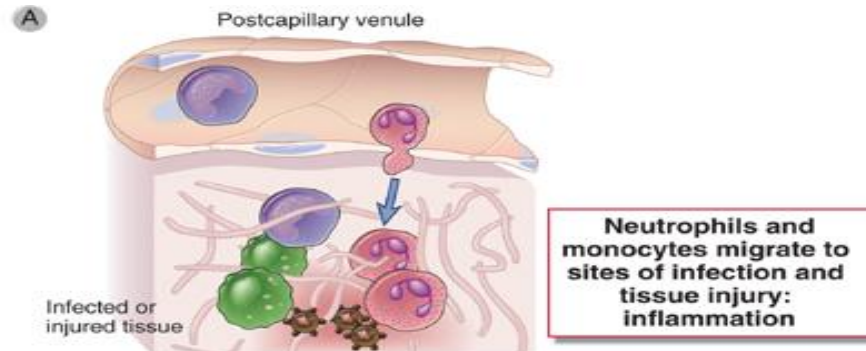
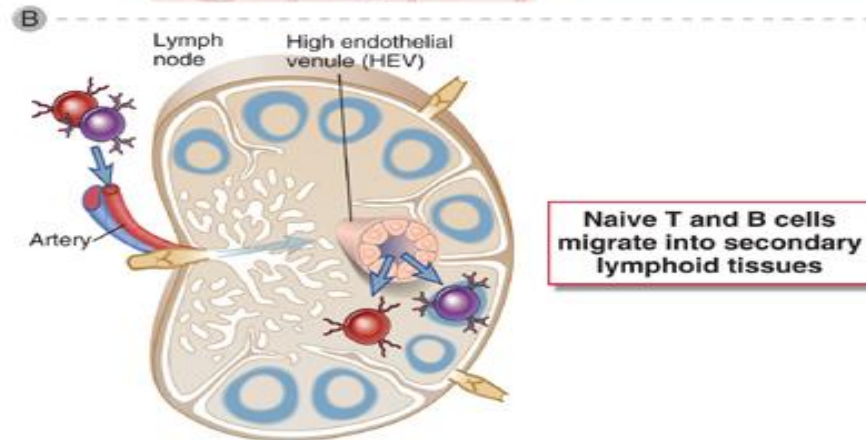
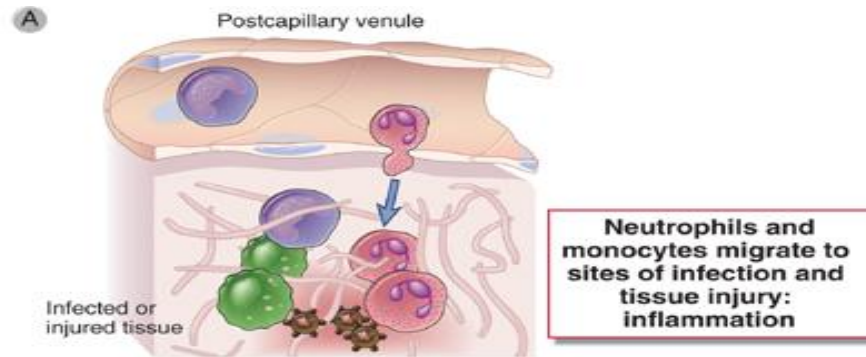


