DEPARTMENT OF HEALTH

If You Are Pregnant: Information on Fetal Development, Abortion and Resources

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If You Are Pregnant: Information on Fetal Development, Abortion and Resources

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Women's Right to Know (https://www.health.state.mn.us/people/wrtk/index.html)

Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.

Contents

Introduction

The information provided in this booklet is designed to provide basic, medically accurate information on fetal development in two-week intervals from fertilization to birth. It will include such details as average weight and length, organ development and movement for that age.

This booklet also includes information on the methods of abortion, the medical risks associated with abortion, emotions related unintended pregnancy, and the medical risks associated with pregnancy and childbirth.

If You Are Pregnant: Information on Fetal Development, Abortion and Resources presents current, medically reliable information. However, each pregnant person and fetus are unique. A pregnant person may find it helpful to talk with a trusted family member, friend, counselor, or medical provider about all options available to them including abortion, parenting, and adoption.

A directory of services to support pregnant and parenting people is also available. By calling or visiting the agencies and offices in the directory you can find out about alternatives to abortion, obtain assistance in making an adoption plan for your baby; and locate public and private agencies that offer medical and financial help during pregnancy, childbirth and while a child is dependent. This directory does not include referrals to abortion care. The directory is available online: If You Are Pregnant: A Directory of Services Available in Minnesota (www.health.state.mn.us/docs/people/wrtk/directoryenglish.pdf)

This document was developed by the Minnesota Department of Health as required by the 2003 Woman's Right to Know Act provision codified at Minnesota Statutes section 145.4243.

Fetal Development

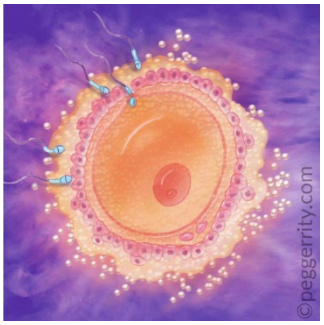
Fertilization occurs when an egg from the female unites with the sperm from the male, forming a single cell. This cell begins to divide into more and more cells. Within a few days, there are 32 to 64 cells, and this cluster of cells is called a blastocyst. By the eighth day after fertilization, the blastocyst has begun to attach to (implant itself into) the wall of the uterus where it will continue to grow at a rapid rate.

The term embryo refers to a developing human from implantation until the eighth week of pregnancy. After eight weeks, it is referred to as a fetus. Age of the fetus in this handbook are listed from both the first day of the last menstrual period (LMP) and estimated day of fertilization. The "due date" is estimated as 40 weeks from the first day of the LMP. The length of the pregnancy in weeks is called the gestational age.

A pregnant person may notice their first missed menstrual period at the end of the second week after fertilization, or about four weeks after the first day of their last normal period. Pregnancy tests are available in most pharmacies and are generally accurate to detect pregnancy 2 to 3 weeks after fertilization, but a pregnancy test cannot tell the gestational age of the pregnancy. An early (first trimester) ultrasound is the most accurate way to determine if a pregnancy is implanted in the uterus and its gestational age. At this time, the length of the fetus is used to determine the number of weeks in the pregnancy, or gestational age.

First Trimester

Two weeks from Last Menstrual Period (LMP)

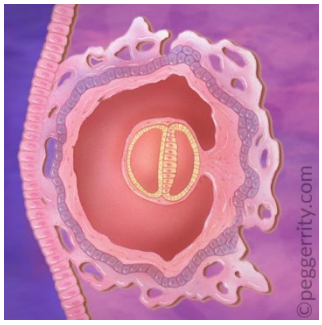


Fertilization

Fertilization occurs when the egg from the female unites with the sperm from the male, forming a single cell. At this moment, an individual's unique genetic material is created.

