Immunodeficiency	Abnormalities	Common Infections	Tx
T-Cell	↓T-zones ↓DTH ↓T-Cell proliferation in response to mitogens *in vitro*	IC, V, F	- aggressive tx - stem - NO live/attenuated
B-Cell	↓follicles/germinal centers ↓Abs	EC, V	- Antibiotics - Abs - NO live/attenuated
Innate	variable	EC, V	- Antibiotics - stem

T-CELL	Maturation/Development		Activation/Function			Regulation	
	DiGeorge	Severe Combined (SCID)	Bare Lymphocyte (rare)	Chronic Mucocutaneous Candidiasis (CMC)	Hyper-IgM (X)	AutoImmune Lymphoproliferative Syndrome (ALS)	IPEX (X)
Pathogenesis	Thymus (3rd/4th pouches)	1) RAG 2) γc 3) ADA/PNP	↓MHC1/MHC2, ↓CD8/4	TH2 bias	CD40 mutation ↓class-switching	Fas mutation no AICD excessive T/B-cells	FoxP3 mutation ↓Treg
Diagnosis	- face, heart, parathyroid - ↓T, normal B	- *Candida albicans* in mouth - ↓T,B, Abs - response to mitogens	- infections (GI) - ↓MHC,CD8/4	*pregnancy - *Candida*	- EC infections - ↓IgG/IgA, ↑IgM	huge LN/spleen	autoimmune (gut/ovaries)
Tx	- Partial = time Complete = graft - NO live/attenuated	- stem - gene - NO live/attenuated	- aggressive tx - stem	- antifungal	- aggressive tx - Abs	- stem	- immunosuppressant - stem

B-CELL	Maturation/Development		Activation/Function	
	Brutun's X-Linked Agammaglobulinemia (BXA) (X)	SCID	Hyper-IgM	Selective IgA Deficiency (SIgAD) (most common)
Pathogenesis	↓BtK no Pre>Pro ↓mature B	**	**	↓B class-switching ↓IgA
Diagnosis	- males - EC infections - ↓mature B, plasma cells, Abs	**	**	- asymp - infections(GI/lungs) - Type 3 hypersensitivity
Tx	- Abs - NO live/attenuated	**	**	- aggressive tx - (NO Abs)

INNATE	Complement System	Cell Migration	Phagocytosis
	Hereditary AngioNeurotic Edema (HANE)	Lymphocyte Adhesion Deficiency (LAD-1)	Chronic Granulomatous Disease (CGD)
Pathogenesis	↓C1 inhibitor overactive Classical Pathway	Adhesion Molecule mutation	↓phagocyte oxidases Ag presentation T-Cell accumulation (granuloma)
Diagnosis	swollen face (edema)	EC infections (GI,mouth)	- granulomas, abscess, pneumonia, LN infections
Tx		- antibiotics - stem	- antibiotics - stem