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Master's Thesis

COMPARISON BETWEEN LOW FAT AND LOW CARB DIETS

Master of Science in Nursing

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ABSTRACT

Low-carb diets have been a topic for quite some time. Humans have been around for about 2.8 million years, and their diets have always been dominated by animal products. Many plants that we consume now were discovered and enhanced via cultivation and selection throughout the agricultural revolution, and as a result, plants can now fulfill most of our nutritional requirements. An agricultural revolution ushered in a new era in food production that considerably increased the quantity of nutrition from plant origin (mostly starch) and made cereals more palatable at the same time. Low-carb diets date back to the Olympic games in 776 BC, when athletes were encouraged to forego eating bread before competitions in order to save energy for training and competition. William Banting recounted his fruitless efforts to combat obesity and the assistance of physician William Harvey. Harvey helped Banting reduce weight rapidly.

William Harvey was intrigued by the then-novel theory that starch (i.e. carbs) in the human body is converted to fat. In Harvey's opinion, the best way to lose weight was to stop drinking beer, eating sugary foods, and eating potatoes (fish and fatty meat). Banting was able to shed 46 pounds without resorting to deprivation. The diet he advocated became so popular that the term "banting" now refers to a low-carb diet. Such a diet is popular not just in the United Kingdom but across the world (Foxcroft, 2012).

Weight loss is achieved by the use of low-carbohydrate diets and reduced fat diets, which are the two most popular mainstream dietary patterns in the United States (Thomason 2016). When it comes to food options, the two diets might be rather different from one another, especially in the beginning. Low-carb and high protein diets, often known as ketogenic diets, place a focus on high-fat foods like bacon, nuts, steak, butter, and fried meals made with oil,

while restricting carbohydrates like bread, pasta, and rice. If you're trying to lose weight, a low-fat diet is described as one in which the quantity of fat ingested in a meal is minimized and high-nutrient foods like whole grain breads, pastas, and rice are taken in favor of meals rich in fat and oil. Despite the fact that each diet has its own distinct tone, they all have one thing in common: they all aim to reduce weight and enhance general health. In both the low-carb diet and the low-fat diet, there is scientific evidence to support their claims that both diets may help people lose weight and have a healthy lifestyle (O'Neill & Raggi, 2020). In spite of this, studies have shown that each of these diets yields the same benefits, despite their completely different approaches to weight loss and overall health.

LITERATURE REVIEW

Low Fat Diets:

In low-fat diets, the major goal is to limit the intake of fatty foods, but these diets also recognize that not all fats are harmful. Despite their assertions to the contrary, the majority of low-fat diets acknowledge the importance of specific fats for good health. Foods rich in fat and cholesterol may still be eaten on low-fat and cholesterol diets. If you're concerned about your cholesterol and fat intake, you may want to check out an online article called "How to Eat a Low-Fat Diet" According to the American Heart Association, "fats supply energy and vital fatty acids, as well as assisting in the absorption of the fat-soluble vitamins A, D, E, and K." In certain quarters, fats are sometimes referred to as "good fat" (which does not harm the body, but may not be necessary). The term "good fats" refers to monounsaturated and polyunsaturated fats, which are said to be beneficial to the heart, cholesterol, and general health. Additionally, there is "bad fat," which is the exact opposite of "good fat" when it comes to health advantages. Saturated fat, which is typically referred to as "bad fat," has been related to an increase in cholesterol levels and the risk of heart disease. Some cream and other milk may include it, although that's not always the case (Seid & Rosenbaum, 2019).

Consequently, the low-fat diet advises its adherents to consume as little saturated fat as possible since saturated fat is the major cause of high cholesterol levels. It was created by the National Institutes of Health to be a highly controlled experiment in which 19 obese men and 19 obese women participated. They were kept in a laboratory for two weeks, where every calorie they ingested and expended was meticulously recorded by researcher technologists and physicians. I discovered the research on the website everydayhealth.com, and I'll describe it here.

The participants ingested a baseline diet at the start of each stay, which was intended to assist them in maintaining their weight by providing them with the exact amount of calories they burnt on a daily basis. Following the lead-in phase, the subjects were put on a 6-day weight reduction regimen that reduced their calorie consumption by 30 percent, according to the researchers (about 800 calories). In one visit, participants ingested 800 fewer calories from carbs, despite the fact that their intake of fat and protein remained constant over the same visit. People ingested 800 fewer calories from fat on their second visit, but their carbohydrate and protein consumption were similar (Frenn, Malin & Bansal, 2003)

Each meal was meticulously planned and prepared by the study team to ensure that it adhered to the dietary rules to the letter, and participants were required to swallow every last bit of food that was presented to them. The amount of fat that the individuals burned on a daily basis was also determined with the use of standard research procedures. It was then determined whether or not the participants had lost any net body fat by comparing the quantity of fat that they ingested on each diet to the amount of fat that they burnt. In line with expectations, every participant in the trial decreased body fat; however, those who followed a low-fat diet did so at a quicker pace than those who did not. Those who followed a low-carb diet used more fat for fuel, but their net fat loss was lower as a consequence of the fact that they absorbed more fat from their meal, hence a low fat diet was better than a low carb diet (Sakimura, 2015).