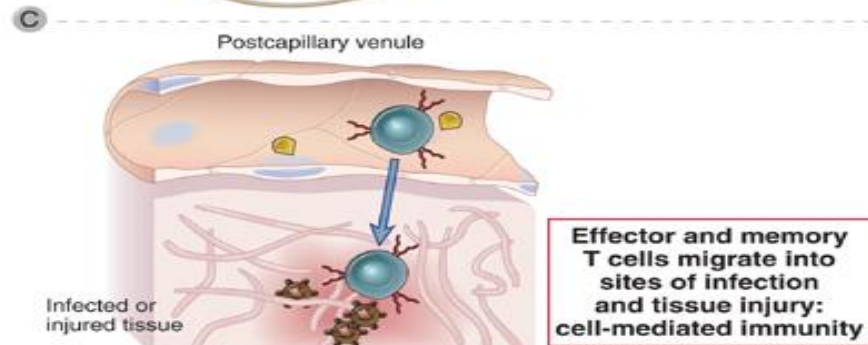
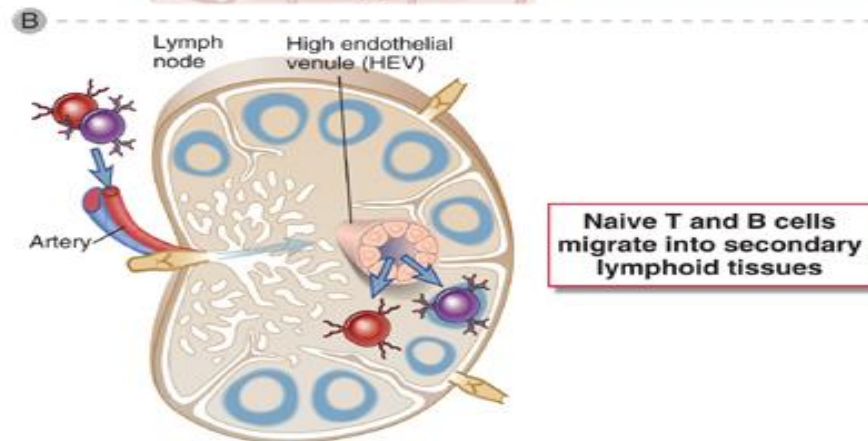
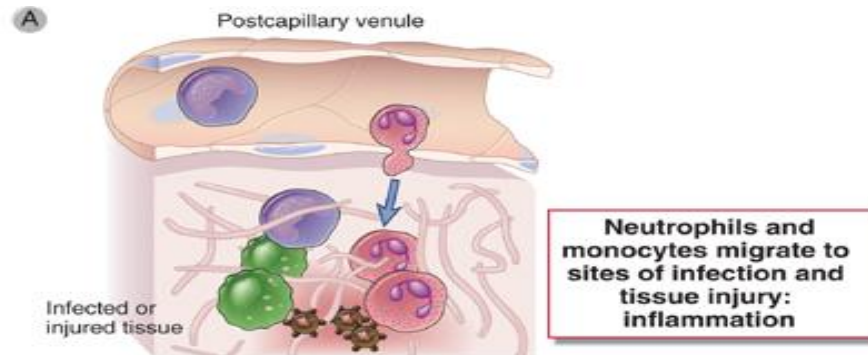
Migration from blood into tissues (Abbas Chapter 3)



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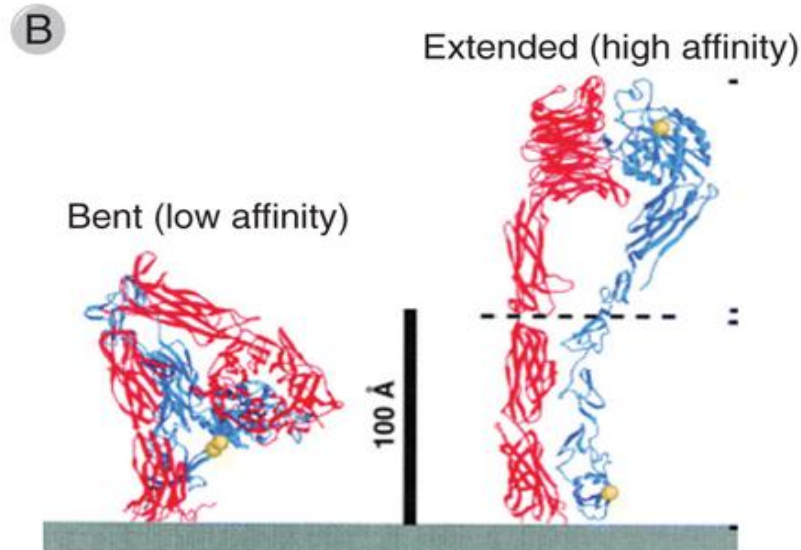
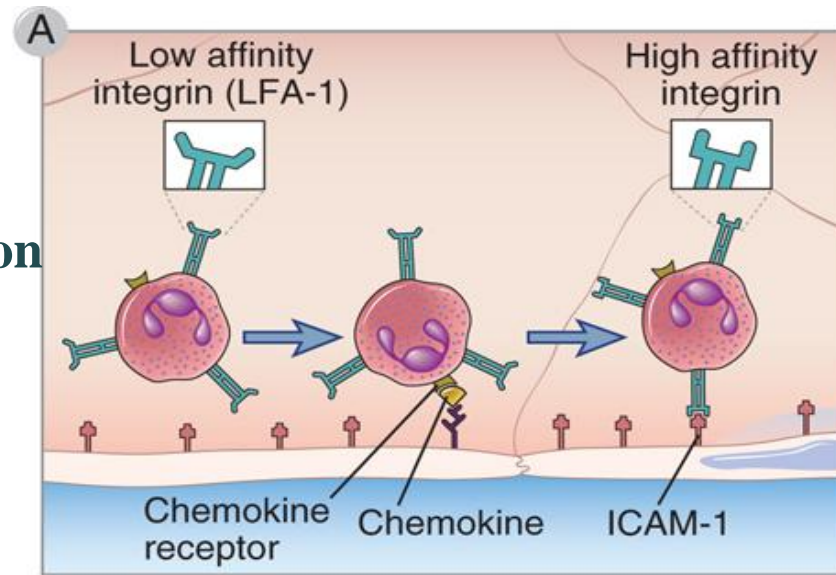


