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Nutrition Project: Evaluation of a Popular Diet Book

The book I chose was *The Eight Week Blood Sugar Diet: How to Beat Diabetes Fast (and Stay Off Medication)*, an international best-seller and is the second edition of the book after popular response. This diet claims to be able to cure type-2 diabetes, saving people from a lifetime of pills and insulin caused by what is commonly believed to be an incurable condition. The central focus of the diet is that the cause of type-2 diabetes is the result of fat clogging the liver. By lowering calorie count, The body will burn through subcutaneous fat, then visceral fat around the organs, then finally clean out the liver. This is done over the course of 8 weeks. The diet itself outlines what to eat to maintain an 800 calorie count per day, to maintain a nutritional balance. It advocates a diet that excludes refined carbohydrates, and allows for healthier sources of protein and fat to provide lasting satiety. In particular, this diet highlights the Mediterranean Diet as a proper model to follow. Accompanying the diet are instructions regarding physical activity and mental health, which are both described as important for allowing normal insulin function.

The rationale for this diet is that diabetes is reversible and stems from an issue where the metabolism can no longer deal with sugar. Current care for diabetes patients is to recommend a low-fat, high carbohydrate diet which is the opposite of what this diet recommends. Recent studies have shown that low-fat doesn't seem to help, and patients remain taking medication and insulin for the rest of their lives. However, patients that undergo weight reduction surgery are able to reverse their symptoms. This is theorized to be a result of not the surgery itself, but due to the side effect of being unable to eat for a time after the procedure.

The blood sugar diet focuses on rapid weight loss over 8 weeks as a motivating element to keep people committed, although a degree of flexibility exists in the design as well. These 8 weeks broadly disallow refined sugars and foods that are easily converted into sugars. This includes

foods like chips, crackers, cakes, pasta, soft drinks white rice, white bread, breakfast cereals and instant oatmeal. Other foods the diet avoids are fruit juice and foods with fructose.

The foods this diet allows does include some carbohydrates, such as complex carbohydrates from vegetables, legumes, and whole grains like brown rice, quinoa, steel-cut oats, and whole rye. Protein and fat are allowed as they provide a lasting sense of satiety. High-quality proteins such as oily fish, shrimp, chicken, turkey, pork, beef, eggs, and hummus are highlighted. The diet says to eat processed meats sparingly. "Healthful fats" the diet recommends are olive oil, oily fish such as salmon, tuna, mackerel, which aid in ADEK vitamin absorption. Butter is ok, cheese is ok in moderation, but avoid margarine. Other foods such as vegetables, nuts, seeds, certain whole grains, mushrooms, and most fruits make up the rest of the diet. This diet states that it is not for everyone, instead claiming to be working information for a specific application regarding a common misconception for diabetes. This topic is increasingly important due to the increasing prevalence of obesity, and what is described to be a "diabetes pandemic." However if blood sugar is not your concern, this diet is not recommended to you by the author. This diet also notes individuals that this diet cannot help, such as late-onset type-1 diabetics, which can often confuse themselves as type-2 diabetics. Other factors can affect the body's ability to process insulin. This book outlines physical activity, and mental well-being in a few simple ways. It goes over basic strength training to reduce insulin resistance in the muscles, and introduces the topic of mindfulness as a modern method of mediation to counteract the effects of stress hormones on metabolism.

The diet also suggests an alternative called the 5:2 approach, where 5 days of the week are a Mediterranean diet, and only counting the 800 calories on 2 days of the week. While it has less rapid results as the 8-week version, it may be easier for some to commit to, and also exists as a maintenance program for those who have finished the 8 -week version to continue cutting out refined carbs. The diet also outlines ways to stay motivated for the 8 weeks, such as a calorie

diary, cleaning out cupboards, writing down goals, and measuring waist size as an indirect indicator of visceral fat. Throughout the diet book, many studies are referenced with rather large sample sizes that agree with the overall message of the diet.

