

# Koch's postulates

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An understanding of the causes of infection came in the nine - tenth century . Microbes had been seen under the microscope, but Koch laid down the first definition of infective disease (Koch's postulates; see Summary box 5.1 ). The Austrian obstetrician Ignaz Semmelweis showed that puerperal sepsis could be reduced from an incidence of over 10% to under 2% by the simple act of handwashing between cases, particularly between postmortem examinations and the delivery suite. Louis Pasteur recognised through his germ theory that microorganisms were responsible for infecting humans and causing disease. Joseph Lister applied this knowledge to the reduction of colonising organisms in compound fractures by using antiseptics. The principles of antiseptic surgery were soon enhanced with aseptic surgery at the turn of the twentieth century . As well as killing the bacteria on the skin before surgical incision (antiseptic technique), the conditions under which the operation was performed were kept free of bacteria (aseptic technique). This technique is still employed in modern operating theatres ( Figure 5.1 ).

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It should be possible to isolate it from the host and grow it in culture  
It should reproduce the disease when injected into another healthy host  
It should be recovered from an experimentally infected host

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