NNC GOVERNING BOARD
Resolution No. 4, Series of 2018

ADOPTING THE NNC POLICY STATEMENT ON FAD DIETS

WHEREAS, the NNC being a policy-making body on nutrition develops policy statements in aid of legislation or to provide guidance on nutrition issues and concerns;

WHEREAS, the proliferation of different fad diets that claim to result to rapid weight loss cause concern as these may pose health and nutrition concern among Filipinos;

WHEREAS, several studies have proven that fad diets are nutritionally-imbalanced, challenging to comply with in the long-run, induce stress, cause disease to certain organs, lack focus on physical activity, and may have psychological implications;

WHEREAS, studies have shown that following a short dietary regimen is medically unsuitable and unsustainable with many dieters failing in their dietary adherence and long-term behavioral change, and may pose potential health risks;

WHEREAS, the NNC desires to protect the general public against fad diets and provide guidance to nutrition and health practitioners in dealing with people adhering to fad diets;

NOW THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, in consideration of the foregoing, we the National Nutrition Council Governing Board, do hereby approve and adopt the policy statement on fad diets, as follows:

> "Fad diets are not recommended for weight loss as it may pose potential health risk and dangers. Instead, the NNC recommends the adherence to a holistic, sustainable, adequate, and nutritionally-balanced diet, complemented by an active lifestyle and lifelong behavioral modifications. It is also the position of the NNC that individual efforts to address overweight and obesity must be complemented with population-based interventions, particularly on the promotion of healthier food environments and food systems and public awareness through behavior-change communications, to prevent further increase in overweight and obesity prevalence in the country."

RESOLVED FURTHER, that recommendations for a safe, healthy, and holistic dietary, exercise, and behavioral plan as key to long-term weight loss and improvement of overall health must be advocated by nutritionist-dietitians and other health professionals, both in private and public practice;

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RESOLVED FURTHER, for the National Nutrition Council Secretariat to ensure that this policy statement is disseminated as widely as possible to the general public, practitioners and health and nutrition workers and those in the medical and allied professions; and its dissemination monitored and reported to the Governing Board.

Approved this 21st day of June 2018.

FRANCISCO T. DUQUE III, MD, MSc
Secretary of Health and Chairperson
National Nutrition Council Governing Board

Attested:

Assistant Secretary Maria-Bernardita T. Flores, CESO II
Council Secretary and Executive Director IV
National Nutrition Council

NNC GOVERNING BOARD
Resolution No. 4, Series of 2018

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Republic of the Philippines
Department of Health
NATIONAL NUTRITION COUNCIL

NATIONAL NUTRITION COUNCIL
POLICY STATEMENT ON FAD DIETS

I. Introduction

The National Nutrition Council (NNC) is the highest policy-making and coordinating body on nutrition in the country. It formulates and coordinates the Philippine Plan of Action for Nutrition (PPAN) as the country's framework for nutrition improvement. Along with this mandate, the NNC issues policy statements in aid of legislation or to clarify prevailing issues in nutrition and define the stand of the NNC in addressing such issues.

One issue that has been identified by the NNC is the proliferation of fad diets which may pose health and nutrition risks to the individuals who patronize these diets. Therefore, there is a need to have a policy statement addressed towards the general public, health and nutrition workers and practitioners to serve as a reference in dealing with fad diets.

The policy statement on fad diets is developed in consultation with doctors, experts, and professionals in the field of weight loss and diet management. This policy statement is based on the review of numerous peer-reviewed literature and reference materials on obesity, weight loss, and weight management.

II. NNC Policy Statement on Fad Diets

The policy of the NNC is that - Fad diets are not recommended for weight loss as it may pose potential health risk and dangers. Instead, the NNC recommends the adherence to a holistic, sustainable, adequate, and nutritionally-balanced diet, complemented by an active lifestyle and lifelong behavioral modifications. It is also the position of the NNC that individual efforts to address overweight and obesity must be complemented with population-based interventions, particularly on the promotion of healthier food environments and food systems and public awareness through behavior-change communications, to prevent the further increase in overweight and obesity in the country.

III. Definition of Fad Diets

A fad diet, also known as a crash diet or diet cult, is any dietary regimen or practice promoted for weight loss and improvement of health that does not form part of standard dietetic-led weight management advice.[1] It comprises a very restrictive eating plan with few or an unusual combination of foods for a brief period of time and often makes claims for quick drastic weight loss.[2]

The characteristics of fad diet are as follows:

- Makes dramatic claims that are not supported by evidence or seem "too good to be true"
- Is nutritionally imbalanced
- Promises rapid weight loss (more than 1 kilogram in a week)
- Does not include or encourage improvement of health and exercise
- Provides no health warning to those with pre-existing medical conditions
- Based on anecdotal evidence and/or testimonials rather than robust clinical trials and/or simplistic conclusions drawn from complex studies
- Focuses on appearance-related outcomes rather than health benefits
- Restricts several foods and/or whole food groups
- Recommends consumption of large amounts of one food or food type
- Suggests that food should be eaten in a specific order or specific combinations
- Suggests that certain foods or ingredients "burn" fat
- Requires purchase of specific products, supplements or resources.

IV. Fad Diets through the years

Fad diets have been around for almost 200 years when the Vinegar and Water Diet was made popular by Lord Byron where one eats only potatoes drenched in vinegar. This was followed in 1825 when a low-carbohydrate regimen was published in "The Physiology of Taste" by Jean Brillat-Savarin. Grahams Diet consisting of the crackers was introduced in 1830 and in 1863, Banting's Low Carbohydrate Diet which made Banting synonymous with dieting at that time. Below is the list of fad diets through the years although not exhaustive.

1. 1903 - **Horace Fletcher promotes "Fletcherizing" (chew food 32 times)**
2. 1917 – Calorie Counting by Lulu Hunt Peters
3. 1925 – Cigarette Diet (have cigarette instead of a sweet)
4. 1928 – Inuit Meat-and-Fat Diet (caribou, raw fish and whale blubber)

[1] Hankey, C. (2018). *Advanced nutrition and dietetics in obesity*. Hoboken, NJ: Wiley.
[2] British Dietetic Association. Fad diets, 2006. Available online at: https://www.bda.uk.com/foodfacts/faddiets.pdf, accessed 22 March 2018.

