

# Genes that control 'aging' steroid identified

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Eight genes which control levels of the main steroid produced by the adrenal gland, believed to play a role in ageing and longevity, have been uncovered by an international consortium of scientists, co-led by King's College London.

Crucially, some of these eight genetic regions are also associated with important diseases of ageing, including [type 2 diabetes](#) and [lymphoma](#). Researchers say that these findings, published in the journal [PLoS Genetics](#) today, provide the first genetic evidence for the ageing role of the steroid, and therefore highlights it as a marker of biological ageing.

It was already known that the concentration of the steroid dehydroepiandrosterone sulphate (DHEAS), declines rapidly with age – it diminishes by 95 per cent by the [age](#) of 85. This has led to speculation that a relative DHEAS deficiency may contribute to common age-related diseases or diminished [longevity](#).

To explore the mechanisms behind declining levels of the steroid, the researchers carried out an analysis of DHEAS levels and 2.5 million genetic variants in 14,846 people from Europe and USA. They found eight common [genes](#) that control the blood concentration of DHEAS, and importantly some of these genes are associated with ageing and common age-related diseases such as type 2 diabetes and lymphoma.

Lead author, Dr Guangju Zhai from King's College London, said: 'This is the first large-scale study to unlock the mystery that has always surrounded DHEAS. We have identified specific genes that control its

concentration levels, and shown that some of these are also involved in the ageing process and age-related diseases.

'The findings provide us with the basis for future studies to look into potential mechanisms of exactly how the DHEAS is involved in ageing. The next important question to try and answer is whether sustained high levels of DHEAS can in fact delay the ageing process and prevent age-related diseases.'

'Professor Tim Spector, senior co-author from King's, said: 'This study shows the power of collaborative genetic studies to uncover mechanisms of how the body works. For 50 years we have observed the most abundant circulating steroid in the body, DHEAS, with no clue as to its role. Now its genes have shown us its importance in many parts of the ageing process.'

Provided by King's College London

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