To most learners Point of Care Ultrasound (POCUS) may seem like an enigma full of black and white static. This series aims to demystify US scans into simple infographics that learners can quickly refer to as a refresher.

**What is Ultrasound (US)?**
An imaging modality that uses high-frequency sound waves and their reflection to produce real-time images of various structures.

### Types of Probes
- **Curvilinear**
  - Low-frequency (3-6 MHz)
  - Used for imaging vasculature or guiding procedures like central line placement
  - Example: Excellent for visualizing the abdominal and pelvic compartment

- **Linear**
  - Higher frequency (5-12 MHz)
  - Used for visualizing cardiac structures

- **Phased Array**
  - Sends waves in concurrent phases
  - Excellent for imaging moving structures
  - Small footprint = easy to maneuver between ribs

### Knowledge
- **Depth**
  - Adjust how far you want to see
  - Increased Depth = Larger area but smaller size of object of interest

- **Gain**
  - Brighter image = due to amplification of the return echo

### Sonographic Appearances
- **Gray objects = Isoechoic**
  - Reflect some of the US waves
  - Examples: Liver, spleen, uterus, subcutaneous fat, muscle

- **White objects = Hyperechoic**
  - Reflect most of the US waves
  - Examples: Diaphragm, caliculi, surface, periosteum (spinal periosteum pictured here)

- **Black objects = Anechoic**
  - Don’t reflect any US waves
  - Examples: Fluids (like blood in the aorta pictured here)

**POCUS Pearls**
- Start with maximum depth to scan the largest possible area and then decrease it to center the object of interest.
- Gain setting often varies with personal preference and the scan. Find a gain where different tissues appear different shades of grey.

- **Increased Depth**
  - BART:
    - **Blue** = Away
    - **Red** = Toward

- **Decreased Gain**
  - Too low of a gain can give false positives for presence of fluids due to excessive darkening of the image.