5. 1930 – Hay Diet (carbohydrates and proteins are not allowed in the same meal)
6. 1930 – Dr. Stoll's Diet Aid (first use of liquid diet drinks)
7. 1934 – Bananas and Skim Milk Diet
8. 1950 – Cabbage Soup Diet
9. 1950 – Grapefruit diet/Hollywood Diet
10. 1960 – Zen Macrobiotic Diet (created by Japanese philosopher George Ohsawa)
11. 1961 – Calories Don't Count Diet (US FDA filed charges regarding the diet claims)
12. 1964 – Drinking Man's Diet (Harvard School of Public Health declared diet unhealthful)
13. 1970 - **Sleeping Beauty Diet (**Individuals are heavily sedated for several days)
14. 1970 – Liquid Protein Diets
15. 1981 - Beverly Hills Diet (only fruit for first 10 days but in unlimited amounts)
16. 1985 – Fit for Life (does not combine protein and carbohydrate foods)
17. 1985 -Caveman Diet (foods from Paleolithic Era)
18. 1986 – Rotation Diet (rotates the number of calories taken in from week to week)
19. 1987 – Scarsdale Diet (Low-carbohydrate, low-calorie diet plan)
20. 1990 – Cabbage Soup Diet (resurfaced from the 1950s through the web)
21. 1994 – High Protein, Low Card Diet (Dr. Atkin's version)
22. 1995 – Sugar Busters – Cut Sugar to Trim Fat (no refined carbohydrates)
23. 1995 - Zone Diet (40% carbs, 30% protein and 30% fat)
24. 1995 – South Beach Diet
25. 1996- Eat Right for Your Type (based on blood type)
26. 1999 – Juice, Fasting and Detoxification
27. 2000 – Raw Foods Diet
28. 2000 – Macrobiotic Diet/Gwyneth Paltrow Diet (eliminates fruits, dairy meat)
29. 2001 – High Protein, Low Carb Diet (updated the 1994 version)
30. 2004 – Coconut Diet (fats are replaced with coconut oil)
31. 2005 – Cheater's Diet (cheating is required on weekends)
32. 2005 - Acai Berry Diet (endorsed by Oprah Winfrey)
33. 2006 – Maple Syrup Diet (uses a special syrup-lemon drink)
34. 2007 – Juice Fasts and Master Cleanses (detox diets to eliminate toxins)
35. 2008 – Banana Diet (bananas and water for breakfast)
36. 2009 – Dr. Siegel's Cook Diet (eat cookies 9 times to suppress appetite)
37. 2010 – Baby Food Diet (14 jars of baby food with optional adult dinner)
38. 2011 – HCG Diet (injection of hormone HCG found in pregnant woman's urine)
39. 2012 – Wheat-Free Diet

40. 2012 – Dukan Diet
41. 2012 – Gluten-Free Diet
42. 2013 – Paleo Diet – (no whole grains and dairy)
43. 2014 – K-E Feeding Tube Diet (uses feeding tube for 10 days)
44. 2014 – Ketogenic Diet
45. 2015 – Sugar-Free Diet

V. Fad diets and Obesity

Filipinos turn to fad diets for weight loss to improve body image, for better health and other personal reasons. The goal of weight loss among individuals is a growing concern considering that there is an increase in the prevalence of overweight and obesity among Filipinos as shown in **Figure 1**. Increase in overweight and obesity is observed across all ages (except for children under-five years of age) with the highest prevalence among adults. The World Health Organization (WHO) defines overweight and obesity as abnormal or excessive fat accumulation that may impair health.[3] This can be classified in the standards set by different nutritional assessments such as body mass index (BMI), waist circumference, and body composition (percent body fat).

Weight loss, even in small amount, will provide benefits including[4&5]**:**

1. Improvement of cardiovascular health by decreasing blood pressure, LDL, triglycerides.[6]
2. Prevention and control of blood glucose levels[7]
3. Lower risk for certain cancers
4. Improved mobility
5. Decreased joint and back pain
6. Decreased risk for osteoarthritis
7. Decreased risk for sleep apnea.

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[3] Obesity and overweight. (n.d.). Retrieved from http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight

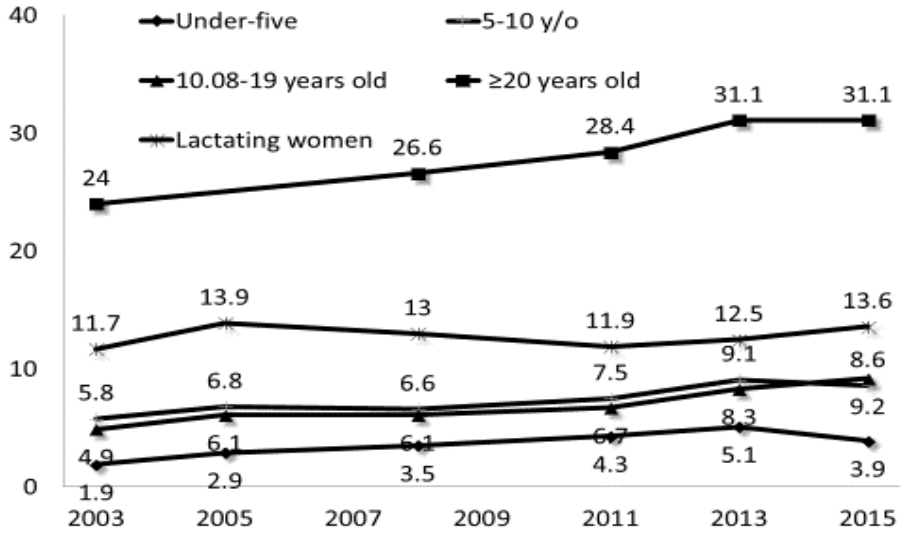
[4] Nadia B. Pietrzykowska, MD, FACP. Benefits of 5-10 Percent Weight-loss. Obesity Action Coalition.

[5] N. Lasikiewicz, K. Myrissa, A. Hoyland, C.L. Lawton. " Psychological benefits of weight loss following behavioral and/or dietary weight loss interventions. A systematic research review." *Appetite* January 2014.

[6]Wing, R. R., Lang, W., Wadden, T. A., Safford, M., Knowler, W. C., Bertoni, A. G., . . . Wagenknecht, L. (2011). Benefits of Modest Weight Loss in Improving Cardiovascular Risk Factors in Overweight and Obese Individuals With Type 2 Diabetes. *Diabetes Care, 34*(7), 1481-1486. doi:10.2337/dc10-2415

[7] Effect of Weight Loss With Lifestyle Intervention on Risk of Diabetes. Richard F. Hamman, Rena R. Wing, Sharon L. Edelstein, John M. Lachin, George A. Bray, Linda Delahanty, Mary Hoskin, Andrea M. Kriska, Elizabeth J. Mayer-Davis, Xavier Pi-Sunyer, Judith Regensteiner, Beth Venditti, Judith Wylie-Rosett. Diabetes Care Sep 2006, 29 (9) 2102-2107; DOI: 10.2337/dc06-0560

Figure 1. Prevalence of Overweight and Obesity among various age groups, 2003-2015



Source. National Nutrition Surveys. Food and Nutrition Research Institute, DOST

VI. Popular Fad Diets and their Potential Impacts on Health

Because of the nature of fad diets, it has effects on the body. Below is a summary of fad diets, organized by classification including its potential advantages and disadvantages.

