

## The Study on the Typology of Kenyang Diet and Low-Energy Diet on Obesity Therapy

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### ABSTRACT

This study examines the characteristics and composition of macro and micronutrients in *kenyang* diet in obesity therapy compared with a regular obesity diet, a low-energy diet. The approach is qualitative, Diet Quality Index (DQI-I) instruments is used for *kenyang* diet and low-energy diet consumers. *Kenyang* diet and the low energy diet have different characteristics from qualitative and quantitative aspects. *Kenyang* diet has the principle of natural food ingredients without processing and elimination of food additives. In comparison, the low-energy diet focuses on consuming foods low in energy, high in protein, sufficient in fat, and high in fiber. The composition of the *kenyang* diet obtained was 22% protein, 45% fat, and 35% carbohydrates from the total energy intake. Compared to *kenyang* diet, low-energy diet meets a balanced nutritional composition. Processing the menu in *kenyang* diet and low-energy diet has differences in frying technique. *Kenyang* diet as a qualitative diet has advantages and disadvantages in terms of nutrition and health. Consumption of natural foods and avoiding processed foods is a good health approach. *Kenyang* diet uses mindful techniques as the initial stage of the diet by giving full attention to what is eaten. However, *kenyang* diet has a risk of iodine and potassium deficiency due to the absence of consumption of table salt and milk in the long term.

**KEYWORDS:** diet trends, obesity, *kenyang* diet, characteristics, energy composition.

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### INTRODUCTION

Obesity is a severe health problem. According to WHO (2021), overweight and obesity are abnormal or excessive fat accumulation that can interfere with health. Body mass index (BMI) is a simple weight-for-height index commonly used to classify overweight and obesity in adults.

Various trends in weight loss diets are seen due to the increasing incidence of obesity in adults. Social influencers can help motivate individuals to eat a healthier diet. Many influencers are not registered dietitians or qualified nutritionists and often share false or misleading nutritional information with no scientific evidence; this can negatively impact diet and health. Therefore, a study of the trend of obesity therapy in Indonesia is needed. It is important to know the credibility and content of these sources from the nutritional aspect.

The research will discuss *kenyang* diet for weight loss. The research will be conducted to analyze the *kenyang* diet as a popular obesity diet in Indonesia and compare it with the Low

Energy Diet (RE) as a regular diet recommended by World Health Organization (WHO).

### OBJECTIVE

The problem from this study is how the characteristics and composition of nutrients contained in *kenyang* diet and how is the comparison of *kenyang* diet with a regular diet (low energy) in weight loss from the aspect of obesity nutrition therapy. According to (Hughes, 2017), *kenyang* diet is a healthy lifestyle with natural food consumption and mindful technique to gain qualitative satiety.

This study aims to examine the concept of *kenyang* diet and compare it with a low-energy diet in obesity diet therapy by analyzing the characteristics, composition, and processing of menus in *kenyang* diet and a low-energy diet.

This study will be helpful as reference for the analysis of the *kenyang* diet as one of the trends in weight loss in obese patients.

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## RESEARCH METHOD

This study uses a qualitative approach with comparative descriptive method and semi-structured interviews with consumers of *kenyang* diet, by examining the motivation to run a diet and food intake during the diet. The study was conducted from February 2022 to April 2022.

## RESULTS

### Characteristics of *Kenyang* diet and a Low Energy Diet

*Kenyang* diet and low-energy diet have dietary characteristics and characteristics that can be compared through elements of nutritional goals, principles, requirements, recommended and not recommended food ingredients, and indications for administration which can be seen in Table 1.