Low Carb Diets:

Low-carbohydrate diets swing the pendulum in the direction of the concept that all carbs are harmful, and they claim that carbohydrates are the underlying cause of weight gain, which is incorrect. The biggest problem with ingesting meals that are heavy in carbs is that our bodies

begin to create more insulin, which leads the body to convert food into body fat more rapidly (Coleman 2014). To prevent the body from producing excessive insulin, which leads to weight gain, low carbohydrate diets such as the Atkins diet limit a person's intake of carbs to meals that contain little to no carbohydrates (Hite, Berkowitz & Berkowitz, 2011). In 2006, researchers at Stanford University discovered that participants on the Atkins diets lost more weight than those on prominent competitor programs like the Zone, Ornish, or LEARN diets during the course of a one-year study including 331 women. Even more astonishing, individuals following the Atkins diet did not experience any severe health consequences, including the high cholesterol levels anticipated by many specialists (Feinman, Vernon & Westman, 2006)

D'Arrigo (2005) defines that The Atkins diet seems to have more favorable health consequences, which is very significant when deciding which diet is ideal for a particular individual's needs. Decreases in cholesterol, blood pressure, insulin, and blood glucose levels were reported by a large proportion of the women participating in the Stanford University trial (D'Arrigo, 2005). If we are debating whether to start a low-fat or a low-carbohydrate diet, one of the first questions we should ask ourselves is how long it will take for either diet to show noticeable benefits. A large number of tests and research have been conducted on the low-fat diet since it has been around for a long time, and it has been demonstrated to be effective at promoting consistent weight reduction.

The long-term repercussions of the diet are still a mystery, according to various organizations like the British Medical Association (BUPA), which says that the low carbohydrate diet, which is relatively new, has not been shown successful for long-term weight loss via long-term studies. There are people who have lost weight quickly while on a low-carbohydrate diet but afterwards found it difficult to keep it off once the program finished. On

July, 2011, at the University of Pennsylvania 64 volunteers were randomly allocated to either a low-carb or a low-fat diet. There was no difference in significant weight loss between those on low-carbohydrate diets and those on low-fat diets even after conducting the study for one year (Barrett, 2012). Even while people on a low-carbohydrate diet lose weight more rapidly than those on a low-fat diet at the start of their diet, the total weight reduction result is the same after a year. When it comes to attaining desired results, there isn't much of a difference between the two diets. It doesn't matter whether the cuisine is different or if the thoughts are presented differently; the end result is the same.

METHODOLOGY

The study includes a review of several research conducted by various experts to shed light on the differences between low fat diets and low carb diets, as well as their respective impacts on human health. These many studies have evaluated the impact of low-carbohydrate and low-fat diets on weight reduction, as well as on a variety of other health-related factors.

RESULTS AND DISCUSSION

Ketogenic Diet

A keto diet is an extremely low carbohydrate and high fat diet that has been considered the optimal eating plan for people trying to burn fats effectively. A keto diet suggests a diet centered on roughly 70 percent healthy fats, 20 percent protein acquired from veggies and meat, 5 percent carbohydrates and the remainder on nuts and fruits to design our body into a condition called

ketosis. On the other hand, a persistent diet unusually heavy in both carbohydrates and fats would eventually lead to fat accumulation in the body and rise of insulin. This creates substantial interruptions in the keto process and might impair your aspirations of reaching the health advantages outlined below.

Fighting Obesity

Recent research from our lab and many other labs has shown that an obese patient's weight loss may be aided by a ketogenic diet. Fasting plasma triglyceride levels are raised and HDL cholesterol levels are decreased when people consume a high carbohydrate diet, according to research. Cardiovascular disease has been related to these changes. When it comes to treating atherogenic dyslipidemia and its accompanying lipid abnormalities, short-term ketogenic diets have been shown to be effective.

Using data from a previous study, researchers found that a keto diet may help obese individuals lose weight naturally. One of the first studies to examine the effects of a diet plan for 24 weeks is presented here. Patients saw a substantial drop in TAGs, lipid levels, Low - density lipoprotein cholesterol, and glucose levels, as well as an increase in HDL cholesterol levels.

