Sri Lanka Journal of Medicine **SLJM**

Editorial

Citation: Navaratna S, 2024. Revisiting Fad Diets to Separate Science from Fiction. Sri Lanka Journal of Medicine, pp 1-7.
DOI: https://doi.org/10.4038/sljm.v33i4.579

Revisiting Fad Diets to Separate Science from Fiction

Navaratna, S*

*Department of Community Medicine, Faculty of Medicine, University of Peradeniya.

Correspondence:
S Navaratna
Email: samidi.navaratna@med.pdn.ac.lk
: https://orcid.org/0000-0001-8528-9891

Key points

- Fad diets often gain rapid popularity by promising quick and effortless solutions to obesity-related issues, despite lacking valid and reliable scientific evidence.
- These diets typically involve restricting one or more macronutrients, imposing rigid food rules, and blaming specific foods or nutrients for weight gain, promoting a simplistic "one-size-fits-all" approach.
- The associated risks include nutrient deficiencies, psychological stress, disordered eating habits, metabolic disruptions, muscle loss, and challenges in long-term weight management.
- Public health efforts in Sri Lanka should emphasise evidence-based dietary practices, raise awareness about the risks of fad diets, and promote healthy eating habits aligned with Sri Lanka's Food-Based Dietary Guidelines and WHO recommendations, in addition to promoting healthy lifestyles to curtail metabolic syndrome.

INTRODUCTION

Optimal eating is linked to longer life expectancy, a significant reduction in the risk of chronic diseases, and positive effects on gene expression. Overweight and obesity are widely recognised as a global epidemic, instigating many individuals to turn to diet plans as a preventive measure. Metabolic syndrome, defined by hypertension, dyslipidaemia (elevated triglycerides and reduced high-density lipoprotein cholesterol (HDL-C) levels, abdominal obesity, and impaired fasting blood sugar levels (insulin resistance), substantially elevates the risk of morbidity and mortality from cardiovascular diseases, type 2 diabetes mellitus, stroke, or a combination of these conditions. As a result, many individuals with or at risk of metabolic syndrome have turned to fad diets in an attempt to regulate these risk factors and improve their overall health outcomes.

The market as well as the e-market is saturated with books, e-books, websites, and Blogs offering quick solutions for weight management, often boasting claims of guaranteed weight loss in a very short time. While various diets often make competing claims about their superiority, especially driven by commercial interests, their core principles are questionable as they lack valid and reliable scientific support. Further, evidence-based diets associated with longevity, reduced chronic disease risk, and improved gene expression such as the WHO recommendations (1) often share overlapping principles, challenging the distinctions

claimed by fad diets. (2). Consequently, this editorial explores several types of fad diets, their claimed advantages, disadvantages, and implications for health to help the reader distinguish science from fiction.

What is a fad diet?

Fad diets are popular dietary plans that promise rapid weight loss or other health benefits through restrictive or unconventional eating patterns. These approaches typically involve specific alterations in macronutrient proportions or the inclusion and exclusion of certain foods, with a primary focus on achieving quick results (3).Therefore, these diets can be appealing to those seeking quick solutions to genuine or perceived obesity and other related health issues as they offer “quick and easy fixes”. Rather than basing their claims on scientific evidence, fad diets often rely on testimonials from individuals who have supposedly experienced dramatic results (3,4). In the modern era, the influence of social media has amplified the reach of fad diets, with celebrities and influencers promoting these "easy fixes" to wide audiences (3). However, their recommendations are often unreliable, unsafe, or even harmful, particularly in the long run (5).

Rigid food rules and the tendency to blame specific foods, food groups, or nutrients for weight gain are common foundations of fad diets. These diets often adopt a "one-size-fits-all" approach, disregarding individual differences in nutritional needs and health conditions (6). As indicated by existing evidence, characteristics of fad diets include rapid weight loss, "miracle" fat-burning foods, excessive consumption of a single type of food, rigid meal plans, lack of health warnings, and no suggestions for increasing physical activity (3, 4, 7). Like other trends, fad diets come and go, constantly being replaced by new ones when the previous ones fail. While they might seem effective initially, their results are often short-term, leading to the rise of another diet trend (8). Table 1 gives the key indicators of a fad diet.