**Table 1. Characteristics of *Kenyang* diet and a Low Energy Diet**

Characteristics	<i>Kenyang</i> Diet	Low Energy Diet
Goal	<ol style="list-style-type: none"> <li>1) Achieving good health quality by consuming natural foods</li> <li>2) Helps lose weight in obese people</li> </ol>	<ol style="list-style-type: none"> <li>1) Achieve and maintain appropriate nutritional status, age, and physical needs</li> <li>2) Achieve normal nutritional status</li> <li>3) Reduce energy intake</li> </ol>
Principle	<ol style="list-style-type: none"> <li>1) Natural food without ultra-processing</li> <li>2) No Gluten, Salt, Sugar, Fried, Wheat, and Rice (5 G + 1 N) ingredients</li> <li>3) Processing without MSG or MSG (monosodium glutamate)</li> <li>4) High in dietary fiber</li> </ol>	<ol style="list-style-type: none"> <li>1) Low energy</li> <li>2) High protein</li> <li>3) Medium fat</li> <li>4) Low carb</li> <li>5) High fiber</li> </ol>
Requirements	Not mentioned	<ol style="list-style-type: none"> <li>1) Energy intake is reduced by 500-1000 Kcal/day from average needs</li> <li>2) High protein 0.8 – 1.2 g per kg body weight per day,</li> <li>3) Moderate fat that is given about 20-25% of total energy. Saturated fat is limited (6-8%) to full-fat energy</li> <li>4) Slightly lower carbs, at 50-60%</li> </ol>
Indications	It can be consumed by adults who want to achieve good health quality.	Given to patients with BMI > 25 kg/m <sup>2</sup>

## Dietary Principles

*Kenyang* diet uses the principle of natural, unprocessed food, while the low-energy diet uses the code of low energy. Based on the characteristics, *kenyang* diet has a relationship with the paleolithic diet. The Paleo Diet is the modern diet humans consumed during the Paleolithic era. The Paleo diet includes vegetables, fruit, nuts, roots, and meat and excludes dairy products, wheat, sugar, nuts, refined oils, salt, alcohol, or coffee. A study on adherence to the Paleo Diet consumption with the incidence of weight loss by (Mårtensson et al., 2021) showed that high levels of adherence to Paleolithic dietary recommendations were associated with reduced fat mass, body weight, waist circumference, systolic blood pressure, and triglyceride levels in among patients with type 2 diabetes.

## Source of Protein, Fat, and Carbohydrates

The fulfillment of energy in *kenyang* diet is not obtained from the rice consumption. This is based on several arguments by Dewi Hughes, namely proposing the substitution of rice with other carbohydrates because rice makes the satiety faster, making it likely to enter nutrients from other foods.

According to (Baik & Ullrich, 2008), jali-jali wheat provides a low fat, complex carbohydrates (mainly starch) for energy, and relatively balanced protein to meet the needs of amino acids, minerals, vitamins, especially vitamin E and other antioxidants, especially polyphenols, and both insoluble and soluble fiber with general (rapid elimination of food in the large intestine) and specific health benefits.

## Gaining Satiety

*Kenyang* diet and the low-energy diet have different approaches to the acquisition of *kenyang* diet when consuming food. *Kenyang* diet allows eating whenever the stomach feels hungry with food that stops when the stomach feels full. *Kenyang* diet does not use the standard time for breakfast, lunch, and dinner as the time consumption of *kenyang* diet.

Chewing and mindful eating techniques are applied in a *kenyang* diet. In a study of (Schnepper, et.al, 2019), the combination of mindfulness and specific chewing training that increased awareness of satiety strongly influenced energy intake and associated eating styles. There is no reduction in energy in the intervention, but is only loss-oriented and encourages focused enjoyment and tasting of food.

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### Foodstuff Inclusion and Elimination

*Kenyang* diet uses a natural food approach, while the low-energy diet accepts all foods that are low in energy and high

in fiber. The food components included in *kenyang* and low-energy diet can be seen in Table 2.

**Table 2. Foods in *Kenyang* and Low-Energy Diet**

Food Component	<i>Kenyang</i> Diet	Low-Energy Diet
Meat	√	√
Fish/ Seafood	√	√
Egg	√	√
Vegetable	√	√
Fruit	√	√
Nut	√	√
Milk	x	√
Wheat	x	√
Nuts	√	√
Added Salt	x	√
Processed Fat	x	√
Sugar	x	√

From this approach, *kenyang* diet eliminates unnatural food ingredients, namely gluten, salt, sugar, fried, wheat, and rice. The restricted foods are associated with the incidence of weight gaining because the results of the processing have a high energy content (> 60%). In a study conducted in Australia by (Machado et al., 2020), it was found that Australians whose diet was based on ultra-processed foods (>62% of total energy intake) had 0.97 units higher Body Mass Index (BMI), upper arm circumference was 1.92 cm

greater and was 61 and 38% more likely to have obesity and abdominal obesity, respectively than individuals whose diet was not based on ultra-processed foods (<22% of energy intake).

