Balanced, low GI breakfast may benefit teenage girls

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WA researchers have found an association between breakfast composition and Metabolic syndrome in adolescent girls, but not boys.

The project, conducted at Edith Cowan University (ECU), investigated associations between daily and mealtime measures of Glycaemic Load

(GL) and risk of Metabolic syndrome.

Metabolic syndrome is a condition in which disordered processing and storage of glucose and fats in the body can lead to cardiovascular disease and type 2 diabetes.

Analise Nicholl, one of the students leading the research, says GL is a product of the quantity of carbohydrate present in a food combined with the more widely-known Glycaemic Index, or GI (how fast carbohydrate in a food will raise blood glucose levels).

"By taking the amount of carbohydrate present into consideration, the total impact of each meal on blood glucose levels is better represented," Ms Nicholl says.

She says almost all previous studies examining these associations used an average daily GL value, which does not distinguish between the effects of peaks of GL intake at different meals and snacks over the day.

"Looking for associations with disease risk in teenage dietary patterns may act as an early warning system," Ms Nicholl says.

"We may be able to offer better food choices at specific meals to reduce the risk of developing later chronic disease."

They used data from 516 adolescents who participated in the 14-year follow up of the Raine Study—a WA pregnancy cohort following children born in 1989-1991.

Meals record and blood tests measure measure risk

"Participants recorded all their meals over three days and had blood tests to measure various components of Metabolic syndrome, including blood

glucose, 'good' cholesterol (HDL-C) and triglyceride (TAG) levels," Ms Nicholl says.

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Two components of Metabolic syndrome were found to be associated with this increased risk at breakfast: fasting HDL-C and TAG levels.

"Breakfast obviously has a significant effect on blood glucose, and your grandmother was right: it is the most important meal of the day," Ms Nicholl says.

"These findings support further investigation into including lower-GL foods as part of a healthy breakfast in adolescence, particularly for girls.

"Lower GL carbohydrates are those high in fibre and low in added sugars; including other foods and beverages that provide protein and healthy fats will also help lower the meal GL."

Ms Nicholl says further research areas could include the effect of hormonal surges and increased insulin resistance on pubescent girls.

More information: "Higher breakfast glycaemic load is associated with increased metabolic syndrome risk, including lower HDL-cholesterol concentrations and increased TAG concentrations, in adolescent girls." *Br J Nutr*. 2014 Dec;112(12):1974-83. DOI: 10.1017/S0007114514003092

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