Table 1. List of fad diets by classification and potential advantages and disadvantages

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
Calorie Restriction	Very Low Energy Diet (VLED)	A diet with extremely low daily food energy consumption. It only allows 800 kcal/day or less. Primarily intended for obese with BMI $\geq$ 30 or BMI $\geq$ 27 for those with risk factors	• Results to rapid weight loss (about 1.5-2.5 kilos per week)[8]	• Requires medical supervision • Often replaces food with low-calorie shakes and other meal replacements

[8] *Howard AN (1981). "The historical development, efficacy and safety of very-low-calorie diets". Int J Obes.* ***5*** *(3): 195–208.*

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
				• Can encourage binge-eating and overeating due to restriction • Difficulty transitioning to regular meals once weight loss is achieved[9]
	Military Diet	3-day diet meal plan with 4-days off, following the military regime used during the world war. The diet provides 800-1100 calories daily. Premise: lose 10 pounds in 1 week	• Planned food and liquid consumption for 3 days • Results to rapid weight loss (about 1.5-2.5 kilos per week)	• Highly restrictive • Can encourage binge-eating and overeating due to restriction • Nutrient insufficiencies • Limited food choices
	Blood Type/ Cohen Diet	The Cohen's Lifestyle Program is a rapid weight loss and wellness program through nutrition. It is individually prescribed based on an individual's unique blood profile. It uses food to correct the imbalance of hormones that cause weight gain triggering the body's natural ability to burn fat rapidly and safely.	• Highly individualized diet plans[10] • Suggests healthier eating plans and options that aid in weight loss	• No sufficient studies have shown the correlation between weight loss and blood type and efficiency of weight loss related to blood type • Relatively expensive consultations and meal planning[11]

[9] Schwartz, M. W., Seeley, R. J., Zeltser, L. M., Drewnowski, A., Ravussin, E., Redman, L. M., & Leibel, R. L. (2017). Obesity Pathogenesis: An
Endocrine Society Scientific Statement. Endocrine Reviews, 38(4), 267-296. doi:10.1210/er.2017-00111

[10] C. (n.d.). The Programme. Retrieved from http://www.cohenlifestyle.com.ph/thecohenprogram/the-programme/

[11] Terol, N. (n.d.). Saying yes or no to the Cohen lifestyle. Retrieved from https://www.rappler.com/life-and-style/wellness/54676-cohen-diet-lifestyle

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
	HCG Diet	Promises 1-2 lbs. lost per day using an extremely low-calorie diet and intake of HCG (human chorionic gonadotropin) administered either through drops, pellets, sprays, or injections. The HCG diet is usually divided into three phases. During the weight loss phase, a person takes HCG while eating only 500 calories per day. Claims that HCG elevates other hormones, boosts metabolism and leads to a growth-promoting (anabolic) state.	• Results to rapid weight loss primarily due to the very low caloric intake.	• HCG was found to be ineffective in reducing hunger. • Decreased muscle mass[12] • Most of the HCG products available online are "homeopathic," meaning they don't actually contain any real HCG. • Side effects include headache, fatigue, depression[13]
Low Carbohydrate, High Protein	Atkin's Diet	Low-carbohydrate diet, particularly restricting "net carbs" (digestible carbohydrates that affect blood sugar, equal to total carbohydrate grams less fiber grams) Focuses on limiting sugars and carbohydrates so the body turns fat into fuel. Advocates high saturated fat diet.	• Effective for immediate weight loss	• Much of the weight loss is water loss rather than fat loss • Ketosis • Vitamin and mineral deficiency • Bone loss • Elevated cholesterol levels due to possible consumption of high saturated fat foods • Muscle weakness
	Paleo Diet (or "The	Can refer either to the eating habits of	• May have anti-inflammatory	• Nutrient deficiencies from

[12] Chaston, T. B., Dixon, J. B., & Obrien, P. E. (2006). Changes in fat-free mass during significant weight loss: A systematic review. *International Journal of Obesity, 31*(5), 743-750. doi:10.1038/sj.ijo.0803483

[13] Shetty, K. R. (1977). Human Chorionic Gonadotropin (HCG) Treatment of Obesity. *Archives of Internal Medicine, 137*(2), 151. doi:10.1001/archinte.1977.03630140007005

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
	Cave Man Diet")	humans during the Paleolithic era, or of modern dietary plans purporting to be based on these habits. Paleo diets are based on a simple premise – if the cavemen didn't eat it, you shouldn't either. Restriction is made on dairy, legumes, grains, and refined sugar and focus is given to meat, fish, poultry, fruits and vegetables.	benefits from eating whole and plant-based foods	lack of whole grains and dairy • Expensive • High protein may induce kidney stress/disease although it may not be true to all population
Moderate Carbohydrate, High Protein	Zone Diet	Specifies the consumption of calories from carbohydrates and protein in a specified ratio; recommending eating five times a day to make a sense of satiety that discourages overeating.	• May have anti-inflammatory benefits	• Achieving macronutrient ratio is challenging • Costly • Frequent eating may not promote fat burning
	South Beach Diet	Emphasizes eating high-fiber, low-glycemic carbohydrates, unsaturated fats, and lean protein, and categorizes carbohydrates and fats as "good" or "bad"	• Results to immediate weight loss • May promote good blood sugar control	• Frequent eating may not promote fat burning • Too calcium restrictive

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
Low Carbohydrate, High Fat	Ketogenic Diet	Primarily developed as treatment for epileptic children. A high-fat, low-carb diet, in which dietary and body fat is converted into energy.	• May show promising results for weight loss, blood glucose control, and decrease in lipid blood values • Increased satiety due to high-fat consumption	Multiple compli-cations such as: [14] • Metabolic acidosis • Diabetic ketoacidosis with SGLT2 inhibitors • Fatty liver, liver toxicity, gallstones, acute pancreatitis • Severely low blood sugar, blood potassium levels • "Keto flu", fatigue, headache, fever • Changes in gut microbiome • Kidney stones (Nephrolithiasis, hypercalciuria, hypocitraturia, renal damage) • Bone health impairment • Increased bad cholesterol (LDL-Cholesterol), Total

