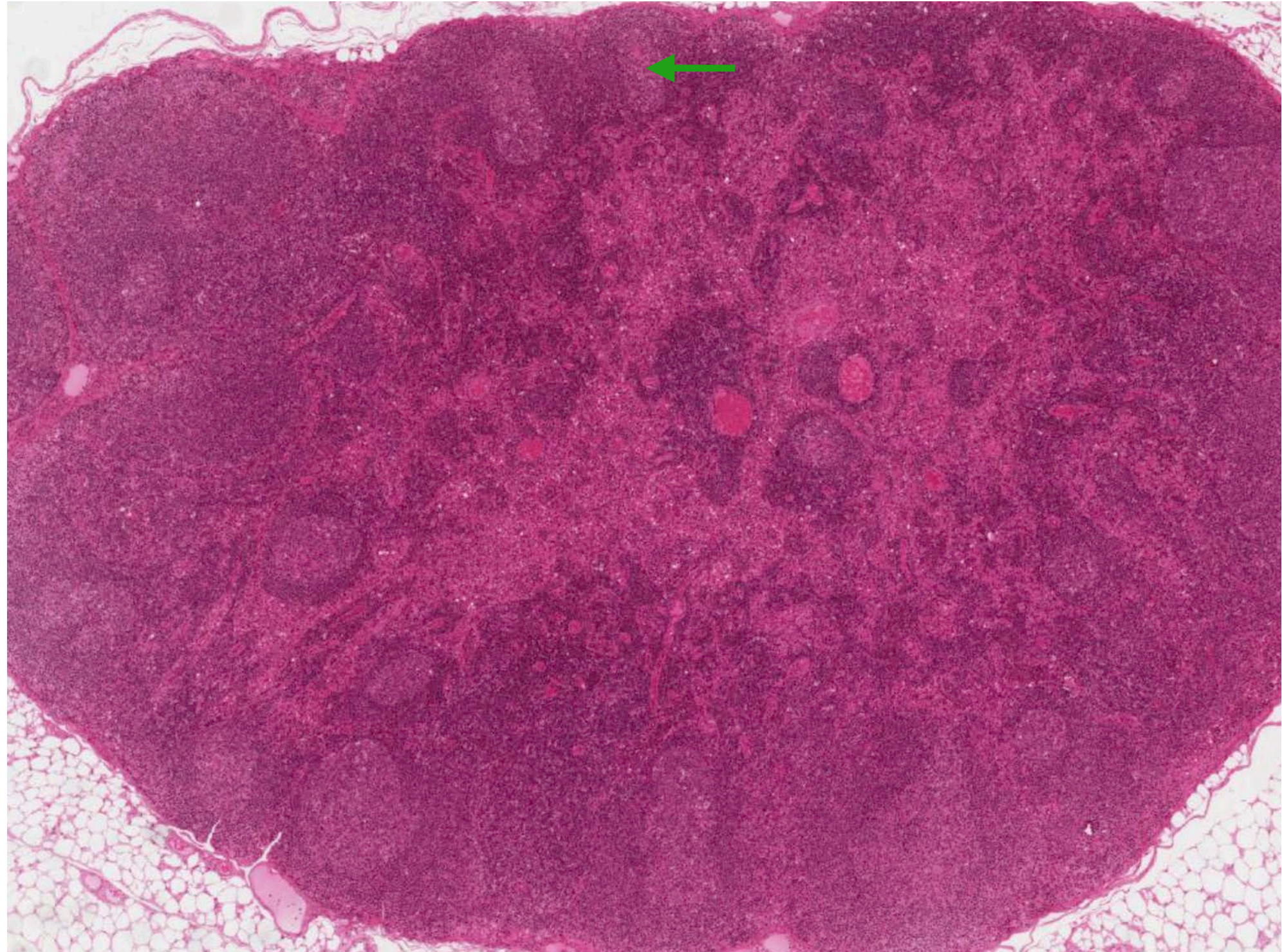


Histology of the Immune System

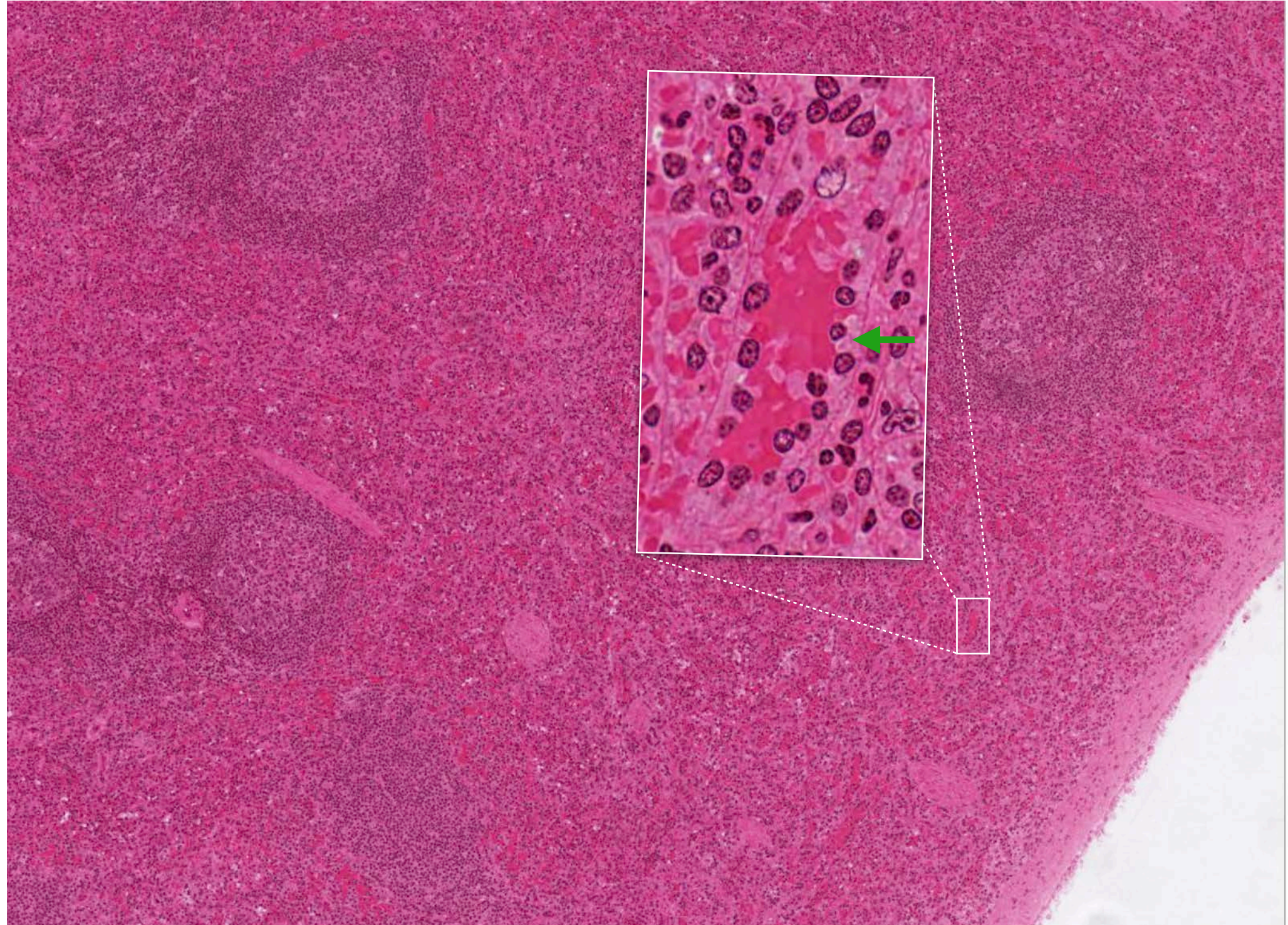
1. What event primarily happens in this region of the lymph node?

- T-cell activation
- Positive selection of T-cells
- Maturation and proliferation of B-cells
- Capturing antigen from lymph



