**Lecture:2 Pregnancy: Diagnosis, Physiology, and Care**

**Pregnancy is the time period between**[**fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**of an oocyte and delivery of a fetus approximately 9 months later.**

**The 1st sign of pregnancy is typically a missed menstrual period, after which, pregnancy should be confirmed clinically based on a positive β-hCG test (typically a qualitative**[**urine**](https://www.lecturio.com/concepts/bowen-disease-and-erythroplasia-of-queyrat/)**test) and pelvic ultrasound.**

**There are numerous maternal adaptations to pregnancy, both anatomic and physiologic, which occur to help support the developing fetus and prepare the mother's body for ultimate delivery.**

 **Pregnancy is not a pathologic condition, but good routine**[**prenatal care**](https://www.lecturio.com/concepts/prenatal-care/)**can help achieve the best outcomes for both the mother and infant.**

[**Prenatal care**](https://www.lecturio.com/concepts/prenatal-care/)**includes appropriate lab and ultrasound testing, anticipatory guidance, and offering solutions or advice for common pregnancy discomforts.**

**Definition**

**Pregnancy is defined as the time period between**[**fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**of an oocyte and delivery of a fetus approximately 9 months later.**

**Terminology**

* **Gravidity: the number of times a woman has been pregnant**
* **Parity:**
	+ **The total number of deliveries**
	+ **More specifically, the total number of pregnancies reaching the age of viability regardless of the outcome (live birth, stillborn, cesarean delivery, etc.)**
* **Abortion:**
	+ **Number of lost pregnancies prior to the age of viability**
	+ **Includes both spontaneous abortions (i.e., miscarriages) and induced terminations of pregnancy**
* **Last menstrual period (LMP): the 1st day of a woman’s LMP**
* **Gestational age: the age of pregnancy calculated from the LMP**
* **Embryonic age: the age of pregnancy calculated from the day of**[**fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**(not used in obstetric clinical practice)**
* **Estimated date of delivery (EDD): also known as the estimated date of confinement Sequence of events**
* [**Fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**of the oocyte by a sperm →**[**embryo**](https://www.lecturio.com/concepts/fertilization-and-first-week/)
* [**Implantation**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**of the early**[**embryo**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**into the uterine wall**
* **Fetal and placental differentiation, growth, and development**
* **Concurrent changes occur in the mother’s body to support the developing fetus and prepare for delivery.**
* [**Labor**](https://www.lecturio.com/concepts/normal-and-abnormal-labor/)**and delivery of the infant**
* **Puerperium: return of the mother’s body to the prepregnant state**

**Pregnancy duration**

* **Pregnancy is counted by completed weeks + completed days of the current week since the LMP:**
	+ **Known as weeks gestational age (wga)**
	+ **E.g., 35 + 4 wga would indicate that an infant is 35 weeks and 4 days gestational age**
* **Duration of normal pregnancy:**
	+ **Full-term pregnancy: 37–42 wga**
	+ **Preterm pregnancy: < 37 wga**
	+ **Post-term pregnancy: > 42 wga**
	+ **Notes: Only about 5% of women deliver on their EDD.**
* **Classified into trimesters:**
	+ **1st trimester: 0–13 + 6 wga**
	+ **2nd trimester: 14 + 0 to 27 + 6 wga**
	+ **3rd trimester: 28 + 0 wga through delivery**

**Clinical Presentation**

**Individuals trying to get pregnant will typically present with a positive home pregnancy test. Many others may not know they are pregnant and will present with symptoms of early pregnancy, which may include:**

* **Missed periods (**[**amenorrhea**](https://www.lecturio.com/concepts/congenital-malformations-of-the-female-reproductive-system/)**)**
* **Irregular bleeding (especially in cases of**[**ectopic pregnancy**](https://www.lecturio.com/concepts/ectopic-pregnancy/)**and/or**[**miscarriage**](https://www.lecturio.com/concepts/spontaneous-abortion/)**)**
* **Pelvic or**[**abdominal pain**](https://www.lecturio.com/concepts/acute-abdomen/)**/discomfort**
* [**Breast engorgement**](https://www.lecturio.com/concepts/breastfeeding/)**and tenderness**
* [**Nausea**](https://www.lecturio.com/concepts/antiemetics/)**and**[**vomiting**](https://www.lecturio.com/concepts/hypokalemia/)
* [**Fatigue**](https://www.lecturio.com/concepts/fibromyalgia/)
* **Frequent urination (typically later in pregnancy)**

