

لا تنصروا أهل  
غزة هي معكم

## Foregut

Longer  
the left  
renal

The abdominal aorta ends at the level of L4 (left side) where it divides into the right and left common iliac arteries.

Lower limb

Enters the rectus sheath

Supply the diaphragm

give

## Midgut

give



## Pelvis

Anterior  
abdominal wall  
(*turned down*)

Medial umbilical ligament  
(fibrous part of umbilical  
artery)

*F. Netter M.D.*

Single Branches of Abdominal Aorta .

Pairs Branches of Abdominal Aorta .

Other arteries supply the adrenal gland not directly from abdominal aorta .

## 5 – Abdominal Aorta: course

They all emerge from abdominal Aorta, which ends as Common iliac artery

### Course:

- ✓ Enters the diaphragm at the mid line through Aortic opening in it at The level of T12.
- ✓ Descends behind the peritoneum on the anterior surface of the bodies of the lumbar vertebrae (it is retroperitoneal)
- ✓ End at the level of the 4<sup>th</sup> lumbar vertebra at the left side As common iliac artery
- ✓ (just opposite to I.V.C. which starts at the level of 4<sup>th</sup> lumbar vertebra to the right)

### Relations:

#### Anterior:

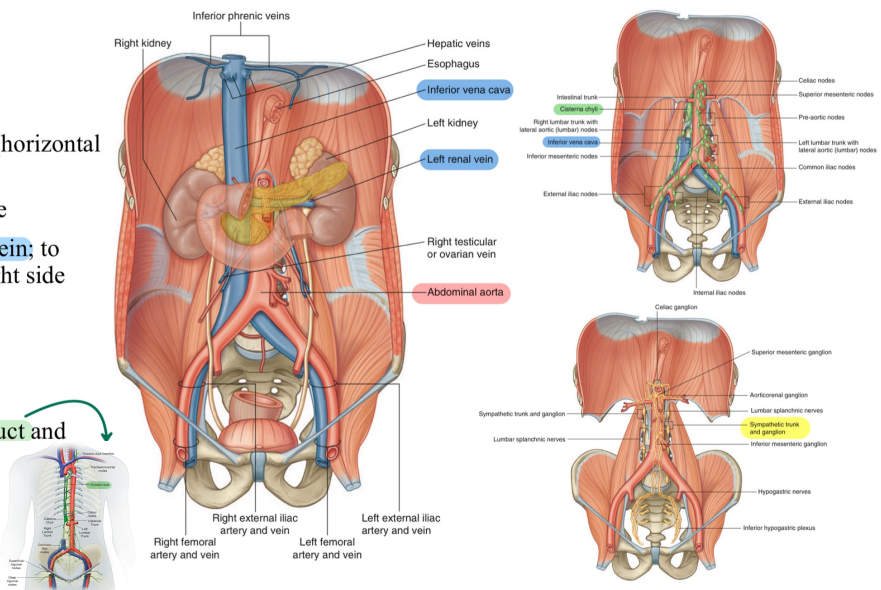
- ✓ pancreas
- ✓ 3<sup>rd</sup> part of duodenum (horizontal part)
- ✓ Coils of small intestine
- ✓ Crossed by Lt. renal vein to reach I.V.C. on the right side

#### Right:

- ✓ I.V.C
- ✓ Cisterna chyli
- ✓ the start of thoracic duct and azygos vein

#### Left:

- ✓ left sympathetic chain



## Common Iliac Artery

The **abdominal aorta ends at the level of L4 (left side)**, where it **divides into the right and left common iliac arteries.**

