

# SPLENOMEGALY

## TERM DEFINITION

An abnormal enlargement of the spleen, typically defined as craniocaudal length > 13 cm in imaging.

### Massive splenomegaly

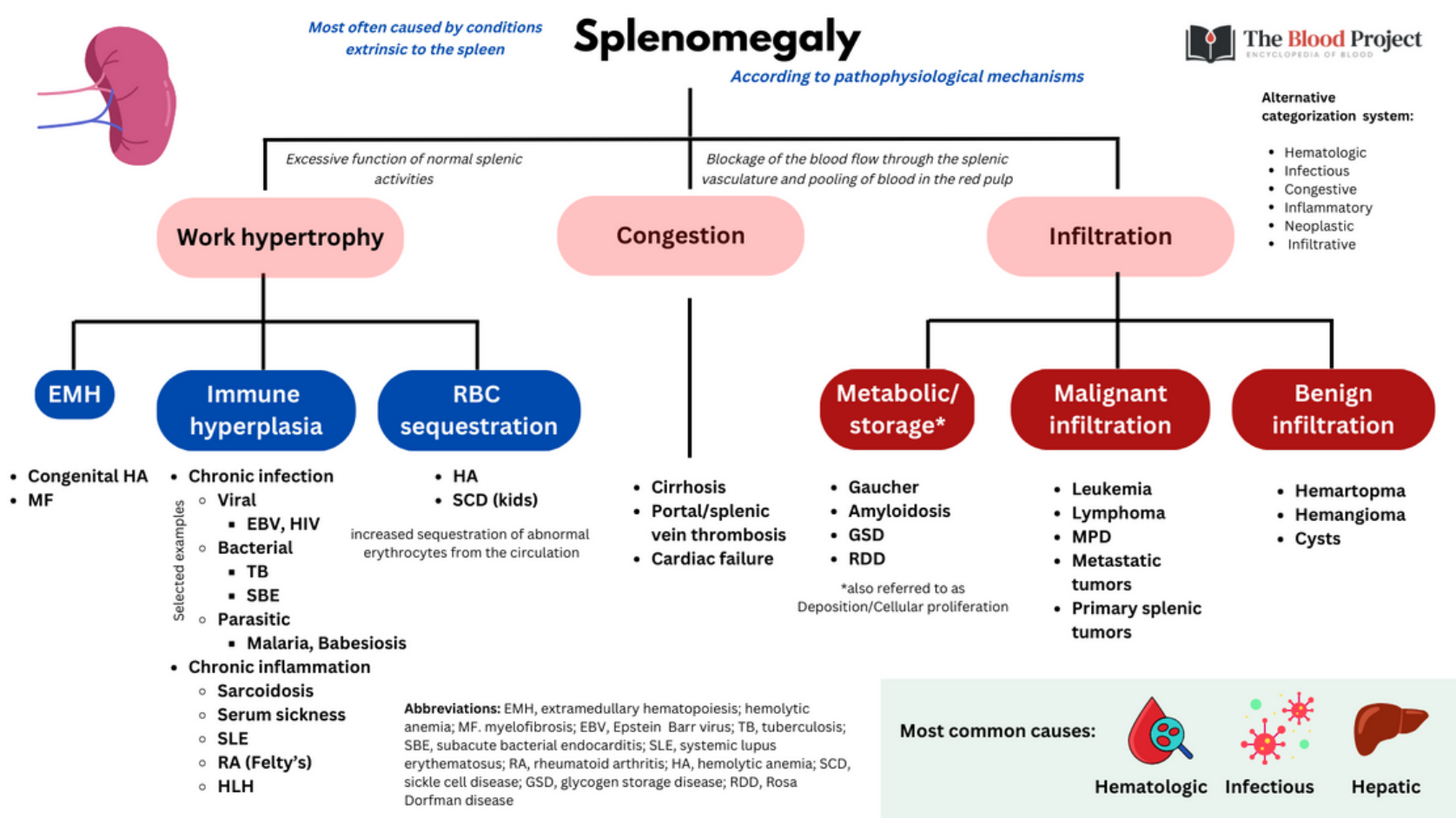
Clinically palpable > 8 cm below left costal margin

### Hypersplenism

Cytopenias resulting from splenic sequestration, usually associated with portal HT-mediated splenomegaly

