



**Ministry of Higher Education and Scientific Research**

**Future university**

**College of Science**

**Department of Medical Physics**

**The five Lecture**

**Fetal Doppler**

**Stage Four - Practical Side**

**Medical Physics Laboratory**

**For morning and evening study**

**M.Maream.latef shandel**

**Doppler fetal monitor** :is a handheld device that uses ultrasound to monitor the heartbeat of a fetus.

**- Features of the Sonotech Xpress Fetal Doppler**

- It can be operated, simply, using a button, it is easy to use.
- The LCD screen displays the fetal heart rate.
- It has a freeze function that allows the user to monitor the values even after the device has been removed from the body.
- Clear sound, less noise.
- Light weight of 80 grams, and built-in batteries.
- It works on standard AAA batteries, and the continuous working time is up to 8 hours.

**-How to use the Sonotech Xpress at home**



- Do not use the device too early; In most cases, the device will not be able to hear the heartbeat until the beginning of the second trimester.
- Before using your Doppler monitor, keep in mind that some women report hearing their heartbeat easier in the morning when this is when the abdomen is less distended. Using a Doppler while the bladder is full can also make it easier to hear the heartbeat
- To start, lie down with your back on a flat surface, and then expose your abdomen as you would during a normal ultrasound.
- Use ultrasound gel on the skin to make it easier to hear the

heartbeat.

- Use the Sonotech Xpress for very limited periods, but if no heartbeat is detected within 1-2 minutes, don't keep trying.
- Avoid using the device as frequently as possible.
- When finished, clean the probe to avoid gel build-up. You can also clean it with 70% ethanol, and let it air dry or wipe it with a clean, dry cloth. But don't immerse the device in water, and don't use cleaning chemicals.

### **Normal fetal heart rate**

The normal rate of the fetal heartbeat varies according to the stages of pregnancy, as shown below:

-The normal fetal heart rate at the beginning of pregnancy  
The fetal heart begins to develop around the fifth week of pregnancy. At this time, the heart rate is slow, but by the sixth week, it averages 100 beats per minute.

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-The normal fetal heart rate in the ninth week of pregnancy  
In the ninth week of pregnancy, the fetal heart rate rises to 140-170 beats per minute.

- The normal rate of the fetal heartbeat, the 12th week of pregnancy  
The fetal heartbeat in the twelfth week of pregnancy ranges from 110 to 160 beats per minute.

-The normal fetal heart rate in the last ten weeks of pregnancy  
The average fetal heart rate in the last weeks of pregnancy remains between 110 and 160 beats per minute, and it may decrease slightly

-The fetal heartbeat is usually disturbed if the mother suffers from some health problems, most notably:

- 1- anxiety.
- 2- Blood sugar levels disorder.
- 3- Dryness of the body.
- 4- fever.
- 5- infection.
- 6- Anemia.
- 7- Thyroid problems.

Moreover, the fetal heart rhythm disorder may be caused by the

**mother's smoking, taking certain medications, or excessive consumption of caffeinated beverages.**