Integrin activation (Abbas Chapter 3)

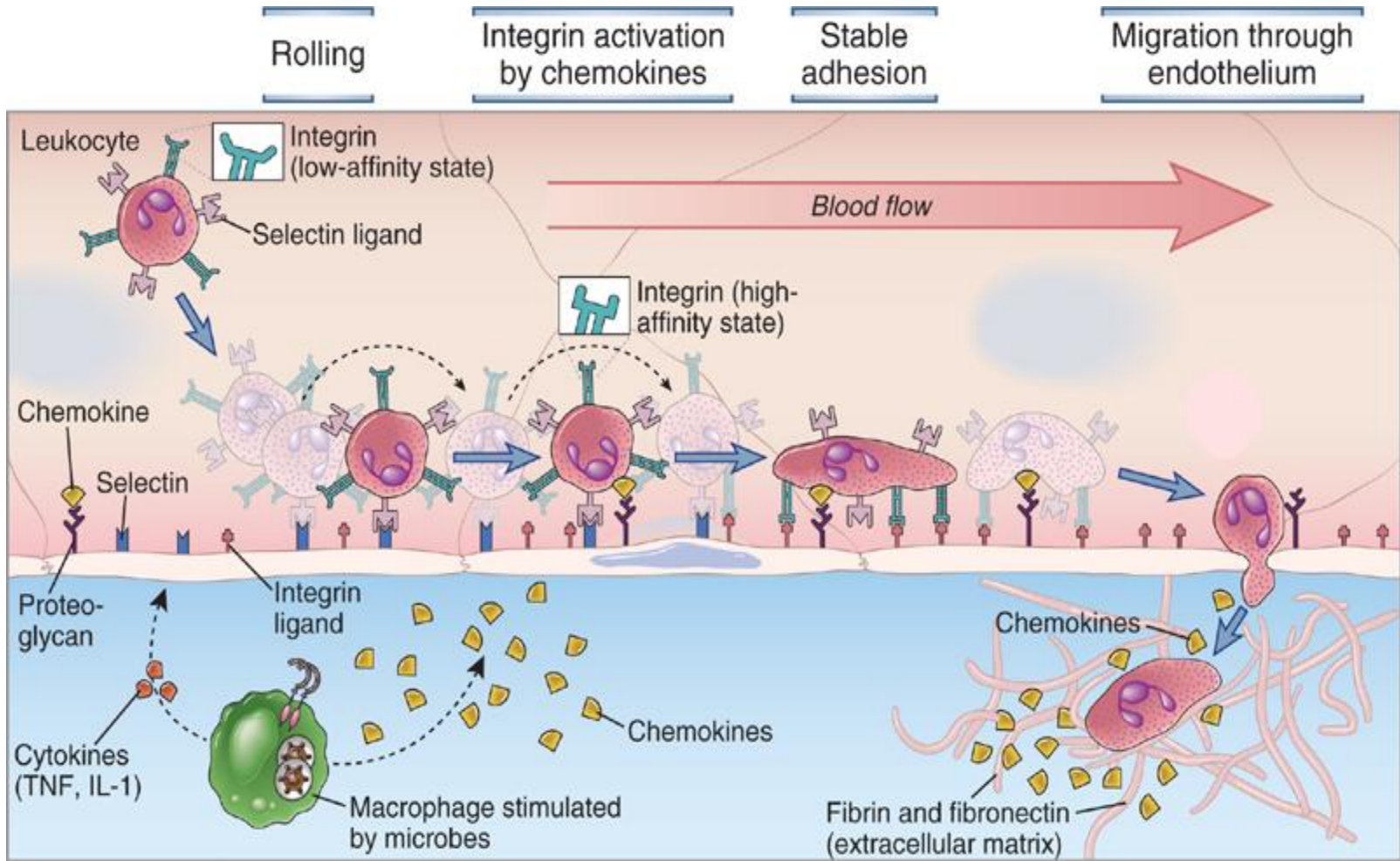
1. Selectin-integrin interaction
2. Rolling/chemokine interaction
3. High affinity binding

