Warm-Up – Blood Vessels: ID Vein or Artery

For each scenario, you must:

1. Identify the vessel (**artery or vein**)
2. Provide **TWO pieces of evidence**
3. Explain the **physiology behind it**

Scenario A

A vessel has:

- Thick smooth muscle layer
- No valves
- Blood flow that pulses with each heartbeat
- High pressure

➢ What is it? Explain WHY each feature matters

Scenario B

A vessel:

- Collapses when cut open in a lab
- Contains valves
- Has slower, non-pulsatile flow
- Relies on surrounding skeletal muscle contraction

➢ Identify + explain the mechanism of blood movement.

Scenario C

A vessel carries **oxygenated blood**, but:

- Has relatively thin walls
- Low pressure
- Leads *toward* the heart

➢ Artery or vein?
➢ Why is this an exception to the “oxygen rule”?

Scenario D

A patient has damage to vessels that results in:

- Blood pooling in the lower limbs
- Increased swelling (edema)
- Backflow of blood

- Which vessel type is most likely compromised?
- What structure is failing?

Scenario E

Two vessels have the **same diameter**, but one:

- Maintains shape when empty
- Has a narrower lumen relative to wall thickness

The other:

- Appears flattened
- Has a larger lumen relative to wall thickness

- Identify each vessel
- Explain how structure relates to function and pressure

Finally:

“Predict what would happen if veins had the same wall thickness and pressure as arteries. What problems might arise?”

- Try and conjure up three to four complications from this: