



REVIEW OF THE PREVALENT DIET PLAN FOR MANAGEMENT OF LIFESTYLE DISORDER

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Abstract

The ultimate result of food with adequate digestion and metabolism is health. There is no need for medicine if we eat properly. But present era food habits are changing dramatically. Individual prefers junk, processed food and skipping breakfast; therefore, They are more prone to lifestyle disorders, gastrointestinal illnesses, and other conditions, cardiovascular disease. According to Ayurveda, bhojana (food) is essential for health, followed by vidhi and vikalp. Ayurveda described *Aahara* (diet), *Ritucharya* (seasonal basis), *Dincharya* (daily basis), *Ashtavidh aahar visheshaatana*, *Dwadash pravicharna* etc.). By adopting this Ayurvedic pattern of diet along with prescribed popular modern diet, healthy and disease-free life can be achieved.

Keyword: *Vidhi, vikalp, Ashtavidh Aahar Visheshaatana, Dwadash pravicharna*

Introduction:

A lifestyle disorders are non-communicable disease which is the outcome of bad habits of eating, drinking, and sleeping pattern. In WHO Cardiovascular, diabetes, obesity, cancer, osteoporosis, respiratory, and gastrointestinal disorders caused by lifestyle factors account for 59 percent of the annual 56.5 million fatalities and 45.9 percent of the worldwide burden of disease. The basic principle of *Ayurveda* is "*Swasthyashya Swasthya Rakshanam, Aturashya Vikara Prashamanancha*"ⁱ, means to maintain the health rather than cure the diseases. For this purpose, it is elaborated in *Ayurveda*, at various places like in the explanation of *Dincharya*, *Ritucharya* and many other spaces, that precise diet and routine should be tracked according to *Prakriti, Kala, Desha, Vaya* etc to maintain the health. **Dietic approach:** Most health issues arise from improper eating habits and cooking techniques. One of the "pillars" of the "three pillars of life" (*Tri-Upastambha*) is *Aahara* (diet)ⁱⁱ. *Ayurveda* deals with the *Pathya-Apathya* (planning of diet-dietetics) in a very systematic and holistic way of Dietetics. The diet recommendations provided in the classical Ayurvedic texts are very well-balanced and founded on strong ideologies. The person's age, season, and habitat should all be

taken into consideration while planning their diet. In present study focus on diet plan in globally with the claim of corrected life style disorder, however it is observed that there are many dietary plan advised by modern dietitian like keto diet, dash diet etc. In this paper we will review the content's advantage, disadvantage and their validity on the enlight of ayurvedic principle.

Aim And Objective

To review prevalent diet plan from an ayurvedic perspective.

Material And Method

Pubmed, googles scholar sources searched for prevent diet plan and a list of the 8 most popular diet plan described. Methodology prepare from their advantages and disadvantage and their validity which is clinically advised on ayurvedic dietetic principle.

Observation

There are eight most popular diet plan practiced worldwide by modern nutrition specialist. Following 08 most popular diet practices worldwide by modern dietetics .

1. Whole 30
2. Mediterranean Diet
3. Zone diet
4. Keto diet
5. Dash diet
6. Mind diet
7. Alkaline diet
8. South beach diet

1. Whole30: Diet

A 30-day plan called the Whole 30 was developed in 2009. Many people attempt this diet for lose weight or resolve digestive issue. The programme encourages to eliminate grains, dairy, alcohol, sugar for 30 days. The program's foundation is to address underlying health concerns in the body by cutting out specific food groups that its designers consider to be harmful.ⁱⁱⁱ This plan divided in 2 phases

- 1 Eliminated potentially harmful foods from diet for 30 days
- 2 Gradually reintroduce some foods after the first 30 days

Food needs to be eliminated

- Sugar and artificial sweeteners
- Alcohol
- Grains: including corn, wheat, rice and oats.
- Pulses: peas, lentils, beans, peanuts.
- Dairy: goat, and sheep's milk, yogurt, cow milk, ice cream, and other products made from dairy

food need to be introduced

- Poultry includes beef, horse,
- chicken, duck, turkey, lamb and eggs.
- Seafood and fish.

