To Dr

_____ has recently signed up to The Eat Fat Get Fit Program. This program utilises 3 health interventions:

1) Low-carb, high-fat (LCHF)
2) Intermittent fasting (IF)
3) High-intensity, short-duration exercise

LCHF, IF and high intensity exercise have been shown to be able to manage and even reverse chronic illness including type 2 diabetes [1, 2], insulin resistance [3], obesity [4, 5], hypertension [6] and cardiovascular disease [7-11].

Our program includes continual monitoring by our resident dietician and myself via a private FB group and online weekly meetings, we also ask for a number of tests prior to the program to ensure everyone is safe to start and that the program is improving important health markers.

As a part of the pre-exercise screening process, as set out by ESSA, Sports Medicine Australia and Fitness Australia; there is an optional requirement for two blood tests (a copy of the pre-screening tool can be downloaded from the ESSA website). These tests assist in stratifying risk for exercise by assessing CVD risk. The two tests are a **fasting lipid profile** and a **fasting glucose**. We would also ask for **insulin** to be tested at the same time as the glucose and lipids. The rationale for insulin is as follows:

Hyperinsulinaemia is a risk factor for the development insulin resistance and subsequently, type 2 diabetes and CVD.[12] It can exist asymptomatically for a number of years, even in the presence of normal blood glucose readings. [13]. Fasting blood glucose and HbA1c readings can still be normal in the presence of hyperinsulinaemia, which is why it is prudent to test insulin level. [13] Furthermore, hyperinsulinaemia can also prevent weight loss and increase the risk for hypertension and dyslipidaemia; which all significantly increase CVD risk.

We also ask if you feel that it is appropriate that you would test the following:

- oestrogen
- progesterone
- testosterone
- cortisol
- homocysteine
- CRP
- ESR

We would also ask for any other blood test you feel is necessary at this time. The more information we can collect for our members, the better we are able assist them in improving their health.

I have included a rationale for our program, over the page, should you have any questions or concerns about anything we're doing.

Thank you for your time and your assistance with this matter

Kind regards,

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Program Rationale

There have been some very troubling health trends over the last few decades. Of significant concern, is the rise in type 2 diabetes (T2D), insulin resistance (IR), cardiovascular disease (CVD), obesity, autoimmunity and other chronic illness. Not surprisingly, food plays a significant role in all of these conditions – whether in aetiology, pathophysiology and/or inducing symptoms.

Disturbingly, in Australia, we are in a diabetes epidemic with diabetes being the fastest growing chronic illness [14]. Type 2 diabetes is strongly correlated to CVD (our number 1 killer), which has meant a substantial proportion of my time has been focused on these conditions. A significant risk for insulin resistance (ergo T2D and CVD) is hyperinsulinaemia. Of grave concern is that many people have hyperinsulinaemia with normal blood glucose results, a normal glucose tolerance test result and will remain asymptomatic from the effects of hyperinsulinaemia many years before symptoms present [13]. During this time, insulin is able to exert a toxic effect on the macro and microvasculature, which can lead to the promotion of atherosclerotic lesions, neuropathies, kidney pathologies and visual disturbances. Unfortunately, there is a general reluctance from doctors to test for insulin, often preferring to use the surrogate marker of fasting glucose but this is not an adequate test in all situations [13]. Therefore, in our program we treat everyone as insulin resistant (which, thus far everyone has been) as there is enormous benefit to people, both with and without IR, in adopting a low carbohydrate diet.

Over the years I have found that there is an abundance of research demonstrating the efficacy of the LCHF/ketogenic diet (KD) in reversing, treating and managing chronic disease [15]. My interest in LCHF particularly became piqued when my father developed type 1.5 diabetes (gradual onset type 1 managed with food and medication). This pushed me to help him find the best way of managing it. Over the last 8 years he has improved his glycaemic control, his HbA1c and other diabetic markers through the utilisation of LCHF, intermittent fasting and exercise.

