

COMPARISON OF KETOGENIC AND VEGETARIAN DIET FOR WEIGHT LOSS: A SYSTEMATIC REVIEW

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Research Question:

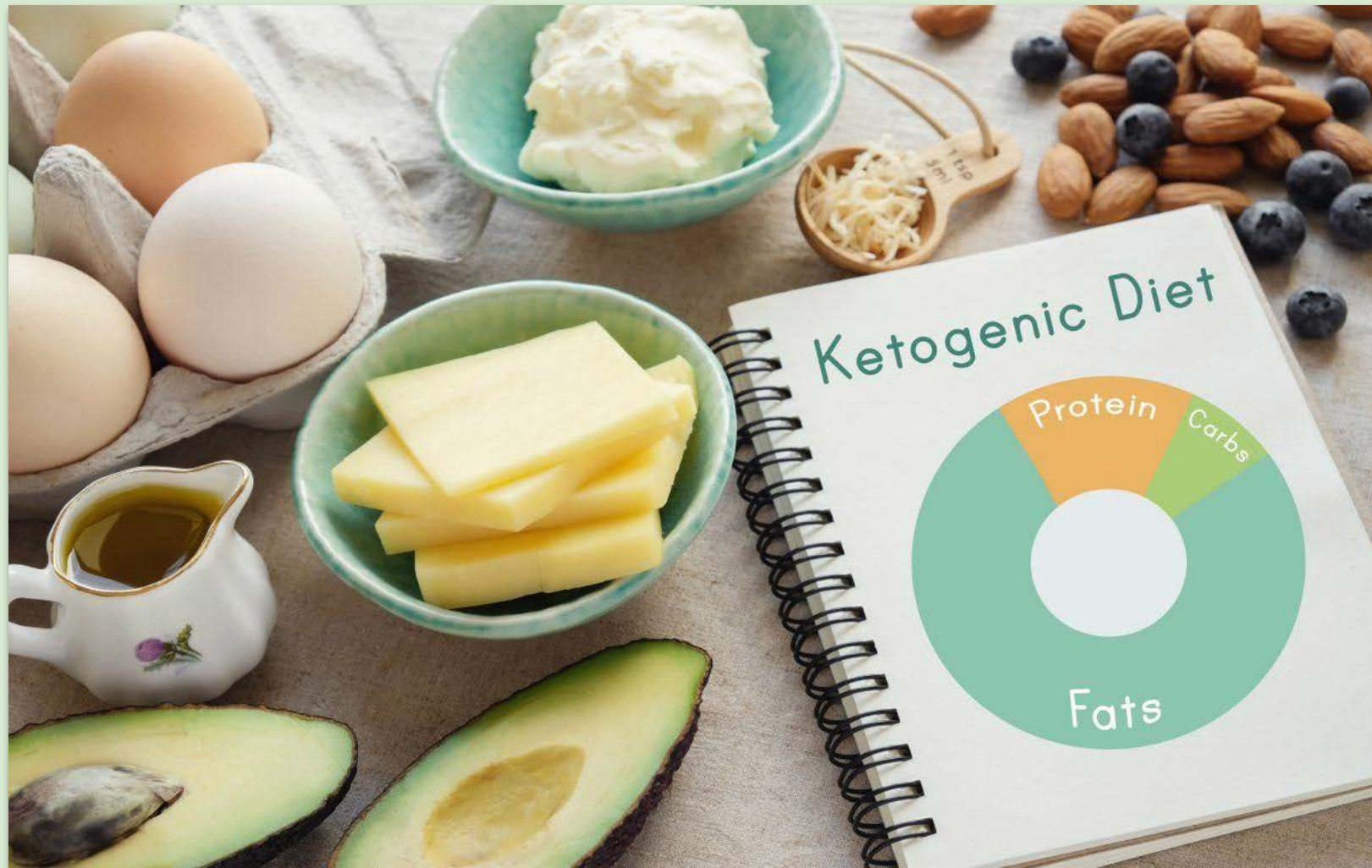
How efficient is weight loss by means of a ketogenic diet in conjunction with side effects compared to a vegetarian diet?