- Fruits: fresh and dried fruits
- Vegetables
- Nuts and seeds, including all varieties, nut butter, nut flour, and nut milk
- Some fats: olive oil, coconut oil, ghee, avocado oil
-

Claimed benefits

- Fat loss
- Increased energy level
- Improved sleep
- Increased appetite
- Improved athletic performance

A critical ayurvedic analysis above mentioned diet reveals:

- ❖ Agni, quality and *samskara* of the *Ahara*, *kosta*, *prakruthi*, *desa*, *kala* are the main factors that has to be considered before choosing the food along with *asta vidha ahara vishesha ayatanas*
- ❖ In these diet poultry food like beef is prominated included, which is consider as *mamsa varga*. As per ayurveda, meat should be consumed only for *Brmhana* (nourishing) purpose and not otherwise^{iv}. Due to excessive *Brahmana*, *santarpana janya vyadhi* can happen in which BMI is always increased It is better if we avoid the beef as it has *guru* properties and difficult for digestion and has been contra indicated for daily uses (*Nitya sevnam*)
- ❖ Fish is contra indicated since it is *Bahu Dosha Yuktha*, *ushna veerya* and *guru*.^v Instead proteins can be supplemented with *Kukkuta mamsa* and *Aja mamsa*.
- ❖ As *Acharya Susurta* mentioned *ekanthitani jatisatmya* (substances which are always suitable and accustomed by birth) are *Ghrita*, *Dugdha* (milk), *porridge* (boiled rice).^{vi} *Ekanta ahitani* food (those which harm the body quickly and so cannot be used even for short period) should not be used for very long time like whole 30 days (except *Ghrita*, *dugda* and *audana*) since they are *ekantahitani aahara*

2.Mediterranean diet

Ancel Keys wrote about the Mediterranean in Greece and Southern Italy in the 1960s. The traditional foods of Greece, Italy which are near the Mediterranean Sea is called Mediterranean diet. Essentially, the phrase "Mediterranean diet" refers to a dietary pattern that is predominantly plant-based and whose increased intake has been linked to improved survival and reduced all-cause mortality.^{vii}

Contraindicated food

- Addition of sugar
- Rounded grains: white bread, pasta, chips, crackers
- foods that are fried and other processed foods
- Processed meat
- Highly processed foods

Indicated Diet

- Broccoli, tomatoes, onions, cauliflower, spinach, carrots, sprouts are examples of vegetables.
- Apples, oranges, bananas, pears, grapes, dates, figs, strawberries melons are example of fruits
- Seeds, Nuts and nut butters
- Legumes
- Whole grains: brown rice, whole wheat bread, corn and pasta
- Seafood and fish
- Poultry: duck, turkey, chicken
- Eggs: chicken, and duck eggs
- Dairy: yogurt, milk, cheese

Advantage

- Weight loss
- Reduced risk of Alzheimer disease
- Lower risk of heart disease
- Longer life span
- Reduced risk of stroke
- Strong and healthier bones
- Improvement in fertility

Mediterranean diet is balanced diet but it is unilateral and non-holistic. As per ayurveda, *Desh* is divided into 3 types -1) *Jangala desh* 2) *Aanoopa desh* 3) *Sadharan desh*.^{viii} Every *Desh* has their own feature, culture and nature. *Jangala desh* is dominated by *Vata* and *pitta* while *Aanoopa desh* is dominated by *Vata* and *Kapha*. According to *Ayurveda*, if we consume *Aanoopa mamsa*, *Saka*, *Dhanya*, *Phala* in *Jangala Desha* it will be considered as *Deshvirudh aahara*.^{ix} So we should always consider *Desha* at the time of selecting the diet. In this diet, green vegetables like onion (*Plandu*) and carrot have been advised for consumption. *Plandu* is *Vata nasak* but *Kaphavardhak*.^x Carrot is *Grahi* and *Teekshan guna*.^{xi} These properties of these diets don't make it suitable for the weight reduction according to the *Ayurveda*.

3.Zone diet

The Zone Diet was established by Dr. Barry Sears, an American biochemist. This diet claims to reduce the inflammation in your body.^{xii} To stay on this diet, consume a particular amount of 40% carbohydrates, 30% protein, and 30% fat. Low glycemic index carbohydrates, lean protein, and monounsaturated fat should all be included in this diet. Diet advocates assert that once inflammation is reduced, it will burn fat, delay ageing, lower risk of developing chronic diseases, and perform better.

Two approaches to implement the Zone Diet.

1)The hand-eye method

This technique makes use of the eye to visualise three portions in a diet and the hand to calculate serving sizes. Five fingers serve as a reminder to eat five times daily and never go without meals more than five hours. Three portion of diet is

1. Lean protein-one third
2. Carbs- Two third
3. A little fat

2) Zone food blocks

This is personalized approach where diet is customised by calculating grams of fat, protein and carbs per day. Height, waist, and hip measurements are main consideration in this diet. Male consumes 14 Zone blocks daily,

whereas the female consumes 11 Zone blocks daily. A snack contains one Zone block, while a large meal contains 3 to 5 Zone blocks in which each is made of 3 blocks.

It is very useful for reducing inflammation .it is mixed type of diet which include protein, carb and fat in the fixed quantity. In this diet, the quantity of the food is fixed for all the subjects. This doesn't follow *Rashi* among the *asta vidha aahara vidhi visheshayatan*. *Rashi* is a unit of measurement for the entire amount of food as well as each meal component (*ahara matra*). *Ayurveda* explains the importance of *Ahara matra* according to *agni* in *anna pachana*. It is impossible to generalise about the amount of food because it varies on each person's ability to digest it (*Agni*). Food that is well digested in a timely manner without upsetting the body's *Dhatu* & *Dosha* balance is said to be in an amount that activates digestive functions.^{xiii} While too less or too much might be hazardous to your health. But in this diet, the quantity is fixed for every person thus it is *rashi virudh* according to *ayurveda*.

4. Keto diet

Definition

It is a ketogenic diet that is high in fat, low in carbohydrates, and promotes weight loss.^{xiv} It involves reducing carbohydrate intake and replacing it with fat intake, after that body becomes extremely efficient at burning fat for energy. It causes the liver to produce ketones from fat, which the brain can use as fuel. Ketogenic diets can significantly lower blood sugar levels, which benefits type 2 diabetes.

Contraindication

sugary foods, grains or starches, root vegetables and tubers ,beans or legumes, fruit ,low fat or diet products, some condiments or sauces, unhealthy fats: processed vegetable oils, mayonnaise, alcohol: beer, wine, liquor, mixed drinks

Foods to eat

Meat, Fatty fish, Eggs, Healthy oils, Cheese, Nuts and seeds, Butter and cream, Avocados etc.

Indication

- Heart disease like coronary heart disease (CHD)
- Cancer
- Alzheimer's disease
- Epilepsy.
- Parkinson's disease.
- Polycystic ovary syndrome.
- Brain injuries

Keto diet is very popular diet in present scenario. In keto diet, fatty meat is indicated, which increase of *snigdhta* cause *medo vridhi* in our body which results *santarpanjan vyadhi*. Fish meat is also heavy

to digest, hot, sweet, *Mamsa vardhak* and said to be *bahudosha prakirtita* except *Rohu fish* which is *Agnideepak, laghupaka and Mahabala*.^{xv} So we can consume *rohu fish* in fish meat. Consumption of fat in large quantity has been advised without considering the *Agni* of the patient and thus will become *Agni viruddha* if digestive capacity of the patient is not considered. Thus, *agni* should be considered before advising the diet.

5.DASH DIET (Dietary Approaches to Stop Hypertension)

This diet used in the treatment or prevention of high blood pressure. Foods include high in potassium, calcium, and magnesium and prohibited which is high in sodium, saturated fat, and added sugars. This diet can lower blood pressure in as little as two weeks. Low-density lipoprotein (LDL) cholesterol levels in the blood can also be reduced. High blood pressure and high LDL levels are major risk factors for heart disease and stroke. This diet restricts sodium intake to 2,300 mg per day. DASH with less sodium has a daily sodium limit of 1,500 mg.^{xvi}

Indicated food

High in potassium, calcium, magnesium, fibre and protein
Low in saturated fat and sodium

Salts like *Saindava*, *Samudra*, *Vida*, *sowarchala*, *romaka*, *audbhida* etc, are hot, *vata* pacifying, increasing *Kapha* and *pitta* and pungent in *vipaka* while, in regressive order, they are unctuous, tasteful and help in elimination of urine and faeces. Among these, *Saindava* is considered best salt in ayurveda which is wholesome for eyes, agreeable, relishing, light appetiser, unctuous, sweet, aphrodisiac, cold and has excellent *dosha* - *alleviating* properties. So we can prescribe *saindhava lavan* for daily consumption.