[14] Lin, A, et al. Complications During Ketogenic Diet Initiation: Prevalence, Treatment, and Influence on Seizure Outcomes. *Pediatric Neurology* 68 (2017) 35e39; Meyler's Side Effects of Drugs. Aronson, J.K., et al. Published January 1, 2016.; Xie G, et al. Ketogenic diet poses a significant effect on imbalanced gut microbiota in infants with refractory epilepsy. *World J Gastroenterol* 2017 September 7; 23(33): 6164-6171; Zhang, X. *Nutrition Research* (2016). Long-term ketogenic diet contributes to glycemic control but promotes lipid accumulation and hepatic steatosis in type 2 diabetic mice. 36:349-358.; Sumithran P, et al. Ketogenic diets for weight loss: A review of their principles, safety and efficacy. *Obesity Research & Clinical Practice* (2008) 2, 1—13; N. Arslan et al. Is ketogenic diet treatment hepatotoxic for children with intractable epilepsy? *Seizure* (2016) 43: 32–38. ; Sampath A, et al. *Journal of Child Neurology*. Kidney Stones and the Ketogenic Diet: Risk Factors and Prevention. (2007) Vol. 22, No. 4.; and Oliveira, CLP, et al. *J Acad Nutr Diet.* 2018 ;118:668-688.; and Best TH, et al. Cardiac complications in pediatric patients on the ketogenic diet. *Neurology*. 2000 Jun 27;54(12):2328-30.

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
				Cholesterol, Apo B, Triglycerides, • Low good cholesterol (HDL Cholesterol) levels
				• Cardiac – heart rhythm problems, dilated cardiomyopathy (enlarged heart) • Arterial stiffness • Micronutrient deficiencies • Brain impairment • Nausea, vomiting, constipation • Bad breath • Leg cramps • Skin rash
Avoidance to certain food groups	Gluten-Free Diet	Primarily used for patients with Gluten Intolerance, although people mistakenly use this diet as another weight loss strategy. Excludes the protein gluten. Gluten is found in grains such as wheat, barley, rye,	• Limits processed foods • Reduces calorie consumption	• Reduces fiber intake • Nutrient restrictive
	Macrobiotic Diet	A diet in which processed food is avoided. Common components include grains, beans and vegetables.	• May improve heart health	• Potential nutrient losses due to high fiber and avoidance of supplements • Low diet adherence
Fasting	Water Fasting	Consuming only water for an extended period of time	Shown to preserve a greater portion of lean body mass during weight loss (10% FFM:90%FM)	• Require drastic changes to eating patterns to reduce energy intake sufficiently

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
			in comparison to continuous energy restriction (25%FFM,75%FM).[15]	• May result in hyperphagia (excessive hunger with abnormally large intake of solids by mouth) on "feed" days and/or elevated hunger or motivation to eat. • Poor adherence • Nutrient deficiencies
	Intermittent Fasting	Cycling between non-fasting and fasting as a method of calorie restriction. In the Philippine setting, this is more commonly known as "The 6 PM Diet", which restricts a dieter's consumption from 6 p.m. onwards.	May promote greater adherence with an "on-off' approach to eating, which is potentially more preferable and achievable.[16]	• Require drastic changes to eating patterns to reduce energy intake sufficiently • May result in hyperphagia on "feed" days and/or elevated hunger or motivation to eat. • Poor adherence • Nutrient deficiencies
Detox	Juice Fast	Consuming only fruit and vegetable juices while abstaining from solid food Premise: promotes implausible and unevidenced claims for its health benefits	• Efficient for instant and rapid weight loss • Increased vitamin and mineral intake from fruits and vegetables	• Require drastic changes to eating patterns to reduce energy intake sufficiently • May result in hyperphagia on "feed" days and/or elevated hunger or motivation to eat. • Poor adherence

[15] Varady KA. Intermittent versus daily calorie restriction: which diet regimen is more effective for weight loss? Obesity Reviews 2011; 12: e593–e601.
[16] Collier R. Intermittent fasting: the next big weight loss fad. CMAJ 2013; 185(8): E321–E322.

Classification	Diet	Definition/ Premise	Positive Impact/ Advantage	Negative Impact/ Disadvantage
				• Nutrient deficiencies
	Master Cleanse	Modified juice fast that only allows tea, lemonade/lemon water with maple syrup and cayenne pepper for an extended period of time	• Efficient for instant and rapid weight loss • Increased intake of Vitamin C, to strengthen immunity	• Require drastic changes to eating patterns to reduce energy intake sufficiently • May result in hyperphagia on "feed" days and/or elevated hunger or motivation to eat. • Poor adherence • Nutrient deficiencies

VII. Positive Effects and Advantages of Certain Fad Diets

Fad diets, when strictly adhered to, can ultimately lead to rapid and substantial weight loss as they follow the simple principle of energy deficit. Their popularity can be attributed to their novelty value as a "new" diet, which may counter the "diet fatigue" many dieters experience and may promote greater compliance. The variation among these diets also offers a choice for a weight loss strategy, recognizing the reality that individualization is important in diet planning.

To support the efficiency of these diets, short-term randomized controlled trials (RCTs) have been done. In Ketogenic Diet, for example, a study has shown its equal efficacy to low-fat diets assisted with weight loss drugs in terms of weight loss and several cardiovascular disease risk factors.[17] The recent findings on the Ketogenic diet have even influenced the Swedish Council on Health Technology Assessment to consider the use of low carbohydrate, high-fat (LCHF) for their future dietary guidelines in obesity treatment.[18] (It should be noted though that there are complications in the use of the Ketogenic diet as shown in Table 1.)

Calorie restriction has also been seen in a new light as animal-based studies showed the extension of lifespan in rodent and primate models. Accumulating data from observational and randomized clinical trials indicate that calorie restriction in humans results in some of the same metabolic and molecular

[17] Yancy WS, Westman EC, McDuffie JR, Grambow SC, Jeffreys AS, Bolton J, Chalecki A, Oddone EZ. A Randomized Trial of a Low-Carbohydrate Diet vs Orlistat Plus a Low-Fat Diet for Weight Loss. Arch Intern Med. 2010;170(2):136–145. doi:10.1001/archinternmed.2009.492
[18] Mann, J., & Nye, E. R. (2009). Fad diets in Sweden, of all places. *The Lancet*, *374*(9692), 767-769. doi:10.1016/s0140-6736(09)61575-0

adaptations that have been shown to improve health and retard the accumulation of molecular damage in animal models of longevity. However, the efficiency in humans is not yet known.[19] Calorie restriction in humans also shows improvement in cardiovascular aging and rejuvenation of skeletal muscle transcriptional profile.[20]

