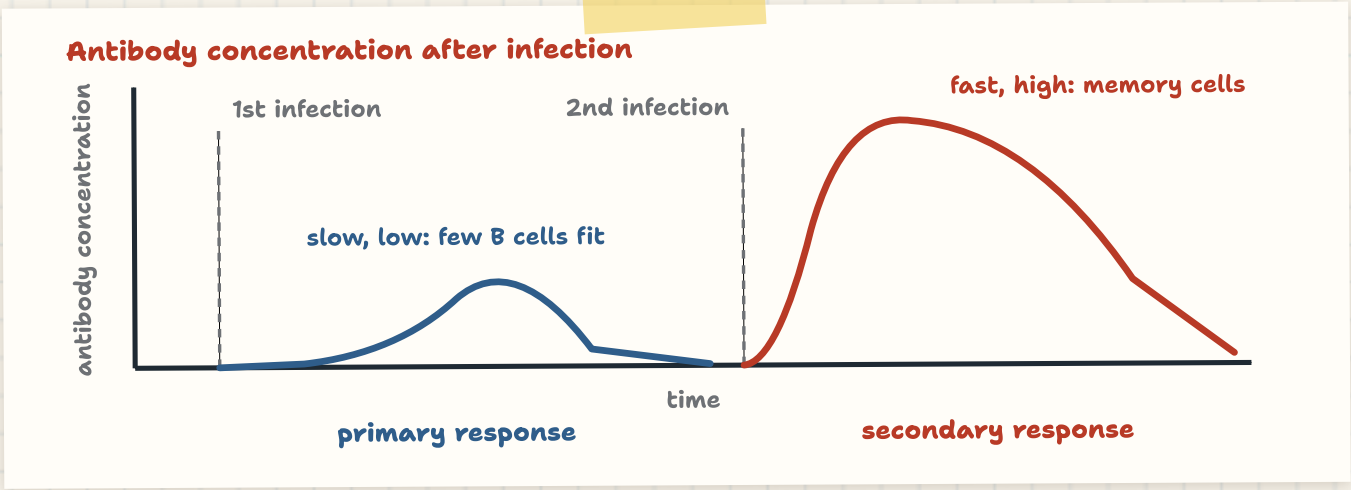
Primary and Secondary Immune Response

The first response is slow and small; memory cells make the second response faster and larger.



Key terms

primary response	the first exposure: the specific B cell is selected, divides, and plasma cells secrete antibodies, slowly and in small amounts.
plasma cell	a differentiated B cell that secretes antibodies.
memory cell	a long-lived cell from the clone that stays in the blood; it does not secrete antibodies.
secondary response	at the second infection, memory cells divide and differentiate into plasma cells faster, making more antibodies.
clonal expansion	rapid division by mitosis of the selected B cell.
antibody concentration	the amount of antibody in the blood; it peaks higher and sooner in the secondary response.

I can...

- [ ] Roles of plasma cells and memory cells in primary and secondary immune responses

EXAM TRAP

Memory cells stay, not the antibodies, and memory cells do not secrete antibodies: they divide into plasma cells, which do. Do not just write that the body remembers: say faster and more plasma cells.

4 marks: what earns them

1. In the first response, the B cell with the complementary receptor is selected and divides (clonal expansion) into plasma cells that secrete antibodies (minimum for the mark: selection or division AND plasma cells secrete antibodies; "takes time" is optional)
   Not: B cells make antibodies, with no plasma cells; antigens make antibodies
2. Some of the clone become memory cells, which stay in the blood for a long time
   Not: antibodies stay in the blood for years; memory cells secrete antibodies
3. At the second infection, memory cells recognise the antigen and divide / differentiate into plasma cells more quickly
   Not: the body remembers the pathogen, alone; memory cells change into antibodies
4. More plasma cells are made, so more antibodies are secreted, giving a higher concentration
   Not: more antibodies, with no reference to more plasma cells or memory cells

Remember

First time: select, divide, plasma cells.
Some clones stay as memory cells.
Second time: faster, more plasma cells.

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