HT, hypertension

## CLASSIFICATION



## FACTOIDS

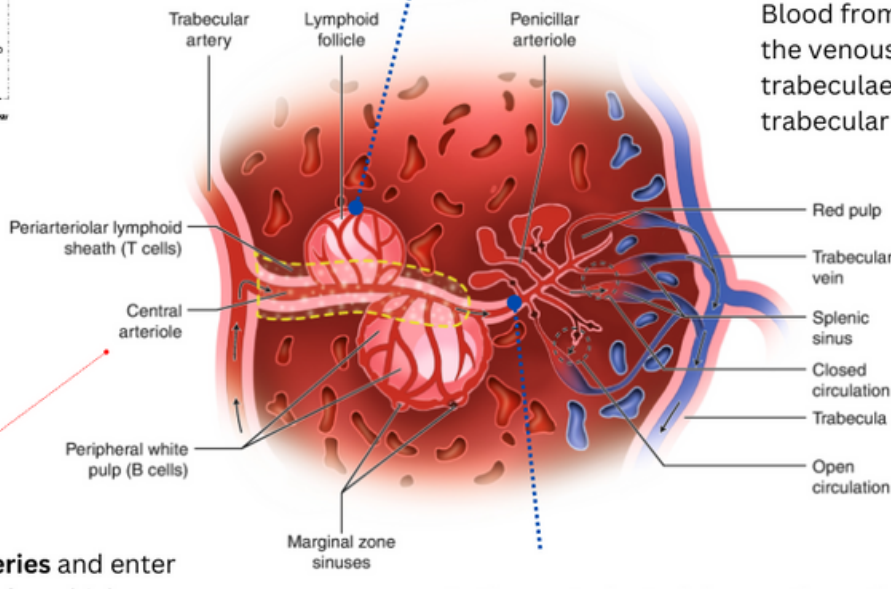
- The spleen contains 2 main compartments: red pulp and white pulp
- The red pulp functions as the body's primary filter
- The white pulp functions in adaptive immunity
- There is no agreed upon upper limit of normal spleen size
- The most common cause is portal hypertension, often associated with liver cirrhosis
- Overall sensitivity of physical exam for detecting splenomegaly 60-80%

## ANATOMY

### White and Red Pulp

Smaller arterioles branch from the central arterioles and feed the white pulp capillary beds

Blood from the red pulp collects in the venous sinuses which enter the trabeculae and merge into the trabecular veins



### Splenic artery

Splenic artery divides into trabecular arteries

Small arterioles branch from the trabecular arteries and enter the red pulp where they become central arterioles which are surrounded by lymphoid tissue.

### Splenic vein

As the central arterioles continue, the white pulp wanes and they become penicillar arteries surrounded by red pulp

## PRESENTATION

### Splenomegaly - Order Set

Evaluation of splenomegaly is guided by history and examination, focusing on the common etiologies of liver disease, malignancy, and infection

Organ	Test	Comments
	Liver function tests	Chronic liver disease is a common cause of macrocytosis
	Renal function	Though CKD not associated with splenomegaly per se, it may be seen with other causes
	CRP	Elevated in inflammatory states
	Auto-antibodies, e.g., ANA, RF	To detect autoimmune conditions associated with splenomegaly
	Imaging (US or CT)	To confirm splenomegaly

Organ	Test	Comments
	CBC + diff	Splenomegaly may be caused by many conditions associated with reduced or elevated counts
	Peripheral smear	Morphologic changes in hemolytic anemia, cirrhosis, leukemia and lymphoma
	Reticulocyte count	May be elevated with normal Hb in compensated hemolysis
	Hemolytic indices	Hemolytic anemia may present with low haptoglobin; increased AST, LDH and bilirubin
	PT and aPTT	May be abnormal in cirrhosis
	Vitamin B12	Pernicious anemia may be associated with splenomegaly

### Selected cases

**Hematology:**

- BM biopsy
- Coombs test
- Smear for malaria
- Hb electrophoresis

**Biochemistry:**

- ACE (sarcoidosis)
- SPEP and FLC (amyloidosis)
- Enzyme test to rule out Gaucher

**Infectious disease:**

- Monospot test
- Blood cultures
- Serological tests

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## IMAGING

Radiology has four major roles in the investigation of splenomegaly:

- Confirmation of splenic size
- Evaluation of splenic architecture
- Assessment of other organs affecting the differential diagnosis
- Radiologically-guided biopsy

### Ultrasonography

Advantages include:

- Cost-effectiveness
- Accuracy
- Lack of radiation



### Contrast-enhanced CT

After intravenous contrast injection, the normal spleen enhances in a mottled pattern during the arterial and early portal venous phases



**DID YOU KNOW?**

time may be lost. Experience shows that simple splenomegaly is only too frequently the first stage of some serious or fatal malady. According to Osler<sup>1</sup> the ultimate outlook of simple splenomegaly is bad, and there is only one radical cure—removal of the spleen. The results of splenectomy are so favourable, and the fate of splenomegaly with splenectomy are so unfavourable, that it seems nowadays unjustifiable to temporise and waste valuable time in administering drugs or “trying X-rays” in the hope that the disease may be arrested.

Bristol Med Chir J (1883) . 1913 Dec;31(122):325-331

## NOTES

### ATTRIBUTIONS

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ENCYCLOPEDIA OF BLOOD