

	Early Fetus	Late Fetus	Birth-1m	Infancy	Childhood
Complement	Produced in liver @ 6-14 weeks		Component levels range from 20-100% of adult levels. CH50 low	CH50 low until about 2 y	NI
Neutrophils	14-16wks PMN found in yolk sac	Blood PMN increase during late gestation	Low storage pool causes neutropenia in sepsis. Low adhesion due to low L-selectin, decreased chemotaxis, may have slightly decreased killing	NI storage pool	Chemotaxis normalizes at 2y
Macrophages	Seen in yolk sac at 4 weeks		Poor migration, decreased DTH, alveolar macs low in number and poor killing. Premies have very low alveolar macs		
B cells	PreB cells in marrow at 13 wks.	Diversity of repertoire increases during gestation.	No immunoglobulin production until after birth usually. Responses to protein antigen low	NI response to protein Ag at 2m	Full maturity of Ig function at 5 years of age. IgA and IgG2 production begins about 1-2 years of age. Polysaccharide responses begin about 2-3 years of age
T cells	Thymic rudiment detectable at 8 wks. NI architecture by 12 weeks. At 14 weeks nl # T cells in periphery.		Unless infected, all T cells at birth are naïve (CD45RA usually). Naïve T cells require co-stimulation and are slower to react. Decreased help for B cells (low CD40L), low cytotoxicity. Antigen specific T cell responses require previous exposure to Ag	Memory T cells increase slowly. Other functions gradually improve	
Natural Killer cells	Seen at 6 wks gestation		NK cytotoxicity about 50% of normal.	Full fxn at 1 y	