

Diets in trend

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Abstract

There are different types of diets in trend nowadays. Most of them are recommended for weight loss but some of them have other effects also. The present review article researches different types of diets that are in trend like The Paleo diet, Vegan diet, modified Atkin's diet, Ketogenic diet and Mediterranean diet. It was found that modified Atkin diet (MAD) and the Ketogenic diet (KD) are more or less similar in content and based on high-fat ingredients. MAD and KD both are used to treat seizures and cancer (tumour). Both types of diets have important role in weight reduction. Paleo diet (PD) is diet that contains lesser carbohydrate and higher protein content. It is also very good for weight reduction. Paleo diet is also used as a cure for heart disease, diabetes and many forms of cancers. Vegan diet (VD) is based on plant sources, therefore It provides good amount of fiber, antioxidants and phytochemicals; thereby risk for various types of degenerative diseases is reduced. Mediterranean diet and South Beach diets were found effective for weight reduction as well as for weight maintenance also.

Keywords

Diets, trendy, Atkin's, Keto diet, Paleo diet, Mediterranean diet, Vegan diet

Introduction

Nutrition is essential for living. The dietary pattern varies from individual to individual, region-wise, based on food choices, etc. Dietary trends change over time according to the needs of the individual diet modification and thus new diets come in trend. This is a continuous procedure. In the last decades, many new types of have come in trend. A new diet trends are also based on the type of food available, globalization, awareness for fitness, role of some diets in particular disease prevention, fashion, interest, taste etc.

Different forms of trendy diets have been discussed as below -

1. The Paleo diet

The Paleo diet trend starts in European countries. It originated from the Paleolithic era (Franco et al., 2021). The Paleo diet has reached to wide popularity in recent era and the followers of this diet have improved their body shape.

The Paleo diet is based on these food groups -

1. Fruits & vegetables,
2. Meats & poultry,
3. Nuts & seeds,
4. Fat (olive oil)

This diet discourages processed food, sugars, dairy products & grains. The Paleo diet is a type of fad diet (Norwood et al., 2018). It works for weight loss, diabetes control, heart disease, and cancer (Franco et al., 2021)

The Paleo diet is expensive that is based on fish, fruits, nuts and seeds. Therefore, the population belonging to low-income groups can't afford the same.

In this diet the amount of carbohydrates is kept low, the amount of protein is high and the amount of fat is moderate. The Paleo diet includes a lot of fruits and vegetables, carotenoids, vitamin K, vitamin B, iron, alfa-lipoic acid and polyphenols. Fish and meat have protein, omega-3 and polyunsaturated fat (ICMR). Nuts and seeds have vitamin K, Omega -3 fatty acids, zinc, selenium, magnesium and calcium.

Benefits of the Paleo diet

1. It is considered as weight loss diet due to its low carbohydrate content
2. It's a protein-rich diet that helps treat diabetes, cancer, tumour, injury, boost immunity and improve muscle mass (Franco et al., 2021)
3. Its high fiber that helps to reduce weight and give satiety.
4. This diet is rich in Omega-3 as it includes walnut and fish. Omega-3 helps to improve liver and cardiovascular function and help to reduce cholesterol.
5. This diet is rich in protein, calcium, zinc, selenium, and magnesium; so it improves muscle mass and relieves back pain, knee pain, joint pain, and arthritis.
6. The Paleo diet is high in many fat soluble and water soluble vitamins

2. Modified Atkins diet (MAD)

It's a less carbohydrate and high saturated fat diet (Park et al., 2018) and designed by cardiologist Dr. Atkins. Its low carbohydrate content helps the individuals to reduce weight. Here one needs to be careful in including good quality proteins and healthy fats to meet the requirements.

The main agenda of the Atkins diet plan is healthy weight loss and that's why it is so much in trend these days. It also provides other health benefits like boosting metabolism, maintaining blood sugar levels and hence controlling diabetes. Carbohydrate counting is essential in the Atkins diet.

Nowadays Atkin diet is changed to the Modified Atkin diet. It is also known as a substitute for keto diet. In this diet fat with carbohydrates and protein ratio is 1:1 (fat: carbohydrates and protein) and carbohydrates should be limited to 20 grams per day. In this diet, 70% of calories should be provided by fat (Cervenka et al., 2014) and the rest from carbohydrates and protein of total calorie intake.