Selectin on the vessel wall
Integrin on the migrating cell
Chemokine from the vessel wall
Chemokine receptor on the cell

Integrins increase their affinity
by changing their conformation



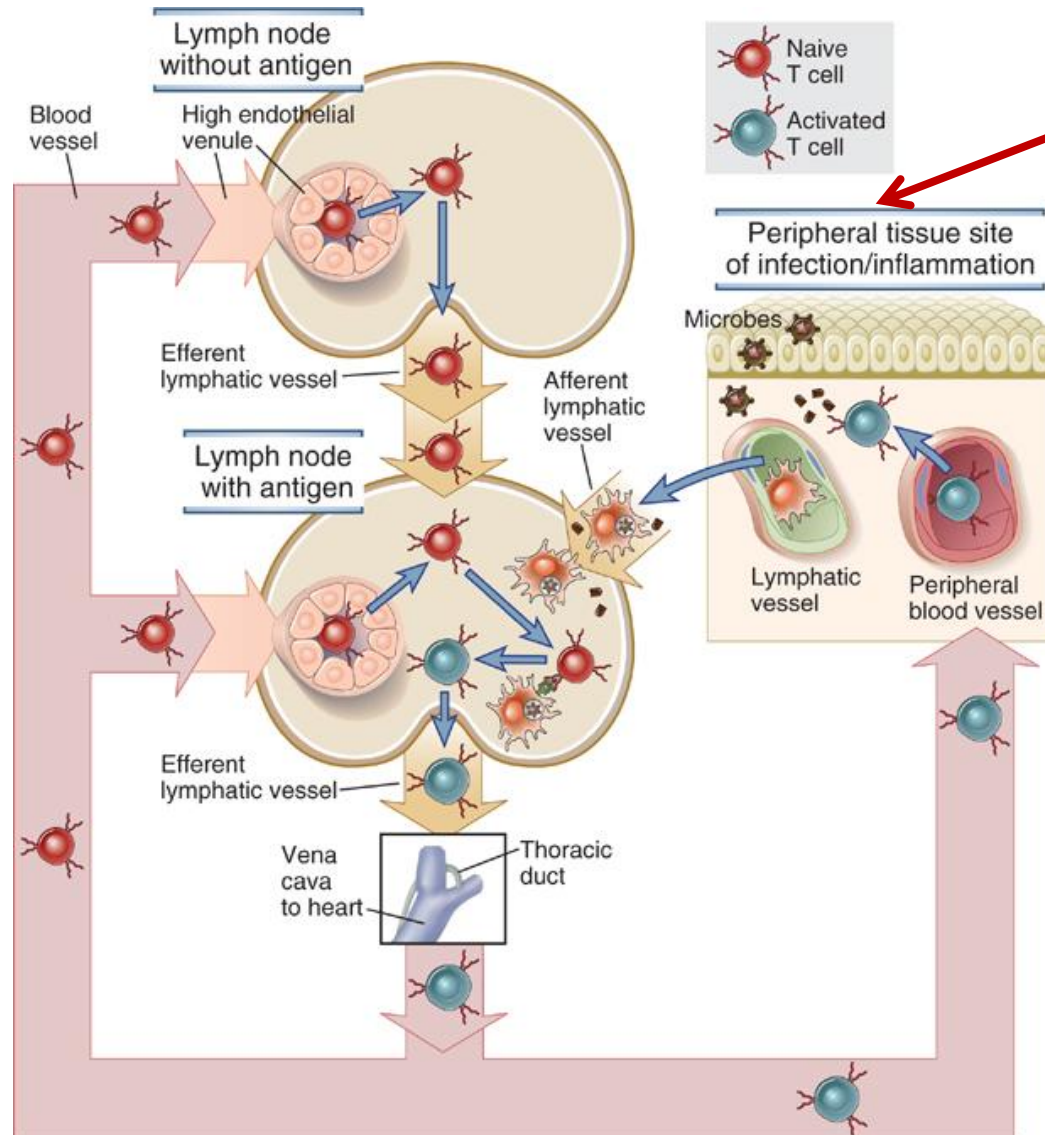
Leucocyte-endothelial interactions (Abbas Chapter 3)