### ***Kenyang* diet and Low Energy Diet Composition**

*Kenyang* diet and the low-energy diet have different nutrient compositions which is based on the intake of nutrients in *kenyang* diet. The result can be seen on Table 3.

**Table 3. Dietary Composition in *Kenyang* Diet and Low-Energy Diet**

Nutrients	<i>Kenyang</i> Diet*	Low Energy Diet I	Low Energy Diet II
Energy (Kcal)	937	1200	1500
Protein (g)	50	63	80
Fat (g)	37	25	35
Carbohydrate (g)	107	190	233
Dietary Fiber (g)	34	30	35
Calcium (mg)	552	840	901
Iron (mg)	34	22	25
Vitamin A (SI)	674	8131	226
Thiamin (mg)	0	0,9	1,1
Vitamin C (mg)	34	260	270
Sodium (mg)	180	186	180

\*Compositions of KD are estimated involving Mrs. RRW's dietary recall

The results showed that the consumption of a *kenyang* diet was less than the daily dietary requirements of Mrs. RRW, which are 2057 Kcal of energy, 77 grams of protein, 57 grams of fat, and 308 grams of carbohydrates. In 3 days of consumption, the intake data obtained that the average total intake of Mrs. RRW was 937 Kcal, 50 grams of protein, 37 fats, and 107 grams of carbohydrates which were far from the

nutritional adequacy rate of Mrs. RRW for the fulfillment of macronutrients.

Energy consumption Mrs. RRW does not meet the total energy requirement in a day, which is 2057 Kcal. Percentage of energy achievement Mrs. RRW of 45% of daily nutritional needs. Based on the 2018 National Food and Nutrition Workshop (WNPNG), the energy consumption of Mrs. RRW is in the category of severe deficit (<70%). The result is

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because, in one day, Mrs. RRW does not eat energy-dense foods but instead consumes sources of protein, vitamins, and minerals. Compared to her daily nutritional needs, Mrs. RRW needs to increase her intake by at least 1000 Kcal to meet daily dietary needs. The calculation has been adjusted to the ideal weight of Mrs. RRW, which is 53 kg. dietary fiber, calcium, iron, vitamin A, thiamin, vitamin C, and sodium. The intake is processed and adjusted to the standard nutritional adequacy rate (RDA) for women aged 50-64 years. In fiber, the intake of Mrs. RRW has reached the RRW of fiber. This is related to the proportion of fruit and vegetable consumption that is greater than the consumption of other foodstuffs. For calcium, the intake obtained is 552 mg which is still far from the RDA for calcium, which is 1200 mg per person per day. This is due to the absence of adequate consumption of calcium sources, one of which comes from milk.

On iron, the intake of Mrs. RRW exceeds the nutritional adequacy rate, which is 34 mg of iron. This is due to the frequency of consumption of Mrs. RRW in egg whites as a source of iron. In vitamin A, the intake of Mrs. RRW is at normal value. In thiamin (vitamin B1), the intake of Mrs. RRW can be classified as less than the RRW. Need to meet 1.1 mg for thiamin. The intake of vitamin C Mrs. RRW is also categorized as less than the RRW. On sodium or sodium, Mrs. RRW no meets the RDA for sodium. This is because salt is not consumed in a *kenyang* diet.

Based on these results, it was found that Mrs. RRW has a tendency to not meet the intake of essential nutrients for the body obtained from macro and micro nutrients. This has an impact on the fulfillment of nutrients to the optimization of the body's work. However, the diet quality index (DQI) score is 72, which is included in the category of good diet quality in terms of variety, adequacy, moderation, and balance aspects.

In comparison, Mr. MFZ's who underwent the mayo weight loss program, had a tendency to fail in dieting. This is in accordance with the DQI score of Mr. MFZ is 40 which is

included in the category of low diet quality (<60). The score is influenced by the habits of Mr. MFZ who did not consume vegetables and fruit during the diet program. This can be influenced by motivation in undergoing a low diet, so that dietary compliance is not optimal. Besides, Mr. MFZ eats foods other than those offered in the mayo diet program. From these results, it can be discussed that diet motivation is the main thing in order to achieve diet goals. This motivation can be obtained by various approaches.