**Diagnosis of Pregnancy and Establishing the EDD**

**Pregnancy is confirmed based on lab tests and obstetric ultrasound imaging.**

**Laboratory**

**The major [analyte](https://www.lecturio.com/concepts/immunoassays/) used to establish pregnancy is β-hCG.**

* **β-hCG is a hormone produced early by the developing**[**embryo**](https://www.lecturio.com/concepts/fertilization-and-first-week/)**.**
* **The presence of β-hCG indicates pregnancy.**
* **β-hCG tests may be:**
	+ **Qualitative: to detect the presence or absence of β-hCG**
		- [**Urine**](https://www.lecturio.com/concepts/bowen-disease-and-erythroplasia-of-queyrat/)**tests (available as over-the-counter kits) or a test at a medical lab**
		- **Reliable approximately 2 weeks after**[**fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)
	+ **Quantitative: to determine serum β-hCG levels**
		- **Serum tests**
		- **More sensitive, reliable 6–10 days after**[**fertilization**](https://www.lecturio.com/concepts/fertilization-and-first-week/)
		- **Can be used to track β-hCG levels when there is a concern for an abnormal pregnancy (e.g.,**[**ectopic pregnancy**](https://www.lecturio.com/concepts/ectopic-pregnancy/)**or**[**miscarriage**](https://www.lecturio.com/concepts/spontaneous-abortion/)**)**
		- **Levels should roughly double every 24–48 hours during the 1st month.**

**Imaging**

* **Ultrasound is the**[**obstetric imaging**](https://www.lecturio.com/concepts/obstetric-imaging/)**modality of choice to diagnose and date a pregnancy.**
* **Purpose of early ultrasounds:**
	+ **Viability: to establish if a viable pregnancy is present**
	+ **To determine the number of fetuses**
	+ **To establish the location of the pregnancy (e.g., rule out**[**ectopic pregnancy**](https://www.lecturio.com/concepts/ectopic-pregnancy/)**)**
	+ **Dating**
* **1st-trimester findings:**
	+ **Presence of a gestational sac:**
		- **1st visible finding of pregnancy is seen around 4.5–5 wga.**
	+ **Presence of a**[**yolk sac**](https://www.lecturio.com/concepts/embryoblast-and-trophoblast-development/)**:**
		- **1st seen approximately 5–6 wga and disappears around 10 wga**
	+ **Presence of a fetal pole with a heartbeat: seen around 5.5–6 wga**
* **Dating a pregnancy using ultrasound:**
	+ **1st trimester: measuring the**[**crown-rump length**](https://www.lecturio.com/concepts/obstetric-imaging/)**of the fetal pole**
	+ **2nd and 3rd trimesters: calculated using a formula by considering measurements of biparietal diameter, abdominal circumference, and femur length**

**Establishing the EDD**

**Dating a pregnancy is usually done by calculating the EDD from the LMP and comparing that date with the EDD obtained from early ultrasound measurements.**

* **Calculating the EDD from the LMP:**
	+ **The date that falls exactly 40 weeks after the LMP**
	+ **Calculated by adding 280 days (or 9 months and 7 days) to the LMP**
* **Dating by ultrasound:**
	+ **Measure the**[**crown-rump length**](https://www.lecturio.com/concepts/obstetric-imaging/)**and look up the associated date in a table (most ultrasound machines will show this along with the measurement).**
	+ **Ultrasound dating is most accurate in the 1st trimester before genetic variation and the effects of intrauterine environment begin to have greater effects on fetal growth.**

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**physiologic changes in pregnancy** :

