

**Editorial****Can Anthocyanins Help Weight Loss?**Ameneh Marzban¹, Abdolrazagh Marzban^{2*}, Payam Emami

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Obesity is a multiple-factorial disease and a major challenge for the public health. Nowadays, prevalence of the disease is increasing in developed and developing countries due to changes in the peoples' lifestyle (1). General obesity and abdominal obesity are significantly associated to diseases such as cardiovascular diseases (CVD), gastrointestinal tract (GIT) diseases and cancers. In addition, obesity is an important risk factor for hypertension, type 2 diabetes and hyperlipidemia. It has recently been addressed that obesity is not only linked to medical consequences, but also it is associated to people's social statuses (2). In general, high-energy foods, changes in lifestyle, loss of physical activity, composition of intestinal microbiota and increased urbanization are the major causes of obesity (3). Overweight and obesity are the most important risk factors for moderation of several diseases. However a number of medications have been approved for the treatment of obese patients, several of these medications have been withdrawn due to their severe side effects such as heart diseases and psychiatric disorders (4). It seems that phytochemicals in foods, including anthocyanins, may play roles in decreases of obesity by losing weight and adipose tissues due to the structures of these chemicals (5, 6).

Anthocyanins are natural pigments of plant origins known as antioxidant compounds. Due to the increased interests in consuming food products based on natural ingredients, anthocyanins have become popular in food industries (7). These compounds are in the group of secondary metabolites and belong to the family of

flavonoids (8). Anthocyanins are water-soluble pigments and produce various colors of red, purple and blue in fruits, vegetables and flowers, depending on the pH of the environment (9). Up-to-date, nearly 540 types of anthocyanins have been identified from various plant sources. Several types of anthocyanins, including chalcone, delphinidin, petonidin, peonidin, malvidin and cyaniding, are important in foods (10). Anthocyanins are found in most fruits (e.g. apples, apricots, blueberries, blackberries, blackberries, blueberries, cherries, blueberries and grapes), vegetables (e.g. asparagus, eggplant, chili, red cabbage, purple cabbage, purple carrots, purple cauliflower, purple turnips, red onions and red radishes), legumes (e.g. black beans and black soybeans) and grains (e.g. black rice, black purple rice, black sorghum, purple barley, red sorghum and rye) (1). Eating more foods rich in anthocyanins can play important roles in maintaining weight in adulthood and help prevent obesity and its severe consequences. Preventing low weight gain can also have significant effects on general health of the community and decrease risk of diabetes, high blood pressure, CVDs and various cancers.

Authors' contributions

Marzban A conceived the original idea and designed the study. Marzban AR and Emami P collected data and wrote the primary draft of the manuscript. All authors read and approved the final version of the manuscript.

Keyword: Anthocyanin, Obesity, Weight loss

References

- Jayarathne S, Stull AJ, Park OH, Kim JH, Thompson L, Moustaid-Moussa N. Protective Effects of Anthocyanins in Obesity-Associated Inflammation and Changes in Gut Microbiome. *Molecular nutrition & food research*. 2019;63(20):1900149.
- Marzban A, Nadjarzadeh A, Abbasi-Shavazi M, Rezaei M-R, Jambarsang S, Ehrampoush M-H. Prevalence of Overweight, Obesity, and Its Related Factors in Adult Population of Yazd. *Journal of Nutrition and Food Security*. 2020;5(3):192-200.
- Park S, Choi M, Lee M. Effects of Anthocyanin Supplementation on Reduction of Obesity Criteria: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Nutrients*. 2021;13(6):2121.
- Xu H, Liu M, Liu H, Zhao B, Zheng M, Liu J. Anthocyanins from purple corn ameliorated obesity in high fat diet-induced obese mice through activating hepatic AMPK. *Journal of Functional Foods*. 2021;84:104582.
- Song H, Shen X, Deng R, Zhang Y, Zheng X. Dietary anthocyanin-rich extract of açai protects from diet-induced obesity, liver steatosis, and insulin resistance with modulation of gut microbiota in mice. *Nutrition*. 2021;86:111176.
- Lee M, Sorn SR, Park Y, Park H-K. Anthocyanin rich-black soybean testa improved visceral fat and plasma lipid profiles in overweight/obese Korean adults: A randomized controlled trial. *Journal of medicinal food*. 2016;19(11):995-1003.
- Fallah AA, Sarmast E, Fatehi P, Jafari T. Impact of dietary anthocyanins on systemic and vascular inflammation: Systematic review and meta-analysis on randomised clinical trials. *Food and Chemical Toxicology*. 2020;135:110922.
- Lee Y-M, Yoon Y, Yoon H, Park H-M, Song S, Yeum K-J. Dietary anthocyanins against obesity and inflammation. *Nutrients*. 2017;9(10):1089.
- Tarone AG, Cazarin CBB, Junior MRM. Anthocyanins: New techniques and challenges in microencapsulation. *Food research international*. 2020;133:109092.
- Yildiz E, Guldaz M, ELLERGEZEN P, Acar AG, Gurbuz O. Obesity-associated Pathways of Anthocyanins. *Food Science and Technology*. 2020.