Lower Triglyceride Levels

While obesity is a major health issue by itself, it is also one of the causes for elevated triglyceride levels. Triglycerides are fats from the food we eat that are stored in the fat cells throughout the body. Unhealthy sources of fat, such as margarine (trans fat!), as well as excess calories, turn into triglycerides and visceral fats surrounding our vital organs. Higher than normal levels of triglycerides in your body can lead to an increased risk for heart attacks, strokes, and

metabolic dysfunction. One report suggests that nearly one-third of Americans have elevated triglyceride levels, and this situation is similar across many developed countries based on their similar high carb high fat diet. However, elevated triglycerides levels can be hard to detect, and even harder to correct. The keto diet is the perfect way to target the cause of elevated triglyceride levels – excess carbohydrates. The low carb nature of the keto diet restricts your daily carbohydrate intake, while the high amount of healthy fats consumed keeps your body satiated and energetic for longer. Keto also trains your body to become fat adaptive, by harvesting fats instead of carbs for basic daily energy. By targeting the root causes of elevated triglyceride levels, the keto diet helps you to lower them rapidly in a safe manner.

Combating Diabetes

There are many similarities between the risk factors for obesity, high triglyceride levels and type 2 diabetes – excess calories, high carb diet. In fact, studies have shown that 70% of those suffering from type 2 diabetes have elevated triglyceride levels and are very likely overweight. People diagnosed with type 2 diabetes struggle with insulin resistance. Normally, insulin allows cells to take in sugar to be used for energy. In type 2 diabetes, the cells are not responsive to insulin, resulting in inability to use sugar for energy. A study conducted in 2005 showcased that type 2 diabetics benefit greatly from the keto diet. After a 16-week period of the keto diet, results showcased a drop in their A1C blood test, a blood test that measures how long your red blood cells are exposed to glucose in your blood over the past 3 months. This led to diabetes medication being discontinued or reduced in most participants, while under close medical supervision.

Other Low carb diets (Not necessarily ketogenic)

Appetite and Hunger

Studies have shown that when compared to low-fat diets, low-carb, and high-protein diets reduce sensations of hunger and enhance mood, making them more likely to be easier to maintain in the long run. When researchers analyzed 148 people, they discovered that a low-fat diet was related with bigger decreases in levels of peptide Y (a hormone that suppresses hunger and enhances fullness). On the other hand a low-carbohydrate diet had a slight decrease in levels of peptide Y. It's possible that the filling properties of protein and fat are to blame for this occurrence. These two macronutrients help you feel fuller for a longer period of time by delaying the emptying of your stomach after you eat anything. Researchers have discovered that protein and fat consumption have an effect on a range of hormones that regulate hunger and appetite. They believe that this is due to the fact that these nutrients are essential for human survival. According to one study, higher protein and higher fat meals were associated with higher levels of the fullness hormone glucagon-like peptide 1 (GLP-1), whereas ghrelin, the hunger hormone, was elevated in low fat and low protein diets.

Loss of weight

When it comes to losing weight rapidly, research shows that low-carb diets are more successful than low-fat diets. According to the findings of a previous six-month study on 132 obese patients, low-carb diets resulted in three times greater weight reduction than low-fat diets. Overweight youngsters on low-carb diets lost an average of 21.8 pounds (9.9 kilograms), whereas those on low-fat diets lost just 9 pounds (4.1 kilograms).

It is possible that a diet that restricts carbohydrates and fats may be more beneficial in the long term. An analysis of 17 studies found that those on a low-carb diet lost more weight than those on a low-fat diet. The low-carb diet remained superior after a year, but the gap between the two diets shrank throughout that period.

It was shown that a low-carb or low-fat diet had the same effect on weight loss when researchers conducted 48 clinical tests. Finding a diet that one can stick to for the long run, say experts, may be the most important factor in successfully losing weight.

Loss of body fat

The majority of findings show that low-carb diets are more effective in reducing fat than other types of diets.

According to the findings of a small 16-week trial, people who followed a diet low in carbs and calories saw greater reductions in total fat mass and belly fat than those who followed a lower fat diet. Results from a year-long study with 148 participants were found to be similar. Many more studies have shown that low-carb diets are more effective at reducing belly fat than low-fat diets, and this is due to this. A review of 14 research found that low carb diets, and especially extremely low carb diets, were associated with a reduction in fat mass in obese persons, according to the findings of one study (Shiell et al., 2001).

Amounts of glucose in the blood

Low blood sugar levels, in addition to increasing appetite, may produce major side effects such as shakiness, fatigue, and unintentional weight gain, among other things. To assist regulate blood glucose levels, one method that may be used is to reduce carbohydrate

consumption. If results of one research, which included 56 patients with type 2 diabetes are examined, it is evident that a low-carbohydrate diet is more helpful in regulating blood sugar levels, while also promoting weight reduction and decreasing insulin requirements when compared to a low-fat diet.

Another research, which included 31 people, assessed the effects of the two diets and discovered that only the low-carbohydrate diet was effective in lowering insulin levels and increasing insulin sensitivity, according to the findings. As a result of greater insulin sensitivity, the body's capacity to transfer sugar from the circulation into cells may be strengthened, which may result in better management of blood sugar levels over time.