The evidence for LCHF/KD has also been strengthened during my masters studies with Deakin University. This year I was fortunate to have completed a subject called Diet and Disease, which, looked at nutrition strategies for dealing with chronic illness. This subject focused heavily on type 2 diabetes and insulin resistance due to it being a significant risk factor for the development of both type 2 diabetes, cardiovascular disease [16] and its precursor metabolic syndrome. During this subject, much evidence was put forward for the role of a low carbohydrate diet and LCHF in the treatment and reversal of insulin resistance and T2D. [2, 8, 10, 11, 17-20]

The American Dietetics Association has also been promoting low carbohydrate diets for some time now and Today's Dietitian wrote an article just this year on the efficacy of low carbohydrate diets in the management of diabetes. [21]

The CSIRO has also promoted low carbohydrate diets [22] with this from their website:

"The most amazing benefit of the low carbohydrate diet was the reduction in the patient's medication levels, which was more than double the amount than the volunteers following the lifestyle program with the high-carbohydrate diet plan."

"The very low carbohydrate diet presented greater improvements in the blood cholesterol profile, by increasing the levels of good (HDL) cholesterol and decreasing triglyceride levels to a greater extent than the traditional high carbohydrate, low fat diet approach," Professor Thompson said. [23]

In addition to this, Endocrinology Update reported the following; "Health professionals have been divided over the best dietary approach for managing type 2 diabetes and the ongoing uncertainty is a hotly debated topic among clinicians and researchers," he says. "The most amazing benefit of the low carbohydrate diet was the reduction in the patient's medication levels, which was more than double the amount than the volunteers following the lifestyle program with the high-carbohydrate diet plan." The research suggests traditional dietary approaches for managing type 2 diabetes are outdated, Dr Brinkworth says. "We really need to review the current dietary guidelines if we are serious about using the latest scientific evidence to reduce the impact of the disease." [24]

A common concern with LCHF is the saturated fat content, however a meta-analysis by Siri-Tarino and colleagues concluded "A meta-analysis of prospective epidemiologic studies showed that there is no significant evidence for concluding that dietary saturated fat is associated with an increased risk of CHD or CVD. More data are needed to elucidate whether CVD risks are likely to be influenced by the specific nutrients used to replace saturated fat." [25] Siri-Tarino and colleagues later concluded that the replacement of saturated fat with carbohydrate increased risk for CAD [26]. The recommendation to replace saturated fats with polyunsaturated fats still requires further investigation due to polyunsaturated fats including both omega 3 and omega 6 fatty acids. Omega 3 fatty acids are considered anti-inflammatory and well established as being heart healthy and essential for good health. It is also well established that the overconsumption of omega 6 fats can be pro-inflammatory and increase the symptoms of chronic illness.

Part of the concern over LCHF is in the lack of understanding over what it is. People following our program eat:

- poultry
- meat
- seafood
- eggs
- veggies
- some fruit
- some dairy
- coconut oil, milk and cream
- water/tea/coffee

The diet is as unprocessed as possible and specifically avoids any form of processed carbohydrate (sugar and grain) and processed seed oils. I simply cannot understand why a diet that encourages cooking from scratch, buying local seasonal produce and eating food as close to it's original form can be under scrutiny?

With the burgeoning rise of chronic illness, it is clear that many health strategies are needed. One of the serious problems with the current dietary guidelines is that they assume they will be suitable for

100% of the population. This is clearly problematic and becomes exceedingly so for those who are diabetic and/or insulin resistant. To encourage someone with these conditions to eat 45-55% of their daily calories from carbohydrate (the very nutrient that they cannot metabolise properly) is of the highest form of cognitive dissonance. Surely when someone is unable to process the by-product of carbohydrate metabolism the sensible strategy is to reduce the carbohydrate. Furthermore, with an obesity epidemic in developed countries and a LCHF/ketogenic diet showing a great deal of promise in weight loss [4, 8, 11, 15] and adherence rates, surely this is a diet worth pursuing? And finally, the improvements in CVD risk (reduced plasma insulin, homocysteine and triglycerides and increased HDL and glycaemic control) have often been shown to be greater following the ketogenic diet /LCHF than other diets (low fat, low GI etc.). [8, 19, 20, 27] This is of huge significance when we consider 33% of deaths in Australia are due to CVD.

In my years of doing this, everyone who has undertaken our program has seen at least some, if not all of the following:

- increased energy
- improved TG:HDL ratio
- improvements in blood pressure
- reduced serum insulin levels
- improved glycaemic control
- Improved HbA1c
- Reduced inflammation (measured by CRP)
- weight loss
- body composition improvement
- reduction in symptoms of chronic illness
- increased confidence in food choices
- improved understanding of hunger and hunger signals
- improved natural eating habits
- implementation on mindful eating habits
- less food-guilt association
- increased fitness

We receive an abundance of positive feedback on our program and work very hard on continual improvement.

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