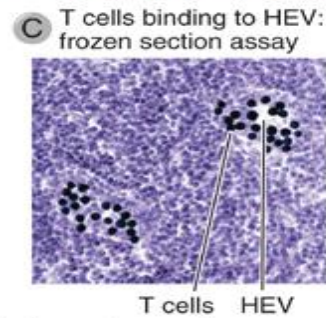
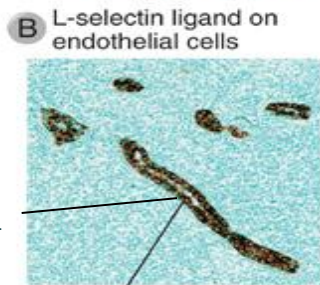
Start ↗

T lymphocyte recirculation (Abbas Chapter 3)

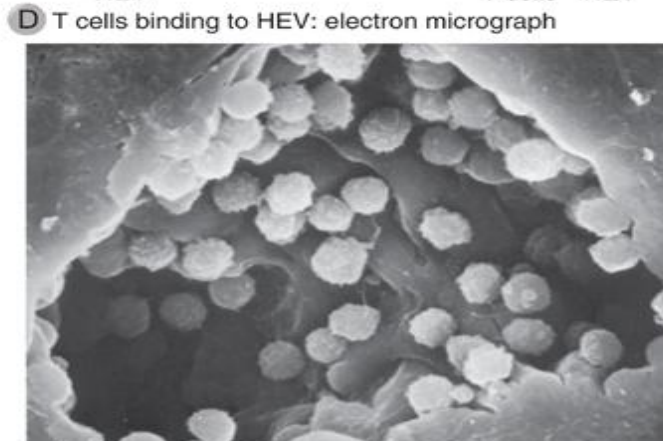
naive lymphocytes
recirculate
from LN to LN



