

THE BROAD STUDY DIET

This stop-go traffic light graphic shows the foods you should and shouldn't eat if you want to try the BROAD wholefood plant-based diet. Dr Wright says it may be hard for people to cut out all of the "red" foods all of the time but people with diabetes, high heart disease, obesity, high blood pressure, and/or high cholesterol should be stricter and are likely to see bigger benefits if they stick to the guidelines as closely as possible.

People at risk of developing diabetes, for example those with a family history of the disease, should aim to cut out the red foods and limit the orange foods if they want to improve their health and reduce the risk of developing diabetes in later life. While involving a small number of participants, the BROAD diet study had such a positive impact on blood sugar levels, the charity set up to carry on researching its impacts is currently running a second trial looking specifically at the benefits of a plant-based diet for people with T2D.

The published BROAD article is open-access, and Dr Wright works on promoting the diet in his own time, when he is not being a full-time GP in Gisborne. He and Morgen Smith run an online video programme for people interested in trying plant-based diets, with all profits being given to charity. For more information, see thebroadstudy.com and plantbasedvideos.com.

RED - STOP
Fried animal foods • eggs • dairy (cow's milk, yoghurt, cheese, including low-fat versions) • meat (including fish and chicken) • fats and oils (including margarine, coconut, olive oil) • sugar-sweetened soft drinks

ORANGE - CAUTION
High-fat foods: fake meats • tempeh/tofu • avocado • olives • coconut cream • nuts and seeds • alcohol • diet drinks • coffee • plant-based milks without added oil • refined flours • dried fruits or fruit juice

GREEN - EVERY DAY
Starches, complex carbohydrates • fruits • vegetables • legumes (beans, peas) • spices and herbs • Vitamin B12 • Omega 3 from flaxseed or chia seed

Cutting out eggs, chicken and fish. Low-fat dairy products like yoghurt and milk are also off the menu. Research has suggested that A1 beta-casein in cow's milk protein is a primary causal trigger of type 1 diabetes in those with a genetic susceptibility, says Dr Wright. "There are complicated metabolic pathways at play with diabetes. You have to treat the whole body, not just the pancreas but also the liver and other organs. We found it was vital to not only cut out refined sugar but also to drastically reduce high-fat foods," he said. "Recent research shows a high-fat diet is linked to insulin resistance. If you have type 1 diabetes and cut back on fats, and are strict about it, we've seen a 30-40% decrease in insulin requirements. We have also had a number of type 2 diabetes patients who have come off their medications and no longer meet the criteria for having diabetes." Gisborne has the highest rates of obesity and type 2 diabetes in New Zealand. The researchers included Dr Wright, co-researcher Dr Luke Wilson who works in general practice, and exercise physiologist Morgen Smith who is programmes director. The research was overseen by Hauora Tairāwhiti public health physician Dr Bruce Duncan, and GP trainer/emergency medicine physician Dr Patrick McHugh.

reduced their cholesterol levels and improved their overall HbA1c levels. The results of the first study, which began in 2013, were published last year in the *Nutrition & Diabetes* journal with Dr Wright as lead author. It attracted international interest because the Gisborne group achieved the biggest weight loss in any randomised control trial where participants had no restriction on calories and didn't have to exercise. Dr Wright said: "The wholefood, plant-based approach shows very promising weight loss results that appear to be sustained over time. People don't have to worry about going hungry and can still lose weight." "This diet is designed to be followed long-term and is safe for people with both type 1 and type 2 diabetes. It's about eating fewer refined foods and much less fat and the weight loss is a consequence of people making these healthy eating choices. "We find that those who stick with the lifestyle changes closely have the biggest benefits. We know people's taste buds do change over time and they get used to eating a low-sugar, low-fat, plant-based diet." The BROAD diet recommends limiting foods with more than 20% energy coming from fat, which means