In the case of weight loss method, Mrs. RRW and Mr. MFZ also differs in cooking awareness. According to (Adelina, 2018), cooking awareness had a significant relationship with BMI. Those who are dependent on food preparation tend to be overweight/obese. This happened because they eat while hungry, so the need for the necessary nutrients tended to be proportional to that issued.

According to (Fitriah & K D, 2017), there are 5 keys to a successful mayo diet, namely eating with the Mayo Clinic pyramid guide which guides how many servings of each food group are needed to achieve energy goals, become more physically active, adopt habits healthy, define goals realistically, and stay motivated. This can be achieved if you have the determination to go on a diet.

### Methods of Processing the Kenyang diet and Low Energy Diet

*Kenyang* diet and the low-energy diet have differences in food processing methods. In *kenyang* diet, natural foods are used in which aims to avoid over-processing, that is, one-time processing is enough, such as boiling, baking, steaming, and eating right away. In the processing of processed food or ultra-processed food, nutrients will potentially be lost due to processing methods involving food additives (BTP) to maintain the durability of processed foods. This is found in frozen and canned foods, such as fish processed into sardines, fruit preserved in cans, and beef processed into sausages/smoked beef. The methods of both diets can be seen on Table 4.

**Table 4. Methods of Cooking in Kenyang and Low-Energy Diet**

Method	<i>Kenyang</i> Diet	Low-energy Diet
<i>Air-frying</i>	√	Not Mentioned
<i>Deep-frying</i>	X	√
Steaming	√	√
Boiling	√	√
Baking	√	√
<i>Juicing</i>	√	√

### Frying in a *Kenyang* Diet

In a comparative study of the characteristics of french fries treated with high temperature oil frying and air frying by (Teruel et al., 2015), it was found that although the air frying technique produces lower fat substances than frying, air

frying requires a long processing time, namely 21 minutes compared to potatoes which is 9 minutes.

### Steaming in Staples

In *kenyang* diet, steaming is the main cooking method in staple foods. In (Yong et al., 2019), the steaming method is

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one of the most common cooking methods in Chinese cooking.

### CONCLUSION

The results of the study of Dewi Hughes' *kenyang* diet and low energy diet in obesity therapy can conclude *kenyang* diet is a qualitative diet that has advantages and is followed by weaknesses in terms of nutritional and health aspects, which are as follows:

1. *Kenyang* diet and the low-energy diet have the same goal of achieving good health. Compared to a low-energy diet, *kenyang* diet uses a qualitative approach in terms of principles and conditions, namely the consumption of natural foods without processed foods, and consumption techniques as the main thing in the diet.
2. *Kenyang* and low-energy diets differ in the composition of nutrients. A satiated diet has less nutritional value. This is in line with the achievement of the participants' needs on *kenyang* diet with adequacy below the daily needs.
3. *Kenyang* and the low-energy diets have different menu processing in the frying process. *Kenyang* diet avoids using cooking oil and replaces it with air-fry, steamed, boiled, roasted, and juicing. This processing is good for reducing the loss of nutrients due to the processing.
4. No diet fully meets all nutritional needs besides a balanced nutritious diet. *Kenyang* diet tends to imbalance in nutrient intake because the food ingredients are eliminated. Consumption of a *kenyang* diet in the near and long term will allow iodine and potassium deficiency due to the absence of consumption of table salt and milk in *kenyang* diet.

### SUGGESTION

The study of *kenyang* diet can be used as a scientific consideration in choosing obesity diet therapy. *Kenyang* diet needs to pay attention to quantitative aspects in determining nutritional needs which are manifested in portions and menu consumption schedules. This is so that *kenyang* diet is understood in general, and can be a specific and measurable diet.

*Kenyang* diet needs to pay attention to consuming food sources of iodine, calcium, and vitamin B complex as essential minerals in the body.

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### AUTHOR CONTRIBUTIONS

ANI, designed, conducted, and performed result analysis, and drafted the manuscript; EW and RA advised the manuscript, and AM corrected, all authors approved the final manuscript.

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