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Public health nutrition policies should stop encouraging people to focus on calorie counting to fight non-communicable diseases: a critical review


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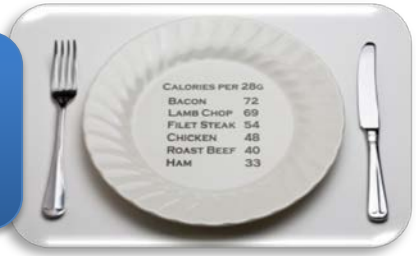
Introduction

Public health policies focused on calories

minor shifts toward healthier choices[1]



not enough to prevent obesity and related diseases[1]

Example: menu calorie labeling has little or no effect on the food choices[2]

Some actions might promote a reduction in caloric intake, but..

Can calorie reduction improve health simply because it can result in weight loss?

[1]CAMACHO & RUPPEL, 2017; LUCAN & DINICOLANTONIO, 2015. [2]SINCLAIR et al2014; KISZKO et al, 2014; LONG et al, 2015; FERNANDES et al, 2016

Aim: To discuss the (lack of) relationship between calories and healthy eating and propose a shift in the focus of public policies

Methods

Critical review discussing the relationship among **calorie** counting, **obesity**, **healthy eating** and **public health nutrition policies**.

Databases: **Cochrane** Library; **Scopus**; Medline, **Web of Science; Lilacs** and **Scielo + Organizations websites, paper references** and **books**

Keywords: Four main groups of keywords

- **Calorie concept** (eg, calorie, calorie count, energy value, calorie label)
- **Public health policies** (eg, menu label, food label, food guidelines)
- **Food choices** (eg, food selection, meal choice, eating behavior, healthy eating)
- **Non-communicable diseases** (eg, chronic diseases, obesity, eating disorders)

Calorie concept and use

Healthy food choices

Calories and healthy food choices

Healthy eating and public health nutrition policies

Results

According to the World Health Organization[1]:

Fundamental cause: "**imbalance** between **calories** consumed and expended as a result of **increased ingestion of high-energy foods that are rich in fat** and reduced physical activity"

Overweight and obesity are defined as the abnormal or excessive accumulation of fat that may impair health

Dietary recommendations:

- **Reduction** in fats, **sugar, and sodium**
- Consumption of oilseeds and of foods **rich in fibers and minerals**

Even though high caloric intake might be associated with a high body mass index[1], calorie reduction should be associated with an improvement in the nutritional quality of the diet for long-term weight-loss maintenance[2].

[1]WHO, 2018. [2]WELLS, 2013; HOWARTH et al., 2007

Results

There are many reasons, including that:

Concentrated sources of **rapidly absorbable carbohydrates** and **insulin** can **block** leptin's action of **suppressing appetite** and **promoting energy expenditure**. Effect: associated with food type, not with its caloric value[1]

Different types of a **macronutrient with the same caloric value are metabolized in different ways**. For instance, **trans fats increase lipogenesis** and the risk of heart diseases, whereas monounsaturated fats have the opposite effect[2]

Food processing and **cooking methods** also influence the nutritional value of foods and their effects to the health[1].

[1]LUCAN and DINICOLANTONIO, 2015. [2]CHALLEM, 2012; MATTES et al., 2014

Discussion

- It is not possible to choose a healthy diet solely based on calories
- Calories differ in nutritional quality according to their source
- Foods are more than a collection of calories and nutrients

(CHALLEM , 2012; MATTES,2014)

Food / Composition	Chewy fruit flavored candies (UP[1]) (6 units, 25 g) 	Almonds (MP[2]) (14 units, 15 g) 
Energy	**97 kcal**	**97 kcal**
Carbohydrate	21.2 g (76% sugar)	3.6 g (80% complex carbohydrates)
Protein	0 g	3.5 g
Fat	1.5 g (58% trans and saturated fats)	8.4 g (88% mono- and polyunsaturated fats)
Fiber	0 g	2.1 g
Sodium	17.5 mg	0 mg
Other minerals	No	Potassium, phosphorus, calcium, magnesium, iron, and zinc
Vitamins	No	E, folate, niacin, riboflavin, thiamin, B-6

[1]UP, ultraprocessed food; [2]MP, minimally processed food. Sources: product label (candy) and US Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory (almond)

Conclusion

Calorie-counting is **not effective** to **fight non-communicable diseases, even to decrease obesity**

Public health nutrition policies should focus on:

Ingredients and dietary sources

Food processing and cooking methods

Healthy eating patterns

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PERSPECTIVE

Perspective: Public Health Nutrition Policies Should Focus on Healthy Eating, Not on Calorie Counting, Even to Decrease Obesity

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ABSTRACT

Calorie-focused policies, such as calorie menu labeling, seem to result in minor shifts toward healthier choices and public health improvement. This paper discusses the (lack of) relations between energy intake and healthy eating and the rationale for shifting the focus of public health nutrition policies to healthier foods and meals. We argue that the benefits of reducing caloric intake from low-quality foods might not result from the calorie reduction but rather from the reduced consumption of low-quality foods. It is better to consume a given number of calories from high-quality foods than a smaller number of calories from low-quality foods. It is not possible to choose a healthy diet solely based on the caloric value of foods because calories are not equal; they differ in nutritional quality according to their source. Foods are more than just a collection of calories and nutrients, and nutrients interact differently when presented as foods. Different subtypes of a macronutrient, although they have the same caloric value, are metabolized and influence health in different ways. For instance, industrial *trans* fats increase lipogenesis and the risk of heart diseases, whereas monounsaturated fats have the opposite effect. Food processing and cooking methods also influence the nutritional value of foods. Thus, public health nutrition policies should stop encouraging people to focus mainly on calorie counting to fight noncommunicable diseases. Instead, policies should focus on ingredients, dietary sources, and food processing and cooking methods. *Adv Nutr* 2019;0:1–8.

Keywords: calories, energy, joules, processed food, food quality, healthy food, obesity, chronic diseases, menu labeling, food guidelines

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