Pros and Cons of Low Carb Diet on Human Life

According to a number of dietitians, low-carbohydrate eating offers various benefits over other diets when it comes to health-promoting diets and a range of other desirable properties. There are also negative repercussions associated with carbohydrate diets in human life. Carbohydrates are defined as health-risking substances that deteriorate the human body when they are utilized inappropriately. There are several misconceptions and myths surrounding the low-carbohydrate diet, and it is critical to be properly educated about the health risks and benefits associated with this kind of diet. First and foremost it is necessary to understand the role that carbohydrates play in the human body before discussing the benefits and downsides of a low-carb diet. Carbon dioxide and water are the major sources of energy in a human's body, and carbohydrates are the most abundant. Carbohydrates are processed, and glucose is produced as a consequence of this process. The body stores any surplus glucose in the form of glycogen, which

is found in the liver and muscles' cell glycogen reserves once it has satisfied its glucose requirements. The accumulation of body fat grows as a result of the enormous amount of glycogen that has accumulated in the body (Elisia & Krystal, 2021).

The benefits of practicing low carb diet

As a weight-loss approach, a low-carb diet is commonly viewed as effective because, when glucose is converted to glycogen, a resulting surplus of glycogen is stored in muscle and liver cells, which may reduce buildup of fat around the waist. Low-carbohydrate diets are associated with decreased appetite, which has the benefit of reducing the need to actively calculate calories eaten in order to lose weight and enabling you to indulge in whatever foods you choose. It is more vital to follow a low-carbohydrate diet in order to maintain low blood sugar levels. In the process of metabolizing carbs, glucose is generated, which includes a substantial quantity of sugar and presents a health hazard; thus, a low-carbohydrate diet is essential to effectively treat this condition. This kind of diet has been demonstrated to be particularly effective in terms of decreasing serum triglyceride levels, with a low level of triglyceride being associated with a decreased risk of heart disease, insulin resistance, diabetes, and obesity, among other health outcomes. This kind of diet also has the added advantage of lowering insulin resistance in the body, which is beneficial for those with diabetes. It follows that there is a lower risk of the human body being affected by cardiovascular disorders.

For years, low-carbohydrate diets have sparked discussion. A number of people feel that the high levels of cholesterol in these diets are linked to heart disease. In most scientific studies,

low-carb diets have been shown to be beneficial and nutritious. They lead to decreased LDL cholesterol, low TAG levels and increased levels of HDL cholesterol.

Lower your hunger pangs.

Dieting's most unwelcome side effect is frequently its increased hunger. People often get sad and eventually give up because of this. In contrast, a low-carbohydrate diet automatically reduces appetite. People who cut their carbohydrate consumption while increasing their protein and fat intake consume much less calories than those who eat the same amount of carbohydrates.

Greater reduction in body weight

Reducing your carbohydrate consumption is one of the simplest and most efficient ways to lose weight today. People who follow a low-carb diet lose weight more rapidly and effectively than those who follow a low-fat diet, despite the fact that both limit calories. Studies have shown this to be true. In the first few weeks of a low-carb diet plan, weight loss is accelerated because the body flushes out extra water, which decreases insulin levels and reduces hunger pangs. Both a low-carbohydrate and a low-fat diet may help you lose weight, but research shows that cutting down on carbohydrates is the most successful strategy. Researchers found that a low-carb diet was more effective for obese persons than a commonly used weight-loss diets over the first six months of the trial, at least in the short term. Weight loss differences across diets were no longer statistically significant many years afterwards. A year-long study of 609 overweight persons found that both low-fat and low-carb diets resulted in almost the same amount of weight loss.

The Levels of Triglycerides Fall Sharply

Lipids in the circulation, such as triglycerides, are what cause the body to produce cholesterol. Cardiovascular disease is associated with elevated fasting triglyceride levels in the blood after an overnight fast. In sedentary people, carbohydrate consumption, especially simple sugar intake, is one of the most major contributors to increased triglycerides. As a consequence of their decreased carbohydrate consumption, many persons who follow this diet report substantial reductions in their blood triglyceride levels. Consuming a low-fat diet has been shown to raise blood triglycerides, the bad cholesterol (Terink et al., 2021).

Blood Sugar and Insulin Levels are lowered

Low-carb and ketogenic diets may be especially beneficial for persons suffering from diabetes or insulin resistance, which affects millions of people throughout the globe. In accordance with the findings of study, carbohydrate restriction lowers blood sugar and insulin levels. Following the adoption of a low-carb diet, some diabetics realize that they need to lower their insulin dose by half practically immediately, if not instantly (Newcomb et al., 2003). Within six months of starting the investigation, 95 percent of the participants with type 2 diabetes were able to decrease or discontinue the use of their glucose-lowering medication. For those who are presently on blood sugar medication, it is recommended that they check with the doctor before making any changes to their carbohydrate intake. In certain cases, your medication dose may need to be modified in order to avoid hypoglycemia from occurring (Krebs et al., 2019)

The Abdominal Cavity Is Where You Lose the Most Fat

A person's fat composition varies from one portion of the body to the next. The most common kind of fat in overweight men is visceral fat, which is situated in the abdominal cavity.