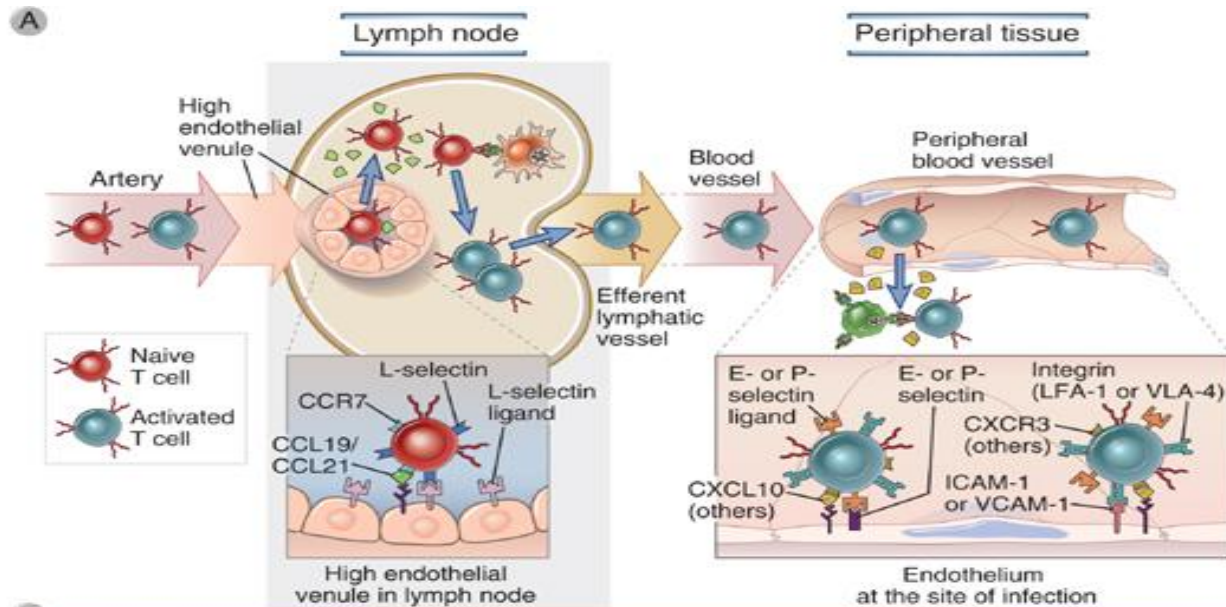
High endothelial venules (Abbas Chapter 3)



Antibody against L-selectin



Migration of naive and effector T cells (Abbas Chapter 3)