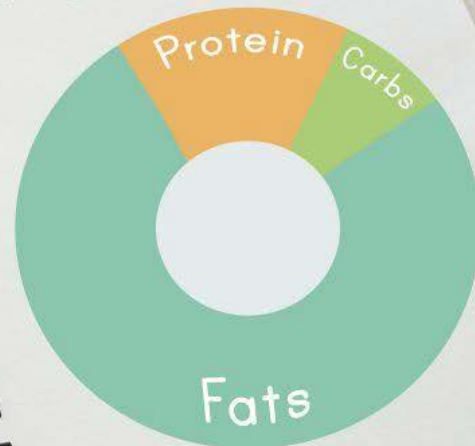
Objective:

Analyze the data researched and come to a conclusive decision of which diet (ketogenic or vegetarian) is predominantly more beneficial.





Ketogenic Diet



What is a Ketogenic Diet?

- High Fat, moderate protein, low carbohydrate diet

Nutritional Intake	
Ketogenic Diet	Normal Healthy Balanced Diet
75-80% of total calories from Fat	20-35% of total calories from Fat
15-20% of total calories from Protein	10-35% of total calories from Protein
5% of total calories from Carbohydrates	45-65% of total calories from Carbohydrates

In a ketogenic diet, you shrink the body's supply of vitamins and minerals, so it is important that you are eating...

Recommended Food Intake:

- Meats (chicken, fish, beef, and lamb)
- Above-ground vegetables (broccoli, cauliflower)
- Leafy greens (Kale and spinach)
- High-fat dairy (cheese, cream, and butter)
- Nuts and seeds
- Avocado
- Berries
- Healthy fat and oils (olive oil, coconut oil, fish oil)
- To prevent dehydration, drink ~3L of water per day (minimum)



Center For Nutritional studies. (2018). Whole Food, Plant-Based Diet Guide. Retrieved from <https://nutritionstudies.org/whole-food-plant-based-diet-guide/>

Foley, C. (2018, August 03). Keto Diet: The Fat-Burning Health Benefits of Ketogenic Diet Foods. *University Health News*. Retrieved from <https://universityhealthnews.com/daily/nutrition/keto-diet-health-benefits-of-ketogenic-diet/>

AVOID



Bread



Pasta



Sugar



Corn



Beans



Rice

What is a Ketogenic Diet?

- In 1920 it became an effective treatment for **epilepsy in children**.
- Potentially helpful for:
 - Weight-loss
 - Appetite suppression,
 - Blood sugar control to help improve lipid profile and hypertension

A Ketogenic Diet Potentially Therapeutic For:

- Cancers/Tumors
- Cardiovascular Diseases
- Diabetes
- Epilepsy
- Obesity
- Neurological Disorders (Alzheimer's/Parkinson's)

Disadvantages of Ketogenic Diet:

- Requires an adaption process
- Increase risk of nutritional deficiencies
- Limited sugars and carbs
- High cholesterol (excessive meat intake)
- Ketoacidosis



What is a Vegetarian Diet?

- A diet which excludes meat, chicken and fish

Types of Vegetarian Diet:

- Lacto-Ovo Vegetarian
- Lacto Vegetarian
- Ovo Vegetarian
- **Vegan**

In a vegetarian diet, you shrink the body's supply of:

- Iron
- Calcium
- Zinc
- Vitamin B12
- Vitamin D

So it is important that you are eating...

