Professor Janet Lord

Janet's research focuses on understanding our immune system in sickness and in health. She is particularly interested in why our immune system deteriorates as we age making us more susceptible to infections such as pneumonia.

However, this interest in immune function extends into developing treatments for a range of diseases that involve the ageing immune system, particularly chronic inflammatory disease (Rheumatoid Arthritis).

Inflammation

During an immune response inflammatory cells, including T cells and neutrophils, are recruited to sites of infection to help to clear the disease. Once the site is rendered sterile these same cells must be removed efficiently to avoid attacks on healthy cells.

Professor Lord's team have shown how this process fails in chronic inflammatory diseases such as Rheumatoid Arthritis, leading to the accumulation of inflammatory cells and destruction of healthy tissue by cells such as neutrophils. They are now developing new drugs to try and stop the damaging actions of neutrophils in patients with Rheumatoid Arthritis.

Professor Janet Lord "We don't believe that ill health should be an inevitable part of growing old. By understanding what happens to our immune system as we age, we want to break that link between ageing and illness. You could say we want to ensure people enjoy a long, healthy life and a short death."

Stress and the ageing immune system

As humans age they become more susceptible to infectious diseases (especially bacterial infections), inflammatory disease and have poorer responses to vaccinations. Although ageing is a complex process, this suggests that immune function is reduced as we age and will contribute to increased illness in the elderly.

Importantly, Professor Lord's team have shown that at times of stress, e.g., after a hip-fracture or following a bereavement, the loss of immune function is dramatically increased and that this may be caused by an excess of the immune suppressive stress hormone cortisol and a lack of the immune enhancing counter stress hormone dehydroepiandrosterone (DHEA). Professor Lord is currently trying to gain funding for a clinical trial to give DHEA to hip-fracture patients to try and prevent the excess level of infection in this vulnerable group.