Table 1: Key Indicators of a Fad Diet

Indicator	Description
Quick and Easy Weight Loss	Promises rapid weight loss, often unrealistic or unsustainable, without addressing long-term lifestyle changes.
Unlimited Quantities of Certain Foods while Restricting Certain Others	Allows unrestricted consumption of specific foods while ignoring portion control or balanced nutrition. Restricts certain foods altogether.
Use of Supplements or Food Combinations	Claims enhanced weight loss by taking certain supplements or eating specific food combinations, often without scientific basis. May introduce ‘miracle foods’ that burn fat rapidly.
Targeted Weight Loss Claims	Promises fat loss from specific body parts, such as the reduction of "cellulite" from buttocks or abdomen which is not supported by evidence.
Restricted Food Variety	Limits the variety of foods consumed, increasing the risk of nutritional deficiencies and imbalanced diets.
Focus on One or Two Macronutrients	Overemphasises specific macronutrients (e.g., high-protein, low-carb, or combination of high protein and fat) at the expense of others, leading to potential health risks.
Intermittent Fasting Patterns	Includes fasting intervals that may not be suitable for everyone, particularly for those with comorbidities.
Neglect of Sustainability and Physical Activity	Lacks emphasis on the sustainability of the diet plan, long-term lifestyle changes, or the importance of regular physical activity for overall health.

*A fad diet may include one or more of the above indicators

Fad Diets in the Sri Lankan Context

In Sri Lanka, overweight and obesity are increasingly recognised as significant public health concerns, reflecting a global trend. The 2021 STEPS study reveals that 39.4% of Sri Lankan adults aged 18-69 are overweight, with 11% classified as obese. Additionally, 87.2% of adults reported no recreational physical activity, and 67.8% consumed fewer than five servings of fruits and/or vegetables per day on average. Among those aged 40-69, 14.2% were found to have a 10-year cardiovascular disease (CVD) risk of ≥20% or existing CVD, based on an assessment of combined risk factors (9). The rise in non-communicable diseases (NCDs), such as diabetes, hypertension, and cardiovascular diseases, is closely linked to unhealthy dietary habits and sedentary lifestyles (10, 11). As a result, many Sri Lankans are turning to diet plans to manage their weight and prevent associated health complications.

Fad diets are gaining significant popularity in Sri Lanka, driven largely by social media, endorsements from celebrities, and occasionally by misguided healthcare workers leveraging online platforms. Patients often experiment with one or more of these diets, driven by promises of rapid results. The modern societal pressures on appearance, and peer pressure, combined with the pressures of modern urban lifestyles, have further fuelled the popularity of these quick fixes.

Public health efforts in Sri Lanka need to focus on raising awareness about evidence-based dietary practices and the risks of adopting unverified fad diets. Encouraging balanced, healthy eating patterns in line with Sri Lanka's Food-Based Dietary Guidelines (12), which align with WHO recommendations (1) and draw upon the country's traditional cuisine rich in all essential nutrients. Additionally, encouraging regular physical activity and ensuring adequate sleep are key strategies to help combat the growing prevalence of overweight and obesity in Sri Lanka.

Fad Diet Types

Lord Byron's 1820s diet, based on drinking water mixed with apple cider vinegar, is considered one of the earliest fad diets. Promoted for maintaining a slender appearance, it gained popularity despite lacking scientific backing and posing potential health risks (7). Fad diets come in various forms, each with unique principles, claimed benefits, and potential drawbacks.

Low-carbohydrate diets, such as the ketogenic diet, focus on drastically reducing carbohydrate intake while increasing fat consumption to induce ketosis, a state where the body burns fat for energy instead of glucose (13, 14). Intermittent fasting takes a different approach by emphasising the timing of meals rather than their content, with popular methods like the 16:8 or 5:2 plan alternating between fasting periods and designated eating windows (2, 14, 15). Another popular trend is the Paleo diet, which mimics the dietary patterns of early humans by prioritising unprocessed foods such as lean meats, fish, fruits, and vegetables while eliminating grains, dairy, and processed foods (14).

Plant-based diets, including vegan and raw food diets, exclude or minimize animal products, focusing instead on plant-derived foods like fruits, vegetables, legumes, and nuts (13). Detox diets, such as juice cleanses, claim to rid the body of toxins through restrictive regimens that often involve consuming only liquids for several days; however, their scientific basis remains limited (16). Finally, high-protein diets, exemplified by the Dukan diet, prioritise protein intake while limiting carbohydrates and fats (2).

Each of these diets has distinct principles and outcomes, as summarised in Table 2, highlighting their varied effects on weight loss, overall health, and sustainability.