Recommended Food Intake:

Non-Starchy Vegetables

- Leafy greens
- Broccoli
- Zucchini
- Eggplant
- Tomatoes

Starchy Vegetables

- Potatoes
- Legumes
- Beans
- Lentils
- corn

Fruits

- All whole fruits (avoid: dried or juiced)

Whole Grains

- 100 % whole wheat
- Oats
- Brown rice

Beverages

- Water
- Unsweetened plant “ milks”
- Decaffeinated coffee and tea

Omega 3 fatty acids

- Chia seeds
- Ground flaxseed

Spices

- All spices

AVOID

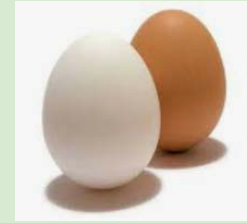
- **Animal products**



Meat



Fish



Eggs



Dairy

- **Processed artificial foods**

→ Sugar, sodium, Trans fats and preservatives

A Vegetarian Diet Potentially Therapeutic For:

- Cardiovascular Diseases
- Cholesterol
- Diabetes
- Hypertension
- Obesity
- Lower intake of saturated fats (decreases heart problems/type 2 diabetes)

Disadvantages of Vegetarian Diet:

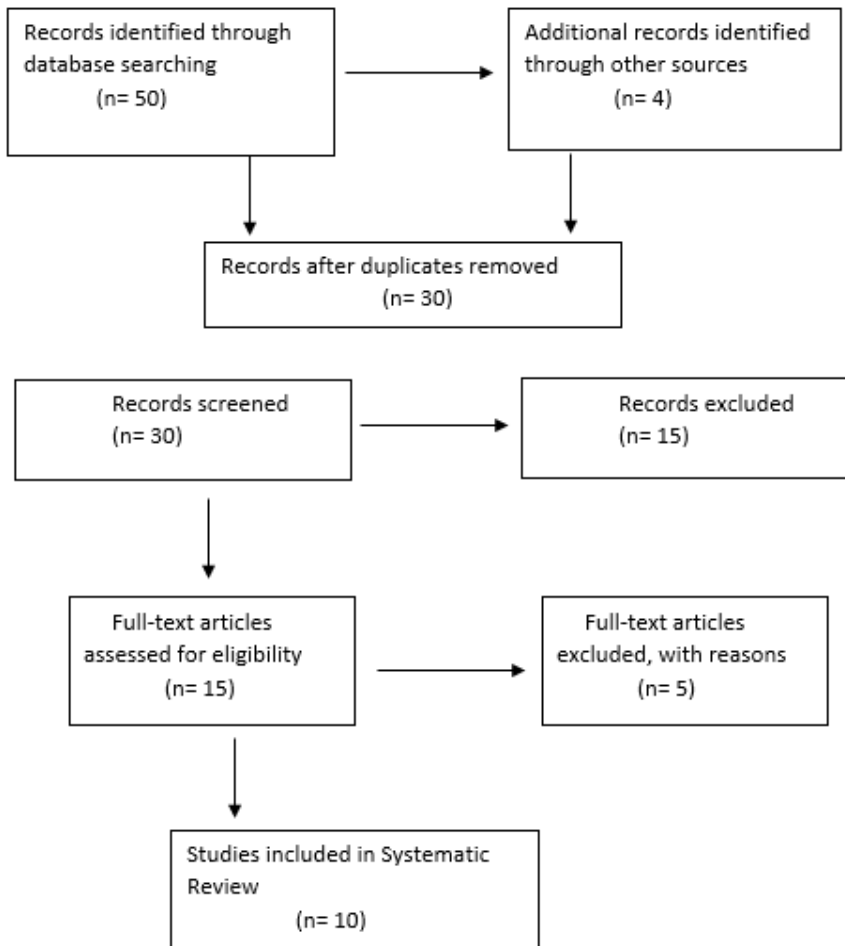
- Too much fiber can lead to poor absorption of Calcium, Zinc, Iron
- Protein deficiency
- Consuming less calories

Identification

Screening

Eligibility

Included



Literature Search Strategy

Keywords:

weight loss, side effects, benefits, ketogenic diet, vegetarian diet

PRISMA Flow Chart

Inclusion Criteria:

