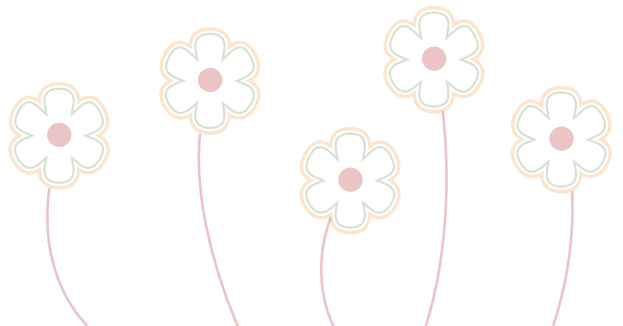
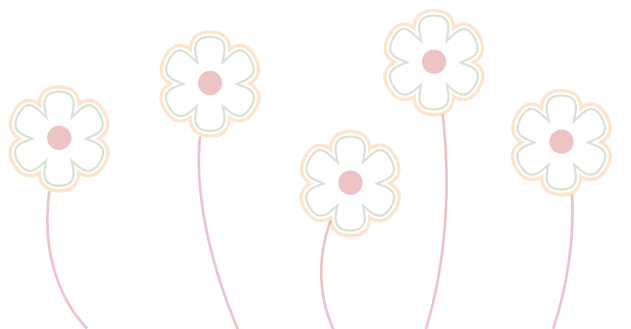


# Ultrasound - Window to the Womb

## Lesson 2.2





### Lesson Instructions

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At only seven weeks you can see the baby's fingers and toes.

**Suitable For:** All clients.

**Time Frame:** Ideal before the first ultrasound but worthwhile anytime during the pregnancy.

**Lesson Objective:** To prepare a client for her ultrasound, better allowing her understand the procedure and what she sees on the screen. To help her bond with her pre-born child during pregnancy.

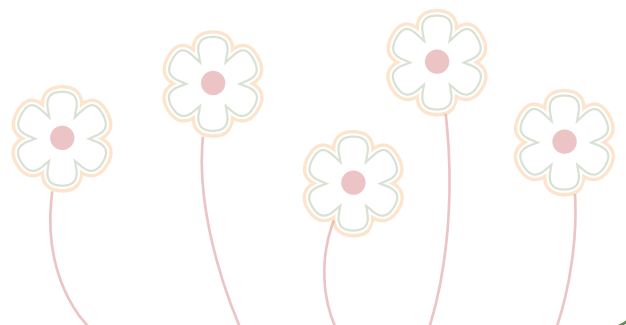
**Instructions:** Show the DVD *Eyewitness 2. Click on Eyewitness 2 - Class Room.* After the DVD, go over the DVD worksheet and the Discussion Sheets with the client. Have the "Touch of Life - First Trimester" and the "Touch of Life" fetal models displayed where the client can feel and hold them. Put the appropriate size model into the mother's hand when you are discussing the size.

**\* Questions to discuss with your client are bolded and italicized.**

**Homework:** Give client a copy of the discussion sheet and the homework sheet that goes with it.

**Supplies:** DVD: *Eyewitness 2*, "Touch of Life - First Trimester" and the "Touch of Life" fetal models. If you don't have Fetal Models any development pictures will work.

**Note:** You do not need to remove the master sheets from the protective plastic to copy. You can copy right through the plastic. Start with the last page first and move forward so your copies will come out in order.



### DVD Worksheet

#### Say Cheese!

Sometimes during ultrasounds you can see features of the baby perfectly - and even sometimes see them smile! What you get to see depends on the baby. If the baby is positioned just right, you can get some great pictures.



Ultrasounds are a great way to see your baby before it is even born.