4 Weeks from LMP

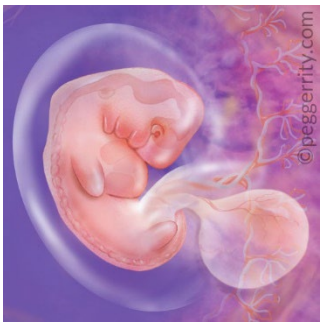
2 weeks since fertilization



- The cells rapidly divide as they travel down the Fallopian tube, which connect the ovaries to the uterus.
- The group of cells is called an embryo.
- By day 7, the ball of cells, called a blastocyst, begins implanting into the uterus.
- In the third week after fertilization, a groove forms along most of the length of the embryo's back.
- The upper edges of the groove will fold over onto themselves and begin to create a hollow tube.
- The embryo is about 1/10 of an inch long at this time.

6 Weeks from LMP

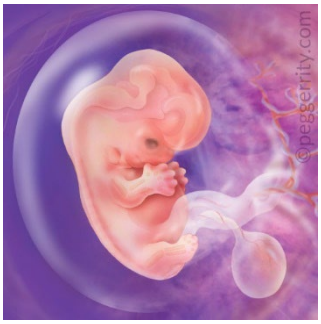
4 weeks after fertilization



- The embryo is about 1/6 to 1/4 inch long.
- Structures that will become arms and legs, called limb buds, begin to appear.
- On day 22 or 23, the heart begins to form, and by the end of week 4, the heart is circulating primitive blood cells throughout the embryo.
- By the end of week 4, the edges of the groove have zipped together, forming a hollow tube. This is the neural tube, the beginnings of the brain and spinal cord.

8 Weeks from LMP

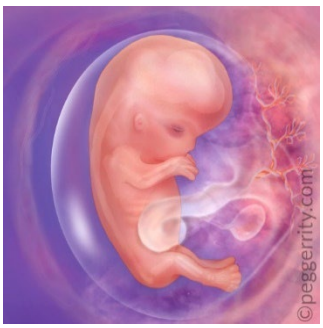
6 weeks after fertilization



- The embryo is about 1/2 to 3/4 inches.
- All vital organs are mapped out and have begun to form.
- The heart has begun to develop valves and compartments.
- Tissue that develops into vertebrae forms, the brain develops into five areas and nerve cells are forming in the brain and spinal cord.
- The embryo shows spontaneous movements.
- Facial features - eyes, nose, and mouth - continue to develop.

10 Weeks from LMP

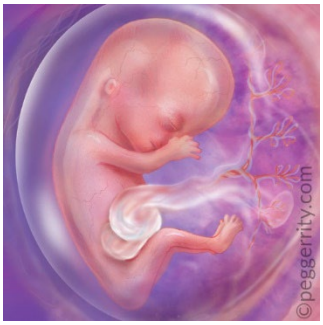
8 weeks after fertilization



- After 8 weeks, the embryo is now called a fetus.
- The fetus is about 1-1/4 to 1-1/2 inches long from head to rump (with the head making up about half this size) and weighs less than 1/2 ounce.
- All major organs and bodily systems are present, although few of them are functional.
- Muscles and skeleton are developing. Purposeful movements start to occur, but these movements are not consistently coordinated until later in development.
- Structures that form eyes, ears, arms, and legs have begun to form.
- Toes and eyelids begin to form.

12 Weeks from LMP

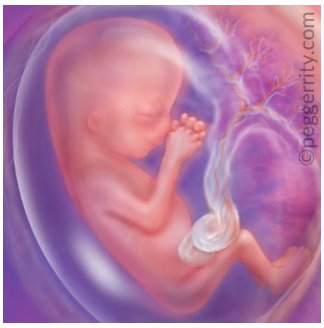
10 weeks after fertilization



- The fetus is about 2-1/2 inches from head to rump, weighing about 1-1/2 ounces.
- Fingernails and hair begin to develop, and blood is formed in the liver.
- The fetus has distinct human characteristics.
- Urine begins to be made by the kidneys.