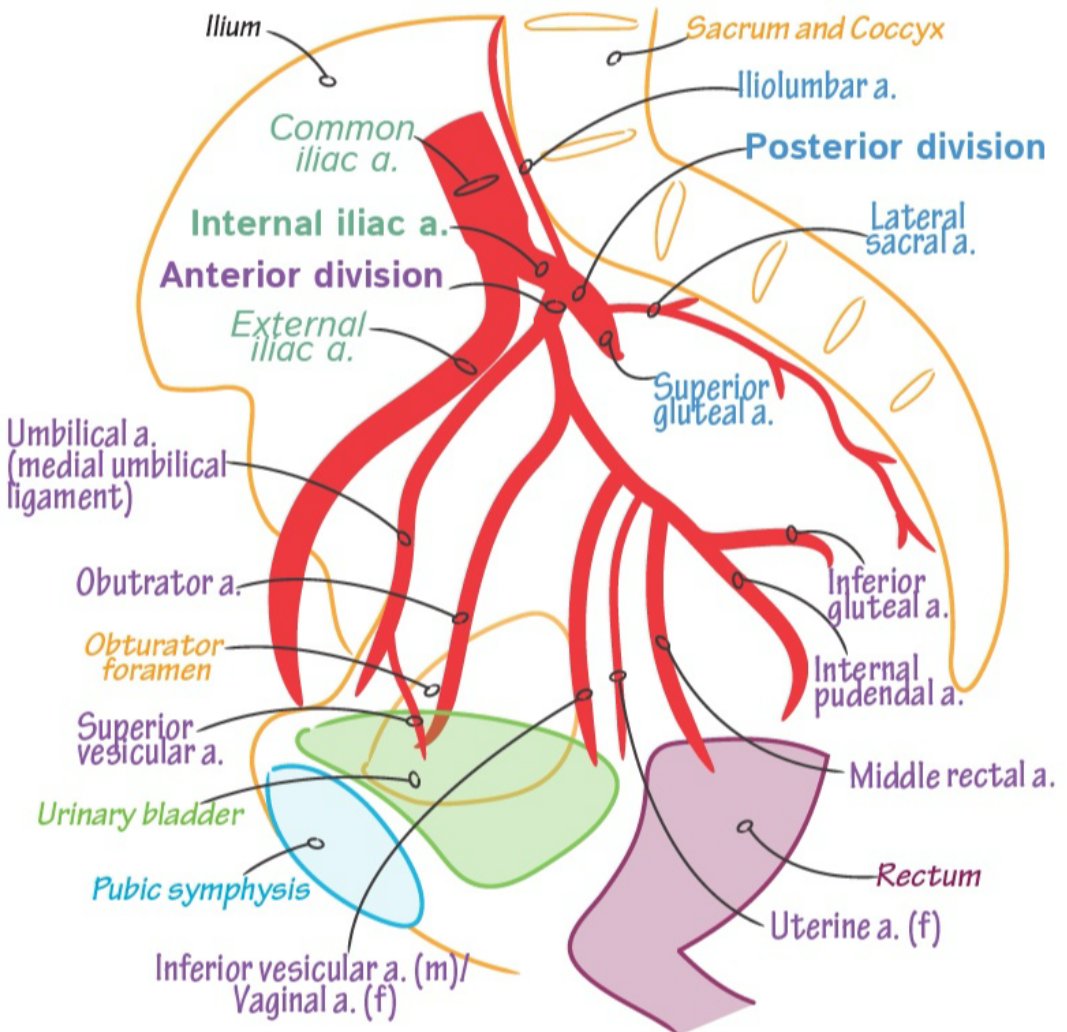
Each common iliac artery then divides near the pelvic inlet into:

**External iliac artery and its branches .**

**Internal iliac artery and its branches [A = anterior | p = posterior]**

# Internal iliac artery and its branches [A = anterior | p = posterior] division

- \* I Ileolumbar
- \* L Lateral sacral
- \* G Gluteal
- \* P Pudendal
- \* I Inferior vesicle
- \* M Middle rectal
- \* V Vaginal
- \* O Obturator
- \* U Umbilical