Evaluating the Benefits and Drawbacks of Fad Diets

Fad diets often appeal to individuals seeking rapid results, as they can facilitate noticeable weight loss in a short period. For instance, low-carbohydrate diets, such as the ketogenic diet, work by inducing ketosis, where the body burns fat for energy, leading to quick reductions in body weight and fat mass (13). This initial success can act as a strong motivator for individuals to pursue further dietary changes. Another advantage is that many fad diets, like intermittent fasting, simplify meal planning by reducing the number of meals or limiting the time window for eating, which can make adherence easier for some people (2). Additionally, certain fad

Table 2: Types of Fad Diets: Principles, and Outcomes

Diet Type	Principles	Outcomes		Example
		Claimed Benefits	Drawbacks	
Low-Carb (Keto)	Limits carbs, increases fat to induce ketosis	Rapid weight loss, improved blood sugar	Nutrient deficiencies, risk of keto flu	Ketogenic Diet
Intermittent Fasting	Alternates between eating and fasting periods	Simplifies meal planning, weight control	Hunger, fatigue, not suitable for everyone	16:8 Method
Paleo	Emphasises whole, unprocessed foods	Improved digestion, reduced processed food	Lacks dairy and grains, costly	Paleo Diet
Plant-Based	Eliminates or limits animal products	Heart health, ethical benefits	Potential vitamin B12 and iron deficiencies	Vegan Diet
Detox	Promotes body detoxification	Short-term weight loss	muscle loss	Juice Cleanse
High-Protein	Increases protein intake, limits carbs and fats	Preserves muscle mass, quick weight loss	Kidney strain, risk of high cholesterol	Dukan Diet

diets offer short-term improvements in specific health markers. For example, plant-based diets have been shown to lower cholesterol levels and reduce blood pressure, contributing to cardiovascular health.

The psychological boost provided by rapid results is another notable advantage of fad diets. People often feel empowered and encouraged when they see visible changes in their weight or body composition early in the process. This sense of achievement can inspire continued commitment to healthier lifestyle choices, at least temporarily (13).

Despite their appeal, fad diets are associated with significant disadvantages, including nutritional imbalances. Many of these diets restrict entire food groups, and sometimes one or more macronutrients, such as carbohydrates, fats, or proteins, as the main strategy for achieving rapid weight loss leading to an imbalance in nutrient intake. This restriction often leads to an imbalance in nutrient intake, which can result in short-term weight loss but may compromise long-term health by causing deficiencies in essential macro- and micro-nutrients (2).

The elimination or severe reduction of specific macronutrients in these diets disrupts the balance needed for optimal metabolic function and overall well-being (17). For example, low-carbohydrate diets like the ketogenic diet significantly limit carbohydrate intake to induce ketosis, while high-protein diets like the Dukan diet promote protein at the expense of carbohydrates and fats (13). The paleo diet excludes dairy, which is a primary source of calcium for many people, raising concerns about bone health over time (2). Similarly, plant-based diets, while beneficial for heart health, can lead to deficiencies in vitamin B12 and iron if not carefully managed (18).

Another major disadvantage is the unsustainability of most fad diets. Their restrictive rules can make them difficult to maintain long-term, often leading to feelings of deprivation and eventual abandonment. This can result in a cycle of weight loss and regain, commonly referred to as "yo-yo dieting," which has been shown to negatively impact metabolism and psychological well-being (13). Some fad diets limit daily calorie intake to 1,000–1,200 kcal or restrict carbohydrate consumption to less than 100 grams per day. This can lead to several negative effects, including fatigue, constant hunger, muscle loss, and disruptions to metabolism. Additionally, such severe restrictions can push the body into "starvation mode," where the metabolism slows down, making it increasingly difficult to sustain weight loss over time (4, 19). This phenomenon has been linked with increased cortisol levels (7).

Health risks associated with consumption include strain on the kidneys and increased cholesterol levels, potentially leading to long-term health issues (2). Detox diets, which claim to eliminate toxins, lack scientific evidence to support their efficacy and may cause adverse effects like electrolyte imbalances, fatigue, and muscle loss [16]. Plant-based diets including vegan diets are often associated with cardiovascular health benefits but can lead to nutrient deficiencies if not carefully planned (2, 13).

The evidence regarding the impact of fad diets on lipid profiles remains inconsistent. Both intermittent fasting and the ketogenic diet share mechanisms that include inducing lipolysis and generating ketone bodies (17), which may offer cardiovascular benefits. However, intermittent fasting is generally considered a safer option compared to the ketogenic diet, as it carries a lower risk of causing hyperlipidaemia (20). In contrast, the ketogenic diet has been associated with elevated low-density lipoprotein cholesterol (LDL-C) levels, which can be detrimental to cardiovascular health (21). Some studies have linked fad diets to serious adverse events, such as ketosis, and in extreme cases, even death. Prolonged adherence to these diets has also been linked to ketosis and various other metabolic issues (22).