1. "Real time" ultrasound was invented during the end of the 1970's. What does "real time" mean?
2. Sherry mentions "transvaginal ultrasound." What is the difference between this and regular ultrasound?
3. Why does this get better results than an abdominal ultrasound?
4. At 3 - 4 weeks from conception the embryo is the size of an \_\_\_\_\_.
5. \_\_\_\_\_ is when the baby moves for the first time.
6. At 8 weeks the term changes from embryo to \_\_\_\_\_, which literally means "young one."
7. Mothers feel movement in the \_\_\_\_\_.
8. In the second trimester the baby continues to grow to \_\_\_\_\_ of it's birth weight.
9. Why can't you hear when an unborn baby cries?
10. During the last 3 months the baby's weight will more than \_\_\_\_\_.
11. How many gallons of blood per day does a baby's heart pump in the third trimester? \_\_\_\_\_
12. Were you surprised by the detail an ultrasound shows of an unborn baby?
13. Have you had an ultrasound yet? If so, what impressed you the most? If not, when is yours scheduled?



### DVD Worksheet Key

#### Say Cheese!

Sometimes during ultrasounds you can see features of the baby perfectly - and even sometimes see them smile! What you get to see depends on the baby. If the baby is positioned just right, you can get some great pictures.



Ultrasounds are a great way to see your baby before it is even born.

1. "Real time" ultrasound was invented during the end of the 1970's. What does "real time" mean?

**"Real time" means that they can watch as the baby moves around.**

2. Sherry mentions "transvaginal ultrasound." What is the difference between this and regular ultrasound?

**Transvaginal ultrasound is when the sonographer uses a wand that she inserts into the vaginal canal.**

3. Why does this get better results than an abdominal ultrasound?

**Because it is higher powered and can get the wand very close to the uterus and get a clearer image of the baby at a very early age.**

4. At 3 - 4 weeks from conception the embryo is the size of an **apple seed**.

5. **7 weeks** is when the baby moves for the first time.

6. At 8 weeks the term changes from embryo to **fetus**, which literally means "young one."

7. Mothers feel movement in the **16th week**.

8. In the second trimester the baby continues to grow to **half** of its birth weight.

9. Why can't you hear when an unborn baby cries?

**Because it is surrounded with fluid which blocks out the sound.**

10. During the last 3 months the baby's weight will more than **triple**.

11. How many gallons of blood per day does a baby's heart pump in the third trimester? **300**

12. Were you surprised by the detail an ultrasound shows of an unborn baby?

**Answers will vary.**

13. Have you had an ultrasound yet? If so, what impressed you the most? If not, when is yours scheduled?

**Answers will vary.**



### Discussion Sheet, Page 1

#### New 3D Ultrasound

There are many locations now offering 3D ultrasounds of your baby, including locations in many malls. These are fun because you get to see your baby's face and features. But make sure you get a medical ultrasound that will be viewed by your doctor. While the 3D ultrasounds can be fun, they are not always used for the medical examinations that need to be done.



#### Your Doctor Has Requested an Ultrasound...

Although you may have heard about ultrasound before, you may have some questions. This information is provided by the American Institute of Ultrasound in Medicine, an organization of doctors, sonographers, and scientists, to answer questions and explain how ultrasound works.

#### What Is Ultrasound?

Ultrasound is like ordinary sound except it has a higher frequency (or pitch) than people can hear. It is energy in the form of sound waves produced by a small crystal. **The sound waves move at a frequency too high to be heard by the human ear.** Ultrasound is sent into the body from a scanning instrument (transducer) placed on the patient's skin. The sound waves bounce off tissues inside the body, like echoes. They are converted into sounds of the heartbeat of the fetus, or images of the internal organs and the fetus, which appear on a televisionlike screen. The moving pictures can be recorded on film or videotape. Diagnostic ultrasound is commonly called sonography or ultrasonography.

#### Why Do Patients Have an Ultrasound?

**The most common reason for having an ultrasound examination is to help your doctor determine when your baby is due and to make sure your baby is growing as it should. Some other reasons it is used is to determine: the placement of the placenta, fetal position, movement, breathing and heart rate, the amount of amniotic fluid in the uterus, and the number of fetuses. Ultrasound also may be used to detect some birth defects.**

#### How Is an Ultrasound Performed?

**There are two main methods of performing pelvic ultrasound: abdominal (transabdominal) and vaginal (transvaginal, endovaginal).** The same principles of high frequency sound previously described apply in each technique.

