service, SUGiRS determining a Low Glycaemic Index 24 , a Low Glycaemic Load 1 and Insulinemic Index of (1), suggesting an insulintrophic effect (the bread stimulates insulin secretion) (7).

Herman Brot, Low Carb bread, has 2.3g carbohydrate and 11.7g protein and 4.5g dietary fibre per 45 g slice. Its ingredients are a combination of wheat based whole grains, soy protein, linseeds and sunflower seeds. It provides 17g of whole grains per 45 g slice.

Herman Brot Low Carb bread is unique, as it provides individuals with the opportunity to incorporate low carbohydrate nutrient rich bread into a dietary pattern that optimises their health goals and specific goals of incorporating whole grains and legumes as an integral part of a healthy dietary life-style.

Herman Brot Low Carb Bread, is the perfect package, with characteristics that support short and long term health for those who are overweight, obese and those individuals with type 2 diabetes and those with a focus on optimising health and well-being.

References:

1. National Health and Medical Research Council, Australian Government., www.nhmrc.gov.au/your-health/obesity-and-overweight

2. Diabetes Australia, www.diabetesaustralia.com.au

3. Mercedes de Onis, etal., American Journal of Clinical Nutrition doi: 10.3945/ajacn.2010.29786

4. Australian Government, National Health and Medical Research Council., Eat for Health - Australian Dietary Guidelines., Department of Health and Aging., 2013.

5. Tay etal., A very low Carbohydrate, Low Saturated Fat Diet for Type 2 Diabetes Management: A Randomised Trial., Diabetes Care; DOI: 10.2337/dc14-0845 July 2014.

6. Grains & Legumes Nutrition Council., www.glnc.org.au

7. The Sydney University's Glycemic Index Research Service (SUGiRS)., www.glycemicindex.com