



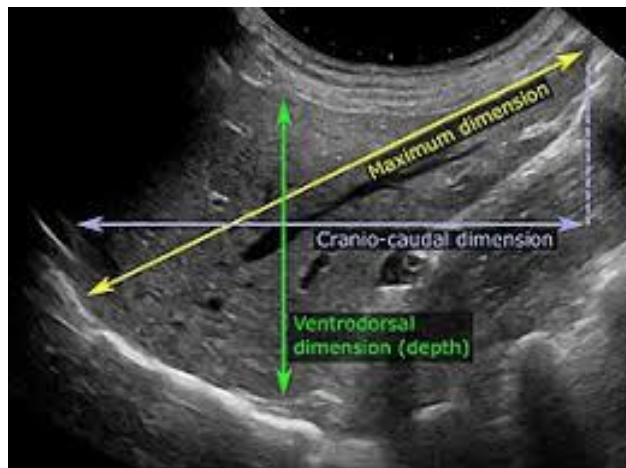
KARNATAKA RADIOLOGY EDUCATION PROGRAM

Normal measurements

Knowledge of 'Normal measurements and reference values in Radiology' is absolutely vital in diagnostic radiology practice. All radiology residents and practicing radiologists must be aware of the normal measurements during their daily reporting. Here, we have compiled a list of 'Normal measurements and reference values in Radiology' to assist radiologists all over the world :

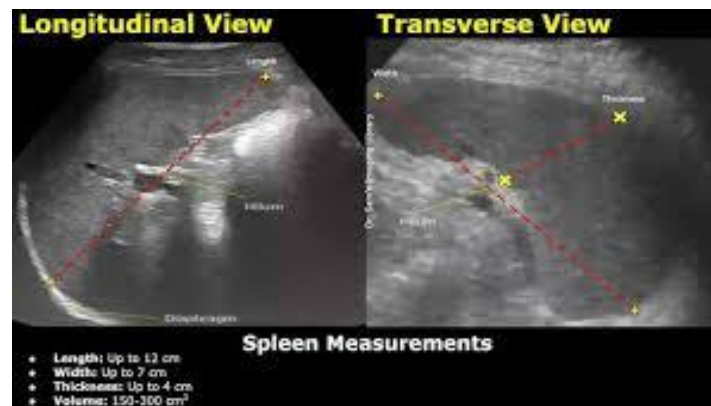
Some Routinely used measurements in Radiology

Liver :



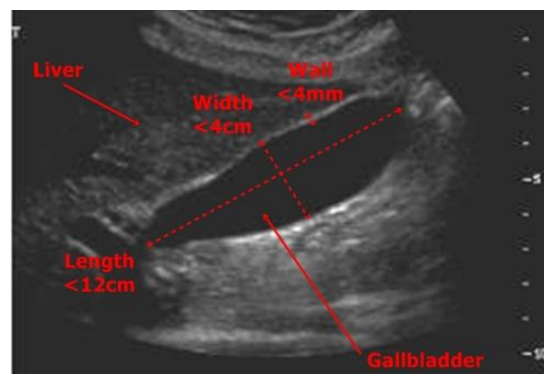
- Adults: 15.5 cm in craniocaudal axis
- Children: upto $(8 + \text{AGE}/4)$ is normal

Spleen :



- Adults: 12 cm
- Children: upto $(6 + \text{AGE}/3)$ is normal

Gall bladder :



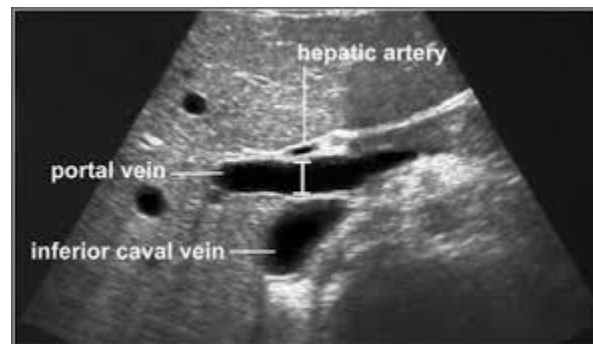
- Wall thickness upto 3 mm is normal, Length >9 cm is considered distended

Common Bile duct :