Right and left inferior phrenic arteries

Abdominal aorta

Celiac trunk

1 Cm

Left hepatic artery

Right hepatic artery

1. Left gastric artery

2. Splenic artery

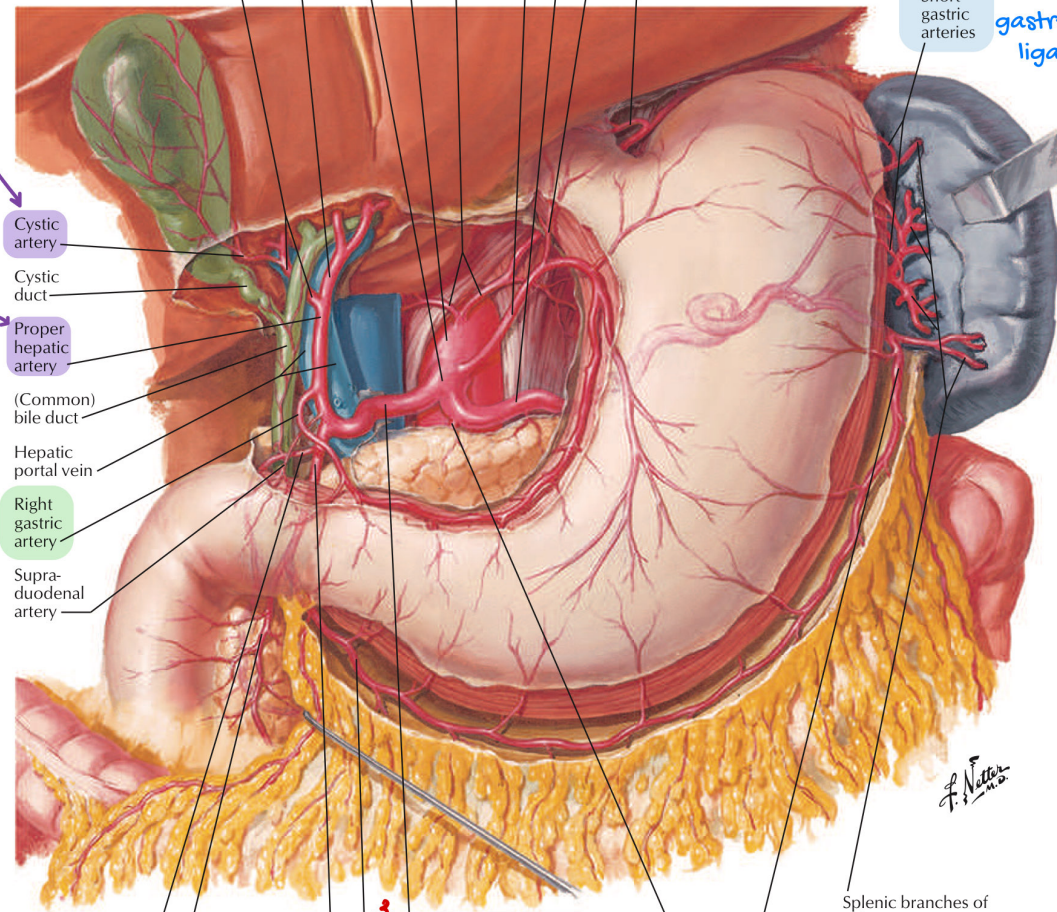
that runs along the upper border of the pancreas

Esophageal branch of left gastric artery

Recurrent branch of left inferior phrenic artery to esophagus

Short gastric arteries

via the gastrosplenic ligament



Cystic artery

Cystic duct

Proper hepatic artery

(Common) bile duct

Hepatic portal vein

Right gastric artery

Supraduodenal artery

3.

Common hepatic artery

Right gastroepiploic (gastroepiploic) artery

Gastroduodenal artery

Posterior superior, Anterior superior pancreaticoduodenal arteries

Left gastroepiploic (gastroepiploic) artery

Dorsal pancreatic artery

Splenic branches of splenic artery

**The celiac trunk** is very short (~1 cm) and arises at **the upper border of L1** (or sometimes noted as the lower border of T12 in some sources).



### Branches of celiac trunk :

Left gastric and its branches to the foregut .

Splenic artery and its branches to the foregut .

Common hepatic artery and its branches to the foregut .

The Common hepatic artery continue as proper hepatic

Proper hepatic artery and its branches .

