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Vaccine Immunology: Current Trends

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Description

Developing vaccine-mediated protection is a difficult task. Currently current vaccinations were mostly produced on the basis of trial and error, with little or no knowledge of how they activate the immune system. Vaccination has had the most impact on human health of any medical intervention practised in the past. Immunization is the sole low-cost option for preventing and even eradicating

The science of vaccinology can be traced back to the ancient Chinese, who used the process of variolation to defend against smallpox by intranasally inoculating small amounts of scabs from an infected person's lesion. Edward Jenner's discovery that cowpox pustules may prevent smallpox infection launched modern vaccinology as a legitimate scientific study. His work was the first to be scientifically evaluated, and it established the scientific basis for utilising a similar but less hazardous virus to elicit cross-protective immune responses against the more virulent infection. Sheep could also be protected from anthrax in similar experiments. Immunity evoked by the BCG tuberculosis vaccine, first administered in 1921 and still widely used today, is based on this notion of weakening a pathogen to call the

Last, the rapid discovery of new vaccinations raises plenty of issues that are beyond the targeted diseases and the potential consequences of their prevention to include the particular and specific effects of such vaccines on the immune system, and hence on human health.

This is easily done through immunisation programmes that can provide long-term protection, which is a feature of adaptive immunity

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