In addition to physical problems, fad diets can lead to various psychological issues, including disordered eating patterns, such as binge eating or orthorexia (8). The restrictive nature of these diets often exacerbates body image disturbance, increasing dissatisfaction with one's appearance and contributing to low self-esteem (23, 24). Additionally, the pressure to adhere to strict food rules can result in anxiety, stress, and feelings of guilt when individuals deviate from the prescribed eating patterns. Social isolation may also occur, as individuals on fad diets tend to avoid social events that involve food, which can lead to feelings of loneliness (25). Emotional dependence on dieting, where self-worth becomes linked to dieting success, may further perpetuate a cycle of dieting and self-criticism, potentially leading to depression (8).

Table 3: Appealing Characteristics and Drawbacks of Fad Diets

Appealing characteristics	Drawbacks
Weight Loss: Many fad diets induce rapid weight loss by creating calorie deficits or altering metabolic processes.	**Lack of Evidence:** Based on subjective opinion rather than scientific evidence.
Simplicity: Fad diets often have simple rules, making them easy to follow initially.	**Nutritional Deficiencies:** Restrictive diets may lead to imbalances or deficiencies in essential nutrients.
Short-Term Health Benefits: Certain diets, like plant-based or low-carb diets, may improve markers like blood sugar levels, cholesterol, or blood pressure in the short term.	**"One-size-fits-all"** approach without considering the individual differences. **May adversely affect those with serious illnesses and comorbidities.**
Motivational Boost: Visible, rapid results can motivate individuals to maintain dietary changes.	**Eating Disorders and other health risks specific to diet types** (Table 2).
	Absence of one or more food groups
	Yo-Yo Dieting: Rapid weight loss followed by regaining weight is common, negatively affecting metabolism and psychological health.
	Unsustainability: Many fad diets are difficult to maintain in the long term due to strict rules or social limitations.
	Few or absent recommendations for physical activities.

Accordingly, health risks associated with fad diets are well-documented, and, adherence to these restrictive and imbalanced eating patterns can pose serious risks to one's health, including nutrient deficiencies, fatigue, weight regain, and the development of disordered eating behaviours (8, 17, 26). Instead, the best approach to weight loss and improved health is to follow a long-term, healthy, and balanced eating plan while maintaining an active lifestyle. The lack of scientific validation for many fad diets raises concerns about their safety and effectiveness. These diets may even exacerbate health problems by promoting extreme caloric restriction or nutrient deprivation (13). Therefore, individuals should approach fad diets with caution and consider evidence-based dietary recommendations instead.

Table 3 provides a summary of the claimed benefits and drawbacks of fad diets, while Table 2 provides the claimed benefits and drawbacks of some common specific types of fad diets.

CONCLUSION

Fad diets offer intriguing promises, particularly for rapid weight loss or specific health goals. While some may provide temporary benefits, their restrictive nature and potential health risks highlight the importance of embracing them cautiously. A balanced diet based on scientific guidelines, coupled with regular physical activity, and adequate sleep remains the most sustainable approach to long-term health and weight management. For trustworthy nutritional guidance, consulting a qualified physician or a dietitian should be recommended to all patients as the safest option.