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### Superior Mesenteric Artery

- ✓ Origin: **upper border of L2 or lower border of L1.**
- ✓ Supplies the **midgut.**
- ✓ Branches:

Superior Mesenteric Artery main branches to the midgut .

Ileocolic artery branches .

marginal artery .

### Inferior Mesenteric Artery (IMA)

- ✓ **The inferior mesenteric artery** originates **at the level of L3.**
- ✓ It supplies the **hindgut**, including:

Inferior Mesenteric Artery main branches to the hindgut .



✓ Origin: upper border of L2 or lower border of L1.

Superior mesenteric artery **Midgut**

✓ The inferior mesenteric artery originates **at the level of L3.**  
**Hindgut**

**2.**

Inferior pancreaticoduodenal arteries  
(Common portion)  
Posterior  
Anterior

**3.**

Right colic artery

**4.**

Ileocolic artery  
Colic branch  
Ileal branch

**give**

Marginal artery

Anterior cecal artery

Posterior cecal artery

Appendicular artery

Internal iliac artery

Median sacral artery (from abdominal aorta)

Middle rectal artery

Branch of superior rectal artery

**1.**  
Middle colic artery  
Transverse mesocolon  
Marginal artery

Jejunal and ileal (intestinal) arteries

Marginal artery

Inferior mesenteric artery

**1.**  
Left colic artery  
Ascending branch  
Descending branch

Marginal artery

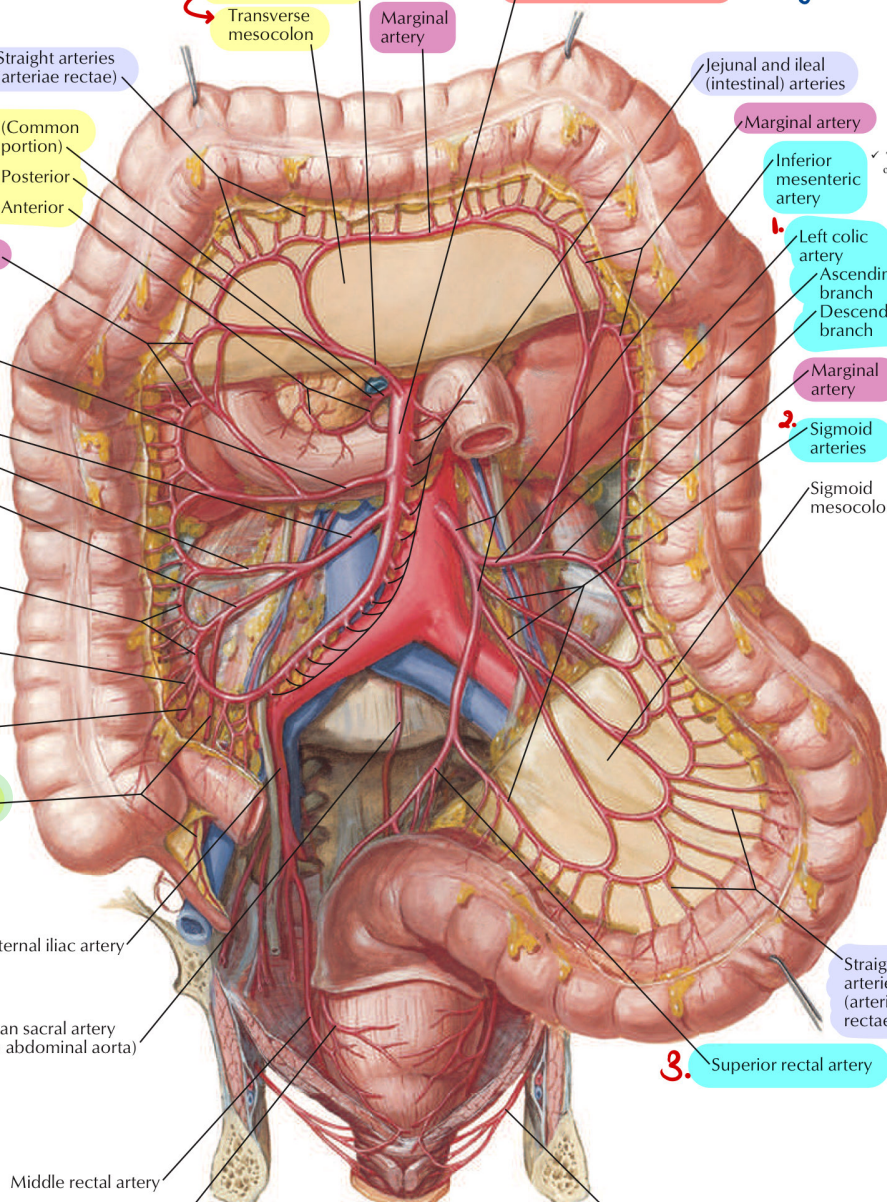
**2.**  
Sigmoid arteries

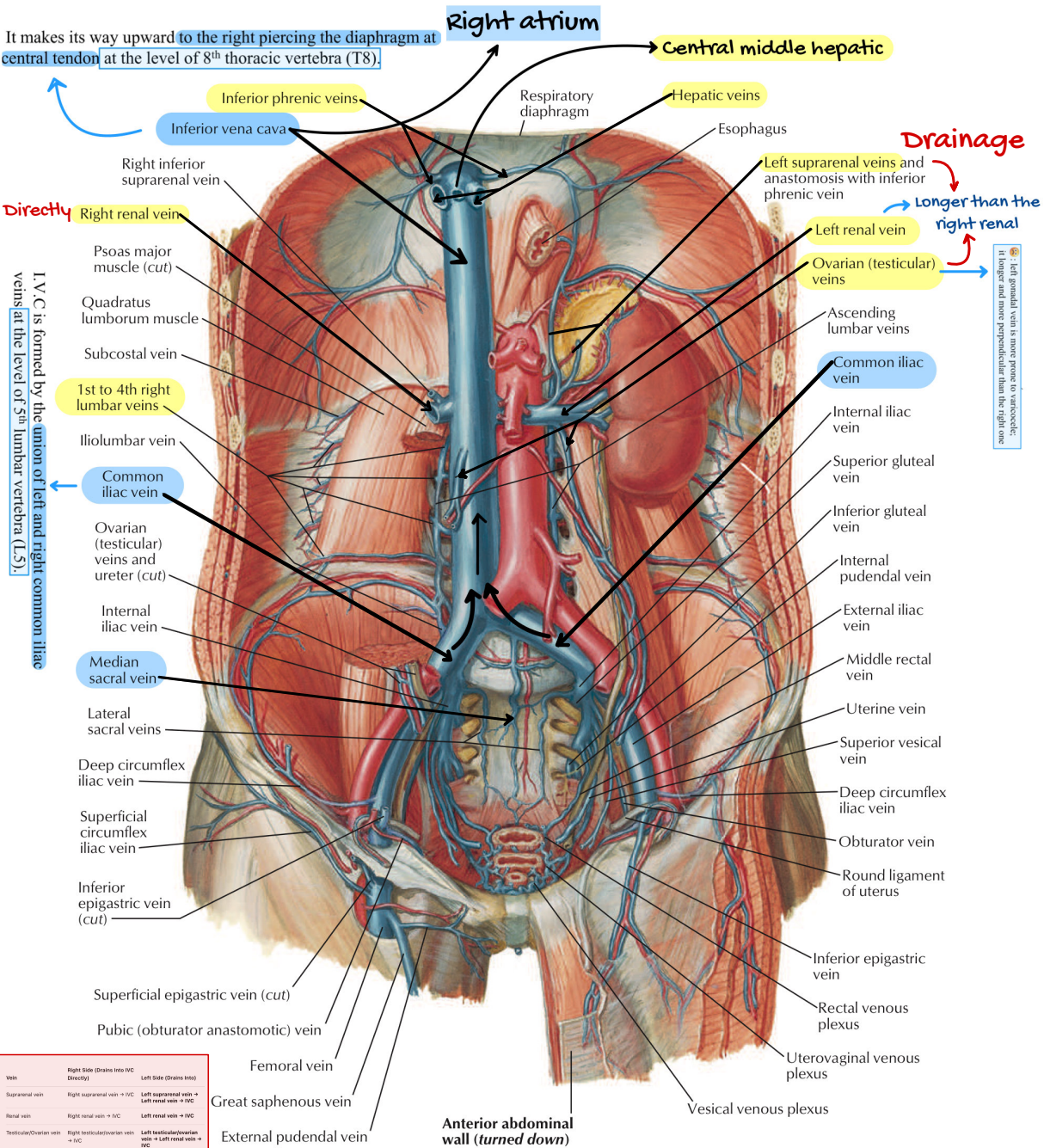
Sigmoid mesocolon

**3.**  
Superior rectal artery

Straight arteries (arteriae rectae)

Inferior rectal artery





Vein	Right Side (Drains Into IVC Directly)	Left Side (Drains Into)
Suprarenal vein	Right suprarenal vein → IVC	Left suprarenal vein → IVC
Renal vein	Right renal vein → IVC	Left renal vein → IVC
Testicular/Ovarian vein	Right testicular/Ovarian vein → IVC	Left testicular/Ovarian vein → IVC

## I.V.C Tributaries

## 10 – I.V.C: course

- ✓ I.V.C is formed by the **union of left and right common iliac veins** at the level of 5<sup>th</sup> lumbar vertebra (L5).
- ✓ It makes its way upward to the right piercing the diaphragm at **central tendon** at the level of 8<sup>th</sup> thoracic vertebra (T8).
- ✓ It **ends at the right atrium**, as it drains most of the blood from the body below diaphragm.

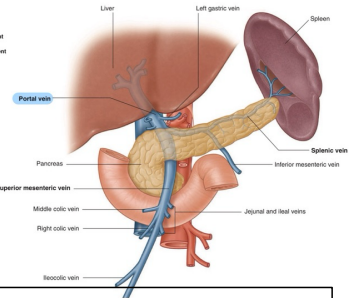
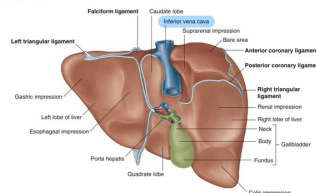
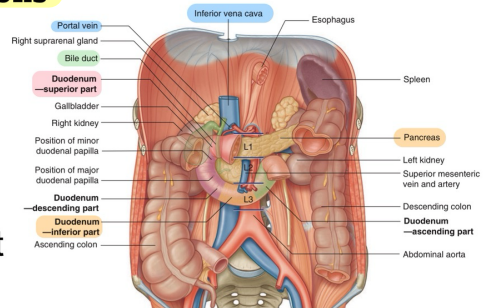
### 10 – I.V.C: Relations

#### Anterior

- Coils of small intestine
- 3<sup>rd</sup> part & 1<sup>st</sup> part of d.d
- Head of pancreas & Common bile duct
- Related to foramen of Winslow
- Portal vein
- Lies in deep groove of liver

#### Posterior:

sympathetic chain, laying to the right margin posterior to I.V.C.



- ✓ **Two anterior visceral tributaries:**
  - the left and right hepatic veins coming from corresponding lobes.
  - A third one may be seen, as in the pic, which is central/middle hepatic vein, coming from caudate and quadrate lobes of liver.

The inferior vena cava (IVC) only receives lateral visceral tributaries directly from the right side of the body. The left-sided equivalents do exist, but they do not drain directly into the IVC. Instead, they drain into the left renal vein, which then drains into the IVC.