According to the National institute of Health Adult treatment panel 3rd guidelines if 7% calorie of total calorie intake obtained from saturated fat, it can reduce the cardiovascular risk.

Animal products are the main sources of saturated fat like - ghee, butter, cheese, egg yolk, beef, mutton and margarines. Source of monounsaturated and polyunsaturated fats are seeds oil, vegetable oils, nuts oil (Coconut, mustard, olive oil, canola, coconut oil, almond oil), nuts and seeds (almond, walnut, flax seeds, etc.) and fish.

To make the modified Atkins diet healthy, it's important to reduce the use of saturated fat and use monounsaturated and polyunsaturated fat instead (Cervenka et al., 2014). Modified Atkins diet helps to treat epilepsy and seizures and helps to reduce weight.

3. Vegan diet

It is a plant-based diet. It was developed by the German Nutrition Society (Richter et al., 2016). It is also called a vegetarian diet. In this diet, animal products like milk and eggs are strictly restricted. As the name suggests, vegan means consuming only food obtained from plant sources; like cereals, pulses, fruits, vegetables, nuts and seeds.

The major drawback of this diet is possibility of vitamin B12 and some branch chain amino acids deficiency after a prolonged consumption. It's based on cereals, pulses & legumes, dry nuts & seeds, fruits and vegetables, seed based fat and sugar.

A vegan diet contains dietary fiber and plant-based proteins like cereals. Antioxidant phytochemicals are found in fruits and vegetables (Freire, 2019). Being rich in fruits and vegetables, the vegan diet is known to reduce the risk of various degenerative diseases.

Vegan diet if consumed properly with a lot of fruit and vegetables, whole grains and legumes; helps to reduce weight.

Nutritive value of Vegan diet

1. Protein - In vegan diet main protein sources are pulses, whole cereals, nuts, and seeds
2. Carbohydrates - cereals and sugars
3. Fat - oilseeds and nuts
4. Vitamin K - green leafy vegetables, legumes, tomato
5. Riboflavin - oil, seeds, nuts, vegetables.
6. Calcium - some vegetables, nuts and seeds, legumes
7. Iron - fruits and vegetables, jaggery, whole grain cereals, nuts and seeds
8. Zinc - whole grain legumes, nuts, and seeds
9. Selenium - nuts and seeds and some bulb vegetables

4. The Ketogenic diet

The Ketogenic diet contains less carbohydrate with more fat content. It is effective for weight loss and treatment of seizure disorder. In the Ketogenic diet fat with carbohydrates and protein ratio is 4:1 (fat: carbohydrates and protein). In this diet 90% of calories should be provided by fat and 2% from carbohydrates of total calorie intake (Cervenka et al., 2014).

A Ketogenic diet also helps to treat cancer. Many tumours grow in presence of glucose (Shalaby et al., 2016), therefore being low in carbohydrate and high in fat content reduces tumour growth and helps to treat cancer. The Ketogenic diet is developed for epilepsy, tumour and the treatment of diabetes type 2.

Many studies showed use of Keto diet in weight loss. Regular consumption of Keto diet is known to reduce HbA1c and helps in weight loss but it increases LDL cholesterol (Blair O'Neill & Palao Raggi, 2020). This diet is most similar to modified Atkins diet.

The mechanism of the Ketogenic diet depends on some basic change in the brain's metabolic function in which energy substrate substitute from glucose to ketone (Swink et al., 1997).

5. Mediterranean diet

The Mediterranean diet includes a lots of fresh fruits and vegetables; pulses, cereals and seafood as source of protein and olive oil and nuts as chief sources of fat. Dairy product intake is limited in this type of diet. As it incorporates a lot of plant foods, therefore it provides abundant amount of fiber, minerals, vitamins, antioxidants and many phytochemicals.

6. South Beach Diet

This is another type of weight loss diet that was designed by Miami cardiologist Arthur Agatston. It is neither low carbohydrate or low fat diet but the emphasis was laid down on right carbohydrate and right fat. It is given in 3 phases:

1. In phase 1, carbohydrates are restricted in diet to reduce craving for carbohydrates. The person is given high protein in terms of meat fish poultry, egg, cheese, nuts accompanied with vegetables
2. In phase 2, the patient is reintroduced with carbohydrate in diet, but in the form of complex carbohydrates. This phase is followed until desired weight is obtained
3. In phase 3, the patient is allowed liberal carbohydrate counts but in complex form and within the limit that allows to maintain desired body weight lifelong

Review of Literature

1. Paleo diet

Franco et al. (2021) quoted in their study that a low carbohydrate and high protein diet is known as Paleo diet. Andrikopoulos et al. (2016) showed that 7 weeks consumption of a Paleo diet improved metabolic status and type 2 diabetes. A Paleolithic diet is known to reduce BMI and HbA1c (Palmer et al., 2016). Other studies showed that intake of sodium is low, while potassium intake is high in Paleo diet. Potassium benefits in reducing stroke, hypertension, nephrolithiasis and osteoporosis.

2. Modified Atkin's diet (MAD)

The MAD has been used in treatment of refractory epilepsy since 2003. It is also known as alternative Ketogenic diet although it has lesser calorie and protein restrictions as compared to Ketogenic diet. It is increasing being followed by adults (Kossoff et al., 2013).

A prospective nonrandomized trial was done by Neves et al., 2020. In this study, patients were allowed to consume a Modified Atkin's Diet (MAD) that included 20 g carbohydrates with liberal amounts of fat and appropriate protein content in a day. This was recommended for 6 months. A decrease was seen in the mean value from 9 - 4 seizures/month in a period of 12 weeks. Although an increase was observed in lipid profile during the entire period. A significantly reduced glucose levels were also found.

A significant decline in cardiovascular risk, body weight, body mass index and waist and arm circumferences were also observed. Some side effects were also seen in terms of headache, weakness and gastrointestinal symptoms that were mild and treatable. Role of Modified Atkins diet was also observed in epilepsy in children and adults also. Beneficial effect of Modified Atkin's diet was observed in both children and adults (Kossoff and Dorward, 2008). Reduction in antiepileptic medication after following a MAD diet was also observed by Kossoff et al., 2003). It was also quoted that this diet may have a therapeutic role also in epileptic patients.

3. Vegan diet

The gut micro-biota of Vegan diet followers is very much similar to vegetarians but not with omnivores. The gut microbiota of people following a vegan diet pattern is very much likely to vegetarian's gut microbiota in terms of good amount of protective species and lesser volume of pathobionts. Lesser inflammation has been reported in vegan diet followers. Although it is still debatable if recommendation of vegan diet for long duration has any health benefit in development of good gut microflora. Muller (2020) described role of Vegan diet in decreasing the risk of many degenerative problems including excessive weight gain, type-2 diabetes, heart problems and many forms of cancers. Simultaneously it was also noted that children dependent on a vegan diet may be deficient in protein and energy along with many nutrients that are otherwise obtained from animal sources like iron, zinc, calcium, iodine, vitamin D and particularly vitamin B12. Deprivation from these nutrients in long run may cause some irreversible health disorders. Therefore supplementation of vitamin B12, vitamin D, iodine etc. Should be recommended to a regular follower of Vegan diet. Similar findings were documented by Bakaloudi et al., 2021) also. It was stated in their research that certain micronutrients deficiencies (vitamin B12, zinc, calcium and selenium) may occur following a vegan diet. Radnitz et al., 2015) conducted an online survey on 246 international population following a Vegan diet. They

investigated the reason of consumption of Vegan diet and found that majority of population was eating Vegan diet from health point of view (eating higher amount of fruits and lesser sweets) rather than for ethical reasons. Hanninen (1999) did dietary intervention and cross-sectional study on vegan diet consumers who also called it as living food (LF). LF consists most of the natural foods like sprouts, vegetables, fruits and nuts. Some foods were rich in lactobacilli that were consumed after fermentation. The diet is rich in fiber and hardly contains sodium and is totally free from cholesterol. It provides abundant amount of antioxidants as it incorporates many types of berries and wheat grass juice. The rheumatoid arthritis patients eating the a plant based diet reported relief in swelling and pain of joints as well as morning stiffness. Overall health condition was found to be improved related to joint problems & sleep qualities.