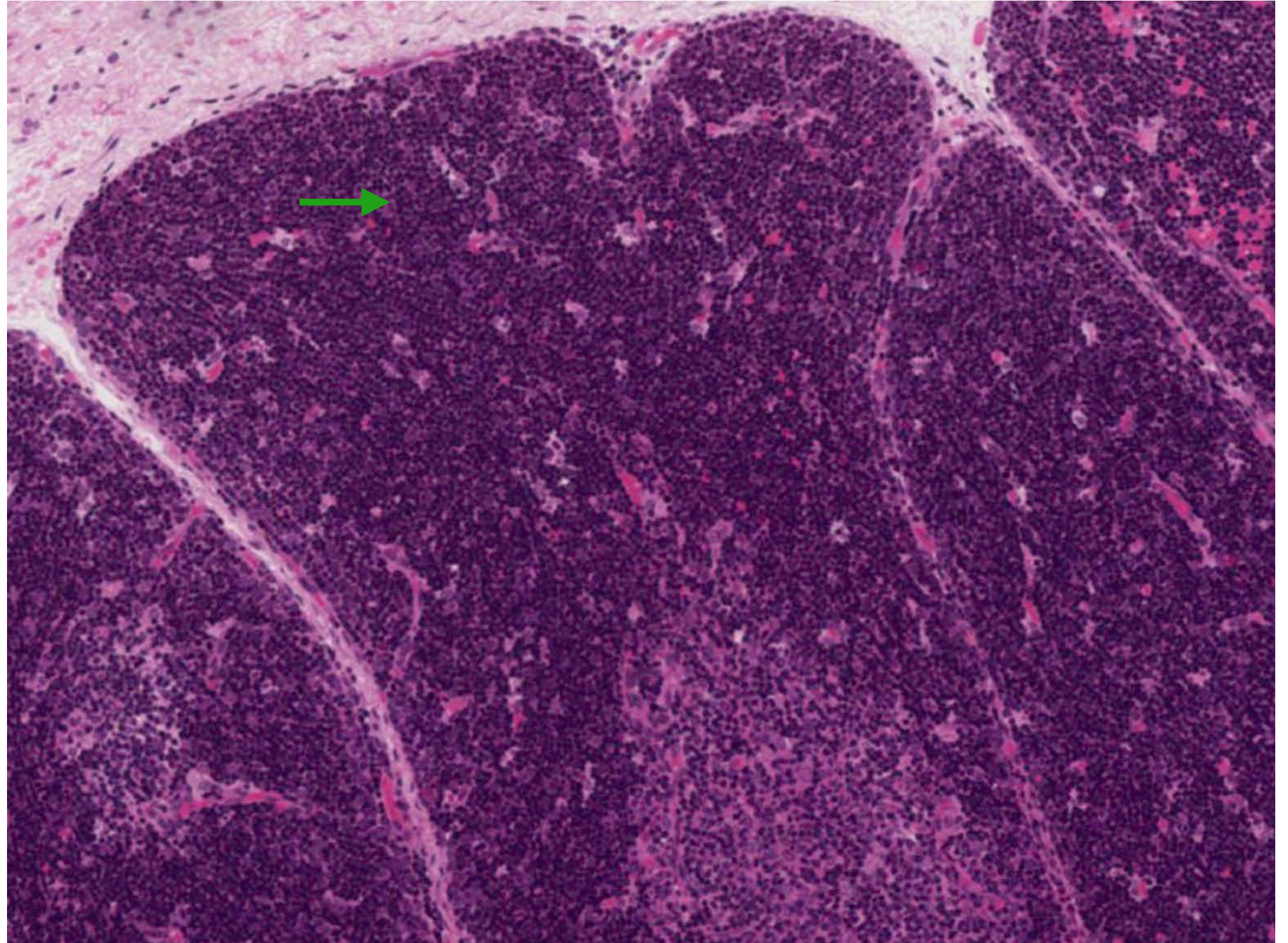
2. What is the primary function of these cells in the spleen?

- Gas exchange
- Transmigration of white cells
- Filter red blood cells
- Capture antigen