6.MIND DIET

A diet that supports brain health is called MIND, or Mediterranean-DASH Intervention for Neuro-degenerative Delay. It combines the DASH diet and the Mediterranean diet and focuses on the food categories in each that can increase mental acuity and protect it from age-related problems like Alzheimer's disease.^{xvii}

Contraindication

Butter/margarine, Cheese, Red meat, Fried foods, Sweets and pastries

Indicated food

- Green leafy vegetables, spinach, and collard greens (at least one serving daily)
- Berries (2 or more per week)
- Nuts (5 or more per week)
- Olive oil (daily)
- Whole grains (3 or more per day)
- Fish/seafood (1 or more per week)
- Beans (4 or more per week)
- Poultry (2 or more per week)
- Wine (one glass per day, but you can skip it)

Mind diet is very useful diet for brain health. Butter is contraindicated food in these diet. As per ayurveda, *navneeta* is *deepana* and *hrdya* and considered as best diet for children. In many *manovaha sroto vikara* like *unmada* and *apasmar*, *ghrita* is considered as best dravya. *Ghrita* is also mentioned as *nitya sevaniya aahara* and mentioned in *achara rasayan* and thus can be consumed daily. Cow's ghee (Go- *ghrita*) promotes memory, intellect and

promotes digestive power. There are various *ghrita* like *panchgavya grita*, *kalyank ghrita*, *mahakalyank ghrita* which are used for therapeutic purpose in various disease.

7.ALKALINE DIET

The alkaline diet intended to alters the ph level of the body, making it either acidic or alkaline. It is hypothesized that incresed acidic meals can harm the body, but eating alkaline or neutral foods will improve the health.The diet emphasises consuming alkaline foods such fresh fruits and vegetables to maintain the body's pH level. The "dietary ash hypothesis," a theory that states that once food is digested in the body, the particles leave either an acidic or alkaline ash, gave rise to this idea centuries ago.^{xviii}

The following meals and beverages are fine in moderation:

- **Wine:** Antioxidants and other elements are abundant in premium red wine.
- **Dark chocolate:** Select one with 70% cocoa content or more. High-quality dark chocolate is incredibly healthful and nutrient-dense.

Alkaline diet is very modernised diet. In *ayurveda* wine refers to *Madhya varga* which has properties like *amla rasa*, *ushna veerya* and *amla vipaka*. As per *Ayurveda*, *Madya* has similar properties of *visha* except *vyakta rasa (amla rasa)* and thus has to be consumed in proper quantity along with proper *anupana* according to one's own *prakriti* which will give effects like consumption of nectar if not produces diseases like *visha*.

8. SOUTH BEACH DIET

Definition

The South Beach Diet described by cardiologist Arthur Agatston in 2003. It is low-carbohydrate diet named after a glamorous area of Miami. It has fewer carbohydrates and more protein and good fats.

Phases of the South Beach Diet^{xix}

There are three phases:

Phase 1 Reduces cravings for processed carbs and foods high in sugar during this two-week timeframe. Eliminate all carbohydrates from diet, and focus on eating lean proteins like those in seafood, skinless poultry, and lean cattle. Consume low-fat dairy, vegetables high in fibre, and foods high in healthy unsaturated fats like avocados, nuts, and seeds.

Phase 2. It is a sustained weight loss phase. Start reintroducing a few of the foods that were restricted in phase 1. Up until attain desired weight, remain in this phase.

Phase 3. Maintaining a long-term, healthy eating habit is the goal of this phase. During this phase, continue to follow the lifestyle rules which learned about in the prior two phases. All foods are acceptable in moderation.