Abdominal or transabdominal ultrasound is performed by a sonographer or physician who places a small amount of gel on the skin to ensure good



### Discussion Sheet, Page 2

#### Should Someone Else Come?

In almost all ultrasound offices, you are welcome to bring a visitor to view your ultrasound with you. Your sonographer (the person giving the ultrasound) will normally have you get ready and get the machine up and running before inviting your visitor in. Make sure to let your sonographer know what you want - this is a time for you and your baby.

transducer (scanner) contact. **The gel makes it possible for the transducer (scanner) to see through your skin into your body.** The gel may feel cold and, even though it wipes off easily and generally does not stain clothing, it is a good idea to wear clothes that can be washed. The transducer (scanner) slides over the skin, sending and receiving ultrasonic pulses, which then convert into images on a television screen.

Vaginal (transvaginal, endovaginal) sonography involves the insertion of a transducer (scanner) into the vagina. The tip of the transducer (scanner) may be circular or oblong, but it is usually smaller than the standard speculum used when obtaining a routine Pap smear. A protective cover is placed over the transducer (scanner), which is then lubricated with a small amount of gel. Then it is inserted into the vagina either by the physician or sonographer, or you may be asked to insert it as you would a tampon.

#### Are There Any Special Preparations?

In most cases, no special preparation is needed for the examination. **In some cases, you may be asked to drink some water an hour before the examination.**

Abdominal scanning is usually done with the patient lying flat on an examination table. Garments are elevated or pulled down to expose the lower abdomen to the pubic bone. Abdominal scanning may require a full bladder, which provides a "window" through which the pelvic organs may be seen. Therefore you may be asked to drink a large quantity of water and/or refrain from urinating just prior to the examination.

Preparations for vaginal scanning are similar to those for a routine manual pelvic examination. You must disrobe from the waist down. You will need to assume a position similar to the one used for a Pap smear. Either your legs are placed in stirrups or your buttocks elevated by a thick cushion. Your bladder should be nearly or completely empty.

#### Will I Have an Abdominal or Vaginal Ultrasound Exam (or Both)?

This depends on the reason the exam has been requested. In some instances, it may only be necessary to perform a pelvic sonogram transabdominally (possibly with a full bladder). In other cases, a transvaginal exam alone will



### Discussion Sheet, Page 3

#### Oh, Gooney!

While getting an ultrasound is pretty easy, transabdominal ultrasounds come with the added bonus of getting slimed. The gel helps the sonographer get a better picture - but it sure is cold!



Isn't it amazing that your baby is so developed already?

be adequate. In some cases, both types of scans will be necessary.

The decision as to which types of scans are necessary will be made by the examiner. Therefore it makes good sense to arrive for the ultrasound exam with your bladder relatively full.



#### Is One Type of Ultrasound Exam Preferable?

Each type has its advantages. **The transabdominal approach offers a panoramic view of the entire pelvis.** This shows where one internal structure is in relation to another. **Improved visualization may be achieved using the vaginal approach,** since the transducer (scanner) is brought closer to the area being examined. This is very helpful in seeing the fetal heartbeat in an early pregnancy, evaluating the uterus, or measuring a cyst in an ovary. The physician or sonographer performing your sonogram will make the decision whether one or a combination of approaches is best for your particular case.

#### Who Will Perform the Examination?

In most cases you will be examined by a specially trained person called a sonographer. The pictures will then be reviewed and read by a doctor. In some cases, you may also be examined by the doctor.

#### How Long Will the Examination Take?

The length of time will vary depending on how easily the necessary information is obtained.

#### Will It Hurt?

There is no pain from an abdominal ultrasound examination. If you have been asked to fill your bladder, this may cause some discomfort. You should also wear clothing that will allow you to expose your abdomen easily, such as a top and a skirt or pants. Some hospitals may even ask you to wear a hospital gown. In early pregnancy it may be necessary to put a special transducer (scanner) in your vagina, so the very small baby can be seen. You will be able to empty your bladder before this type of exam is done. It will not hurt, but you may feel some pressure. It does not hurt the baby.

Although the vaginal examination is often performed to look for a cause of pelvic pain, the sonogram itself should not be painful or significantly increase your discomfort. A vaginal sonogram in most cases is more comfortable than a manual examination.

