

Editorial

Can Eating Foods Burn Body Fat?

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Citation: Hye Won Kang (2016) Can Eating Foods Burn Body Fat. Obesity and Nutri dis, JOND-104. DOI: 10.29011/JOND-104.100004

Received Date: December 1, 2016; **Accepted Date:** December 3, 2016; **Published Date:** December 5, 2016

Editorial

Obesity is a serious, world-wide health problem [1]. It is very prevalent in the United States, affecting not only adults but children and adolescents as well. Obesity is defined as having excess bodyfat, which commonly results from an imbalance in a person's food intake and their energy expenditure [1]. This imbalance results in increased body weight as well as in an abnormal metabolism [1].

It has been well established that obesity is related to a number of health problems and conditions, including insulin resistance, type-2 diabetes, heart attack, stroke, high blood pressure and high cholesterol levels [1]. Given its seriousness as a health issue, various strategies have been tried to prevent and reduce obesity, such as diet programs, surgery and medications [2]. However, these current strategies have limitations, such as side effects, requirement of long-term efforts and appropriateness for certain age ranges. Consequently, there remains a need to find new methods of controlling obesity. One new research area being investigated as a way of regulating fat accumulation is to activate brown adipose tissue (BAT) which may reduce stored body fat by generating heat, leading to increased energy expenditure [3].

The human body has two types of adipose tissues: white adipose tissue (WAT) for energy storage and BAT for energy expenditure [4]. BAT utilizes calories which contribute to increasing energy expenditure. BAT has lots of mitochondria including a brown fat-specific protein, uncoupling protein 1 which allows BAT to generate heat instead of energy by utilizing fatty acids [4]. Normally, BAT is activated when norepinephrine is released from the sympathetic nervous system, which in turn activates hormone-sensitive lipase and then breaks down triglycerides in BAT into glycerol and free fatty acids [4]. These fatty acids are then used by the BAT's mitochondria to generate heat, increasing body temperature. This process is called non-shivering thermogenesis [4]. BAT also generates heat by using fatty acids directly released from WAT and blood-circulating lipids provided from food consumption, which can contribute to the prevention of extra fat accumulation in WAT and other tissues [5]. Based on this function of BAT,

current researches have shown that activation of BAT may contribute to increasing energy expenditure that leads to a reduction in WAT and then weight loss.

Until now, most research has focused on preventing fat accumulation in WAT by inhibiting the proliferation of white adipocytes, lipid synthesis within it or absorption of dietary fat in intestine. Now that BAT's properties are becoming better known, studies to find dietary compounds that can increase energy expenditure by activating BAT are being suggested. Food is the main source of necessary nutrients for managing the human body. If people eat foods containing dietary compounds that have the ability to increase BAT activity throughout their life, obesity may be prevented. However several questions remain to be answered. First, what dietary compounds are capable of increasing BAT activity, and what foods have them? Second, how efficient are these dietary compounds and foods in activating BAT to burn stored fat? Third, if increasing BAT activity works as a means of burning fat, how can eating habits be adjusted to include these types of foods?

Because food is not medicine, even if dietary compounds can be consumed by taking dietary supplements, BAT research in food and nutrition may not have a big impact on the prevalence of obesity in the short term. However, increasing public awareness of BAT's properties might change people's behavior toward food selection and preference, improving human health over time.

Reference

1. Billington CJ, Epstein LH, Goodwin NJ, Hill JO, Pi-Sunyer FX, et al. (2000) Overweight, obesity and health risk. Arch Intern Med 898-904.
2. Laddu D, Dow C, Hingle M, Thomson C, Going S A (2011) review of evidence-based strategies to treat obesity in adults. Nutr Clin Pract. 512-525.
3. Townsend K and Tseng YH (2012) Brown adipose tissue: Recent insights into development, metabolic function and therapeutic potential. Adipocyte 13-24.
4. Cannon B and Nedergaard J (2004) Brown adipose tissue: function and physiological significance. Physiol Rev 277-359.
5. Bartelt A, Bruns OT, Reimer R, Hohenberg H, Ilttrich H (2011) Brown adipose tissue activity controls triglyceride clearance. Nat Med 200-205.