New approach to fighting obesity and diabetes

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World-first equipment, made exclusively for UQ scientists, will determine how to produce food which is better for us, but still tastes good.

UQ researcher Professor Bob Gilbert said that while an unhealthy lifestyle and poor eating habits were significant factors in Australia's obesity and diabetes epidemics, they were not entirely to blame.

“An important component of the problem is from changes in the starches in our food,” Professor Gilbert said.

“Starch supplies 50 percent of food energy in the modern Australian diet, and up to 90 percent in countries on Asian diets.

“A way forward would be to see what factors in the starches in our diets correspond to healthy digestibility”.

He said uncovering which starches were good for us was no easy task.

“Starch and non-starch polysaccharides, which are important for fibre, have amazingly complex structures which are very hard to characterise.

“For example, the units in a single molecule of a component of starch, are like the branches on a very convoluted tree, and a given food sample is like a huge forest of trees of all different sizes and structures.”

New instrumentation, manufactured in Germany for UQ, will overcome the difficulties of measuring such a complex structure.

“No other equipment can separate ‘trees' of all sizes simultaneously, and at the same time measure quantities such as the weight, branching density and number of ‘trees' of a given size.”

The equipment recently arrived at UQ and is in the Hartley Teakle Building on the St Lucia campus.

Another UQ finding will ensure that data produced by the new machine can be placed in a meaningful context, Professor Gilbert said.

“The second breakthrough is in sophisticated new mathematical and experimental developments which enables us to make sense of a plethora of data.”

The new machine was financed through the UQ major equipment fund and the mathematical and experimental breakthroughs by the Australian Research Council.

“These new techniques, developed by the Centre for Nutrition and Food Sciences at UQ, will provide the tools needed to produce foods which are both better for us nutritionally, and palatable to the consumer,” Professor Gilbert said.

Source: UQ

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