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**Machine Introduction**

**The concept of the ultrasound :**

There is a crystal inside the probe trans the sound wave as a pulse to the body and received the reflect pulse as a 2D image

The most important part in the probe is the crystal so if the probe full down the crystal will damage and the image will be not proper

**Type of probe in ultrasound :**

1. Carve- for abdomen + obstetric 2D
2. Liner - super facial structure
3. 3D / 4D – obstetric

TGC : time gain compensator (enhance the contrast)

Gina – 2D (enhance the contrast)

Depth

Freeze – stop the real image

Caliper – to take the measurement

Pointer

Color –to see if there is a blood flow (toward the probe = red , away from the probe =blue )

Doppler - Measure the speed of blood flow from the heart to the arteries and blood vessels.

Focus - to the area of interest

Trackball

**liver scan**

**Anatomy:**

The liver is the largest organ in the body divided into lobes:

1. Right lobe (biggest lobe).
2. Left lobe.
3. Caudate lobe.
4. Quadrate lobe.

**Vessels:**

1. hepatic veins.
2. hepatic arteries.
3. portal vein.

**Appearance:**

The lobes of the liver are mid grey.

The vessels are anechoic(black).

**Patient preparation:**

Better to be fasting before the examination to reduce gases.

**Probe:**

curved (2-5) MHz probe is used.

**Breathing technique:**

Deep held inspiration.

**View:**

@ the mid clavicle line

1. The liver with the kidney (compare the echogenicity) - The kidney more hypoechoic then the liver
2. The measurement of the liver (from the edge of the left lobe )-(adult: 13.5-17 cm )