- Must be a scholarly or peer-reviewed source
- A relevant article within the last 20 years
- The articles published in English language only
- Will be a randomized control trial and cohort study comparing ketogenic diet and vegetarian diet

Ketogenic Diet: Weight Loss

Author	Year	Findings
Westman et al. <i>Randomized Controlled Trial</i>	2018	Low-carb diet is effective for improving and reversing type 2 diabetes. There is a significant weight loss in overweight and obese people with Type 2 Diabetes, and elimination/reduction of Rx with the ketogenic diet.
Paoli et al. <i>Systematic Review</i>	2018	Ketogenic diet causes a reduction in appetite due to higher satiety effect of proteins, reduction in lipogenesis and increased lipolysis and an increased metabolism of gluconeogenesis and the thermic effect of proteins
Thornton et al. <i>Randomized Controlled Trial</i>	2017	When the ketogenic diet is done with a high water intake, this leads to loss of body weight so water must be observed from ingestive behavior to metabolic function.

Ketogenic Diet: Weight Loss (continued)

Author	Year	Findings
Johnstone et al. <i>Randomized Clinical Trial</i>	2008	Ad libitum energy intakes were lowered with low-carb ketogenic diet than with medium-carb non-ketogenic diet (P=0.02). Hunger was significantly lowered with LC diet (p= 0.014) Weight loss was significantly higher with LC diet (p= 0.006)
Yancy et al. <i>Randomized Controlled Trial</i>	2004	A low-carb diet versus a low-fat diet is used to treat the effect of a high glycemic index in patients with type 2 diabetes, obesity and hyperlipidemia.
<u>Dashti</u> et al. <i>Case study</i>	2004	The weight, body mass index, triglyceride level, LDL cholesterol and blood glucose level decreased, while the HDL cholesterol level increased. (P<0.0001).

Vegetarian Diet: Weight Loss

<u>Author</u>	<u>Year</u>	<u>Findings</u>
Crimarco et al. <i>Observational study</i>	2017	People on this diet have a lower BMI than those on non plant-based diets. Plant based diets should be considered for those who want to lose weight.
Chavarro et al. <i>Randomized Controlled Trials</i>	2015	Vegetarian diet showed a significant weight loss in comparison to non-vegetarian diet. Individuals who consumed energy restricted (ER) vegetarian diet demonstrated a significantly greater weight reduction than the ones without the ER.

Vegetarian Diet: Weight Loss (continued)

<u>Author</u>	<u>Year</u>	<u>Finding</u>
Tuso et al. <i>Case Control Study</i>	2013	Plant-based diets are associated with significant weight loss & lower risk for cardiovascular diseases and mortality compared to non-plant based diets. The Vegetarian diets are very beneficial due to their ability to reduce cardiovascular diseases, diabetes, cholesterol, obesity, blood pressure, weight loss and most importantly they were cost effective. Recommendations to eat vegetables and beans, seeds, nuts, whole grains and to avoid or limit animal products, added fats, oils and refined or processed Carbohydrates.
Sabate et al <i>Cross-sectional study</i>	2010	PBD is a positive approach to prevent childhood obesity

Conclusion:

- It is important for patients to consult with their primary care physicians and dietitians before going on the ketogenic diet or vegetarian diet.
- In a shorter duration, there is a more significant weight reduction using the ketogenic diet vs. vegetarian diet.
- A ketogenic diet is recommended for patients with obesity, type 2 diabetes and hyperlipidemia.
- Ketogenic diet decreases appetite.
- Randomized clinical trials and lower “p” values make the ketogenic diet more significant.

Recommendations:

- A singular focus on weight loss for ketogenic diet and vegetarian diet.
- Raise awareness of the benefits and side effects of ketogenic diet and vegetarian diet, in order to decrease health risks.
- More human research, in general.
- Further studies on children and communities in larger populations.
- More specific, longitudinal cohort studies in diverse communities.
- A policy to decrease the costs of healthy foods.



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