As for the various types of fasting, the extreme energy restriction to facilitate acute negative energy balance and/or to activate adaptive stress response pathways have been proposed as the potential mechanism underlying the metabolic improvements.[21] It has also been seen to have nutrigenomic effects via the activation of 'skinny gene', that potentially increase insulin sensitivity, efficiency of fat oxidation, and inhibition of fat storage and inflammation.[22] It was also shown to offer the quickest fix to achieve substantial weight loss in a short amount of time (up to 5% in 6 days, or 8% in 8-12 weeks).[23] Fasting may also preserve a greater proportion of lean body mass during weight loss (with 10% FFM: 90% FM) compared to prolonged energy restriction (25% FFM: 75% FM).[24]

One caveat that must be noted is that almost all of these studies have only been performed on a short duration, therefore not concluding long-term results. There is still a necessity for studies that assess the health risks and benefits of certain diets when sustained for a longer duration. Furthermore, available data on fad diets are conflicting and insufficient to identify one popular diet as being more beneficial than others. Because of the lack of sufficient evidence, suggesting a fad diet that is risk-free, beneficial, and safe as alternative means for weight loss and management is still not recommended.

VIII. Negative Impacts of Fad Diets

The potential positive impacts are outweighed by the negative impact of fad diets.

1. Short-term success, long-term failure

Fad diets that propose restricted macronutrient consumption and exclusions of certain foods may be beneficial for a few highly motivated individuals in the brief period of time. However, the simple explanation for the loss of weight is a systematic energy deficit (decreased caloric

[19] *Calorie Restriction, Aging and Longevity,* 301-309. doi:10.1007/978-90-481-8556-6_17
[20] Cava, E., & Fontana, L. (2013). Will calorie restriction work in humans? *Aging*, *5*(7), 507-514. doi:10.18632/aging.100581
[21] Antoni R, Johnston KL, Collins A, Robertson MD. The effects of intermittent energy restriction on indices of cardiometabolic health. Research in Endocrinology 2014. doi: 10.5171/2014.459119.
[22] Fulco M, Sartorelli V. Comparing and contrasting the roles of AMPK and SIRT1 in metabolic tissues. Cell Cycle 2008; 7(23): 3669–3679.
[23] Johnstone AM. Fasting: the ultimate diet? Obesity Reviews 2006; 8: 211–212.
[24] Varady KA. Intermittent versus daily calorie restriction: which diet regimen is more effective for weight loss? Obesity Reviews 2011; 12: e593–e601.

intake, increased energy expenditure). With obesity being a chronic condition, the long-term effects of a diet are the most vital. Nevertheless, fad diets can only be modestly efficacious at decreasing weight short-term, but these benefits are not sustained long-term.[25] In addition, the initial significant drop in weight may be caused by the loss of body water and lean muscle mass rather than fat.

A study has suggested that instant weight loss reflects the susceptibility to weight gain (independent of genetic factors), rending dieters prone to future weight gain. The recurrent weight loss and gain can also contribute to weight cycling, which has been shown to exacerbate obesity by increasing metabolic efficiency.[26] The metabolic rate can also be slowed down when dieting and high levels of physical activities are not maintained.[27]

2. *Nutritionally imbalanced*

Fad diets that limit certain food groups can cause nutrient deficiencies over time. Furthermore, many fad diets are nutritionally imbalanced, with lower diet quality scores, particularly where the focus is on macronutrient composition rather than micronutrient intakes.[28]

3. *Poor diet adherence and long-term behavior modification*

Fad diets encourage the notion of a diet as short-term behavior rather than a sustainable lifelong change. Regular dieting is associated with weight gain, possibly due to the adoption of negative behaviors such as binge-eating, skipping breakfast, and not exercising.[29] Diet adherence is so challenging that it is poor even in short-term studies where all food is provided. When diets are prescribed, adherence is likely to diminish over the long term despite self-reports to the contrary.[30] Some fad diets can

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[25] Atallah, R., Filion, K. B., Wakil, S. M., Genest, J., Joseph, L., Poirier, P., . . . Eisenberg, M. J. (2014). Long-Term Effects of 4 Popular Diets on Weight Loss and Cardiovascular Risk Factors: A Systematic Review of Randomized Controlled Trials. *Circulation: Cardiovascular Quality and Outcomes*, *7*(6), 815-827. doi:10.1161/circoutcomes.113.000723

[26] CPietiläinen, K. H., Saarni, S. E., Kaprio, J., & Rissanen, A. (2011). Does dieting make you fat? A twin study. *International Journal of Obesity*, *36*(3), 456-464. doi:10.1038/ijo.2011.160

[27] Johannsen, D. L., Knuth, N. D., Huizenga, R., Rood, J. C., Ravussin, E., & Hall, K. D. (2012). Metabolic Slowing with Massive Weight Loss despite Preservation of Fat-Free Mass. *The Journal of Clinical Endocrinology and Metabolism*, *97*(7), 2489–2496.

[28] Yunsheng MA, Pagoto SL, Griffith JA, Merriam PA, Ockene IS, Hafner AR, et al. A dietary quality comparison of popular weight-loss plans. Journal of the American Dietetic Association 2007; 107(10): 1786–1791.

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[30] Freedhoff, Y., & Hall, K. D. (2016). Weight loss diet studies: We need help not hype. *The Lancet*, *388*(10047), 849-851. doi:10.1016/s0140-6736(16)31338-1

be difficult to sustain due to boredom, monotony, cost, and unsociable setting practice. [31]

4. *Induces stress and causes disease to certain organs*

Popular high protein, low carbohydrate diets increase the risk for kidney stone formation.[32] Diets that encourage intake of certain nutrients (e.g. fat) can contribute to lifestyle diseases (e.g. atherosclerosis). There are also physiological effects like the suppression of natural killer cells necessary for immune response.[33] Weight cycling (or yo-yo dieting) showed potential increased risk of hypertension, hypercholesterolemia, and gallbladder disease[34]

Leptin and ghrelin are two hormones that have been recognized to have a major influence on energy balance. Leptin is a mediator of long-term regulation of energy balance, suppressing food intake and thereby inducing weight loss. Ghrelin, on the other hand, is a fast-acting hormone, seemingly playing a role in meal initiation. In obese subjects, the circulating level of the anorexigenic hormone leptin is increased, whereas surprisingly, the level of the orexigenic hormone ghrelin is decreased. It is now established that obese patients become leptin-resistant. [35]

5. *Lacks focus on the importance of health and increasing physical activity*

Fad diets rarely focus attention on energy expenditure through the promotion of increased physical activity. Fatigue caused by low energy and nutrient consumption may demotivate a dieter to exercise.

