

Diet Dispute: Comparing nutrient differences among popular weight loss diets

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DIET DISPUTE

Background

As the obesity epidemic continues to threaten the health of many Americans, individuals look for ways to lose weight and live a healthier lifestyle. Popular diets are a common method individuals turn to lose weight and prevent further weight gain. There are numerous popular diets on the market that offer promises of weight loss, but it is unclear how these diets differ in terms of nutrient content. Significant differences in nutrient intake could impact an individual's health far beyond just the surface level of weight loss.

Objective

To examine nutrient differences among the four different diet types (moderate, plant-based, low-carbohydrates, and meal replacement) from the popular diets rated by the 2018 US News and World Report (USNWR) Diet Rankings.

Methods

A total of 40 best diets were rated by the USNWR. Each diet included a one-day sample meal plan along with the breakdown of nutritional content. The nutrient content was pulled for each of the 40 diets and compared to determine significant differences. Diets were categorized into four groups based on macronutrient content and foods allowed: (1) Moderate (e.g., Weight Watchers), (2) Plant-based (e.g. Ornish), (3), Low-carbohydrate (e.g., Atkins), and (4) Meal replacements (e.g., Slim-fast). Sample menus and nutrient breakdowns (kcal, % energy from macronutrients, and select micronutrients (sodium, potassium, calcium, vitamin B12, and vitamin D)) were obtained for each diet from the USNWR website and two raters categorized each of the diets into the four groups. One-way ANOVA with Tukey's post-hoc analyses were conducted to examine differences in the nutrients among the four groups.

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Results

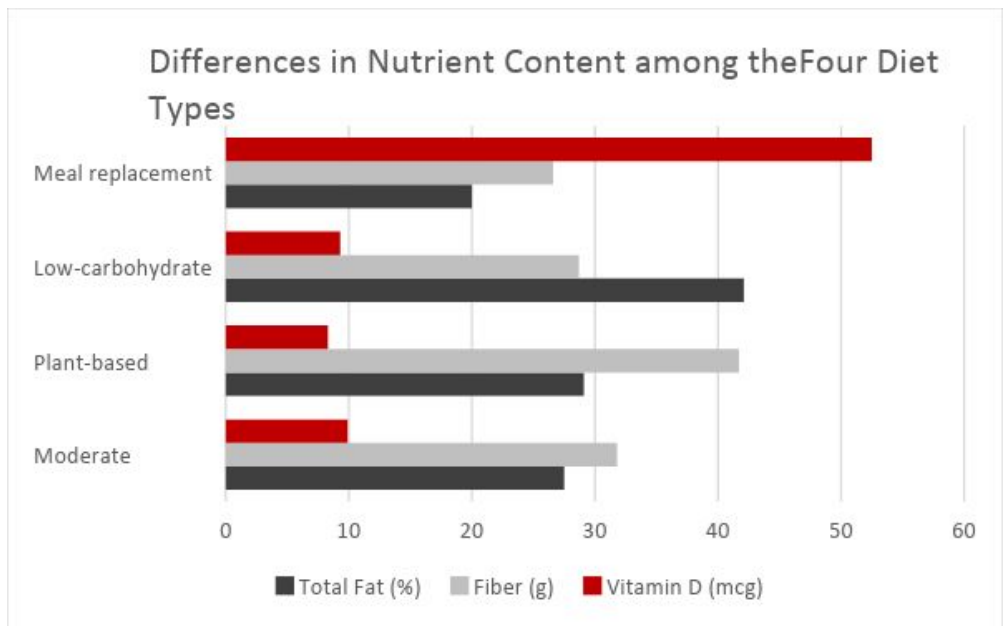
A total of 40 diets were analyzed (n=19 Moderate, n=9 Plant-based, n= 8 Low-carbohydrate, and n=4 Meal replacement). There were no significant differences in kcals (p=0.20); or % energy from saturated fat (p=0.11), trans fat (p=0.79), carbohydrates (p=0.34), or sugars (p=0.85); or any of the micronutrients (p's all >0.05) with the exception of vitamin D. Significant differences among the four diets were observed for % energy from total fat with the low-carbohydrate diets having significantly more fat than the moderate diets (p=0.01). Fiber (g) approached significance (p=0.055) among the four diets. Vitamin D content differed among the four diets (p=0.01), with meal replacement diets containing significantly more vitamin D than moderate, plant-based, or low-carbohydrate diets.

Diet category	Total Fat (%)	Fiber (g)	Vitamin D (mcg)
Moderate	27.5±8.2%	31.8±6.7	9.9±6.3
Mediterranean Diet	29%	32	N/A
Dash Diet	26%	36	11
Flexitarian	27%	32	13.4
Weight Watchers	30%	25	
MIND	33%	43	5.4
TLC	22%	43.5	6
Volumetrics	24%	28	3.7
Mayo Clinic (women's)	22%	24	
Fertility	33%	42	18.6
Asian	33%	31	23
Dr. Well's Anti-Inflammatory	55%	23	0
Flat Belly	26%	35	9.6
Spark Solutions	18%	38	6.2
Biggest Loser	25%	31	11.4
Nutrisystem (womens)	27%	28	
Glycemic-Index	28%	27	16.4
Abs	28%	32	7
Macrobiotic	17%		
Alkaline	20%	22	6.5

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Plant-based	29.1±8.4	41.7±12.7	8.3±11.3
Ornish	16%	56	14.7
Vegetarian	31%	39	5.8
Nutritarian	26%	53	36
Engine 2	23%	50	1
Vegan Diet	33%	43	7.9
Eco-Atkins	42%	48	3.0
Raw Food	28%	35	3.0
Fast	40%	14	3.3
Body Reset	23%	37	0
Low-carbohydrate	42.1±17.1	28.7±7.7	9.3±15.6
South Beach	35%	25	
Zone	33%	22	0.11
Paleo	39%	42.5	0
Supercharged Hormone	30%	45	1
Atkins	63%	19	0.5
Whole 30	41%	56.7	43
Dukan Diet	23%	4	11.6
Keto	73%	15.1	9.1
Meal replacement	20.0±4.3	26.6±8.7	52.5±22.6
Optavia	20%	27.5	22
HMR	14%	13	126
SlimFast	24%	29	9.5
Jenny Craig	22%	33	

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Discussion

Due to the similarities in kcals, % energy from saturated fat, trans fat, carbohydrates, sugars, and all micronutrients with the exception of vitamin D, among all four different diet types, it can be concluded that there is a standard accepted range for these nutrients in diets. However, the differences in total fat, fiber, and Vitamin D content indicate that there is a disagreement among the four diet types over what is considered optimal intake. Future studies should investigate what the optimal value for total fat, fiber, and Vitamin D content is to achieve ideal health. Data gathered on the optimal value for these nutrients can then be used to determine what diets are best for individual's long-term health.