

Scientists shed light on process that shapes illness in later life

September 7 2010

Scientists hope to gain insights into a range of age-related ailments, such as dementia, by examining the behaviour of proteins thought to trigger the conditions.

Researchers from the University of Edinburgh are to study proteins found in the body to try to find out why these molecules can sometimes clump together as people get older. The clumps interfere with the biological processes that enable the body to function healthily.

This clumping - known as aggregation - can occur in many different proteins and is a feature of several conditions relating to ageing, such as age-related sight loss, late-onset diabetes, Alzheimer's disease and other forms of [dementia](#). Accumulations of protein cause the brain plaques associated with Alzheimer's disease, and the cloudy vision caused by cataracts.

The study, a collaboration between physicists and chemists at the University, will focus on how the shapes of the molecules change when they begin to stick together. Understanding how the misshapen proteins bind to one another will help researchers pinpoint the triggers that cause aggregation, which in turn will help the design of drugs to prevent aggregation occurring.

Scientists will focus on the [protein insulin](#) for the study but, because most proteins can adopt a shape that is prone to aggregation, their results could apply to all proteins in the body.

Dr Cait MacPhee, of the University of Edinburgh's School of Physics and Astronomy, who is leading the research, said: "We know that proteins often bunch together, causing processes in the body to break down. Because this problem is common to lots of diseases, we hope that if we can understand how it occurs, it will offer insights into a range of conditions that affect people as they get older."

Provided by University of Edinburgh

Citation: Scientists shed light on process that shapes illness in later life (2010, September 7) retrieved 26 April 2024 from <https://medicalxpress.com/news/2010-09-scientists-illness-life.html>

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