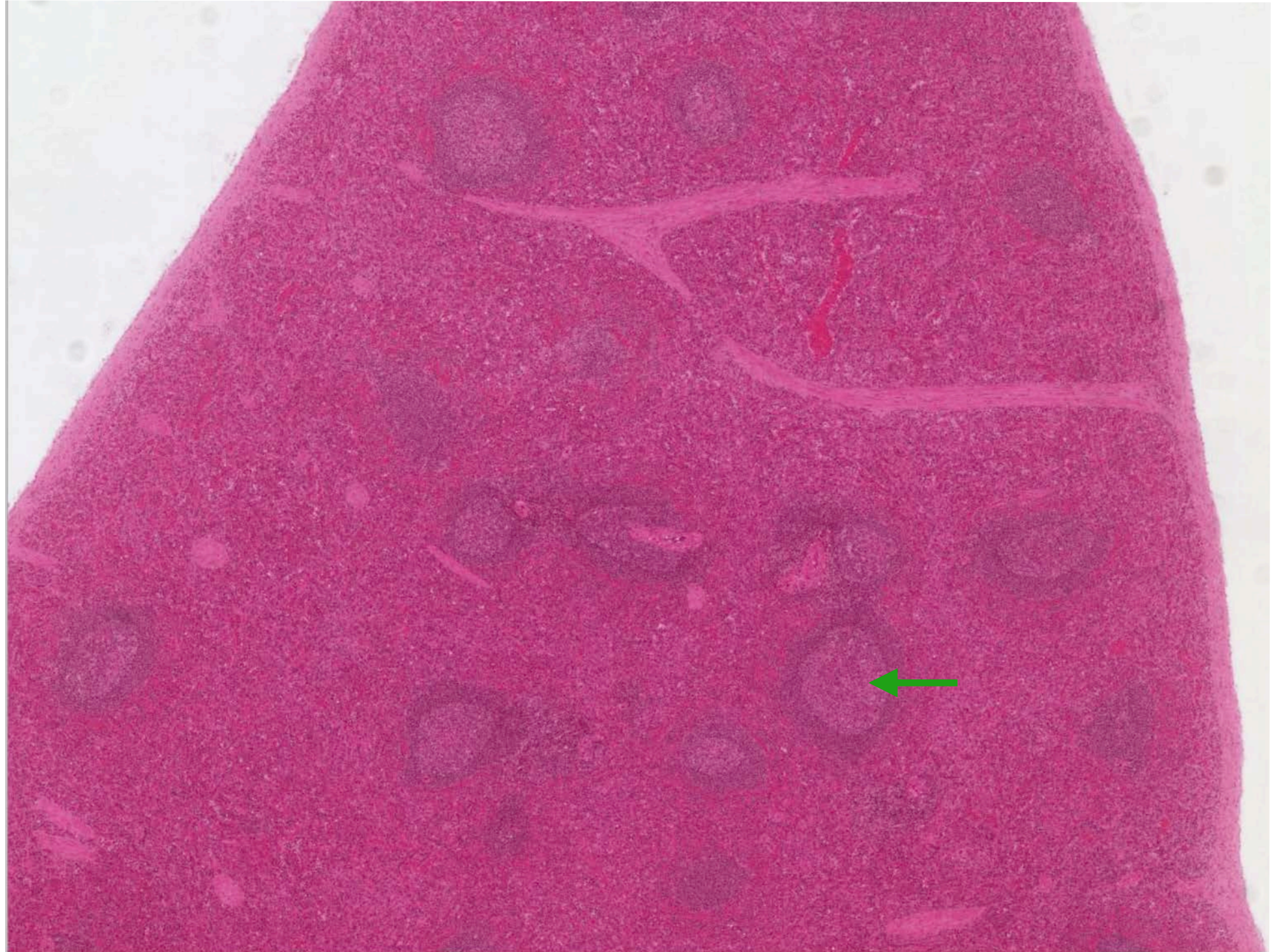
3. What event happens in this region of the thymus?

- Negative selection of thymocytes
- Positive selection of thymocytes
- Entry of thymocytes
- Exit of thymocytes



