

## Scientists discover new fat over lunch

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Uncovering new fats, or lipids, with links to diseases in the human lens is as easy as taking a lunch break, according to chemists from the ARC Centre of Excellence for Free Radical Chemistry and Biotechnology at the University of Wollongong.

The research, conducted by Associate Professor Stephen Blanksby and his PhD student Shane Ellis, used ozone naturally present in laboratory air to find previously unknown lipids in the human lens. Their work will be featured as a hot article in the upcoming edition of the scientific journal, *Analyst*.

“My lunch breaks are never unproductive,” says Shane Ellis. “If I leave the human lens samples on the bench while I am at lunch, the background [ozone](#) in the lab takes care of the reaction with the lipids. Afterwards I analyse the products from the reaction, and determine the structure of the lipids I have in my lens sample.” This builds on the group’s previous work showing that dramatic changes in the [lipid](#) composition of the human lens occur as we age. These changes are associated with the onset of presbyopia, a condition where the eye loses its ability to focus on close objects.

“Revealing the molecular structure of lipids will help us understand their role in disease and provide future treatment options. We hope our work will provide scientists with a convenient tool to do this using nothing but air: a reagent every lab can afford,” says Associate Professor Blanksby.

Using a combination of two methods called desorption electrospray

ionisation mass spectrometry (DESI) and thin layer chromatography (TLC) that the group combined specifically for these experiments, lipids can be characterised in one simple analysis, a significant improvement on older methods.

“Our method allows for reliable lipid identification in any complex biological sample. It has the potential to contribute enormously to what we know about lipids in human tissue and it is almost as simple as going out for a pub lunch!” says Associate Professor Blanksby.

Provided by University of Wollongong

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