

New vaccines

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Vaccination has been deemed the most cost-effective public preventive measure. The elimination of smallpox and poliomyelitis and control of many important infectious diseases spur further interest in vaccine development.

Component vaccine and conjugate bacterial vaccine have been the two major accomplishments in the past decades. Nucleic acid vaccine is currently the most promising new format of vaccine. A new evolving field is to immunize specific subpopulation such as adults and travelers, and even non-infectious diseases such as IDDM, rheumatoid arthritis, and Alzheimer's disease. Several new delivery models of vaccine are being developed including transdermal, transgenic edible plants, and controlled delivery depot systems. Therapeutic vaccine is also a possibility with the promising achievement of vaccine technology.

Nevertheless, there are still many diseases in urgent need of an effective vaccine. The two most prominent examples are AIDS and tuberculosis. The factors to consider in the process of vaccine development consist of choice of antigen, dose of antigen and choice of adjuvant. The development of tuberculosis vaccine will be discussed in more details.