Subcutaneous and visceral fat are the two most common forms of fat in the human body. When a lot of visceral fat surrounds the organs, they will bulge. Inflammation and insulin resistance are thought to be linked to an increase in visceral fat, which may be a contributing factor to the metabolic dysfunction that has become so widespread in Western society in recent years. When it comes to shedding this potentially dangerous belly fat, a low-carb diet works wonders. According to recent studies, a bigger percentage of the fat that individuals shed while following a low-carb diet originates in their abdomen.

HDL

When opposed to "bad" LDL cholesterol levels, high levels of HDL cholesterol are connected with a lower risk of coronary artery disease. In order to raise "good" HDL cholesterol levels, low-carb diets are an excellent option since they contain a diet high in healthy fats. When it comes to raising HDL levels, low-carbohydrate diets are far more effective than those high in fat, which only modestly boost or even drop HDL levels.

Helps prevent Metabolic Syndrome.

Medically, it is a condition that has been linked to heart disease and diabetes in people. Metabolic syndrome is characterized by high blood pressure or diabetes, both of which may lead to cardiovascular disease. Another set of symptoms include high triglyceride levels and low "good" HDL cholesterol levels (the "good" kind). All of these symptoms have been successfully treated with a low-carbohydrate diet. All of these issues may be resolved with the use of such a diet.

LDL Cholesterol is increased in size while its amount is decreased.

Those who have high levels of LDL cholesterol are at greater risk of having a heart attack. The size of the particles, on the other hand, is quite important. Increased risk of heart disease is connected with the cholesterol particles size. The higher risk of heart disease is associated with smaller particle sizes.

The amount of carbohydrates consumed has a direct relationship with the size of LDL particles. In previous studies, it was shown that low-carb diets increase the size of LDL particles while simultaneously decreasing the total quantity of LDL particles in circulation. Therefore, reducing carbohydrate intake may be advantageous to the cardiovascular system.

Limitations of low carb diet

Due to the fact that weight is gained regardless of the kind of calories taken, a low-carb diet is not always sufficient for weight loss. As a result of reducing the quantity of carbs in the diet completely, the body starts to devour the fat that has been stored, even the most vital body fats. As a consequence of a shortage of energy, the person becomes emaciated and weak, placing him or her in greater risk. Developing ketosis as a result of a low-carbohydrate diet has been linked to undesirable health consequences such as bad breath, gout, and nausea. When an excessive amount of protein is ingested and just a little amount of carbs are taken in replacement, kidney stones may start to be produced as a result of this. Additionally, a high protein intake is associated with an increased risk of developing osteoporosis, which is especially true when a person follows an extremely restricted carbohydrate diet. Constipation is also associated with a

low-carbohydrate diet, since fiber is an essential kind of food that is given by carbohydrates. There are advantages and downsides to following a low-carb diet, and if you are contemplating doing so, it is important to consider doing so with the right balance in mind to ensure that you do not jeopardize your life any more by following a low-carb diet. Maintaining a healthy balance of nutrients and making sure to consume an appropriate amount of liquids is very important. If you want to be sure that your meal plan is productive, you should speak with a dietician or a nutritionist. Take into consideration the fact that achieving personal greatness needs individual responsibility.

Pros and Cons of Low Fat Diet on Human Life

For many years, health specialists have urged people to follow a low-fat diet to improve their health. In the mainstream medical community, this proposal has received widespread acceptance, and it is strongly advised that it be followed. New research has called into doubt the validity of these recommendations, yet the great majority of health authorities have not modified their stance on the topic. Despite the fact that their scientific underpinning has been destroyed and that the criteria have stayed mostly constant throughout the course of this era, they continue to be contentious (Lennerz et al., 2018).

Generally speaking, a very low-fat diet is one in which fat constitutes no more than 10–15 percent (or less) of total calories ingested. Additionally, many health standards say that saturated fat should not account for more than 7–10 percent of total calories consumed on a daily

basis, according to the American Heart Association. A significant portion of their calories come from fat, which accounts for 10–15 percent of their total calories (or less). When it comes to losing weight, lower-fat diets are helpful, but are they also efficient? A low-fat eating plan is commonly recommended to those who are trying to reduce weight or who want to improve their health. For every gram of fat, there are about 9 calories; however, for every gram of protein and carbohydrate, only 4 calories are included. It has been shown in research that people who lower their calorie intake by consuming less fat lose weight as a consequence of their efforts. However, despite the fact that on average, weight loss is minor, it is vital to maintain a healthy weight for well-being reasons (Carocho et al., 2014).

