Lewis, Thomas (1881 - 1945)

Summary Article: Lewis, Thomas
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Welsh cardiologist and clinical scientist who discovered that histamine, an amine compound, is released as an initial event in the inflammatory response. Knighted 1921.

His research dealt with the response of the blood vessels in the human skin to chemical, thermal, electrical and mechanical injury, around 1919. He found that the capillaries in the skin around the site of injury dilate and their endothelial linings (the smooth single layer of cells that comprises the capillary wall) acquire increased permeability to enhance the migration of white blood cells (phagocytes) to the site of injury. This inflammatory response produces the redness, heat, and swelling associated with the wound. Here the white blood cells can begin engulfing debris and any infecting micro-organisms.

At the suggestion of Henry Dale, Lewis pricked histamine into the skin and found that he had produced the same immune response with histamine as an inflicted injury. He concluded that a chemical similar to histamine may have been involved in producing the inflammatory response. It is now known that histamine is released as an ‘alarm’ chemical signal in response to injury.

Lewis was born in Cardiff and trained as a doctor at University College, Cardiff and University College Hospital, London. He remained at the latter as a medical tutor and practitioner.

He was also involved in the determination that a small area of tissue in the right auricle of the heart functioned as the ‘pace-maker’, the site at which the beat of the heart is initiated.