A) For this I took one of the suggested example days from the diet book, and put all of the diet recipes for that day into Cronometer. As expected from an 800-calorie diet, the main thing this diet is missing is energy. Carbohydrate and fat intake are significantly lower than what is recommended, but protein is close. Looking at the protein section, all essential amino acids are met. For fats, omega-3 is met, while omega-6 is not. The major issue I see is that fiber is only 34% of the recommended intake. This is interesting because the diet book made such a big deal about increasing fiber intake because it lowers sugar absorption. This may be specific to the day I chose in the diet book, but I would think that fiber would be a bigger priority based on what I read, certainly a lot of vegetables are listed for the day that could instead be replaced with leafier ones with more fiber. The same applies to folate, today's intake only mentions 50% of the recommended amount, yet foods like asparagus, spinach, and legumes are everywhere in the diet book. Carrots appear twice in the recommendation for today and it seems like the adjustment to make is not to eat the same vegetable for two meals in the same day. Vitamins that were found to be lacking are D, E, and B1,2,3,5. The body can produce vitamin D, and the diet does advocate for yogurt so I think that part is fine. Vitamin E can come from certain nuts, but the day already contained almonds so it seems like a matter of increasing the amount (at the cost of adding calories). The B vitamins usually come together, which explains why they are missing together. Foods that have B vitamins are definitely allowed in the diet, so my concern here after this question is staying nutritionally balanced despite a low calorie count. I think over the span of a week however, it seems likely that all categories except carbohydrates (just energy) would be met.

B) Overall, the diet doesn't provide too much of any vitamin or food group. All essential amino acids are listed as 300% of needed, but the amount of meat is typical and is not a cause for concern. For the selected day, it appears eating two carrots has resulted in almost 900% of the recommended daily intake of vitamin A. Vitamin B12 is an excess, from what we know, a deficiency of B12 is virtually nonexistent (as seen here), and no toxicity is documented. Vitamin C is at 250% but that is a water-soluble vitamin and is not a problem in excess amounts. Like the first question, the takeaway here is not to eat the same meals every day, a variety is needed from day to day among the recommended foods for proper nutrition.

C) 800 calories a day differs significantly from a normal American diet. In addition, many popular American foods contain refined sugars.

The diet acknowledges that not everyone can meet the low calorie count and suggests an alternative approach called the 5:2 approach where only 2 out of every 7 days follow the diet. However the diet is set up for 800 calories and 8 weeks so that individuals can see rapid results to motivate them to finish the 8 weeks. The 8 weeks is what the diet states is sufficient to see improvements in pancreatic function. This diet does have a target audience involving diabetic

and prediabetic individuals that do have excess energy stores to burn. The author mentions that the worst hunger is in the first 48 hours but that it improves afterwards. The diet does allow for good foods like fatty fish, and whole-fat yogurt which taste good and help with lasting satiety when compared to refined sugars. The author expects that a major motivation for many is the experience that having to take insulin and diabetes medication is an awful experience. Overall, yes the 800 calories is an obstacle, but also temporary and the diet outlines certain extrinsic motivators to help. The 8 weeks of the diet disallow refined sugars, which is a fair compromise for any diet and the allowed foods are still quite good.

D) Yes, I would say the book mainly focuses on learning ways to eat healthier as a result of only eating 800 calories a day for only 2 months and making those foods count. One example is eating lots of fiber, sources such as beans, leafy greens, and certain fruits, since fiber slows the rate the body absorbs sugar, but is also something most people need to do more of anyway. The book recommends foods such as full-fat yogurt, foods that create a lasting sense of satiety. The main reason the diet is at this calorie count for this amount of time is so people can see rapid results and be motivated to maintain them for the 8 weeks. The diet allows for a lot of good food people enjoy, hopefully convincing people that refined sugars are indeed the culprit and leaving them with less desire to eat them.

E) This diet is not expensive. One reason is that it is heavily guided by the Mediterranean diet, which contains foods that historically were available to people living in that area that weren't particularly wealthy. While normal food such as chicken, full-fat yogurt, and leafy vegetables certainly cost more than processed food, add in the 800-calorie restriction the diet calls for and cost is not likely to be a factor keeping people away from the diet.

F) According to the printout, this diet is at a 1053 calorie deficit, providing only 43% of the amount of energy needed. The intake for the day is at 818 Calories, and 1871 would be burned. This net negative is in line with the design of the diet. First subcutaneous fat is burned as energy, then visceral fat, then finally whatever fat is clogging the liver and pancreas. As a reminder, this diet is not for the average person, but for those with Type-2 diabetes or are prediabetic. This leads to the "50 pounds lost over 3 weeks" results described in some of the testimonials.

G) Yes, this diet is too low in calories, as the focus along with cutting out refined sugars. Looking at mineral deficiencies, most are good with the exception of Zinc, Manganese, and Magnesium only at 50%. Magnesium is a major mineral, while the other two are trace minerals. A zinc deficiency can lead to anemia. Manganese comes from foods that this diet is supposed to have a lot of, such as whole grains, nuts, legumes, and green vegetables, so it is likely to be at sufficient levels on a different day. This is similar for Magnesium with legumes and nuts. The diet does recommend doing this diet under the supervision of your doctor, because the main health concerns center on medication for high blood sugar or high blood pressure. Both will drop as a result of this diet, and in combination with medication can decrease them to dangerously low levels.

