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Development of the lower glycemic index rice cracker
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Background – Control of postprandial hyperglycemia is one of the main therapeutic targets in diabetic patients, glucose-intolerant and normal subjects. High amylose starch, as found in Indica rice and corn flour, suppress blood glucose levels and insulin responses when compared with the low amylose starch. Since the traditional Japanese rice crackers are generally made from Japonica rice, which has a low amylose content (16 – 18 % amylose), they have a high glycemic index (GI, 91). We developed a rice cracker using Indica rice with high amylose content (25 – 35 % amylose) and non-digestible dextrin.

Objective – To determine the GI and insulimemic index (II) of the new rice cracker, plasma glucose and insulin concentrations were monitored in healthy volunteers for 2 hr after consumption of the reference starch solution (Trelan-G), the traditional Japanese rice cracker and the new rice cracker.

Design – Twelve healthy volunteers, 6 men and 6 women aged 28.6±6.6 y, with normal body mass indexes (20.5±1.7 kg/m²) participated. The blood samples were collected before and 15, 30, 45, 60, 90, 120 min after the intake of the reference starch solution (Trelan-G), the traditional Japanese rice cracker and the new rice cracker.

Outcomes and Conclusions – The GI and II of the traditional Japanese rice cracker were 87±28 and 142±123, respectively. The GI and II of the new rice cracker were 63±24 and 85±55, respectively. It was clarified that the GI and II of the new rice crackers were significantly low when compared with those of the traditional Japanese rice crackers. These results indicated that the new rice crackers might be useful for the prevention of the metabolic syndrome.

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Qualitative analysis of the effects of chickpea supplementation on habitual diet
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Background – A balanced diet is an important aspect of disease prevention. Legumes are high in fibre and plant protein, low in fat and cholesterol and have a low glycaemia index. They are an important addition to a balanced diet. Despite their healthy nature, consumption of legumes within Australia is low. Qualitative research into the perceived benefits and barriers of legume consumption is an important step in addressing this. Hypocholesterolaemic properties and enhanced sensations of satiety have been reported. Through increasing satiety chickpeas may replace other food items in the diet potentially leading to beneficial nutrient changes.

Objective – To determine the effect of chickpea supplementation on other food consumption in an ad libitum diet, and the participants’ perception of chickpea consumption.

Design – In an ordered crossover study, 42 participants consumed their habitual diet for four weeks, an ad libitum diet supplemented with 104 g day⁻¹ chickpeas for 12 weeks, and their habitual diet for another four weeks. Fifteen participants from the above study took part in focus groups exploring factors that determine food choice, the acceptability of chickpeas, and the benefits and barriers of legume consumption.

Outcomes – When chickpeas were added they replaced foods in the cereals, vegetables and dairy food groups. Focus groups identified many factors influencing dietary choice and many barriers to and benefits of legume consumption. Participants were particularly concerned with choosing healthy foods, and eating a variety of different foods that are tasty, convenient and accepted by other family members. A number were concerned about flatulence.

Conclusions – Chickpeas mainly replaced carbohydrate rich foods. The health benefits of legumes are the main characteristics encouraging their consumption, while inconvenience and gastrointestinal upset discourage consumption.