When it comes to low-carb diets, protein and fat intake are often stressed over carbohydrate consumption.. Research shows that low-fat diets are just as effective in promoting weight loss as low-carb diets, as long as food consumption is well monitored and regulated. Diets that are low in fat but high in carbohydrates have been shown to be less helpful in controlling weight in healthy people. Although the cause of this discrepancy is not known, the most acceptable is that low-carb diets are often linked with higher food quality than traditional diets, which may account for the majority of the difference. They choose natural foods, such as vegetables, poultry, beef, and seafood, over processed meals like cereals and frozen dinners, since they are healthier. Customers are also advised to steer clear of most fast food meals because of their high sugar or carbohydrate content (Sanders, 1994).

The fiber and protein content of whole food low-carb diets is greater than that of low-fat diets, indicating that this is the healthier option. Some of the ways a low-carb diet might help you lose weight are as follows:

Reduces the amount of calories consumed: Intake of protein is associated with lower calorie intake because it suppresses hunger while simultaneously increasing the amount of calories expended.

Reduces caloric intake through increasing feelings of fullness, which may lead to a decrease in overall caloric intake when fiber intake is high. Carbohydrate and sugar-free diets may help reduce cravings for these foods. Diets that restrict carbohydrate intake are helpful because they encourage people to eat more healthfully. A low-fat diet that doesn't emphasize food quality may lead to an increase in the intake of processed foods that are high in added sugar and carbs. The first publication of the low-fat recommendations was in 1977. The implementation of low-fat dietary recommendations seems to have signaled the beginning of the obesity pandemic in the United States. To be sure, a great deal was happening in society at the time. Consumption of low-fat junk foods increased dramatically as people began to believe that fat was the source of all evil. In addition to being high in refined carbohydrates, sugar and trans fats, these foods are also high in the ailments that the low-fat diet was intended to address, including heart disease, diabetes, obesity, and all types of cancer (Sondike, Copperman & Jacobson, 2003)..

Saturated fat was seen as a major factor to coronary heart disease throughout the creation of the low-fat guidelines. Dietary recommendations created in the subsequent decades were heavily impacted by this idea. It's because health organizations started recommending people to stay away from foods high in saturated fat, such eggs, pork belly, and whole milk. According to the norms at the time, not all scientists agreed with them. A low-fat diet may have unforeseen consequences, according to their caution. Saturated fat isn't the monster it used to be, according

to high-quality studies in today's environment. Recent studies have demonstrated that there is no significant link between saturated fat and heart disease in the general population. However, the anti-inflammatory qualities of polyunsaturated fats suggest that replacing saturated fats with polyunsaturated fats may have favorable benefits on heart health. The classic low-fat diet, on the other hand, does not just advocate limiting saturated fat intake; it also advocates reducing overall fat intake. In addition, people are advised to restrict their fat consumption to less than 30% of their total calorie intake. Researchers discovered that lowering total fat intake did not improve heart health in a number of studies. In fact, it's possible that a diet low in fat increases the likelihood of developing heart disease. The liver produces LDL cholesterol (also referred to as "bad" cholesterol). There are certain flaws with this statement, though. The LDL particle size must also be taken into account. The bigger the number of tiny particles in your bloodstream, the greater your risk of heart disease. If the majority of the particles are big, your chance of developing heart disease is minimal. However, one of the dangers of low-fat diets is that they may actually alter LDL cholesterol levels, transforming it from the beneficial big particles to the dangerous tiny and dense LDL particles that block arteries. Moreover, several studies have shown that low-fat diets might lower HDL "good" cholesterol while simultaneously raising blood triglycerides, which is another key risk factor. What's the bottom line? The low-fat recommendations that were first published in 1977 were not supported by scientific data. However, despite the fact that new research has further undermined its scientific base, the controversy remains. One thing is undeniable. Eating less fat is not necessarily the most effective method of weight loss. Low-carb diets are often more beneficial for the majority of individuals. The relationship between obesity and heart disease is more contentious and nuanced than most people realize. In general, reducing your fat consumption is not likely to lower your risk of heart

disease or other chronic diseases. As opposed to worrying about your overall fat consumption, you should concentrate on enhancing the quality of your food. A smart place to start is by increasing your intake of nutritious foods and healthy fats (Meckling et al., 2004).

Unseen risks of low carbohydrate diets

So why don't we all simply stop eating starches as we do cherry seeds? No pizza, burgers, spaghetti, or amazing chocolate desserts can keep the glucose levels under control. You don't have to go back and regret every image. Such a wide range of symptoms appears when sweets are consumed in excessive quantities. Because starches provide our bodies with energy, they are vital to our weight loss programs. For long-term weight loss, low-carb diets aren't recommended since they are notoriously ineffective. Our health is put at risk, we feel awful, and we miss out on essential nutrients that come with starch-containing foods when we go low carb. Diet, exercise, and social adjustments are all vital components in long-term, safe, and effective weight loss, as well. As an important component of energy digestion and homeostasis, carbohydrates are a popular weight loss fuel source (Katan, Willett & Grundy, 1997).