6. *Psychological implications*

There is increased perceived psychological stress when a person restricts his/her caloric intake (resulting to increased daily cortisol).[36] When

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[31] Lewis S, Thomas SL, Blood RW, Castle D, Hyde J, Komesaroff PA. 'I'm searching for solutions': why are obese individuals turning to the Internet for help and support with 'being fat'? Health Expectations 2011; 14(4): 339–350

[32] Nouvenne, A., Ticinesi, A., Morelli, I., Guida, L., Borghi, L., & Meschi, T. (2014). Fad diets and their effect on urinary stone formation. *Translational Andrology and Urology*, *3*(3), 303–312. http://doi.org/10.3978/j.issn.2223-4683.2014.06.01

[33] Shade ED, Ulrich CM, Wener MH, Wood B, Yasui Y, Lacroix KA, et al. Frequent intentional weight loss is associated with lower natural killer cell cytotoxicity in postmenopausal women: possible long-term immune effects. Journal of the American Dietetic Association 2004; 104: 903–912.

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chronically elevated, cortisol can have deleterious effects on weight, immune function, and chronic disease risk.

Monitoring one's diet involves continuously recording consumed food. Like the stressors characterized in daily hassles literature ("irritating, frustrating demands that occur during everyday transactions with the environment"), monitoring via the use of food diaries likely increased perceived stress by creating repeated stressors throughout the day.

Fad diets can lead to the onset of an eating and body dysmorphic disorders either through restrictive means (anorexia nervosa and bulimia nervosa), excessive binging (binge-eating disorder), muscle dysmorphia (bigorexia), or obsession with healthy foods (orthorexia nervosa).

VIII. Alternative to Fad Diets - Recommendations for Weight Loss

Overweight and obesity are complex disorders with multiple interacting contributory factors that include genetic, biologic, behavioral, environmental, as well as socioeconomic elements. Recommendations for weight loss (reducing overweight and obesity) requires individualized programs complemented by population-based approaches.

A. Individualized intervention

Weight loss requires an individualized interdisciplinary approach in order to achieve long-term success. Recommendations for weight loss and long-term weight management includes a combination of consumption of healthy diet, physical activity, and behavior modification. In special circumstances, weight loss may be aided through the use of drug therapy with the close supervision of a doctor and/or nutritionist-dietitian.[37]

Registered nutritionist-dietitian shall be the authority to give recommendations and advice on weight loss, management, and proper nutrition as provided in Republic Act 10862 or the Nutrition and Dietetics Law of 2016. Certified nutrition and wellness coaches are advocates in health and are allowed to give nutrition and health advice to healthy Filipinos. However, they are not in authority to prescribe diet plans and recommendations for those who wish to lose weight. Doctors, especially those concerned with weight loss such as gastroenterologists, endocrinologists, bariatric surgeons, cardiologists, and lifestyle medicine physicians may give recommendations; however, nutrition counseling and meal planning must also be coordinated with a registered nutritionist-dietitian. With regards to behavioral change and practices, psychologists

[37] Montesi, L., El Ghoch, M., Brodosi, L., Calugi, S., Marchesini, G., & Dalle Grave, R. (2016). Long-term weight loss maintenance for obesity: a multidisciplinary approach. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 9, 37–46. http://doi.org/10.2147/DMSO.S89836

and family medicine physicians are the best practitioners to seek advice from.

Nutritionist-dietitians are present in hospitals (government and private), clinics, and in most local government units.

In the Philippines, the clinical practice recommendations on weight management are represented by a limited number of publications. The two readily accessible sets of recommendations are the focus of discussion in this article and these are the Philippine Association for the Study of Overweight and Obesity (PASOO) recommendations on the healthy and safe weight management program and the Family Medicine Research Group (FMRG) guidelines for diagnosing and treating obesity in family practice as part of the Guidelines Series of the FMRG the Department of Family and Community Medicine at the University of the Philippines-Philippine General Hospital (UP-PGH). The Food and Nutrition Research Institute (FNRI) and the Department of Health (DOH) have developed the Nutritional Practice Guidelines for the Management of Overweight and Obesity but is still to be finalized and disseminated.

The recommendations stated in this document are appropriate for healthy Filipino adults ages 18-59, with the intentions of losing weight. These recommendations are not applicable to children, adolescents, elderly, and pregnant or lactating women. Those who have certain diseases, such as heart problems, diabetes, or kidney problems, may need additional dietary modifications to address their disease during weight loss. It is important those intending to lose weight should seek the clearance of a doctor before undergoing any weight-reducing diet or exercise.

a. Diet

Dietary plans and programs must be done under the supervision of a nutritionist-dietitian. It should follow the basic dietary principles of moderation, variety, balance, and proportionality. Energy restriction and energy balance remain to be the vital elements of achieving weight loss. The best dietary approaches with respect to macronutrient distribution consider the following[38]:

1. Nutritionally adequate with respect to proteins and micronutrients

[38] Hankey, C. (2018). *Advanced nutrition and dietetics in obesity*. Hoboken, NJ: Wiley.

2. Maximize health effects, including minimizing lean tissue loss
3. Limit intake of processed foods, trans fat, and sugar-sweetened beverages
4. Ecologically sustainable
5. Can be followed through for long periods

For guidance, the Food and Nutrition Research Institute developed the *Pinggang Pinoy* (also known as "Healthy Food Plate for Filipinos"). The food plate is an easy-to-understand food guide that uses a familiar food plate model to convey the right food group proportions on a per-meal basis to meet the energy and nutrition needs of Filipinos of specific age groups. It encourages larger portions for "glow" foods such as vegetables and fruits which comprise half of the plate but more vegetables than fruits; while the other half is for rice and alternatives and protein-source, with rice and alternatives occupying a bigger portion than the protein-source. Moreover, the FNRI-DOST also developed a *Low-Calorie Diet Plan*, which aims to trim down the caloric intake to impart weight loss and decrease the risk of being overweight and obese. (Refer to **Annex 1**)

During weight loss under a diet that is nutritionally balanced and adequate, mineral and vitamin supplementation is unnecessary.

b. Physical Activity

Emphasis on the importance of increased physical activity is essential. According to the WHO Global Strategy on Diet, Physical Activity, and Health[39], adults aged 18-64 should engage in leisure-time physical activities such as walking, dancing, gardening, hiking, swimming, active transportation (e.g. cycling), or through games, sports, or planned exercise.

Physical activity improves cardio-respiratory and muscular fitness, bone health, reduces the risk of NCDs and depression. Physical activity should be guided by the following:

1. Adults aged 18–64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an

[39] Physical Activity and Adults. (n.d.). Retrieved March 22, 2018, from http://www.who.int/dietphysicalactivity/factsheet_adults/en/

equivalent combination of moderate- and vigorous-intensity activity. For guidance, a list of aerobic activities based on intensity levels can be seen in **Annex 2.**

2. Aerobic activity should be performed in bouts of at least 10 minutes in duration.

3. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity.

4. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.

In addition, the Philippine Association for the Study of Overweight and Obesity (PASOO) recommends the following physical activity guidelines[40]:

1. Medical clearance should be obtained for those above 40 years as well as those below 40 years with known risk factors which could compromise health. A graded exercise test should be included.

2. Sessions should begin and end with 5-10 minutes of light aerobic/flexibility activities.

3. Aerobic exercises should be performed at least three times a week and once during the weekends.

4. The duration of exercise should expend at least 300 kcal per session (average of 30-60 minutes/session)

5. Maximum oxygen consumption should be 40-80%, which is equivalent to about 60-90% of the maximum heart rate. (220-age)

6. Weave more physical activity into daily routines – stairs instead of elevators, walk instead of ride to work, etc.

7. Chronic strenuous exercise should be done with caution. Recent studies suggest a suppression of the immune system brought about by the decrease in the natural killer cells.

[40] Jasul, Jr., G., & G. Sy, R. (2014). Obesity Treatment Recommendations in the Philippines: Perspective on their Utility and Implementation in Clinical Practice. *Journal of the ASEAN Federation of Endocrine Societies*, *26*(2), 122. Retrieved from http://asean-endocrinejournal.org/index.php/JAFES/article/view/81/382

c. Behavior modification

The most important aspect of weight loss is in behavior modification. Without the proper motivation for a healthy weight loss, dieters tend to have poor diet and physical inactivity. Dietary counseling should include recommendations for appropriate behavioral approaches to weight loss emphasizing lifelong changes in diet and physical activity. The strategies of a physician/nutritionist-dietitian/psychologist will be dependent on adaptability of the dieter as well.

An effective behavioral strategy[41] for weight loss includes:

1. Self-monitoring of nutritional intake and physical activity
2. Goal setting
3. Problem-solving
4. Social support
5. Stress management
6. Stimulus control
7. Alternative behaviors (identifying internal cues for eating such as craving and finding alternate behaviors rather than giving in to the craving)
8. Cognitive restructuring
9. Continuous care—the value of a patient-centered medical home
10. Establish a weight management range
11. Construct a weight maintenance plan
12. Meet with a Registered Nutritionist-Dietitian to discuss structured meal plans, meal replacements, and understanding of portion sizes and portion control
13. Develop specific relapse prevention techniques
14. Adherence strategies

If an individual has difficulty managing themselves, a consultation with a psychologist, lifestyle medicine physician, family medicine doctor, or a registered nutritionist-dietitian may be recommended.

B. Population-based approaches to address overweight and obesity

At the population level, the Lancet Series on Obesity (2011)[42] identified the main driver of the obesity pandemic to be the globalization of food

[41] Kelley, C. P., Sbrocco, G., & Sbrocco, T. (2016). Behavioral Modification for the Management of Obesity. Primary Care, 43(1), 159–175. http://doi.org/10.1016/j.pop.2015.10.004

[42] Roberto, et. Al. Patchy progress on obesity prevention: emerging examples, entrenched bariers, and new thinking. Lancet 2015: 385:2400-09. Published online.

systems that promote overconsumption of energy-dense, nutrient-poor foods and beverages. Along this line, there is a need for policies that address the obesogenic environment by providing healthier food environments, food systems and complemented with behavior change communication. The Philippine Plan of Action for Nutrition (PPAN) 2017-2022 includes the nutrition-specific Overweight and Obesity Prevention and Management Program as well as Nutrition Promotion for Behavior Change Program and are complemented with other programs to be able to achieve the goal of reducing overweight and obesity rates among adolescents and adults and no further increase among children.

IX. Summary and Conclusion

Fad diets are dietary regimes promoted for weight loss and improvement of health that do not form part of the standard dietetic-led weight management advice. Fad diets promise instant weight loss through the restriction of food or certain food groups. Fad diets also make dramatic claims that are poorly supported by few evidences. The program is done only on a short-term basis and lacks recommendations for weight management.

Many believe in fad diets due to the novelty of a new way of eating, which breaks the monotony and boredom of regular food intake. Numerous studies and researches are being conducted to support some of the health benefits. Some fad diets, like those of ketogenic and fasting, claim better organ functions, may reduce the risk for NCDs and aid in longevity and aging. Although some seem to be promising, the majority are still questionable since they have not been performed for longer durations, thus inconclusive of its long-term benefits.

Fad diets claim to be successful in the short-term due to the principle of energy deficit (wherein there is a decrease in caloric intake, increase in energy expenditure, therefore leading to weight loss). According to several studies, when a dieter goes back to his/her usual food intake, there are greater possibilities of weight gain. In addition, fad diets are nutritionally-imbalanced due to the restriction and deficiency of certain food groups and micronutrients. Fad dieting also creates psychological stress which can later manifest as mental and eating disorders. Following a short dietary regime is medically unsuitable and unsustainable with many dieters failing in their dietary adherence and long-term behavioral change.

Recommendations for a safe, healthy, and holistic dietary, exercise, and behavioral plan are key to long-term weight loss and improvement of overall health. A nutritional assessment of weight and health indicators, like the BMI, body composition, percent body fat, and waist circumference, must be done before coordinating a diet plan. There are existing Philippine nutrition and dietary guidelines and IEC materials are that are available for guidance of

Filipinos. For physical activity, the WHO recommends at least 150-minutes of moderate-intensity aerobic exercise throughout the week. One of the most vital yet overlooked aspects of weight loss is behavior modification. Different strategies may be used in order to control and motivate an individual to lose weight.

It is important that health professionals, both in private and public practice, maintain a working knowledge of these current fad diet trends so that they can effectively discuss the process of proper weight management and help people to make informed choices. There is also a need for additional research on fad diets, especially in the Filipino setting, in order to disprove their claims and apply better recommendations for weight loss and obesity management in the country.

Population-based approaches to prevent overweight and obesity are also needed particularly by promoting healthier food environment, food systems and public awareness anchored on behavior-change communication.

X. Dissemination

The NNC shall cause the dissemination of this policy statement within the bureaucracy including local government units, private sector involved in nutrition and dietary management which shall include, but not limited to the following:

1. Professional organizations in the field of nutrition and dietetics, gastroenterology, endocrinology, bariatric surgery, cardiology, lifestyle medicine
2. Government and private hospitals
3. Local nutrition workers such as the Nutrition Action Officers (NAOs), District/City Nutrition Program Coordinators (DCNPC), Barangay Nutrition Scholars (BNS),
4. Academe with nutrition and dietetics, medical and allied courses.