14 Weeks from LMP

12 weeks after fertilization

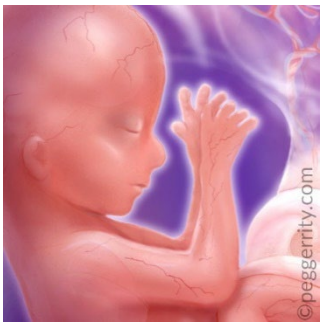


- The fetus is about 3-1/2 inches from head to rump and weighs about 2 ounces.
- Breathing movements may be present.
- External genitals have been developing so that the sex can be identified.
- Bones are hardening in many locations.
- The nervous system is developing.
- Taste buds cover the inside of the mouth.

Second Trimester

16 Weeks from LMP

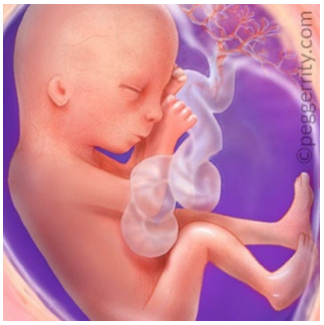
14 weeks after fertilization



- The fetus is about 4-3/4 to 5 inches from head to rump and weighs 4 ounces.
- The head is upright and the arms and legs are developed.
- The fetus can suck the thumb.
- Limb movements become more coordinated but are too small to be felt.
- Ultrasound can routinely detect fetal sex.

18 Weeks from LMP

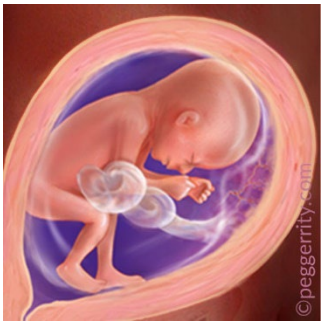
16 weeks after fertilization



- The fetus is about 5 to 5-1/2 inches from head to rump and weighs 7 to 8 ounces.
- The skin is pink and transparent and the ears are clearly visible.
- The fetus can now suck, open the mouth, and cover the face with the hands. Hair and nails begin to grow.
- The fetus can bend and flex the extremities, fingers, wrists, legs and toes and make breathing movements.
- The brain has been rapidly growing and the central nervous system extends its connections from the brain to most parts of the body.

20 Weeks after LMP

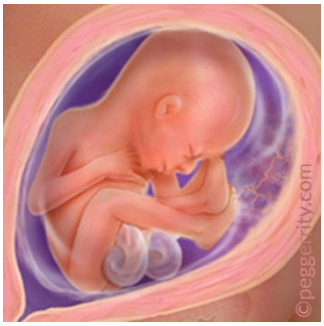
18 weeks after fertilization



- The fetus is about 6-1/4 inches from head to rump, weighing about 10 to 12 ounces.
- All organs and structures have been formed, and a period of growth and maturing begins.
- The skin is covered with vernix - a greasy material that protects the skin.
- By this time, some pregnant people may feel the fetus moving.
- Fingerprints are permanently established.
- Fine, downy hair covers the fetus.

22 Weeks after LMP

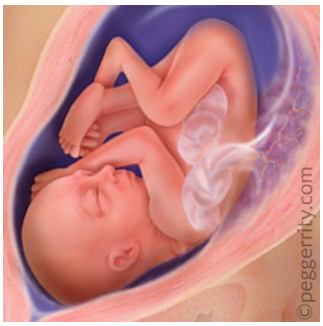
20 weeks after fertilization



- The fetus is about 7-1/2 inches from head to rump, weighing about one pound (16 ounces).
- Eyes are fully formed and eyebrows and eyelids are present.
- Head and body are covered with hair.
- Myelin insulation of the spinal cord, which increases the speed that nerves transmit impulses to the brain, is progressing.
- Pain receptors are present throughout the body and all physical structures necessary to feel pain are present. However, the fetal brain is not thought to have the capacity to experience pain until at least 24 weeks gestation.
- There is almost no chance that a fetus could survive outside the pregnant person's body.