REFERENCES

1. World Health Organisation, Global Strategy on Diet, Physical Activity and Health. 2004, France: WHO.
2. Katz, D.L. and S. Meller, Can we say what diet is best for health? Annual review of public health, 2014. 35(1): p. 83-103. https://doi.org/10.1146/annurev-publhealth-032013-182351
3. Spadine, M. and M.S. Patterson, Social influence on fad diet use: a systematic literature review. Nutrition and Health, 2022. 28(3): p. 369-388. https://doi.org/10.1177/02601060211072370
4. Crosser, G.H., Decoding Fad Diets. Nutrition in Health Promotion Series, Number 20. 1985.
5. Nadeem, N., et al., Fad diet: A myth or reality? Int. J. Biosci. IJB, 2020. 17: p. 285-304. http://dx.doi.org/10.12692/ijb/17.2.285-8
6. Saltzman, E., P. Thomason, and S.B. Roberts, Fad diets: A review for the primary care provider. Nutrition in Clinical Care, 2001. 4(5): p. 235-242 http://dx.doi.org/10.1046/j.1523-5408.2001.00003.x
7. Khawandanah, J. and I. Tewfik, Fad diets: lifestyle promises and health challenges. Journal of Food Research, 2016. 5(6): p. 80-94 https://doi.org/10.5539/jfr.v5n6p80
8. Kraszkiewicz, A., et al., The effectiveness and health impact of fad diets on obese patients: a literature review. Quality in Sport, 2024. 16: p. 52872-52872. https://dx.doi.org/10.12775/QS.2024.16.52872
9. Ministry of Health, S.L. and S.L. Department of Census and Statistics, Non-Communicable Disease Risk Factor Survey (STEPS), in Secondary Non-Communicable Disease Risk Factor Survey (STEPS), Secondary Ministry of Health, S.L. and S.L. Department of Census and Statistics, Editors. 2021: Colombo, Sri Lanka. Available from: https://ncd.health.gov.lk/images/pdf/20230817_STEPS_Survey_new_1_compressed.pdf
10. Navaratna, S., Elevating Wellness: A Unified Preventive Strategy to Address Shared Risk Factors for Cardiovascular Diseases and Cancers in Sri Lanka. Nawalapitiya Mediclal Journal, 2024. 1(1): p. 6.
11. Ministry of Health. Sri Lanka, The National Policy and Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases, in Secondary The National Policy and Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases, Secondary Ministry of Health. Sri Lanka, Editor. 2010. Available from: https://www.health.gov.lk/wp-content/uploads/2022/10/13_NCD.pdf
12. Nutrition Division Ministry of Health Sri Lanka, Food Based Dietary Guidelines for Sri Lankans: A Practitoner's Handbook. 2021, Colombo, Sri Lanka. Available from: https://nutrition.health.gov.lk/wp-content/uploads/2020/12/FBDG-Practitioners-Handbook-Final-English.pdf
13. Johnston, B.C., et al., Comparison of weight loss among named diet programs in overweight and obese adults: a meta-analysis. Jama, 2014. 312(9): p. 923-933. https://doi.org/10.1001/jama.2014.10397
14. Lee, H. and S. Worthy, Adoption of Fad Diets through the Lens of the Diffusion of Innovations. Family and Consumer Sciences Research Journal, 2021. 50(2): p. 135-149. https://doi.org/10.1111/fcsr.12419
15. Patterson, R.E. and D.D. Sears, Metabolic effects of intermittent fasting. Annual review of nutrition, 2017. 37(1): p. 371-393. https://doi.org/10.1146/annurev-nutr-071816-064634
16. Yadav, A.R. and P. Keshari, 10. Fad Diets and Health: A Utopia.
17. Schutz, Y., J.P. Montani, and A.G. Dulloo, Low-carbohydrate ketogenic diets in body weight control: A recurrent plaguing issue of fad diets? Obesity Reviews, 2021. 22: p. e13195. https://doi.org/10.1111/obr.13195
18. Niklewicz, A., et al., The importance of vitamin B(12) for individuals choosing plant-based diets. Eur J Nutr, 2023.

62(3): p. 1551-1559. https://doi.org/10.1007/s00394-022-03025-4
19. Mattson, L., Fad Diets or Exercise? Maintaining Weight Among Millennials. 2018.
20. D'Souza, M.S., et al., From fad to fact: evaluating the impact of emerging diets on the prevention of cardiovascular disease. The American journal of medicine, 2020. 133(10): p. 1126-1134. https://doi.org/10.1016/j.amjmed.2020.05.017
21. Salas Noain, J., et al., Significant Impact of the Ketogenic Diet on Low-Density Lipoprotein Cholesterol Levels. Cureus, 2020. 12(7): p. e9418 https://doi.org/10.7759/cureus.9418
22. Singh, J., et al., Fad diets: Dietary dilemmas, predicaments, and recommendations for its use. Current Nutrition & Food Science, 2020. 16(9): p. 1362-1380 DOI: https://doi.org/10.2174/1573401316999200407092922
23. Puspita, B., A. Lestari, and T.R. Andayani, The Relationship between Fad Diet, Body Image, Stress, Peer Pressure with Eating Disorders in Adolescent Girls Aged 16-18 Years. Amerta Nutrition, 2024. 8(1). https://doi.org/10.20473/amnt.v8i1.2024.49-57
24. Puspita, B., A. Lestari, and T.R. Andayani, Relationship Between Fad Diet and Eating Disorders in Female Adolescents Aged 16-18 Years. https://doi.org/10.26911/FP.ICPH.09.2022.45
25. Bacon, L. and L. Aphramor, Weight Science: Evaluating the Evidence for a Paradigm Shift. Nutrition Journal, 2011. 10(1): p. 9. https://doi.org/10.1186/1475-2891-10-9
26. Phelan, J.M., et al., Opportunities for Maximizing the Dietary Quality of Fad Diets. Nutrients, 2023. 15(21): p. 4526. https://doi.org/10.3390/nu15214526