H) This diet states that it exists for a specific focus, which is on blood sugar levels rather than weight loss. However this occurs through lowering calorie intake and purposely losing visceral fat, so weight loss is fully part of the strategy. How much weight loss to expect is difficult to say however, since this book is targeted towards type-2 diabetics. The testimonials involve people that already weigh hundreds of pounds and mention losing 19 pounds in the first week, and 50 pounds over 3 weeks. While some of the referenced studies have similar numbers, the diet doesn't discuss weight loss as the goal (therefore no claims are made), and the average person should not expect anything close to these numbers. The diet also discusses that thinner people can have plenty of risk factors for diabetes. Again the goal for the book is on reaching normal insulin levels rather than losing pounds.

I) Yes, easily digestible carbohydrates are not allowed with this diet. This includes foods such as honey, maple syrup, agave sugar, breakfast cereal, white rice, bread, pasta, potatoes (goes on). Alcohol is restricted, in that it is allowed, but only in moderation since alcohol tends to be high in calories, which the diet limits. No foods are necessary, but instead the diet is a set of guidelines on what one should be eating when limited on calories for nutrition and satiety purposes.

J) The author is Dr. Michael Mosely, who went to medical school at what is now the medical school of University College London, with undergraduate studies of philosophy, politics, and economics at New College, Oxford, which is a constituent college of the University of Oxford. His current career however is not that of a doctor but a TV producer for the BBC for content related to biology and medicine. His wife is also a doctor as a general practitioner. In 1995 he was awarded Medical Journalist of the Year by the British Medical Association. I feel that these credentials make the author a reputable source since these are very reputable schools he has gone to, and that going through medical school makes anyone a pretty good source for health information. His career as a producer also seems to help. We know doctors are busy people. In a producer role, I imagine it would be a bigger focus for him to keep up with current research.

K) The book does start with a lot of testimonials in the introduction which had me worried. However, once the book actually properly begins there are quite a few studies referenced and the book always makes sure to bring things back to the underlying science. Examples are the Look Ahead study, which involved over 5,000 diabetes and the benefits of a low-fat diet (cut short). Another is the PREDIMED study which advocates for a Mediterranean diet, which is moderately high in fat, but low in highly processed carbohydrates. At the end of the book there is a reference section, showing that the book references 56 studies/journals. In the eBook, which is what I used, one can actually click on the links and read the papers themselves. While I didn't take the time to read any, they are hosted on the same domain that I use for Cell Bio and Genetics papers so that was a good sign for me at least.

L) This diet basically consists of eating less, specifically cutting out easily digestible carbs, and making sure what you do eat is the healthy stuff. No special products are required. While the diet does present premade diet shakes as an option due to their ease of use, the author does

not sell them, and in fact advocates going through the diet with normal food to retrain one's taste buds. Specifically, the author basically states that basically anything will taste good on a low-calorie diet and that individuals should take advantage of this to create a lasting lifestyle change for themselves. One product mentioned is the free, with in-app purchases, Headspace App as one method to maintain mindfulness since stress hormones associated with the fight-or-flight response interferes with our normal ability to process glucose. This diet seems very unlikely to be an advertisement for the Headspace app. However, this is not the only diet book by this author and the back page contains information to contact him as a speaker so one consideration is that he benefits from having something to say that people want to hear/read.

M) Searching for reputable scientific sources, I was only able to find one discussing the diet directly and that one is from the Primary Care Diabetes Society. As a result, among the other two sources, one is for the Mediterranean diet, and the other is a low-calorie diet which describes the two components of the diet.

Starting with the source from the Primary Care Diabetes Society, this is written by a GP. It mentions the same Look AHEAD study referenced in the diet, where a low-fat, high-carb diet does not reverse, or even slow the progress of type-2 diabetes. It also mentions another study that states decreased fiber intake is also contributing to rising prevalence of type-2 diabetes. It references other studies where the Mediterranean diet is working, such as the PREDIMED study, also referenced in the diet book. The article also states that Steven and Taylor (2015), around the time the diet was initially published, were able to demonstrate that weight loss did indeed reverse type-2 diabetes. This is obviously important because that is the focus of the diet --- whether it can reverse diabetes at all. A good sign here is that the article also references studies that are newer than the diet book stating the same thing. The source ends with stating that the author had 24 of her patients undergo the diet (BSD = Blood Sugar Diet) and 23 of them showed improvement, with most of them being able to reduce their medication.