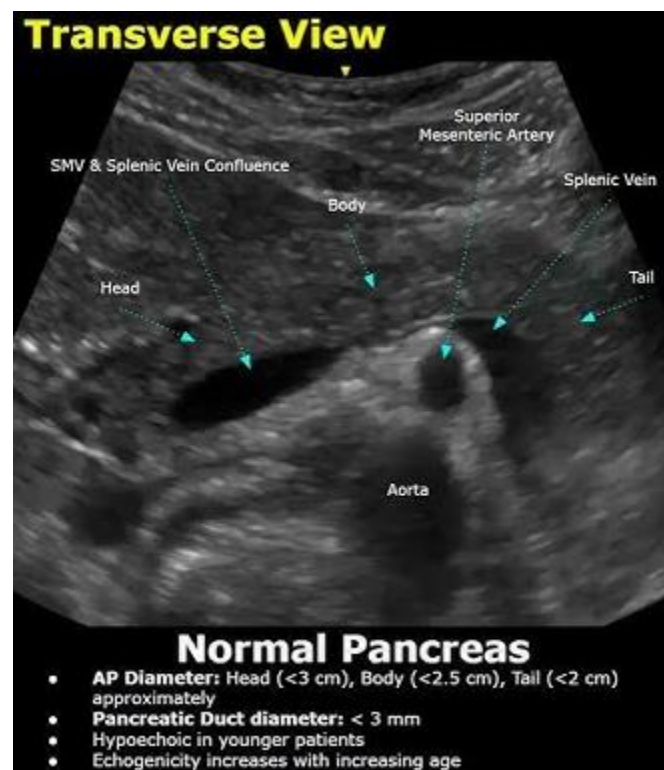
- Upto 7 mm till 60 years
- Add 1 mm for every 10 years after the age of 60
- Children: upto 4 mm
- Post-cholecystectomy: upto 10 mm is normal

Portal vein :



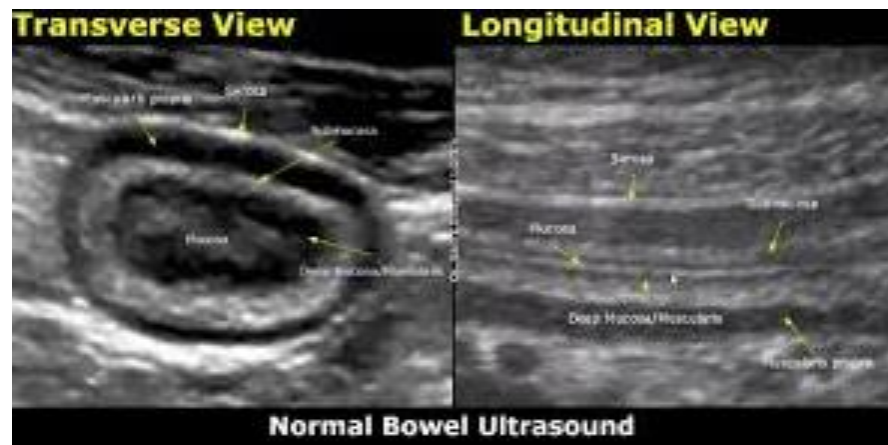
- 1.2cm in diameter

Pancreas :



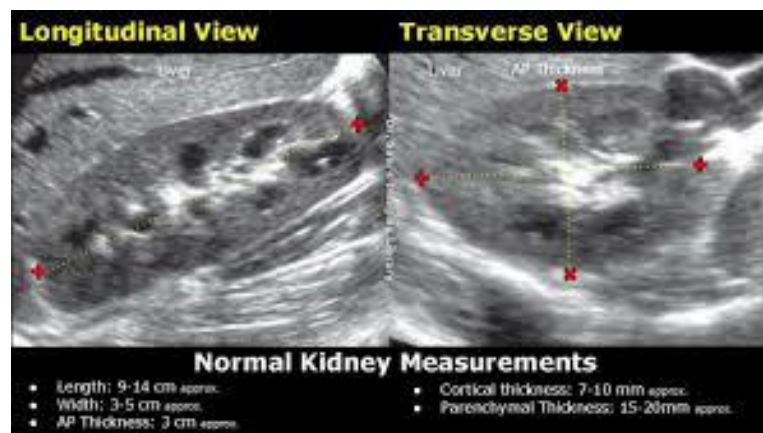
- Head: 23 ± 3 mm
- Body: 20 ± 3 mm
- Tail: 15 ± 2.5 mm
- Neck: 19 ± 2.5 mm
- Pancreatic duct: upto 3mm