South beach diet follows *padansika karma* defined as “*Kramenaapchita dosha, Kramena upachita guna*” means by slowly and gradually giving up the unwholesome practices and by increasing the wholesome practices. A sudden change in habits is likely to cause immense harm of the body. South beach diet is very

focused diet. In this diet, beef and sea food has been advised which is considered as *guru* and not fit for daily consumption. Such diet should be avoided while prescribing the lean proteins. This diet should be advised after considering the *Agni, Desa, Dosha, Bala, Kala, Vaya, Prakiriti, Virudh Aahara, Ashtaaharvisheshaytan, Dwadas Pravicharna* etc.

DISCUSSION

In this article described eight most popular diet advised by modern nutrient specialist which hypothesised that this diet is imbalanced because practised for particular disease, particular desh and dietary pattern. which is design by particular area as per their requirement. it is not universal acceptable. According to ayurveda we planned for diet according to *parkiti, desh, kala, vaya, koshta* which can use for all region.

According to ayurveda

“Aanpapanam prania pranisangyakanam pranachakshte”

Aahara is life of humen being. They generate mental vigour, dhatus constitution, strength, complexity, and sense organ clarity. The ayurvedic literature places emphasis on the fact that eating a balanced diet helps the body meet its needs in all respects

Effect of Aahara

According to Dosha

Vata, Pitta, and Kapha are thought to be in charge of the biochemical processes involved in food digestion and assimilation, as well as normal and abnormal bodily physiological functioning. If *Aahara* aggravates Doshas then diseases condition may be seen while.

According to Rasa

Ahara's primary traits are *Guna, Rasa, and Swabhava*, if food is not consumed properly, these attributes of *Ahara* also cause incompatibility (*Viruddha Aahara*). The six *Rasa* represent the fundamental flavours of food, and each *Rasa* denotes a certain aspect of *Panchamahabhoota* and has a corresponding impact on the *Tridoshas* and *Dhatus*.

Table 1: Rasa & their Panchamahabhoota Element.

S. No	Rasa	Panchbhotikta	Dosha action
1	Madhura	Prithvi & jala	Vata ↓ Pitta ↓ Kapha ↑
2	Amla	Prithvi & Agni	Vata ↓ Pitta ↑ Kapha ↑
3	Lavana	Jalaa & Agni	Vata ↓ Pitta ↑ Kapha ↑
4	Katu	Agni & Vayu	Vata ↑ Pitta ↑ Kapha ↓
5	Tikta	Vayu & Aakash	Vata ↑ Pitta ↓ Kapha ↓
6	Kashaya	Prithvi & Vayu	Vata ↑ Pitta ↓ Kapha ↓

Aahara (diet) takes into account elements like *Desh, Kala, Prakriti, and Vayah*. Due to the current lifestyle, *Viruddha Ahara* assists in preventing the consumption of foods that may cause various illness and incidences of these conditions are on the rise. It is better if avoid the beef as it has guru properties and difficult for digestion and has been contra indicated for *Nitya sevanam*. While consuming fruits, it should be consumed before food intake. Samskara of these diets is also equally important. Vegetables deep fried with oil, improperly cooked meat, fruits mixed with milk can act as *Virudham*. *Agni* of the person plays the foremost factor before prescribing any of these diets. *Varaha vasa* is considered to be the best vasa for consumption. In *Anupa desa* and *Hemantha rtu*, vasa and *Anupa mamsa* is indicated for consumption and in *Sarat ritu*, vasa prayoga is contra indicated. Thus, the pork consumption may be appropriate in korea and not in arab countries. Thus, careful examination of all these factors is necessary before prescribing a diet to the patient.

Conclusion –

All these eight diets are popularly prescribed to the individuals. Even though, it gives positive results in most cases, but it is not subjective. The diets should be individualised and proteins, carbohydrates should be supplemented according to *agni, prakruthi* of the person. In Ayurveda, *Agni*, quality and samskara of the *Ahara, kosta, prakruthi, desa, kala* are the main factors that must be considered. Ayurvedic principle should be considered while prescribing diet.

ⁱ Caraka Samhita of Agnivesa of Ckakrapanidatta by Pt. Kasinatha Sastri, Edited by Dr. Gangasahaya Pandeya, Publisher-Chaukhambha Sanskrit Sansthan edition reprint-2007, Sutra Sthana, Chapter 30, Sholaka no-26, Page no 450.