For the other two sources not directly referencing the diet, the first discusses a 1,200 low-calorie diet, which is more than the 800 described in this diet. It states that many doctors and dietitians do prescribe low-calorie diets, yet 1,200 is already on the low end. It states that yes, it is an effective strategy for rapid weight loss, however it can lead to rapid weight regain without a maintenance plan. What notably matches up with this diet however is *"It should be noted that some research has shown that people with obesity or morbid obesity who follow low calorie or very low calorie diets under medical supervision lose weight and improve their blood sugar and lipid profiles, which can improve overall health."* This describes the target audience for the diet and suggests that a low-calorie diet is a good fit, those with high blood sugar, and excess energy reserves to burn before being able to burn visceral fat. The last source reviews the Mediterranean diet. This article states that research has consistently shown that the Mediterranean diet is effective at reducing the risk of cardiovascular disease by reducing inflammation, blood sugar, and BMI. It notes that a pitfall of the Mediterranean diet is that there is a risk of excess calorie intake, although unlikely due to the included foods providing satiety. This supports the blood sugar diet well, as it doesn't note any sort of deficiency. Even with the less restrictive version of the diet which only counts calories 2 out of 7 days of the week, people

are still building good eating habits. The blood sugar diet controls calorie count and relies on satiating foods, which this review of the Mediterranean diet also says is true.

N) I was happy to find that there was massive overlap between the information in this book and what we have been learning in class. It discusses the better sources of protein, such as legumes, nuts, and chicken, and better sources of fat like fish and olive oil.

In particular the diet outlines refined sugar as the number 1 enemy, and the few carbohydrates that are allowed are the same ones outlined in class, also stating that starchy carbohydrates like potatoes are basically just sugar. Fructose is another notable mention since it has to be processed in the liver (something the diet wants to avoid), which we also talked about in class where Fructose is processed similar to an alcohol.

The biggest overlap is the focus on the Mediterranean diet, which we explicitly went over in class as a model diet to follow. The book also cites the same PREDIMED study. Finally, the book also suggests increasing fiber intake through certain fruits and leafy greens. One of the options for the diet is to use diet shakes, but in addition to those shakes, the one thing that is still eaten is plenty of fiber, similar to our focus on how the average person does not get enough fiber.

Personal Review of the Diet:

Overall, I was very impressed with the diet and this book. I could have ended up choosing a book where I was rolling my eyes the whole time, but what I ended up reading was consistent with what we have been learning in class and with other science courses. Some examples include what we know about satiety, visceral fat, and stress hormones. The diet recommends the same foods as this class, such as nuts, legumes, good sources of protein,

Mentions of the Mediterranean diet, Glycemic Index, and fructose processing stand out to me as being written by someone knowledgeable on nutrition information. As stated above, the book cites 56 scientific journals throughout its length. The book addresses reasons why this information isn't everywhere yet in a logical way, for example learned helplessness in doctors regarding prescribing diabetes medication instead of recommending diet changes for their patients. Overall I found the entire diet very reasonable. It doesn't promise the world, but rather a specific solution for specific people and I would find myself recommending this diet to people I met that fit the scope of this diet (under their primary care doctor's supervision). The low-calorie phase of the diet is temporary and has a purpose. The nutrition information it comes with for maintaining the diet is consistent with what we have learned about in class as healthy. From what we've seen cutting out refined sugars should be a goal for basically everyone and this diet is an extended application of that.

I've never read another diet book before, but I think I want to give this diet a 10/10. I don't know for sure if it works. But I would like other diet books to be like this, with good nutrition information, lots of references to research, instructions on how to integrate physical activity and mental well-being with the diet, and example recipes at the end.

Cited Sources

Bailey, Claire "What people with diabetes are reading: The 8-Week Blood Sugar Diet"

<https://www.pcdsociety.org/> n.p. May 31 2018.

<https://www.pcdsociety.org/resources/details/8-week-blood-sugar-diet>

Kubala, Jillian "1,200-Calorie Diet Review: Does it work for Weight loss?"

<https://www.healthline.com/> n.p. June 11 2020.

<https://www.healthline.com/nutrition/1200-calorie-diet-review>

Harvard T.H. Chan School of Public Health, "Diet Review: Mediterranean Diet"

<https://www.hsph.harvard.edu> n.p. December 2018.

<https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/mediterranean-diet/>