Dissemination to the general public shall include publication in major dailies, websites and social media. Such dissemination shall be monitored by the NNC Secretariat and reported accordingly to the NNC Governing Board.

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ANNEX 1. Low-Calorie Diet Plan by FNRI-DOST

Annex 2. General Physical Activities Defined by Intensity Levels

Source: American College of Sports Medicine

Moderate activity[+] 3.0 to 6.0 METs* (3.5 to 7 kcal/min)	**Vigorous activity**[+] Greater than 6.0 METs* (more than 7 kcal/min)
Walking at a moderate or brisk pace of 3 to 4.5 mph on a level surface inside or outside, such as • Walking to class, work, or the store; • Walking for pleasure; • Walking the dog; or • Walking as a break from work. Walking downstairs or down a hill Racewalking—less than 5 mph Using crutches Hiking Roller skating or in-line skating at a leisurely pace	Racewalking and aerobic walking—5 mph or faster Jogging or running Wheeling your wheelchair Walking and climbing briskly up a hill Backpacking Mountain climbing, rock climbing, Rapelling Roller skating or in-line skating at a brisk pace
Bicycling 5 to 9 mph, level terrain, or with few hills Stationary bicycling—using moderate effort	Bicycling more than 10 mph or bicycling on steep uphill terrain Stationary bicycling—using vigorous effort
Aerobic dancing—high impact Water aerobics	Aerobic dancing—high impact Step aerobics Water jogging Teaching an aerobic dance class
Calisthenics—light Yoga Gymnastics General home exercises, light or moderate effort, getting up and down from the floor Jumping on a trampoline Using a stair climber machine at a light-to-moderate pace Using a rowing machine—with moderate effort	Calisthenics—push-ups, pull-ups, vigorous effort Karate, judo, tae kwon do, jujitsu Jumping rope Performing jumping jacks Using a stair climber machine at a fast pace Using a rowing machine—with vigorous effort Using an arm cycling machine—with vigorous effort
Weight training and bodybuilding using free weights, Nautilus- or Universal-type weights	Circuit weight training
Boxing—punching bag	Boxing—in the ring, sparring Wrestling—competitive
Ballroom dancing Line dancing Square dancing Folk dancing Modern dancing, disco Ballet	Professional ballroom dancing—energetically Square dancing—energetically Folk dancing—energetically Clogging
Table tennis—competitive Tennis—doubles	Tennis—singles Wheelchair tennis
Golf, wheeling or carrying clubs	——

Moderate activity[+] 3.0 to 6.0 METs* (3.5 to 7 kcal/min)	**Vigorous activity**[+] Greater than 6.0 METs* (more than 7 kcal/min)
Softball—fast pitch or slow pitch Basketball—shooting baskets Coaching children's or adults' sports	Most competitive sports Football game Basketball game Wheelchair basketball Soccer, Rugby Kickball Field or Rollerblade Hockey Lacrosse
Volleyball—competitive	Beach volleyball—on sand court
Playing Frisbee Juggling Curling Cricket—batting and bowling Badminton Archery (nonhunting) Fencing	Handball—general or team Racquetball Squash
Downhill skiing—with light effort Ice skating at a leisurely pace (9 mph or less) Snowmobiling Ice sailing	Downhill skiing—racing or with vigorous effort Ice-skating—fast pace or speedskating Cross-country skiing Sledding Tobogganing Playing ice hockey
Swimming—recreational Treading water—slowly, moderate effort Diving—springboard or platform Aquatic aerobics Waterskiing Snorkeling Surfing, board or body	Swimming—steady paced laps Synchronized swimming Treading water—fast, vigorous effort Water jogging Water polo Water basketball Scuba diving
Canoeing or rowing a boat at less than 4 mph Rafting—whitewater Sailing—recreational or competition Paddle boating Kayaking—on a lake, calm water Washing or waxing a powerboat or the hull of a sailboat	Canoeing or rowing—4 or more mph Kayaking in whitewater rapids

Moderate activity[+] 3.0 to 6.0 METs* (3.5 to 7 kcal/min)	**Vigorous activity**[+] Greater than 6.0 METs* (more than 7 kcal/min)
Fishing while walking along a riverbank or while wading in a stream—wearing waders	———
Playing on school playground equipment, moving about, swinging, or climbing Playing hopscotch, 4-square, dodgeball, T-ball, or tetherball Skateboarding Roller-skating or in-line skating—leisurely pace	Running Skipping Jumping rope Performing jumping jacks Roller-skating or in-line skating—fast pace
Playing instruments while actively moving; playing in a marching band; playing guitar or drums in a rock band Twirling a baton in a marching band Singing while actively moving about—as on stage or in church	Playing a heavy musical instrument while actively running in a marching band
Gardening and yard work: raking the lawn, bagging grass or leaves, digging, hoeing, light shoveling (less than 10 lbs per minute), or weeding while standing or bending Planting trees, trimming shrubs and trees, hauling branches, stacking wood Pushing a power lawn mower or tiller	Gardening and yard work: heavy or rapid shoveling (more than 10 lbs per minute), digging ditches, or carrying heavy loads Felling trees, carrying large logs, swinging an ax, hand-splitting logs, or climbing and trimming trees Pushing a nonmotorized lawn mower
Moderate housework: scrubbing the floor or	Heavy housework: moving or pushing heavy
• Waiting tables or institutional dishwashing • Driving or maneuvering heavy vehicles (e.g., semi-truck, school bus, tractor, or harvester)—not fully automated and requiring extensive use of arms and legs • Operating heavy power tools (e.g., drills and jackhammers) • Many homebuilding tasks (e.g. electrical work, plumbing, carpentry, dry wall, and painting) • Farming—feeding and grooming animals, milking cows, shoveling grain; picking fruit from trees, or picking vegetables • Packing boxes for shipping or moving • Assembly-line work—tasks requiring	active and strenuous participation, such as aerobics or physical education instructor • Firefighting • Masonry and heavy construction work • Coal mining • Manually shoveling or digging ditches • Using heavy nonpowered tools • Most forestry work • Farming—forking straw, baling hay, cleaning barn, or poultry work • Moving items professionally • Loading and unloading a truck

Moderate activity[+] 3.0 to 6.0 METs* (3.5 to 7 kcal/min)	**Vigorous activity**[+] Greater than 6.0 METs* (more than 7 kcal/min)
movement of the entire body, arms or legs with moderate effort • Mail carriers—walking while carrying a mailbag • Patient care—bathing, dressing, and moving patients or physical therapy	