ⁱⁱ Caraka Samhita of Agnivesa of Ckakrapanidatta by Pt. Kasinatha Sastri, Edited by Dr. Gangasahaya Pandeya, Publisher-Chaukhambha Sanskrit Sansthan edition reprint-2007, Sutra Sthana, Adhyaya 11 S, Sholaka no-35, Page no.160.

ⁱⁱⁱ Review by Katherine Marengo LDN, R.D, Nutrition- By Johnsan on May 9, 2019.

^{iv} Caraka Samhita of Agnivesa of Ckakrapanidatta by Pt. Kasinatha Sastri, Edited by Dr. Gangasahaya Pandeya, Publisher-Chaukhambha Sanskrit Sansthan edition reprint-2007, Sutra Sthana, Chapter 27, Sholaka no-87, Page no 381.

^v Caraka Samhita of Agnivesa of Ckakrapanidatta by Pt. Kasinatha Sastri, Edited by Dr. Gangasahaya Pandeya, Publisher-Chaukhambha Sanskrit Sansthan edition reprint-2007, Sutra Sthana, Chapter 27, Sholaka no-87, Page no 381

^{vi} Sushruta Samhita of Maharshi- Sushruta, edited with Ayurveda- Tattva-Sandipika, by Kaviraja Ambika duttashastri, Publisher-Chaukhamba Sanskrita Sansthan edition reprint -2018, Sutra sthana Adhyaya 20, Shloka no-04, page no 230

^{vii} Cristina Mihaela Lacatush, Enviourmental Research and Mental health, The Mediterranean Diet: From an Environment-Driven Food Culture to an Emerging Medical Prescription, published 15 March 2019

^{viii} Dr. Brahmanand Tripathi, Caraka Samhita, Hindi commentary Charak Chandrika, Kalpasthana, Adhyaya Madanfalkapa, Chaukhamba Sanskrita Sansthan edition reprint 2006, shloka no.-8, page no.-1075

^{ix} Dr. Laxmidhara Dwivedi, Ayurveda Dipika Sanskrit commentary by Cakrapanidatta, Sutrasthana, Adhyaya Aatreyabhadrakapiya, Chowkhamba Krishnadas Academy, Varanasi edition reprint 2016, shloka no.-88, page no.-507

^x Dr. Laxmidhara Dwivedi, Ayurveda Dipika Sanskrit commentary by Cakrapanidatta, Sutrasthana, Adhyaya Aanapanavidhi, Chowkhamba Krishnadas Academy, Varanasi edition reprint 2016, shloka no.-175, page no.-544

^{xi} Dr. Laxmidhara Dwivedi, Ayurveda Dipika Sanskrit commentary by Cakrapanidatta, Sutrasthana, Adhyaya Aanapanavidhi, Chowkhamba Krishnadas Academy, Varanasi edition reprint 2016, shloka no.-174, page no.-544

^{xii} Samul N. Cheuvront, Journal of the American College of Nutrition, Review article on The Zone Diet: A closer look at the science behind the claims accepted at 30 august 2002

^{xiii} Dr. Laxmidhara Dwivedi, Ayurveda Dipika Sanskrit commentary by Cakrapanidatta, Sutrasthana, Adhyaya Aanapanavidhi, Chowkhamba Krishnadas Academy, Varanasi edition reprint 2016, shloka no.-172, page no.-544

^{xiv} Jennifer T. Batch, Sanjay P. Lamsal, Cureus, Advantage and disadvantage of the Review article: A review article, published 08/10/2020

^{xv} Caraka Samhita of Agnivesha, Cakrapani Datta's Ayurveda Deepika by Dr. Ram karan sharma, Sutrasthan, Chapter- 27, Shloka no.-81-83

^{xvi} Hina J. Challa, Ameer MA, Uppaluri KR., DASH diet to stop Hypertension : review article, Statpearls Publishing, published, 2022 january

^{xvii} Martha Clare Morries, S. D., Christy C., Department of internal medicine, HHS public Access, review article : Mind diet slows cognitive decline with aging Published -2015 september.

^{xviii} Hasan Bahrami, Nutrition researcher, world nutrition journal The Alkaline Diet and the Warburg effect published 2020

^{xix} Franziska Spritzler, healthline, South Beach diet : Review article published 12 march 2017

