Popular Scientific Summary

Obesity is now a global epidemic and one of the major challenges to human health worldwide. The amount of overweight and obese people has increased significantly and become common in every part of the world. According to Worldometer, more than 750 million adults are obese in this moment. Obesity is associated with the metabolic syndrome and increases the risk of developing type 2 diabetes and cardiovascular disease.

The transition in modern society has led to changes in eating habits among world population. Overeating has become more and more common. The amount of processed and unhealthy food that is marketed on television or social media both for adults and children is continuing to increase. Being exposed to these food trends leads people to an unhealthy diet, which can increase the risk of overweight and obesity.

Appetite regulation is believed to have impact on the development of obesity and metabolic syndrome. The gut hormones produced in the gastrointestinal tract communicate with the appetite relating regions in the central nervous system through the gut brain axis in order to regulate food intake and appetite

To slow down the epidemic of obesity, an appropriate diet is extremely important. Furthermore, by changing the characteristics of the food to increase its satiating power would be another way to modulate food intake. Therefore, the research on food options that can be used in daily meals to prevent the development of obesity and improve appetite regulation is important.

Nopal is a cactus plant originating from Mexico. Nopal cladodes are except of dietary fiber rich in ascorbic acid, flavanols, carotenes, and flavonoids, which are bioactive compounds with antioxidant activity. Nopal is used in traditional medicine for the prevention and treatment of obesity and overweight.

A diploma work was conducted at Lund University in 2019 about postprandial appetite parameters following the intake of a Nopal-containing bread indicated that bread containing Nopal cladode flour affected subjective appetite variables by reducing hunger, increasing satiety and reducing desire to eat. The purpose of this study was to investigate the effects of the water soluble and water insoluble fractions of Nopal cladodes on postprandial appetite-related variables (hunger, satiety and desire to eat) in young healthy humans, in a period of three hours post consumption. Two designed breads supplemented with Nopal cladodes flour were prepared, and their postprandial impact on appetite was compared with a baked control bread lacking Nopal ingredients. The test persons rated their appetite by the use of a questionnaire, called Visual Analog Scale. There were three scales with different questions, “How hungry do you feel right now?”, “How full do you feel right now?” and “How much do you desire to eat right now?”. They answered these questions on a 100 mm line before they started eating (time 0) and 15, 30, 45, 60, 90,120, 150, 180 minutes after the start of the test meal by marking their current feeling of appetite from 0 - 100.

This study showed that a bread containing the water insoluble fraction of Nopal cladodes had beneficial effects on postprandial appetite variables. It led to the reduction of hunger and desire to eat, while the satiety feeling increased. Thus, the intake of food during a day can be reduced by including the water insoluble fraction of Nopal cladodes in a meal, since it has the ability to make a person feel full for a longer period of time after the meal. Thereby, this fraction may be included in dietary strategies for prevention and treatment of obesity in the future.