The long-term safety of low carb diets is uncertain, with conflicting data on the risk of heart disease, cancer, and mortality. A major research study found that reduced carb intake increases the risk of heart complications. Long-term low carb diets cause cardiac arrhythmias, osteoporosis, cardiovascular contractile capacity impairment, job disability, increased risk of malignant development, and lipid abnormalities. Heart arrhythmias happen when the electrical driving forces that organize our pulse don't work reliably. This causes rapid or sluggish heartbeat. A decrease in circulatory strain increases the risk of premature death. Reduced carbohydrate intake reduces circulatory strain. Sugar-free diets cause us to consume less calcium,

which affects our bones. Osteoporosis occurs when the body loses too much bone or produces thin, weak bones. Low-carb diets are high in saturated fats, which harm our cardiovascular structure. It makes us fatter and more tired. A low carb diet also causes lipid imbalances due to the increased fat intake. An analyst gathered data on clients who went to the low carb count calories and discovered that they were 51% likely to die of cardiovascular disease, 35% likely of cancer, and 50% likely of cerebrovascular illness (Bhattacharya et al., 2008).

So many studies advise against low carb diets and advise weight watchers to avoid them. Induction phases of low-carb diets often exclude practically all carbohydrate sources. You may only eat 20 grams of carbohydrates each day. Less starches in our diet causes fatigue, loss of attention, and body weakness. A long-term low carb diet will drain the bodies instead of maintaining body fitness. The initial weight loss will be quickly regained as our bodies produce more fat. Using it as an energy source instead of carbohydrates. Our bodies store carbohydrates as glycogen, which is subsequently absorbed into the bloodstream and used as mental energy. The human brain requires at least 130 grams of carbohydrate glucose every day to function properly. As we increase our carbohydrate intake, our brain will demand more time to handle, causing fatigue. As we remove most carbs from our diet, our bodies begin to shed excess water weight, leading to a dry mouth that isn't particularly gratifying. Moreover, a long-term low carb diet increases our body's risk of fatigue, brain aches, and disease. By limiting the carbohydrates we consume fewer calories which leads us to a smaller number of food options that contain other nutrients that our body needs to operate. A low carb diet won't work for long term weight loss since it deprives your body of essential nutrients (Dietary Guideline Advisory Committee, 2005).

A wide variety of carb-rich foods and products are available, including whole grains, legumes and legume products, low-fat dairy foods, fiber, and minerals. We need whole grains

because they protect us from cancer and heart disease and stroke as well as metabolic disorder and diabetes. Whole grains are rich in lignin, which protects against diabetes independent of its effects on blood glucose levels. In addition, obtaining enough amounts of nutrients vitamin C and other infection-fighting cancer preventive agents would be very difficult without fruits and vegetables. Our weight loss strategies should include a broad variety of foods produced from the ground, since they are full of essential nutrients and contain less calories and fats. They are also a major source of potassium, folic acid, vitamin C, and vitamin A. For the prevention of cancerous development and cardiovascular disease, the complex sugars in beans include plant synthetics that are abundant in protein. In spite of the fact that margarine and cream are allowed on a low-carb diet, we won't be able to receive the calcium and protein we need. Milk and yogurt with lower fat content are more common, even when other factors are identical. Carbohydrates food sources are rich in potassium, magnesium, folic acid, vitamin C, and vitamin A nutrients, which are essential for human endurance. We may feel full for longer periods of time without consuming a lot of calories because of these special a. Eliminating them from our diet creates a deficit and forces us to consume more calories all together , which will lead to a re-gain of the few pounds we lost at the beginning of the low-carb eating plan.

Many people want to lose weight quickly and opt for a low-carb diet, but many are unaware of the dangers and unfavorable effects that might result. Sugars are the primary fuel source for your body. During absorption, carbohydrates, such as starch, are broken down into sugars, which are subsequently absorbed into your bloodstream as glucose. Our bodies rely on complex carbohydrates to get a variety of essential nutrients. A low-carb diet restricts carbohydrates, such as those found in grains, vegetables, and natural goods, such as fruits and vegetables. There aren't many low-carb options out there. Each plan has varying restrictions on

the kind of foods you may eat, as well as the quantity of carbohydrates you can consume. You may experience a variety of short-term health effects if you drastically cut down on carbohydrates, such as headaches, fatigue, and more. Many weight-loss strategies include restrictions on the number of calories that may be consumed each day. Some weight loss strategies restrict sugar intake so severely that they lead to deficiencies in nutrients and minerals, bone loss, and gastrointestinal distress, as well as an increased risk of various long-term illnesses. The reason for this is because low-carb diets are not recommended as a weight loss strategy since they may not provide essential vitamins. Whole grains, natural fats, and veggies are the best sources of nutrients for continuous development of cells. As a result, cutting carbs lowers caloric intake, which is not ideal for sustained weight loss (Masko et al., 2010).

Unseen risks of low fat diets

Administration of a low-fat, high-carbohydrate (LF/HC) meal results in an increase in fasting plasma triglyceride concentrations (TG). There are also decreases in the concentrations of HDL and LDL in the blood, as well as the total cholesterol level in the blood. Carbohydrate-induced spikes in TG have been the focus of contemporary controversy about their possible atherogenicity.

