

## Ultrasound Information Sheet

### *What is an ultrasound?*

Ultrasound is a form of non-ionizing radiation that is used for diagnostic testing. These tests can be in the form of visual images or auditory sounds.

### *When are ultrasounds used?*

Ultrasounds are used to evaluate fetal heart tones and to assess fetal well being during pregnancy and in labor. There are a variety of different reasons why ultrasounds are used. It is not uncommon for a woman to have several ultrasounds during her pregnancy. Ultrasound can be used to obtain information or confirmation of, pregnancy, viability, multiple gestations, ectopic pregnancy, estimate of age of fetus, determine sex of fetus, help to locate fetal organs, determine presence or absence of physical anomalies, assess the position and condition of the placenta, and show fetal presentation and position.

Although ultrasounds can be very useful, it is by no means the only method in which to obtain much of this same information. Fetal palpitation, fundal height assessment and fetal heart auscultation can be just as effective in determining fetal well being.

### *Are there different types of ultrasounds?*

Yes, there are three commonly used types of ultrasounds during pregnancy. The different types of ultrasound devices are:

- a. *Doppler*: uses continuous transmission of sound waves to monitor fetal heartbeat.
- b. *Ultrasound scan*: uses high frequency sound waves that are sent intermittent through a transducer or probe, into a mother's uterus via the abdomen or her vagina. These waves are echoed back from various structures of the fetus, the placenta and the mother's internal organs and are reproduced as a picture on a video screen.
- c. *Electronic fetal monitor*: sends and receives intermittent sound waves to detect fetal heartbeat and uterine contractions. The device which looks like a disc or paddle is held in place by a belt around the mother's abdomen. The disc is attached to a monitor that displays and permanently records the fetal heart rate. An internal fetal monitor can also be used where instead of the device being strapped to the mother's abdomen, it is screwed into the top layers of skin on the fetus' head.

### *What are some of the advantages and disadvantages of each type of ultrasound?*

Ultrasound Device	Pros	Cons
Doppler	<ul style="list-style-type: none"><li>• Fetal heart beats can be easily heard</li><li>• Can be used in a water</li><li>• Can be used in many positions</li><li>• Relatively non-invasive</li><li>• Inexpensive</li></ul>	<ul style="list-style-type: none"><li>• Continuous exposure to sound waves</li></ul>

Ultrasound Device	Pros	Cons
Ultrasound Scan	<ul style="list-style-type: none"> <li>• Widely accepted in the medical community</li> <li>• Can see fetus, heartbeat, sex of baby, presence of physical anomalies</li> <li>• Can confirm results of troublesome tests</li> <li>• Aid in bonding</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• Can be impersonal</li> <li>• Accuracy varies depending on reader, quality of equipment and gestational age of fetus</li> <li>• Do not know the long term effects of ultrasound exposure</li> </ul>
Electronic Fetal Monitor	<ul style="list-style-type: none"> <li>• Widely accepted in the medical community</li> <li>• Enables assessment of how contractions effect fetal heart rate</li> <li>• Enables assessment of fetal well-being when complications arise</li> <li>• Allows for telemetry monitoring</li> <li>• Provides information on frequency of uterine contractions</li> <li>• Provides continuous printed record of fetal heart rate and contraction pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Only as accurate as the reader</li> <li>• Mother is unable to move</li> <li>• May be uncomfortable</li> <li>• May require readjustment when the mother or baby moves</li> <li>• Has not been associated with better outcomes than using less invasive monitoring techniques</li> <li>• Impersonal and may take the focus of care away from the mother and focus on the machine</li> <li>• Can be very distracting and mother may be more intent on focusing on machine than her own body</li> </ul>

### *How safe are ultrasounds?*

Ultrasounds have been used during pregnancy since the mid-1950s and are considered to be safe. Numerous small studies of the short and long-term hazards of ultrasound have found no evidence of harmful physical effects. Although the use of ultrasound have given caregivers and parents much valuable information, the long term health consequences from its use remains controversial. High frequency radiation has been shown to alter the DNA of cells. The eggs which a daughter has are produced while she is in her mother's womb. She will not produce any additional eggs once she is born. The use of ultrasound may alter the integrity of the genetic makeup of her eggs and have an impact on future generations.

### *What happens if I choose not to use ultrasound?*

By declining the use of the ultrasound devices your care giver will be required to use alternate methods in monitoring fetal well being. Fetal and uterine palpitation, fundal height assessment and fetal heart auscultation can be just as effective as ultrasound in determining fetal well being. Not only are can these methods be as accurate as ultrasound, they provide for greater personal care.

Although the less invasive methods may be as accurate, there are also limitations to their use. Some of these limitations include, not being able to hear fetal heart beat in water, baby can not be monitored continuously, and listening to fetal heart rate may not be possible in certain labor positions. Without being able to hear the baby's heart beat, fetal well being can not be assessed.