- ✓ **Three lateral visceral tributaries: (right directly)**
  1. the right **suprarenal vein** (the left vein drains into the left renal vein).
  2. **renal veins**. Note that the **left renal vein is longer than the right one**.
  3. right **gonadal (testicular or ovarian) vein** (the left vein drains into the left renal vein)

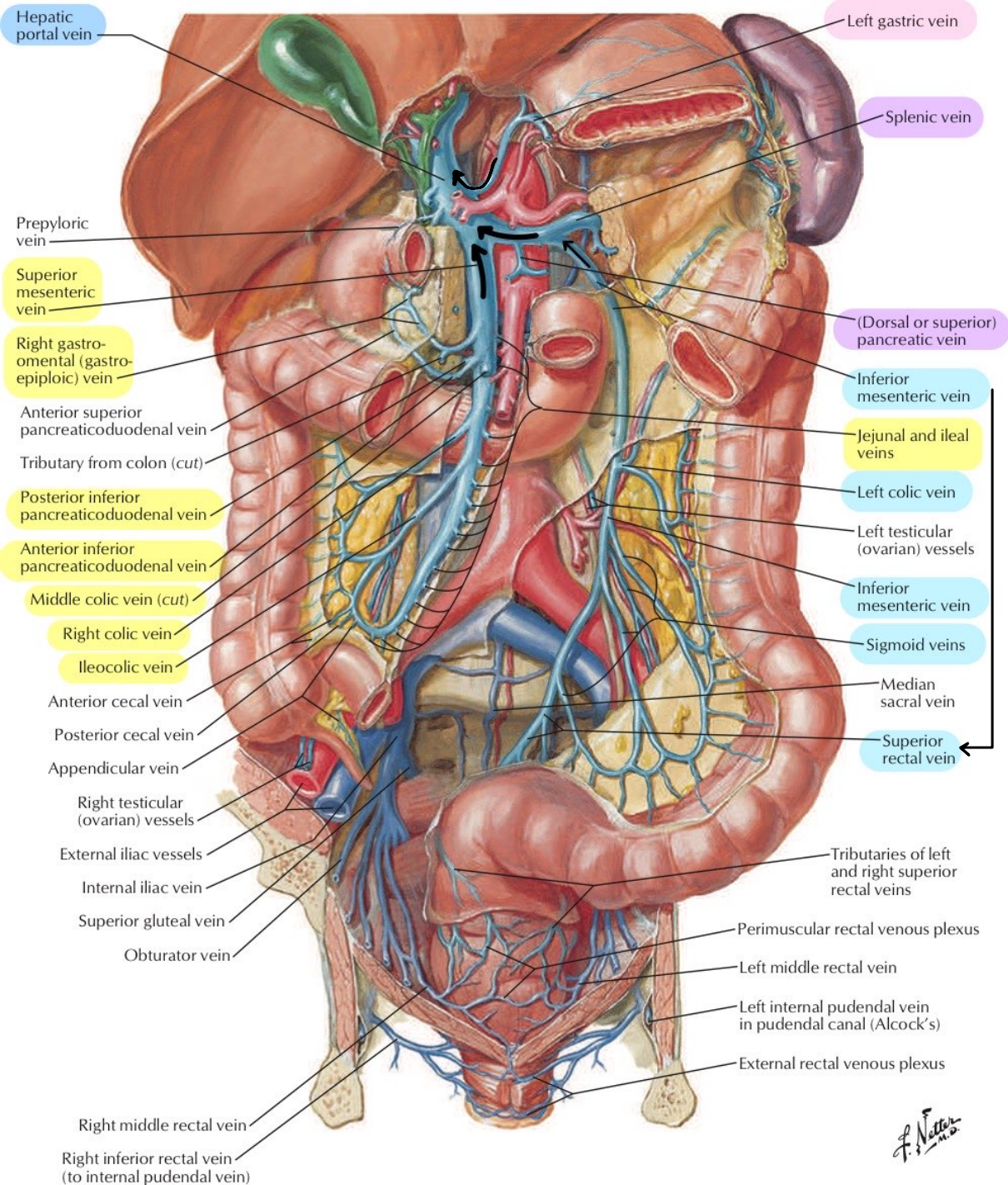
👴: left gonadal vein is more prone to varicocele; it longer and more perpendicular than the right one

- ✓ **Five lateral abdominal wall tributaries:**

- The **inferior phrenic vein**
- **four lumbar veins**

- ✓ **Three veins of origin:**

- **two common iliac veins**. They unite at the level of L5 to form I.V.C
- the **median sacral vein**.