This effect is widely seen in people on low-fat, high carbohydrate diets but the kinetic processes behind it remain unclear. Both a control diet and an LF/HC diet were used to study people with low TG levels and those with TG levels that were considerably increased. Transport kinetics and fatty acid fluxes for VLDL particles and TG were measured, as well as where

VLDL-TG came from. However, there was no substantial change in the production rates of VLDL-apoB or VLDL-TG when subjects followed the LF/HC diet. TG levels increased by 60%, VLDL-TG clearance decreased by 37%, and fat oxidation decreased by 18%. On the LF/HC, HTG patients had significantly higher fasting apoB-48 concentrations (Parks et al., 1999).

It's one of the most fascinating discoveries in the field of nutrition. People who consume a diet low in fats, and notably low in cholesterol, are at greater risk for depression and suicide than the general population. In a surprising turn of events, the first study that low-fat diets could have anything to do with melancholy or self-directed violence emerged a few decades ago. According to the findings of large community-based studies of heart disease preventive techniques, those with the lowest cholesterol levels had a higher frequency of deaths that were not caused by sickness, largely due to suicide, car accidents, and violence. It was difficult to comprehend at first. However, it is possible that the relationship between cholesterol reduction and suicide runs directly via the brain's serotonin pathways, with adverse effects such as melancholy, irritability, impulsiveness, and violence being reduced as a result (Brehm, et al., 2003).

Alternatively, it may flow more indirectly via metabolic pathways of brain serotonin, the neurotransmitter that is most closely linked to depression. Whatever the connection is, it is complicated because it has not been simple to establish. It's not like there's a huge industry of individuals dedicated to tracking it down. Essentially, the problem sets the interests of cardiologists against those of psychiatrists and neuroscientists, or the interests of cardiologists against those of those who study the brain. Cardiologists, along with many other public health specialists, are primarily concerned with the need for a large proportion of the American population to minimize their risk of heart disease by reducing their consumption of dietary fat.

They have a substantial amount of evidence to support their claims. Furthermore, they don't appear to be particularly interested in investigating the possibility that cholesterol-lowering techniques are associated with a previously undiscovered behavioral complication. The link between low cholesterol and depression has been demonstrated in several studies, though it is unclear whether the link between reduced cholesterol and PTSD is as intense in individuals who already have their total cholesterol lowered through diet as it is in people who are born with naturally low cholesterol levels. Due to the large number of variables that must be taken into account while observing and researching behavior, it is a challenging process (Saslow et al., 2014)

However, it seems that some issue with serotonin function is always at the heart of the narrative. High cholesterol levels in nonhuman monkeys have been shown to improve serotonin activity. They have a calming effect on overt hostility. Furthermore, they encourage social behavior. Serotonin deficiency has been linked to significant depression in humans and other animals, as well as to suicide in humans and other species. Serotonin is regarded as a neurotransmitter that promotes restraint and self-control. It stays dormant until called upon to suppress an impulsive command, such as, for example, the contemplation of suicide in the face of increased pressure. In healthy persons, serotonin is activated, which helps to inhibit urges and keep them under control. When the serotonin system is not responsive, for whatever cause, it is unable to inhibit an impulse, resulting in the commission of an impulsive act by the individual. For example, expressing animosity or acting on a suicide impulse. Low-fat diets have been shown to have an adverse effect on serotonin function. It is possible that they reduce the amount of fat in nerve-cell membranes, therefore affecting serotonin receptors.

CONCLUSION

In terms of weight loss and decrease of cardiovascular risk factors, the low-carbohydrate diet outperformed the low-fat diet by a wide margin. Restricting carbohydrate intake as part of a weight-loss strategy could be an option. Physical exercise and a low-fat diet are commonly recommended for the treatment of diabetes. If these dietary and lifestyle alterations are adhered to, the rise in postprandial glycemia and insulin sensitivity increases the risk for heart disease, hypertension, atherosclerosis, overweight, and diabetes, among other diseases and complications. In a study revealed, low-carbohydrate and high-fat diets have been proven to reduce body weight while simultaneously increasing metabolic risk factors. People who follow a low-fat diet see a statistically significant difference in their total and low-density lipoprotein cholesterol levels compared to those who follow a moderate-fat diet, according to the study. Persons may reduce weight and increase their metabolic abnormalities equally as effectively on a reduced carb diet as they do on a low-fat diet, according to these findings. Adoption of a low-carbohydrate diet may help obese persons with abnormal metabolic risk factors lose weight and reduce their chance of developing Type 2 diabetes. The low-carbohydrate diet is better than the low-fat diet in every area that counts, including weight loss, improvement of dyslipidemia linked to type-2 diabetes, management of hypertension and insulin secretion. The results of this study demonstrated that a low-carbohydrate diet is more effective than a low-fat diet.

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