24 Weeks after LMP

22 weeks after fertilization

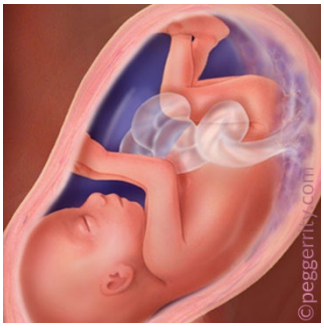


- The fetus is about 8 inches from head to rump and weighs about 1-1/4 pounds.
- Rapid eye movement begins, an activity associated with dreaming.
- The fetus is capable of hiccupping and grasping.
- Pain receptors are present throughout the body in a fetus, and all physical structures necessary to feel pain are present.
- Survival is possible in more than half of infants born at this age. Many of these infants have significant problems with breathing, brain development, and intestinal function which can lead to lifelong disability or death.

Third Trimester

26 Weeks from LMP

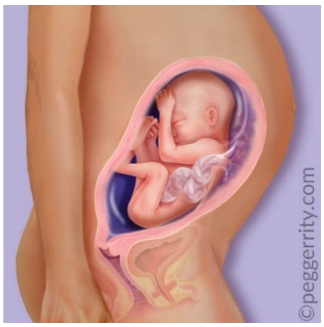
24 weeks after fertilization



- The fetus is about 9 inches from head to rump and weighs about 2 pounds.
- Substantial weight gain occurs in this period and the fetus is better proportioned.
- The fetus hears sounds such as the pregnant person's breathing, heartbeat, and voice.
- Lungs produce a substance necessary for breathing after birth.
- Pain receptors are present throughout the body and all physical structures necessary to feel pain are present.
- Infants born between 24 weeks and term have a good chance of survival with intensive medical care. These infants are expected to have a very prolonged hospital stay and still are at risk for lifelong medical complications.

28 Weeks from LMP

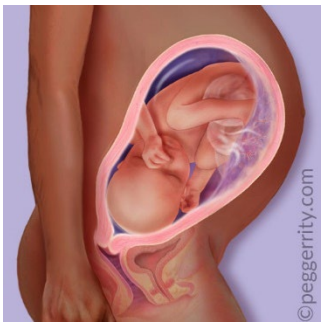
26 weeks after fertilization



- The fetus is about 10 inches from head to rump and weighs about 2-1/2 pounds.
- The eye lids are now partially open.
- Most of the sense organs are now mature.
- Most of the infants born now will survive with intensive medical care, a long hospital stay, and the possibility of long term complications.

30 Weeks from LMP

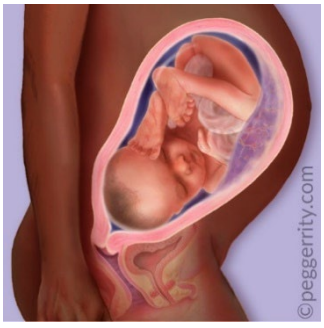
28 **weeks after fertilization**



- The fetus is about 10-1/2 inches from head to rump and weighs almost 3 pounds.
- The fetus has lungs that are capable of breathing air, although intensive care may be needed.
- Rhythmic breathing and body temperature are now controlled by the brain (or central nervous system).
- It is generally agreed that the fetus perceives pain from 29 or 30 weeks.
- Nearly all infants born now will survive with intensive medical care.

32 Weeks from LMP

30 weeks after the first day of the last normal menstrual period.



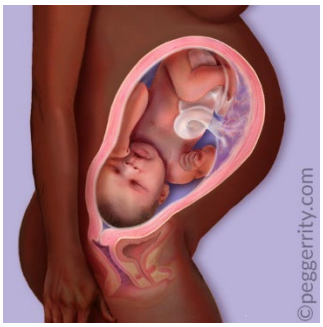
- The fetus is about 11 inches from head to rump and weighs more than 3 pounds.
- Skin is thicker.
- Eyes respond to light.
- From this stage on, fetal development centers mostly around growth and maturation of developed organs.
- Almost all infants born now will survive with intensive medical care.