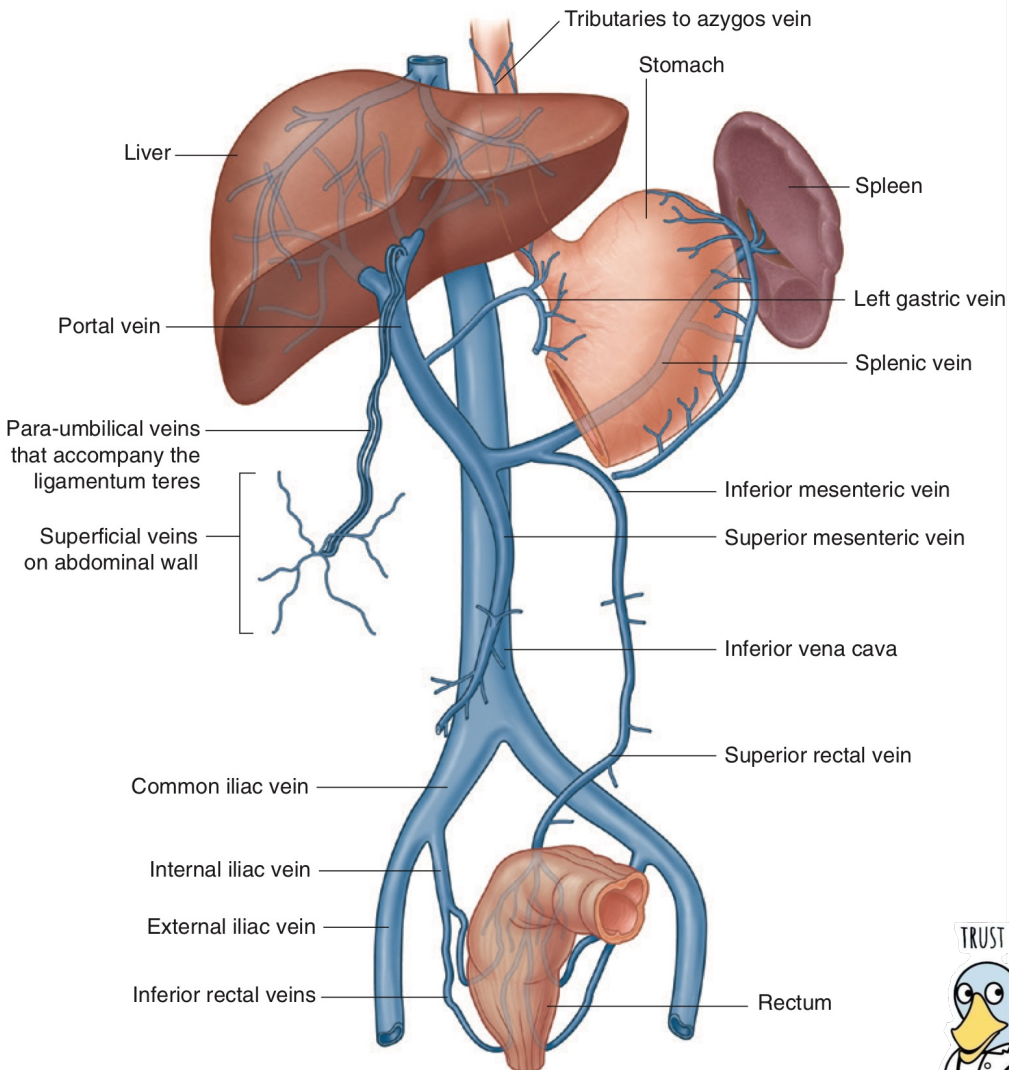
Portal vein ,

The superior mesenteric vein and its tributary .

The Inferior mesenteric vein and its tributary .

Splenic vein and its tributaries .

## Portal systemic anastomosis



*Done by Joud Al zubaidi*

