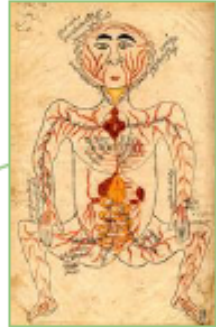


A TIMELINE OF SURGERY

MEDIEVAL: 500 - 1450	Galen (2nd & 3rd century AD) had proved that the brain controls the body through his pig experiment. Galen's understanding of anatomy is based on animals but is used until the 1600s.  Islamic surgeon, Abulcasis (10th century AD) writes a guidebook to surgery called <i>Al Tasrif</i>. He explains cauterisation and even eye surgery. Medieval operations include: amputations, blood-letting and trepanning. Cauterisation with burning oil is used to burn wounds shut.  In the 14th century there are limited number of dissections at universities. If a body goes against what Galen wrote, then Medieval surgeons say that the body is wrong, not Galen! Hugh of Lucca (13th century) criticise the view that pus was good for a wound. However, this goes against Hippocrates and so this good advice is ignored. Painkillers such as alcohol, mandrake and opium are used - many of these come from Ibn-Sina's <i>The Canon</i> 
RENAISSANCE: 1450 - 1700	Andreas Vesalius (1514-54) promotes use of dissections for surgeons. He disproves many ideas of Galen and publishes them in the beautifully illustrated <i>The Fabric of the Human Body</i> (1543)  William Harvey (1578-1657) researches the circulation of the blood. He disproved Galen's ideas about blood and proves the heart is a pump and how much blood is in the body. Published his ideas in <i>The Motion of the Heart</i> (1628)  Ambroise Paré (1510-90) develops new operations thanks to his wartime experience. By chance he discovers that a soothing cream works better than painful burning oil. He also uses ligatures to tie-off blood vessels which is much less painful than cauterisation. His ideas are published in <i>Works on Surgery</i> (1575). 
18th CENTURY	John Hunter (1728-93) not only improves surgical understanding but encourages a more scientific approach to medicine. He learns how to restrict blood to aneurysms instead of amputating limbs, and shows that gunshot wounds should not be 'cut out' of the skin. Published his ideas in <i>Blood Inflammation and Gunshot Wounds</i> (1794) and kept a museum of anatomical specimens. 
INDUSTRIAL: 1800 - 1900	New developments in chemistry meant that there were new, more effective anaesthetics. Nitrous Oxide was used by dentists from 1844. Ether was used from 1846 despite it causing vomiting and being highly flammable. The first safe and effective anaesthetic Chloroform was pioneered by Dr James Simpson in 1847 after he discovered its effects by chance.  Joseph Lister (1827-1912) was inspired by the work of Louis Pasteur to use the chemical carbolic acid to prevent infection during and after surgery. Although there were downsides to Carbolic Acid, its use showed that antiseptics could drastically reduce deaths. However, his work was not immediately accepted. 
MODERN: 1900 +	X-Rays are discovered in 1895 but first used on a mass-scale during WW1  Blood transfusions are possible after Karl Landsteiner discovers that there are 'blood groups'. In 1914 Albert Hustin discovers how to store blood which allows for the use of blood transfusions during WW1. In 1938 the National Blood Transfusion Service is setup, and huge blood banks are using in WW2. Skin grafts and plastic surgery is used in WW1 to treat soldiers suffering from severe facial wounds. This is pioneered by Harold Gillies.  Heart surgery is experimented with by US army surgeon Dwight Harken during WWII leading to huge improvements in surgery  Modern medicine can involve laser surgery, organ and even face transplants, radiation therapy and much more.