

Self-assessment questions: Global progress in tuberculosis vaccine development

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1 The incidence of tuberculosis (TB) disease:

- (a) Is consistently falling in all regions of the world
- (b) Is higher in regions where human immunodeficiency virus (HIV) is endemic
- (c) Is a key indicator of progress towards control and elimination of tuberculosis, according to the World Health Organization (WHO)'s *Global plan to stop TB*
- (d) Is accurately measured using current diagnostic tools
- (e) Would be reduced by an effective preventative vaccine

2 A new vaccine strategy against TB is likely to include the *Bacillus Calmette-Guérin* (BCG) vaccine because:

- (a) It is known to prevent multidrug-resistant TB
- (b) The mechanisms of the protective immune response induced by the BCG vaccine are fully understood
- (c) It is safe in HIV-infected individuals
- (d) It protects children against TB
- (e) Giving a second dose of the BCG vaccine is known to improve efficacy

3 All candidate TB vaccines in current clinical development:

- (a) Are live vaccines
- (b) Contain antigens present in *M tuberculosis*
- (c) Utilise recombinant gene technology
- (d) Have been tested in animals
- (e) Are primarily targeting the humoral arm of the immune system

4 With regard to human immune responses in TB:

- (a) Interferon gamma is necessary for an intact immune response
- (b) CD4-positive T cells are not important in immunity
- (c) Tumour necrosis factor plays a role in containment of latent TB infection
- (d) mVA85A strongly boosts the immune response induced by the BCG vaccine
- (e) Large-scale clinical trials of MVA85A and other new TB vaccines may allow the identification of immune correlates of protection

Answers to these self-assessment questions can be found on page s92.