



SICKENINGLY — *sweet* —

With nearly 10 teaspoons of sugar in the average can of soft drink, one can't help but wonder about the effects its consumption may have on the body. Professor Guillaume Walther, vascular health and cardiometabolic disease researcher, is finding out, Caitlin Ganter writes.

The incidence of Type 2 Diabetes (T2D) is a growing global health issue and, in 2010, an estimated 257 million people worldwide had T2D.

Professor Guillaume Walther, a visiting academic from the University of Avignon, France, who specialises in vascular health and cardiometabolic disease, is currently researching sugary drink consumption in adults with and without T2D, and assessing if physical activity can prevent vascular dysfunction.

"An unhealthy diet is commonly accompanied by consumption of sugary drinks," said Professor Walther. "The last 2010 National Nutrition Survey in Australia found that 58 per cent of young adults drink an average of

800 milliliters of sugary drinks per day. To put this in perspective, if you drink only one 600 milliliters soft drink every day over one year, you will end up drinking 23 kilograms of sugar."

Several studies have reported a high correlation between the consumption of sugary drinks and the risk of developing T2D. This is due to the effects a high sugar intake has on weight gain and glucose metabolism.

"Sugary drinks have 70 – 120 grams of sugar per litre and lead to high levels of glucose in the blood. This is reported to be a precursor of insulin-resistance, and is also responsible for vascular endothelial dysfunction."

The endothelium is the thin layer of cells that lines the interior surface of heart and blood vessels, and helps to control blood pressure by widening and constricting the vessels.

"Although this is known, there are actually very few studies which investigate the underlying mechanisms involved in endothelial dysfunction in response to sugary drink-induced high blood glucose. It is so interesting to examine, as many people simply don't realise they are insulin resistant or have T2D. Even in healthy sedentary people, drinking just 600 milliliters of sugary drink can drive vascular dysfunction.

"So, the objective of the present study is to explore the effect of sugary drink consumption on endothelial function in large and small vessels, in healthy and T2D subjects.

"The second objective of the present work will be to investigate the potential preventive effects of moderate physical activity on

endothelial dysfunction following high blood glucose in healthy and T2D participants.

"Once we have completed the study, we hope to be able to make a number of recommendations towards preventing and reducing cardiometabolic disease, which could help to reduce the incidence or severity of T2D."

ACU has provided a grant for the project, and Professor Walther is currently visiting Australia on sabbatical to undertake the research.

"As ACU is also interested in the effects of obesity and T2D on cardiovascular risk factors, it was quite simple to set up this project. It has been a fantastic opportunity; ACU has some specialised, cutting-edge equipment that was not available to me back home.

"I am really enjoying my time in Australia – working with new colleagues, teaching new techniques and having the opportunity to be completely focused on my research is fantastic."

Professor Walther has plans to continue research in this area, and hopes to conduct a similar study on children and adolescents.

"Young people are the first target in cardiometabolic disease prevention - they are big consumers of sugary drinks and a 2007 survey found that 47 per cent of children aged two to 16 years consumed sugary drinks every day. Their vascular function is also more sensitive to environmental stress such as diet or lack of physical exercise, so I think this would be very valuable research to conduct, especially in developing countries."