Why No Established Correlate of Protection For Pertussis ?

Unlike many other vaccines, no definitive immune correlate of protection has been identified for pertussis, this is due to:

LACK OF STANDARDIZED SEROLOGIC MARKERS, THERE IS NO CONSENSUS ON THE ANTIBODY LEVELS THAT CONFER PROTECTION

COMPLEX IMMUNE RESPONSE: BOTH HUMORAL (ANTIBODY) AND CELLULAR IMMUNITY PLAY ROLES.

WANING IMMUNITY OVER TIME, IMMUNITY CONFERRED BY BOTH WHOLE-CELL AND ACELLULAR PERTUSSIS VACCINES DIMINISHES OVER TIME.

DIFFERENCES BETWEEN VACCINE TYPES, WHOLE-CELL AND ACELLULAR PERTUSSIS VACCINES INDUCE DIFFERENT IMMUNE RESPONSES.

What Immune Markers Are Mesured?

Some antibody responses are **associated** with reduced risk but not proven to be protective alone:

- **Anti-pertussis toxin (PT) IgG**
- **Anti-filamentous hemagglutinin (FHA) IgG**
- **Anti-pertactin (PRN) IgG**

Current Consensus

- Pertussis vaccine effectiveness is **assessed by clinical endpoints**, not immune markers.
- **Cell-mediated immunity** may be more important than antibody titers, especially for long-term protection.
- This lack of a defined CoP complicates **vaccine development and evaluation**