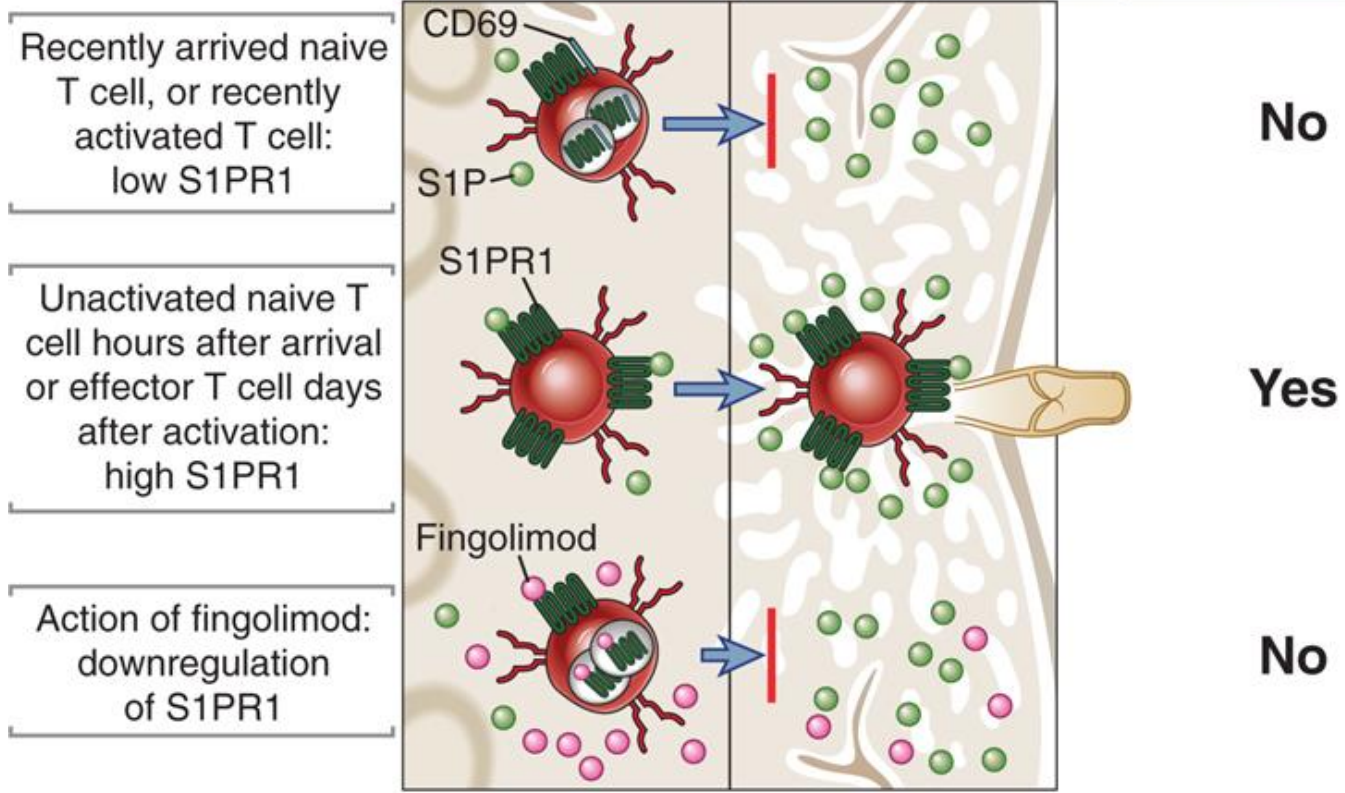
B

T cell homing receptor	Ligand on endothelial cell	Function of receptor: ligand pair
Naive T cells		
L-selectin	L-selectin ligand	Initial weak adhesion of naive T cells to high endothelial venule in lymph node
CCR7	CCL19 or CCL21	Activation of integrins and chemokinesis
LFA-1 ($\beta 2$ -integrin)	ICAM-1	Stable arrest on high endothelial venule in lymph node
Activated (effector and memory) T cells		
E- and P-selectin ligand	E- or P-selectin	Initial weak adhesion of effector and memory T cells to cytokine activated endothelium at peripheral site of infection
CXCR3	CXCL10 (others)	Activation of integrins and chemokinesis
CCR5	CCL4 (others)	Activation of integrins and chemokinesis
LFA-1 ($\beta 2$ -integrin) or VLA-4 ($\beta 1$ integrin)	ICAM-1 or VCAM-1	Stable arrest on cytokine activated endothelium at peripheral site of infection

Egress from lymphoid organs (Abbas Chapter 3)

S1P = chemoattractant lipid sphingosine 1-phosphate

T cell zone of lymph node	Medullary sinus, efferent lymphatics	T cell egress from lymph node
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Egress of T and B cells needs S1PR1

S1P is higher in blood and lymph (S1P lyase degrades S1P in, e.g. LN tissue)

Circulating naive T cells have low levels of S1PR1 (because it is internalized after binding)

After entering the LN, cells need time to enrich S1PR1 again, to sense S1P, and to egress

Important chemokines, receptors and cells

Chemokines

CCR 7 - CCL 19/21

lymphocytes and DC homing

CCR 3 - CCL 11/24 (Eotaxin)

eosinophils, basophils, Th2

CCR 2 - CCL 2 (Monocyte chemotactic protein1, MCP-1)

recruits monocytes to inflammation

CXC chemokines

CXCR 2 – CXCL 1/2/3/5

neutrophil recruitment

CXCR 3 – CXCL 9/10/11

effector T cell recruitment

CXCR 4/5 – CXCL 12/13

B cell migration into follicles

CXCR 1 - CXCL 8 (IL-8)

neutrophil recruitment, angiogenesis

C chemokines

XCR 1 - XCL 1

T cell and NK recruitment

Questions concerning Chapter 3

„right or wrong“ ?

CXCR2 - CXCL2 interaction leads to neutrophil recruitment

CCR7 - CCL19 is necessary for lymphocyte homing

CCR7 - CCL11 is responsible for Eotaxin-mediated homing of eosinophils

CCR7 - CCL19 mediates dendritic cell homing

XCR1 and XCL1 regulate NK recruitment

Naive T cells migrate to sites of infection

Naive B cells migrate to sites of infection

Neutrophils and monocytes migrate to sites of infection

Memory cells do not migrate to sites of infection

Neutrophils migrate to sites of infection

Questions concerning Chapter 3

„right or wrong“ ?

Extravasation of leukocytes into the site of inflammation includes proliferation

Extravasation of leukocytes into the site of inflammation includes cell division

Effector T cells migrate into B cell areas in the spleen

Effector T cells migrate into sites of infection

Effector T cells migrate into T cell areas of lymph nodes

CAMs are involved in leukocyte migration

TAP is involved in leukocyte migration

Chaperons are involved in leukocyte migration

