Lecture-specific immunity:

• NOTES FROM LECTURE:

• Humoral: B cellsà antibodies
• Cell mediated: T cell activation
• Complement cascade: trigger is antibody antigen complex.
• Specific immunity: antigen specific response
• Acquired immunity:
• Memory of encounter
• Rapid recall of how to kill antigen
• Antigen recognised in specific manner
• T and B cells:
• Receptors on surfaceà antigen binds toà recognised
• Receptors only interact with antigenic epitopeà lock and key-fits nicely.
• B cell secreted antibody combines with antigen
• Mature B cell is a plasma cellà oval shape with pushed aside nucleusshed off receptor/antibody to bind with antigen that activated B cell.
• Epitopes:
• Region on antigen that B and T cell receptors can bind to
• B/T can remember the certain epitope of antigen
• For activation of B/T, T cells need help from antigen presenting cell to recognise antigenà dendritic cell, macrophage, B cell.
• Presenting cells break down antigen to display on surfaceà activates T cell
• Helper T cells secrete cytokinesà push immune response to appropriate immune response
• B cells recognise antigen directly and have no need for presenting cells.
• B cells:
• Plasma cells secrete antibodies
• Long lived memory cells once infection is dealt withà live in nodes, peyers patches.
• Antibody epitopes-types of antigen
• If haven't recognised antigen before/haven't encountered ità clonal expansion has to occur so all the B cells can recognise the antigen-causes a lag between infection and immune response.
• 4 X clonal expansion/24 hours
• expansion makes effector cells and memory cells
• Once antigen is encountered a second time, and we have already undergone initial cloning, less cloning will need to occur since we have memory cell population.
• Characteristics of antibody response:
• First antigen exposure: delay until you can actually measure conc of antibody in blood since body hasn't got free floating antibodies for the new antigen-hasn't been exposed to it before-has to make B cells which then must mature and then release antibodies.

• much slower and makes less antibody than second exposure.
• Mainly IGM, then IGG.
• IGM and IGG are isotypes of antibodies.
• IGG=immunoglobulin.
• Second exposure/booster vaccination: makes lots of antibodiesà quicker response.