34 Weeks from LMP

32 weeks after fertilization

- The fetus is about 11-3/4 to 12 inches from head to rump and weighs about 4-1/2 pounds.
- The skin is now smooth.
- Fingernails have reached fingertips.
- Almost all infants born now will survive, and some will need intensive medical care.

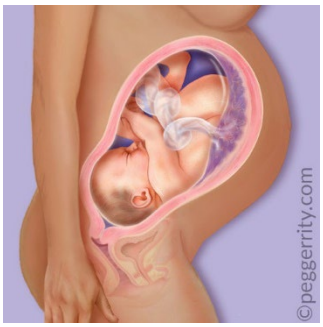
36 Weeks from LMP



34 weeks after fertilization

- The fetus is about 12-1/2 inches from head to rump and weighs about 5-1/2 pounds.
- Infants born at this gestational age survive outside the womb but may need some medical help at first.

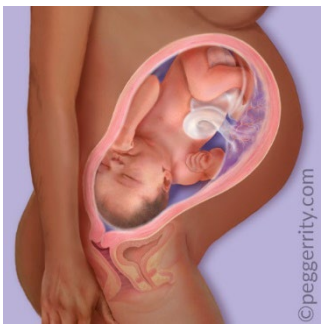
38 Weeks from LMP



36 weeks after fertilization

- The fetus is about 13-1/2 inches from head to rump and weighs about 6-1/2 pounds.
- Toenails have reached tips of toes.
- The fetus can grasp firmly.
- Fetus turns toward light sources.
- Infants born at this age are considered full term.

40 Weeks from LMP



38 weeks after fertilization

- The fetus is about 14 inches from head to rump, may be more than 20 inches overall and may weigh from 6-1/2 to 10 pounds.
- The fetus can now hear, taste, smell and feel.
- This is the due date.

Abortion Methods and Their Associated Medical Risks

If a person chooses to have an abortion, the medical provider must first determine how far the pregnancy has progressed. The gestational age of the embryo or fetus will directly affect the appropriateness or method of abortion. Types of abortion include medication abortion, vacuum aspiration abortion, dilatation and evacuation, and labor induction.

Method of abortion is selected based on a combination of factors including gestational age, patient preference, availability and skill of providers, and medical contraindications. If the date of the beginning of the last normal period is uncertain, patients may be advised to have an ultrasound exam to determine the gestational age of the embryo or fetus.

Abortion Risks

Abortions are very low-risk medical procedures, and there is a very low risk of serious complications or of potential side effects. Complications requiring hospitalization are rare but can occur. The safest time for a person to have an abortion is at or prior to eight weeks after the first day of their last menstrual period. More than 80% of abortions in Minnesota occur within the first 10 weeks of gestation. The overall risk of complications increases with advancing gestational age.

Possible complications include infection, missed or incomplete abortion, cervical tear, uterine perforation, and hemorrhage (heavy bleeding) require transfusion. Minor complications are estimated to occur in fewer than 2.5% of abortions and serious complications (those requiring hospitalization) in fewer than 0.5%.

The risks or possible complications associated with an abortion are listed under each abortion procedure. Of note, the risks of continuing pregnancy are 14 times greater than the risks related to any type of abortion procedure.

Methods Used Prior to Fourteen Weeks

Early Medication (Non-Surgical) Abortion

Early medication abortion (non-surgical and sometimes called medical abortion) is an abortion method approved by the FDA for pregnancies up to 70 days after the last menstrual period. The medications used are mifepristone and misoprostol, and more than 50% of abortions in Minnesota are medication abortions, making it the most common type of abortion. Medication abortions have a low risk of complications and are between 91.9% to 98.1% effective in terminating a pregnancy, depending on the gestational age and way you take the medication.

- Mifepristone is a medication given to stop the hormones needed for the pregnancy to grow. This medication also causes the lining of the uterus to be more likely to shed.
- A second medication, misoprostol, is given by mouth or placed in the vagina causing the uterus to contract and push out the pregnancy. An appropriate location should be selected for taking these medications, because they may cause bleeding, cramps, nausea, diarrhea, and other symptoms that usually begin within 2 to 24 hours.