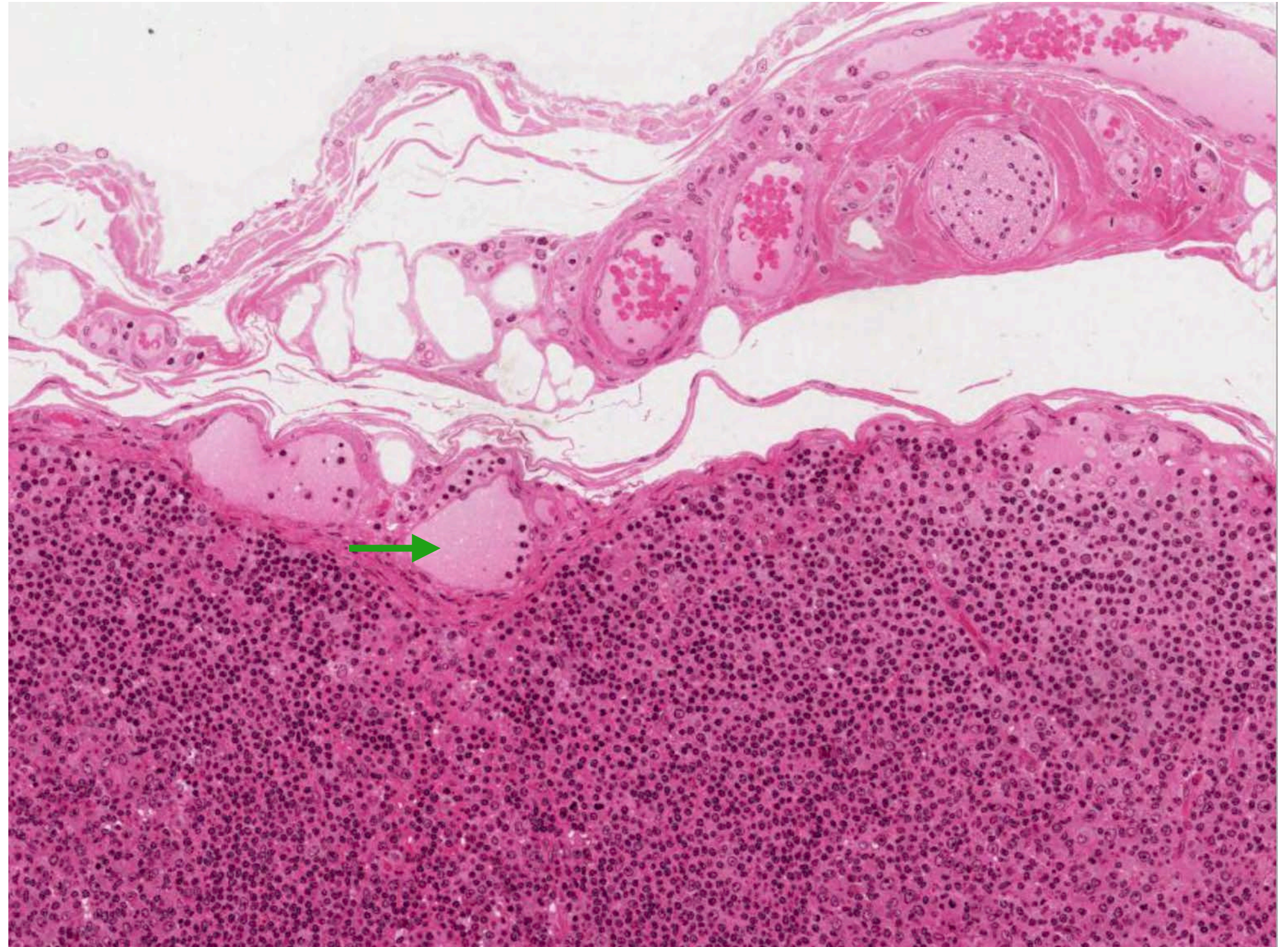
4. Under what condition would this structure in the spleen increase in size and/or number?

- Anemia
- Tissue infection
- Development of thymocytes
- Blood-borne bacterial infection