If you have been experiencing vaginal bleeding, whether you are pregnant



### Discussion Sheet, Page 4

#### Knowing the Sex

Make sure to let your sonographer know whether or not you want to know the sex of the baby. Many people like it to be a surprise - so if you do, make sure your sonographer doesn't ruin it by accident.



This baby is only eight weeks old. You can see his eye and ear just starting to form.



or not, a careful vaginal sonogram will not be harmful and may be helpful in determining the cause of the bleeding.

#### Can I See My Baby Move?

The baby's heartbeat and movement of its body, arms, and legs can be seen by ultrasound, depending on the age of the baby. During an ultrasound examination, the baby can be seen moving many weeks before the mother can feel movement.

#### Will I Learn the Sex of My Baby?

If the baby is lying in a convenient position, sometimes it is possible to see the sex of the baby. If not, the baby's sex cannot be determined.

#### Does an Ultrasound Examination Guarantee a Normal Baby?

**No. The ability to detect abnormalities depends on many things. For instance, the size and position of your baby may not allow certain abnormalities to be seen. Some types of abnormalities cannot be seen because they are too small or not visible by ultrasound.**

#### Will I Need More Than One Ultrasound Examination?

In many cases you may have only one examination, but for a variety of reasons your physician may order additional scans during your pregnancy.

#### Is Ultrasound Safe?

The American Institute of Ultrasound in Medicine, an association of physicians, sonographers, scientists, and engineers, has a Bioeffects Committee that meets regularly to consider safety issues and evaluate reports dealing with the bioeffects and safety of ultrasound. They have adopted the following statement:

**"There are no known harmful effects associated with the medical use of sonography.** Widespread clinical use of diagnostic ultrasound for many years has not revealed any harmful effects. Studies in humans have revealed no direct link between the use of diagnostic ultrasound and any adverse outcome. Although the possibility exists that biological effects may be identified in the future, current information indicates that the benefits to patients far outweigh the risks, if any."

### Homework (Refer to Discussion Sheet)

#### Short and Sweet

The ultrasound should only take about twenty to thirty minutes. It is not very complex and you can look forward to your ultrasound as a chance to see your baby.



Ultrasounds can show great detail. Your sonographer will try to get the best possible picture.

1. What type of waves does ultrasound use?
2. Can you hear them?
3. What are some of the reasons your doctor orders an ultrasound in pregnancy?
4. What are the two ways to perform a pelvic sonogram?
5. What is the purpose of the gel?
6. What is the one thing you may be asked to do before an ultrasound?
7. What are the benefits of a transabdominal sonogram?
8. What are the benefits of a vaginal sonogram?
9. True or False: An ultrasound examination can always find abnormalities in the unborn baby.
10. Is ultrasound safe?



### Homework Key

#### Short and Sweet

The ultrasound should only take about twenty to thirty minutes. It is not very complex and you can look forward to your ultrasound as a chance to see your baby.



Ultrasounds can show great detail. Your sonographer will try to get the best possible picture.

1. What type of waves does ultrasound use?

**Sound waves**

2. Can you hear them?

**No**

3. What are some of the reasons your doctor orders an ultrasound in pregnancy?

**To determine the baby's due date, growth of the baby, the placement of the placenta, fetal position, movement, breathing and heart rate, the amount of amniotic fluid in the uterus, and the number of fetuses.**

4. What are the two ways to perform a pelvic sonogram?

**Abdominal (transabdominal) and vaginal (transvaginal, endovaginal)**

5. What is the purpose of the gel?

**It makes it possible for the scanner to see through your skin into your body.**

6. What is the one thing you may be asked to do before an ultrasound?

**Drink water an hour before the examination.**

7. What are the benefits of a transabdominal sonogram?

**It offers a panoramic view of the entire pelvis and shows where one internal structure is in relation to another.**

8. What are the benefits of a vaginal sonogram?

**It offers improved visualization and is helpful in finding a fetal heart-beat in an early pregnancy.**

9. True or False: An ultrasound examination can always find abnormalities in the unborn baby.

**False**

10. Is ultrasound safe?

**There are no known harmful effects associated with the medical use of sonography.**