- 7 to 14 days after taking the medications, the patient may be asked to return to the medical provider to make sure that the drugs succeeded in ending the pregnancy.
- If the pregnancy is not ended by the combination of medications, a surgical abortion may be required.

Who should not have a medication abortion?

According to the FDA, people should not use the drugs in a medication (non-surgical) abortion who:

- Are using an IUD (intrauterine device); it must be taken out before a medical abortion.
- Have a pregnancy outside the uterus (ectopic pregnancy).
- Have problems with their adrenal glands (chronic adrenal failure).
- Take medication to thin their blood to reduce the risk of blood clots.
- Have a bleeding problem.
- Have porphyria.
- Take certain steroid medicines.
- Have allergies to either of the medications used in the abortion method.
- Ask your healthcare provider if you are not sure about all your medical conditions before taking these medications.

Possible Complications or Adverse Events

Cramping and vaginal bleeding are expected with this abortion. The risk of needing medical attention for any complication within 24 hours of the procedure is 0.2% of all medication abortions.

Rarely, serious, and potentially life-threatening complications occur:

- Heavy bleeding (hemorrhage) (occurs in less than 1% of medication abortions).
- Infections (occurs in less than 1% of medication abortions).
- Incomplete abortion (occurs in less than 1% of medication abortions).

The most common side effects (usually occurring after misoprostol) are:

- Nausea and/or vomiting (occurs in 23-66% of medication abortions).
- Diarrhea (occurs in 23-45% of medication abortions).
- Fever/chills (occurs in 32-69% of medication abortions).
- Dizziness (occurs in 28-39% of medication abortions).
- Headache (occurs in 13-40% of medication abortions).

Vacuum Aspiration Abortion

Vacuum aspiration is the second most common method of induced abortion in Minnesota, and it can also be called dilation and curettage (D&C). Surgical abortions are 99.8% effective in terminating a pregnancy at 9 weeks or less.

- A numbing medication may be used on the cervix to reduce discomfort or pain.
- The opening of the cervix is gradually opened.
- A thin tube is inserted through the cervix into the uterus.
- A suction system is used to gently remove the pregnancy from the uterus.
- A follow-up appointment is recommended to be made with the medical provider up to two weeks after.

Possible Complications or Adverse Events

Cramping and vaginal bleeding are an expected part of this abortion. Minor complications following vacuum aspiration abortions are estimated to occur in fewer than 2.5% of abortions and serious complications, those which require hospitalization, in fewer than 0.5% of abortions. Although rare, vacuum aspiration abortions are associated with premature birth in a future pregnancy.

Rarely, serious, and potentially life-threatening complications occur:

- Incomplete abortion (occurs in less than 3% of vacuum aspiration abortions).
- Infection (occurs in less than 1% of vacuum aspiration abortions).
- Heavy bleeding (hemorrhage) (occurs in less than 1% of vacuum aspiration abortions).
- Torn cervix (occurs in less than 0.1% of vacuum aspiration abortions).
- Perforated uterus (occurs in less than 0.1% of vacuum aspiration abortions).

Methods Used After Fourteen Weeks

Dilatation and Evacuation (D&E)

Abortions occurring in the second trimester, between 13-26 weeks gestation, can be completed by a surgical technique called dilation and evacuation (D&E), which represents about 6% of all abortions in the state.

- Some preparation of the cervix for dilation is required, usually 24 hours before the procedure. This is usually done in a medical provider's office. The medical provider may also recommend a medication called mifepristone to make the abortion easier, safer, and more effective. The preparation procedure places material into the cervix which absorbs water to help the cervix open slightly.
- 24 hours after the cervical preparation, the dilation and evacuation procedure will take place.

- Medications may be given locally, by mouth, or through an intravenous (IV) line to decrease discomfort and prevent infection.
- The pregnancy is removed from the uterus with medical instruments such as forceps and suction. Occasionally for removal, it may be necessary to dismember the fetus.