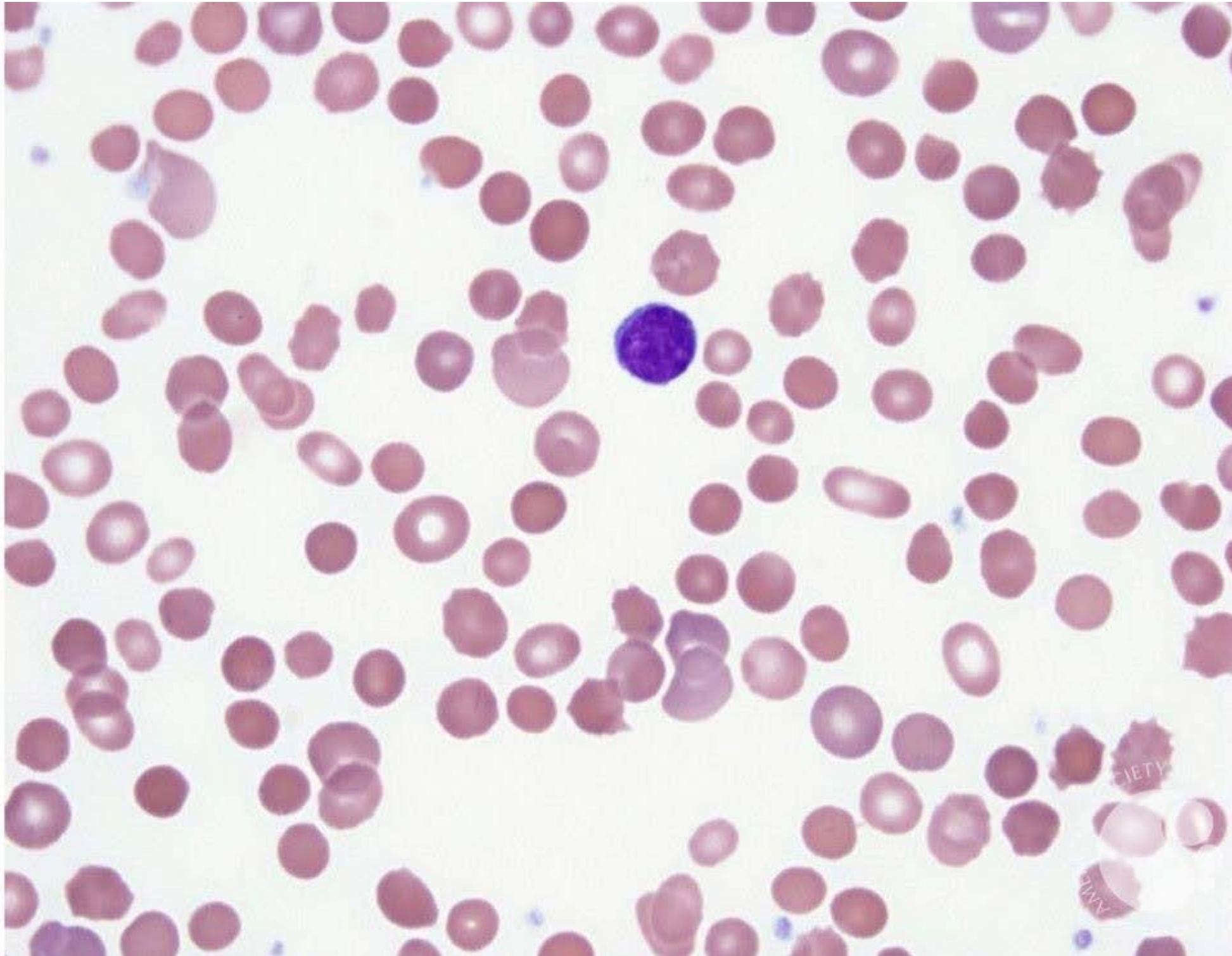


5. What does this structure deliver to the lymph node to facilitate an immune response?

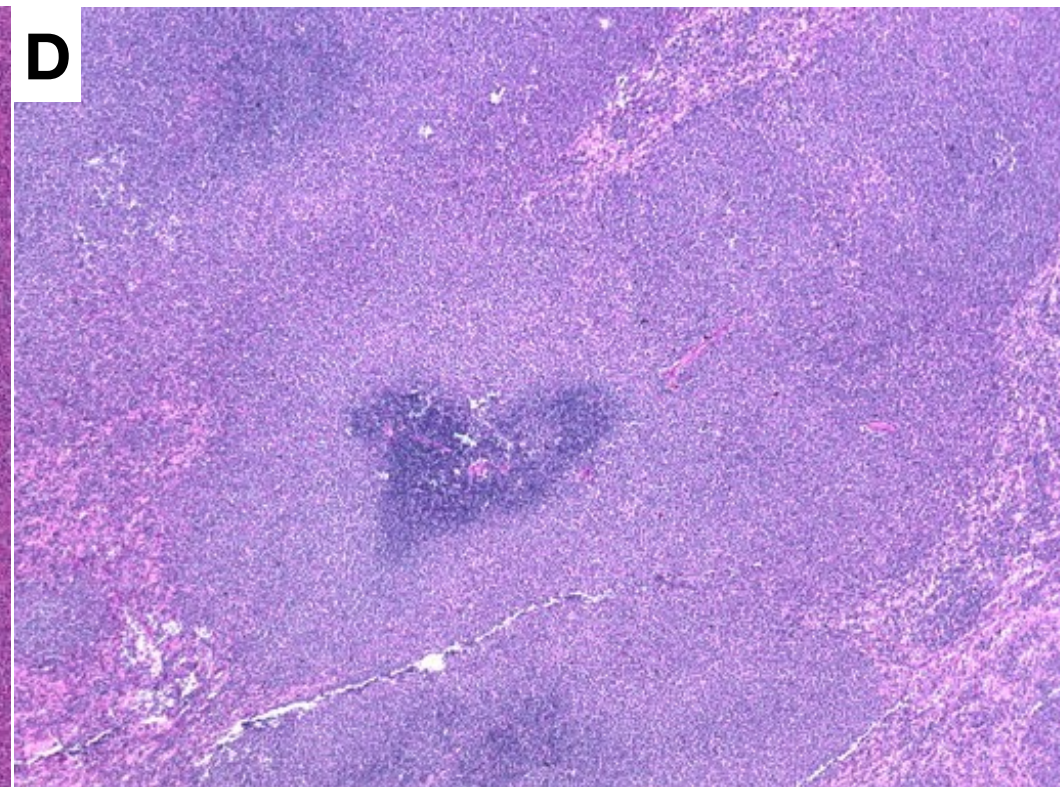
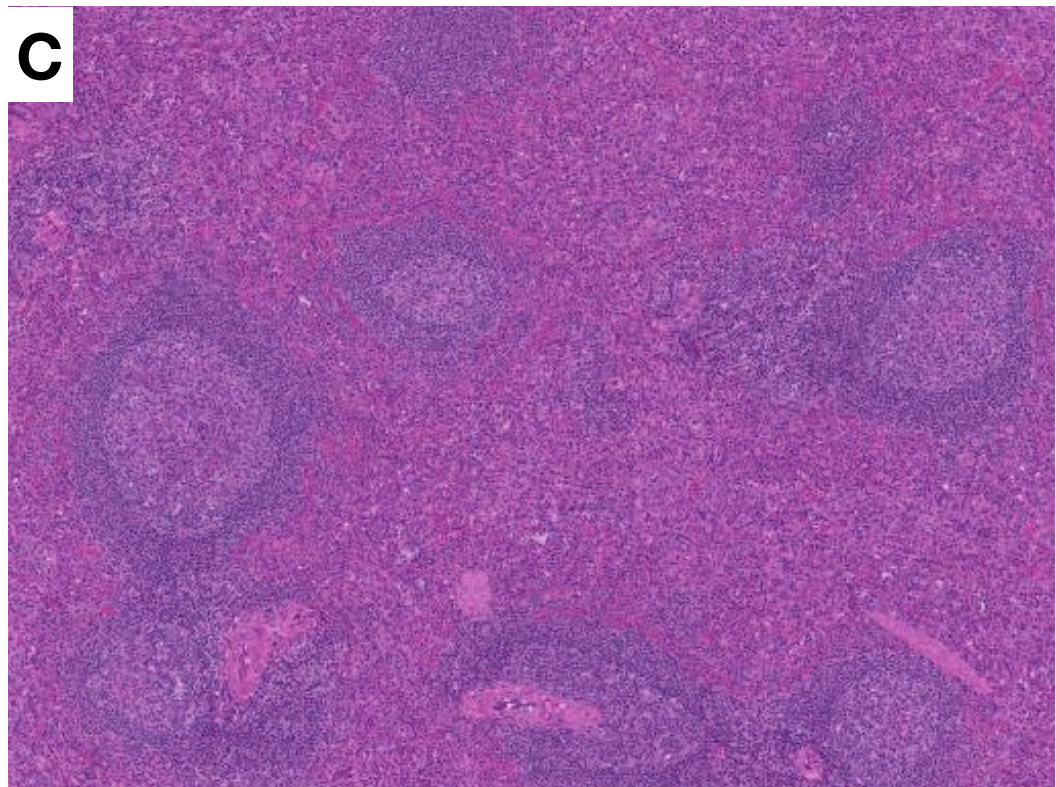
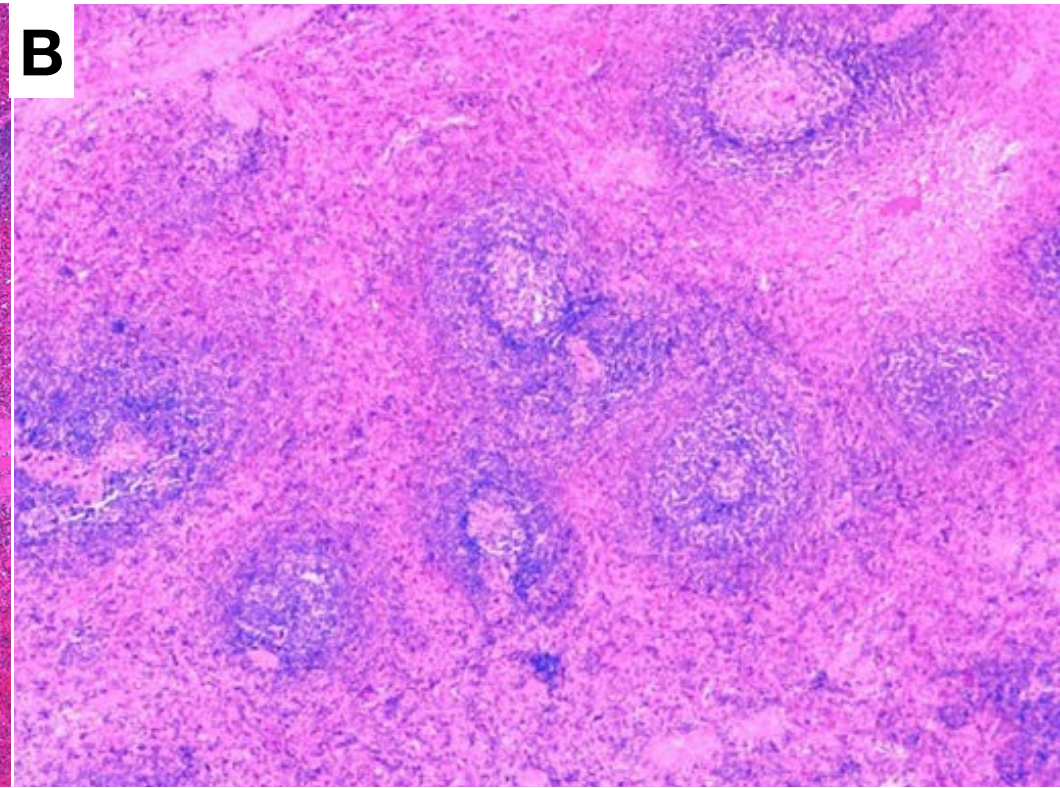
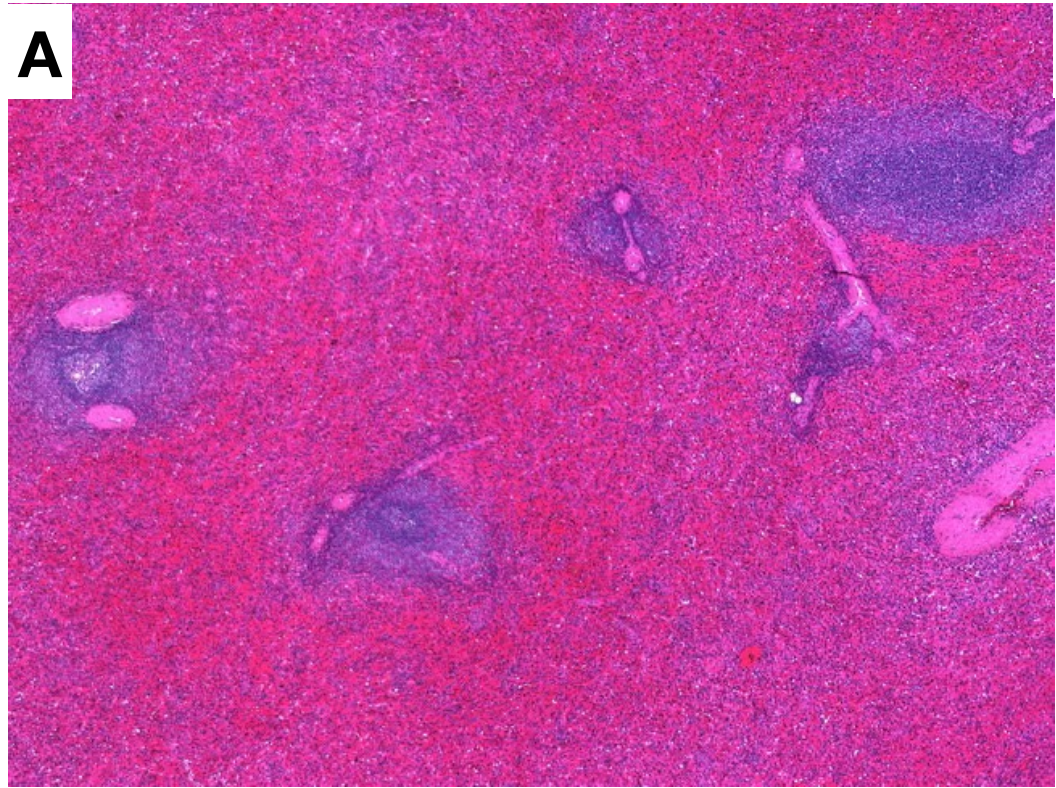
- Antigen
- B-cells
- T-cells
- Macrophages



A patient presents with weakness and shortness of breath. A blood test reveals a low RBC count but an above normal mean corpuscular hemoglobin concentration. A blood smear generates the image below.



Which of the images of spleen biopsies shown below is most consistent with the patient's condition?
What step(s) would increase the patient's RBC count?



A 32 year-old female presents complaining of easy fatigue and muscle weakness that gets worse as the day progresses. A biopsy of her thymus produces the image below. What most likely explains the pathology of the patient's condition? Describe a treatment or procedure that might alleviate the patient's symptoms.

- *Listeria* infection
- Autoimmune disease
- Thymic carcinoma
- Premature atrophy