4. Ketogenic diet

It is known as a high fat, low carbohydrate diet. According to Watanabe et al. (2020), there is an important role of Ketogenic diet in cure of different types of health issues related to neurology, cancer, liver diseases, diabetes as well as obesity. Goday et al. (2016) found that interventional weight loss regimen of diet that is very low in calories, play a very important role in weight loss and blood glucose level control. Similarly Martin McGill et al., 2018 found promising role of Ketogenic diet in epilepsy but simultaneously documented short term gastrointestinal disturbances and increased cholesterol levels with Ketogenic diets. Adam et al. (2007) described that anticonvulsant activity of Ketogenic diet is due to its acetone content that is responsible for control of seizures. Ketogenic diet is also helpful in control of recurrent episodes of seizures. Ballaban-Gill (2005) also conducted a research on effect of Ketogenic diet on children. It was found that 10% children faced adverse symptoms at initiation of Ketogenic diet. 4% patients developed severely low protein levels during a interventional phase of 4 weeks and symptoms of haemolytic anaemia were also seen in 2% cases. Remarkable rise in liver function test was observed in two children. Evangeliou et al. (2003) conducted a learning on role of Ketogenic diet in children between 4 - 10 years having some symptoms of autism. The interventional phase was for 6 months in which Ketogenic diet was administered continuously for 4 weeks with 2 weeks interval. Intolerance to Ketogenic diet was seen in 7 out of 30 children while others discontinued it after 1- 2 months. On the other hand, 18 out of 30 children adhered to the interventional diet and showed improvement in Autism Rating Scale.

5. Mediterranean diet (Med-Diet)

According to studies on Mediterranean diet (Jospe et al, 2019), a better control on blood glucose levels was seen with greater weight loss and overall positive influence on health. Martinez Gonzalez (2015) investigated benefits of Mediterranean diet. A positive effect of Mediterranean diet was observed in many types of degenerative diseases including hypertension, heart ailments, diabetes and oxidative stress of body. Salvado et al. (2018) also stated important role of The Med-Diet in health outcomes of cardio vascular diseases due to its high fibre, antioxidants and good fat sources. Effect of Mediterranean diet on weight reduction was studied by Esposito et al. (2011). It was found helpful in weight loss when given in energy restricted form combined with physical activity for 6 months duration. In spite of relatively high fat content, it was found that it doesn't cause weight gain. It may be due to MUFA rich fat sources with lot of fibre. Villegas et al. (2006) stated that Mediterranean diet helped in prevention of depression as it contained a lot of antioxidants by including fruits, vegetables, nuts, olive oil, legumes or fish etc.

6. South Beach diet

As per Chalasani and Fischer (2008), healthcare professional need to be aware of symptoms of ketoacidosis in era of popularity of low carbohydrate diets for weight reduction. Another study done by Miller et al. (2007), South Beach diet was found helpful in remarkable decline in LDL- cholesterol and apolipoprotein B levels. In a research conducted by Forbes Lorman (2006), it was found that exercise capacity was reduced in initial phase of induction of South Beach diet with an elevated ketone levels and a decreasing trend in body weight. It was also stated that exercised capacity resumed and 1% weight gain was also reported when returned to normal diet pattern.

Conclusion

It can be concluded from the above review on different types of diets in trend that each diet has its own pros and cons. So there is a need of strong apprehension especially in nutritionists who recommend people different types of diets regarding positive and negative aspects of the specific diet regimen. High fat and low carbohydrate diets are found useful in weight loss and epilepsy but simultaneously may increase lipid profile and liver function test if consumed for a long time period. On the other hand, the diets that are plant based may give fibre and antioxidants but lack good quality protein including other important nutrients like vitamin-A, Selenium and vitamin B12. Mediterranean diets and

South Beach diet can be recommended as good for weight loss as in this emphasis has been laid down on quality inspite of quantity. Including it is less restrictive type in comparison to other weight loss diet patterns, therefore more practical to follow for a prolonged time period without any significant nutritional deficiency. Final conclusion can be drawn in favour of judicious use of any particular diet pattern to achieve desired results without any significant adverse outcomes.

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