Possible Complications

Cramping and vaginal bleeding are an expected part of this abortion. There is a low incidence of complications in second-trimester abortions, including D&E. Complications can include:

- Uterus does not contract leading to bleeding (up to 2.6% of D&E abortions).
- Heavy bleeding (0.1-0.6% of D&E abortions).
- Cut or torn cervix (up to 3.3% of D&E abortions).
- Perforation of the wall of the uterus (0.2-0.5% of D&E abortions).
- Pelvic infection (0.1-4% of D&E abortions, not well defined in most studies).
- Incomplete abortion (less than 1% of D&E abortions).

Labor Induction

Abortion by labor induction is extremely uncommon in the state, representing between 0.009%-0.26% of all abortions between 2017-2021. Labor induction requires a hospital stay.

- Medication, called mifepristone, may be recommended prior to labor induction to make the process faster, safer, and more effective.
- Medicine is placed in the vagina to help the cervix soften and dilate or open up.
- This medication may need to be given several times for labor to progress.
- Pain medications, such as an epidural, are available.
- Labor and delivery of the fetus during this period are like the experiences of childbirth.
- The duration of labor depends on the size of the fetus and the ability of the uterus to have contractions.
- There is a small chance that a fetus could live for a short period of time depending on the fetus's gestational age and health at the time of delivery.

Possible Complications

- Individuals have reported surgical abortion with D&E to be less emotionally challenging than induction of labor, though both methods have been reported to be less emotionally taxing than continuing an undesired pregnancy and giving birth.
- If the placenta is not completely removed during labor induction, the medical provider must open the cervix and use suction aspiration to remove remaining placenta and tissue (around 8%).

- Labor induction abortion carries more risk than D&E for problems, such as infection and heavy bleeding, however these risks remain lower than giving birth.
- When medicines are used to start labor, there is a risk of rupture of the uterus if you've already had a cesarean section during a previous pregnancy. These risks are lower than the risk when induction is carried out at term.
- As with childbirth, possible complications of inducing labor include infection, heavy bleeding, stroke, and high blood pressure. These risks are significantly lower when labor is induced for abortion compared to when labor is induced to give birth.
- Other medical risks may include blood clots in the uterus, heavy bleeding, cut or torn cervix, perforation of the wall of the uterus, pelvic infection, incomplete abortion, and anesthesia related complications.

Medical Risks of Abortion

The risk of complications for the woman increases with advancing gestational age (see above for a description of the abortion procedure that your medical provider will be using, and the specific risks listed in those pages).

Pelvic Infection (Endometritis): Bacteria (germs) from the vagina may enter the cervix and uterus and cause an infection. Rarely, infection can become systemic, meaning the bacteria are in the blood. Infections can be mild or severe. Antibiotics are used to treat an infection. In rare cases, a repeat vacuum aspiration, hospitalization, or surgery may be needed. Infection rates are about 0.2% for first trimester medication and surgical abortions and under 1% for D&E, and 5% for labor induction.

Incomplete Abortion: Fetal parts or other products of pregnancy may not be completely emptied from the uterus, requiring further medical procedures. Incomplete abortion may result in infection and bleeding. In the first trimester, the reported rate of such complications is <3% for medication abortions and less than 1% after a vacuum aspiration. In later abortions, the rate is less than 1% in D & E following a labor induction procedure, the placenta may require removal up to 21% of the time.

Blood Clots in the Uterus: Blood clots that cause severe cramping occur in about 1% of all abortions. The clots may be removed by medications or by a repeat vacuum aspiration procedure.

Heavy Bleeding (Hemorrhage): Some amount of bleeding is common following an abortion. Heavy bleeding (hemorrhaging) is not common (<1%) and may be treated by repeat vacuum aspiration, medication or, rarely, surgery. Ask the medical provider to explain heavy bleeding and what to do if it occurs.

Cut or Torn Cervix: The opening of the uterus (cervix) may be torn while it is being stretched open to allow medical instruments to pass through and into the uterus. This happens in less than 1% of first trimester abortions.