Bowel :



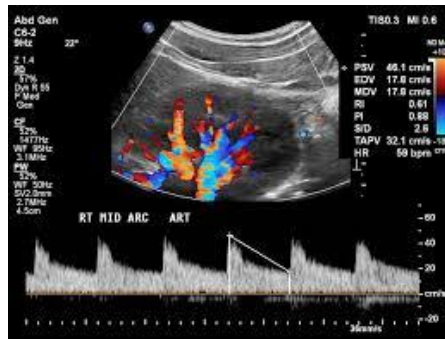
- Wall: upto 3 mm in thickness
- Air fluid levels: <3 is normal
- Large bowel: diameter upto 5 cm
- Small bowel: diameter upto 3 cm
- Appendix: diameter upto 6 mm

Kidneys :



- Length: 9-13.5 cm
- Width: 4-6 cm
- Left kidney is slightly larger than the Right kidney

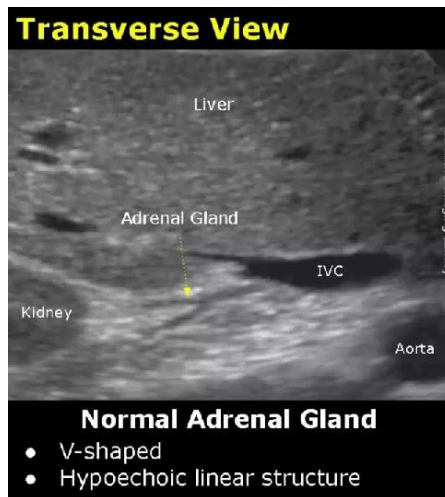
Renal artery doppler :



- **Resistive index: 0.60 – 0.70**
- **Acceleration index: >300cm/sec²**
- **Acceleration time (Main renal artery): upto 70 msec**
- **PSV (Main renal artery): 60 - 100 cm/sec**
- **RAR (Renal aortic ratio): >3.5 is abnormal**
-

Adrenal gland :

Adrenal gland dimensions in cm		
Gestational age (weeks)	Length (range)	Width (range)
25-30	1.2 (0.9-3.6)	0.3 (0.2-0.5)
31-35	1.4 (0.9-3.6)	0.3 (0.2-0.5)
36-40	1.7 (0.9-3.6)	0.3 (0.2-0.5)



- **Thickness: <10mm**
- **Length: 4-6cm**

Mesenteric lymph node :

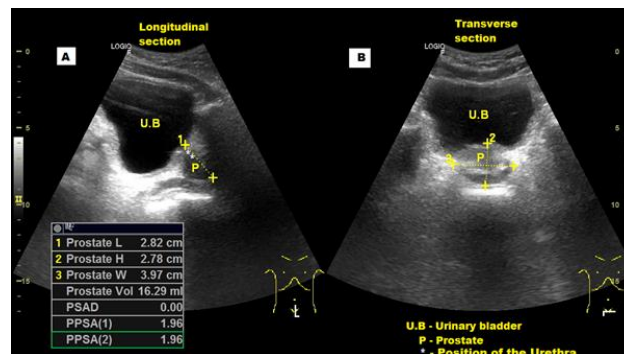
- <10mm in short axis diameter

Urinary bladder :



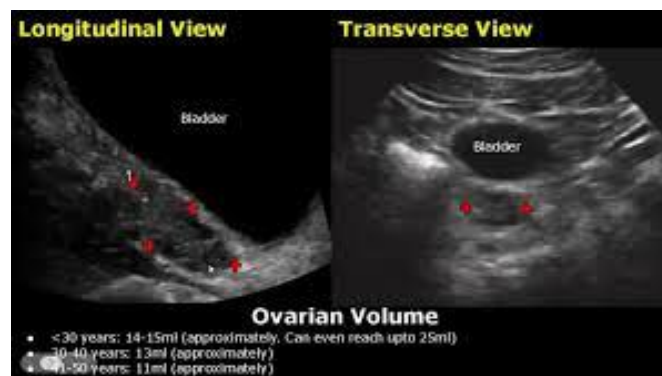
- Wall thickness: upto 3mm

Prostate :



