**MODERN ULTRASOUND TECHNIQUES**

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 Ultrasounds are used by doctors to see what is happening under the skin. Although ultrasounds can be used by doctors for many different uses, the most well-known and common use is in pregnancy. During pregnancy, ultrasound is used to measure fluids, measure the growth of the baby and check for possible developmental problems

Many people equate ultrasonography techniques with pregnancy. An ultrasound is often one of the first pictures that a woman may have of her unborn child. Although ultrasonography is often used in obstetrics, there are many other ultrasonography techniques that are used in modern medicine. Ultrasounds are used to diagnose, treat and cure a variety of ailments, injuries and illnesses.

Transvaginal Ultrasound

Very early in a pregnancy, your doctor may perform a transvaginal ultrasound, which involves inserting a special ultrasound probe into the vagina to see into the uterus. This type of ultrasound enables the provider to get a close view of the uterus. Transvaginal ultrasound is used so that your doctor can view all your reproductive organs, such as the uterus, ovaries, cervix and vagina. The transvaginal ultrasound is often used to determine the stage and health of a pregnancy.

A transvaginal ultrasound is also commonly used in women who have having reproductive problems. In some cases, saline solution will need to be injected into the uterus to help highlight any problem areas in the uterus such as a thickening of the lining of the uterus.

This technique is not painful but does include some pressure as the technician moves the probe around against the walls of the vagina. While there is pressure, most women will not experience true pain. A full bladder is often required during these procedures, which can add to the discomfort.

Standard Ultrasound

This is the most common type of ultrasound. This procedure is performed by placing a wand on the abdomen of the pregnant woman and moving it around to see the baby and surrounding fluids and tissues. The technician will place a water-based jelly over the stomach area to help conduct the ultrasound waves.

This test is performed at least once in most pregnancies to determine the growth of the fetus and help determine the due date. If there is a suspected problem in the pregnancy or the pregnancy is high risk, ultrasounds may be performed more often throughout the pregnancy.

A traditional ultrasound is not painful. Depending on the reason for the ultrasound and the placement of your uterus, you may be asked to drink two to three glasses of water beforehand. If you have a full bladder, there may be some mild discomfort as the ultrasound wand is passed over the lower abdomen.

Ultrasound for Nonpregnancy-Related Issues

Ultrasounds are not just used in pregnancies. In urology, the technology is used to measure blood flow through the kidneys, see kidney stones and detect prostate cancer. In cardiology, ultrasound is used to identify abnormal structures inside the heart or measure blood flow through the heart. The standard technique is usually used in these ultrasounds, but a three-dimensional ultrasound also exists. This uses the standard external wand, but when sound waves bounce off of bone, they provide a three-dimensional picture of what is going on inside the body. Three-dimensional ultrasounds also can be used in obstetrical ultrasounds.