Perforation of the Uterus Wall: A medical instrument may go through the wall of the uterus. The reported rate is 1 out of every 1,000 with early abortions and 3 out of every 1,000 with

D&E. While this usually heals well without complication perforation can lead to infection, heavy bleeding, or both. Surgery may be required to repair the uterine tissue, and in the most severe cases hysterectomy may be required.

Anesthesia-Related Complications: As with other surgical procedures, anesthesia increases the risk of complications associated with abortion. Anesthesia-related complications occur in 0.2%-0.5% of first trimester abortions. Most are allergic reactions producing fever, rash, and discomfort.

Death Related to Abortion: Deaths related to abortion are extremely rare. According to the CDC, the case-fatality rate for legal induced abortions was 0.041 per 100,000 abortions during 2013-2018.

Medical Emergencies

Sometimes people need an abortion in a medical emergency to prevent the person from dying or serious damage to their health. In that case, a medical provider will tell the pregnant person why they need an abortion (the medical indications) before the abortion is performed, if possible.

Fetal Pain

There is no evidence to suggest that a fetus experiences pain. According to the American College of Obstetricians and Gynecologists, scientific studies have found that a human fetus does not have the capacity to experience pain until 24 weeks gestation.

The Emotional Side of Abortion

Stress and anxiety are expected when making a decision about a pregnancy---whether deciding to continue the pregnancy, have an abortion, or place the child for adoption. These feelings are normal. Some people may experience loss of appetite, difficulty sleeping and loss of interest in enjoyable activities. Reaching out to family and friends can provide essential support during this time. If these feelings continue or get worse, you should contact your health care provider.

The Medical Risks of Childbirth

Labor is the process in which a uterus contracts and pushes, or delivers, the fetus from the person's body. The fetus may be delivered through the vagina or by cesarean section. A cesarean section is a surgical procedure that delivers the fetus after making a cut (incision) through the belly and uterus.

A person who carries the pregnancy to term (37-42 weeks gestational age) can usually expect to experience a safe and healthy process, though there are risks to carrying a pregnancy to term. Some medical issues such as diabetes, high blood pressure, autoimmune diseases, history of blood clots, lung, or heart diseases, may significantly increase the medical risks during pregnancy, childbirth, and postpartum period. These medical issues should be discussed with a healthcare provider prior to pregnancy and as soon as a person knows they are pregnant.

For the best health, pregnant people should visit their provider before becoming pregnant, early in pregnancy, and at regular intervals throughout the pregnancy.

Possible Complications of Childbirth

- Uterine infection: 2-5% of births.
- Blood pressure problems (preeclampsia) – an increase in blood pressure which can lead to seizure or stroke in pregnancy: 2-8% of pregnancies globally.
- Severe blood loss (hemorrhage): 3-5% of pregnancies.
- Blood clots (usually in the legs or lungs): 0.5-2.0 per 1,000 pregnancies.

- Tissue tears (lacerations) at delivery: 85% of women having a vaginal birth will have a tear, 6.0-11% will require more serious repair.
- Preterm birth: 10% of births.
- Postpartum depression: symptoms reported in 1 out of every 8 pregnancies.
- Uterine rupture: 0.7% if prior cesarean in labor.
- Placenta left in the uterus after delivery: 2.5% of births.
- Risk of dying as the result of a pregnancy complication is 8.8 deaths per 100,000 women.

Information Directory

The decision to have an abortion, have a baby, or make an adoption plan must be carefully considered. There are lists of state, county and local health and social service agencies and organizations available to assist you. By calling or visiting the agencies and offices in the directory you can find out about alternatives to abortion, obtain assistance in making an adoption plan for your baby; and locate public and private agencies that offer medical and financial help during pregnancy, childbirth and while a child is dependent. This directory does not include referrals to abortion care.

You can find what resources may be available to you in the Minnesota Department of Health resource guide, If You Are Pregnant: A Directory of Services Available in Minnesota (www.health.state.mn.us/docs/people/wrtk/directoryenglish.pdf) or you can call 651-201-3580 or 1-888- 234-1137.

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