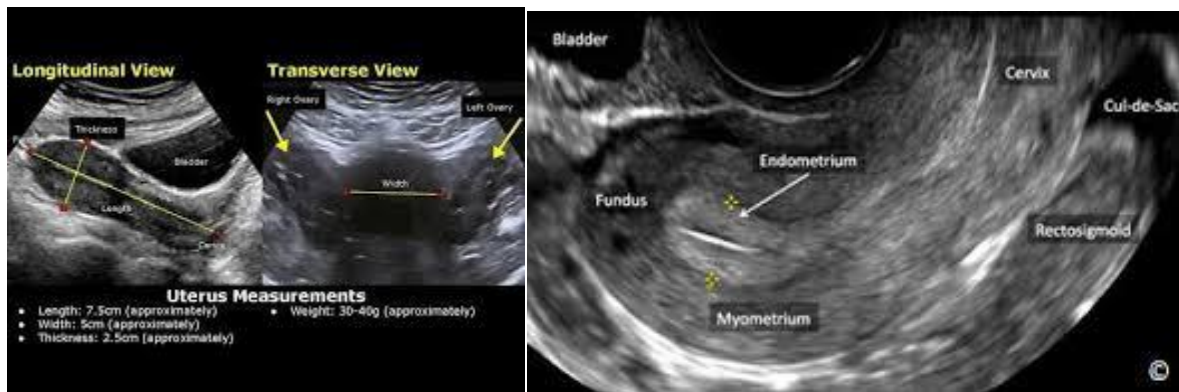
- upto 30cc/30gm

Ovarian volume :



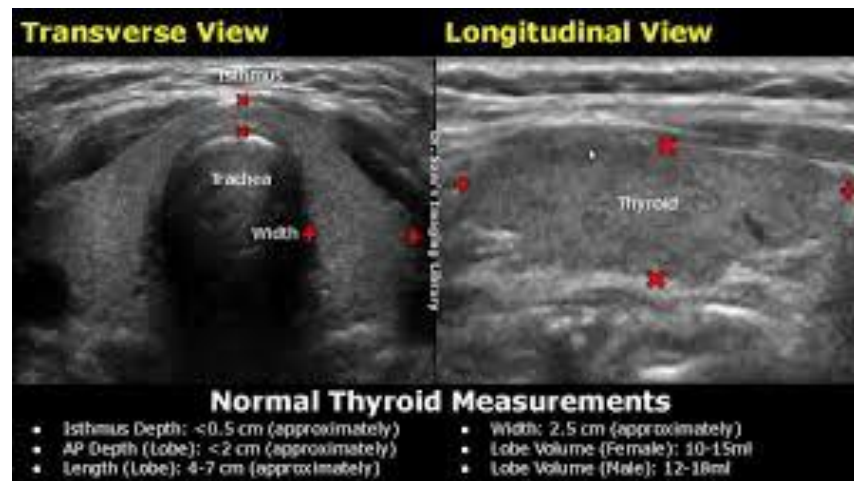
- Pre-menopausal: 20cc
- Post-menopausal: 10cc

Uterus :



- Length: 7.5-8.0 cm
- Cervix: diameter upto 3cm
- Endometrial thickness: (Pre-menopausal: upto 15mm) and (Post-menopausal: upto 5mm)

Thyroid :



- AP diameter: 20mm
- Isthmus: 6mm

Carotid doppler :

- ICA PSV: <125 cm/sec
- ICA EDV: <40 cm/sec
- ICA/CCA PSV ratio: <2.0

Skull basal angle : 125° - 143° (>143° = Platybasia)

Carpal angle : 130°

Bohler angle : 20° - 40°

Critical angle of Gissane : 120° - 145°

Scapholunate interval : upto 3mm

Scapholunate angle : 30° - 60°

Trachea :

- **Length: 10-12 cm**
- **Diameter: [Coronal: 13-25 mm (male), 10-21 mm (female)] and [Sagittal: 13-27 mm (male), 10-23mm (female)]**

Mediastinal lymph node : <10mm (short-axis diameter)

Cardiothoracic ratio : 0.5

Carinal Angle : 35° - 90°

Main pulmonary artery : 29 mm (should be less than aortic diameter at same level)

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<https://radiologyvibes.com/> <https://radiologyassistant.nl/pediatrics/normal-values/normal-values-ultrasound>