[**Uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**:**

* **Increased uterine size:**
	+ [**Mass**](https://www.lecturio.com/concepts/breast-imaging/)**↑ from approximately 70 grams to 1100 grams**
	+ **Volume capacity ↑ from approximately 10 mL to 5 L**
	+ [**Hypertrophy**](https://www.lecturio.com/concepts/cellular-adaptation/)**of the uterine wall with an accumulation of**[**fibrous**](https://www.lecturio.com/concepts/fibrocystic-change/)**and**[**elastic**](https://www.lecturio.com/concepts/connective-tissue/)**tissue**
	+ **Growth is initiated through ↑**[**estrogen**](https://www.lecturio.com/concepts/ovaries/)**levels**
	+ **By 28 wga, uterine growth slows and the**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**continues to stretch and become thinner.**
* **Blood**[**flow**](https://www.lecturio.com/concepts/vascular-resistance-flow-and-mean-arterial-pressure/)**: ↑ from 50 mL/min to 450–750 mL/min at term**
* **Muscle contraction:**
	+ [**Uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**is maintained in a passive noncontractile state through ↑ levels of**[**progesterone**](https://www.lecturio.com/concepts/gonadal-hormones/)**(a smooth muscle relaxant)**
	+ **Braxton-Hicks contractions:**
		- **Irregular contractions that do not cause cervical change**
		- **More noticeable as the pregnancy progresses**
* **Uterine involution: return of the**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**to its pre-pregnant state in the 1st several weeks postpartum**

[**Cervix**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**:**

* [**Cervix**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**softens and can become bluish due to:**
	+ [**Edema**](https://www.lecturio.com/concepts/edema/)
	+ **Increased vascularization**
	+ [**Hypertrophy**](https://www.lecturio.com/concepts/cellular-adaptation/)**and**[**hyperplasia**](https://www.lecturio.com/concepts/cellular-adaptation/)**of the cervical glands**
* **May undergo**[**eversion**](https://www.lecturio.com/concepts/chronic-apophyseal-injury/)**:**
	+ **Glandular cells normally lining the**[**cervical canal**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**become visible on the surface of the**[**cervix**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**.**
	+ **Can cause**[**benign**](https://www.lecturio.com/concepts/fibroadenoma/)**bleeding (all bleeding in pregnancy should be fully worked up)**
* **Endocervical mucosal cells produce a mucus plug, an immunological barrier for uterine contents.**

[**Ovaries**](https://www.lecturio.com/concepts/ovaries/)**:**

* [**Ovulation**](https://www.lecturio.com/concepts/menstrual-cycle/)**and follicle development are suppressed by ↑**[**estrogen**](https://www.lecturio.com/concepts/ovaries/)**levels**
* **The**[**corpus luteum**](https://www.lecturio.com/concepts/ovaries/)**supplies**[**progesterone**](https://www.lecturio.com/concepts/gonadal-hormones/)**during the 1st part of pregnancy until the**[**placenta**](https://www.lecturio.com/concepts/placenta-umbilical-cord-and-amniotic-cavity/)**is developed enough to take over this function.**

[**DVT**](https://www.lecturio.com/concepts/deep-vein-thrombosis/)**/PE: deep vein**[**thrombosis**](https://www.lecturio.com/concepts/epidemic-typhus/)**/**[**pulmonary embolism**](https://www.lecturio.com/concepts/pulmonary-embolism/)[**GFR**](https://www.lecturio.com/concepts/kidney-function-tests/)**:**[**glomerular filtration**](https://www.lecturio.com/concepts/glomerular-filtration/)**rate**[**UTI**](https://www.lecturio.com/concepts/urinary-tract-infections/)**:**[**urinary tract**](https://www.lecturio.com/concepts/urinary-tract/)**infection
TSH:**[**thyroid**](https://www.lecturio.com/concepts/thyroid-gland/)**stimulating hormone**[**FSH**](https://www.lecturio.com/concepts/menstrual-cycle/)**: follicle stimulating hormone**[**LH**](https://www.lecturio.com/concepts/menstrual-cycle/)**: luteinizing hormone**

[**Skin**](https://www.lecturio.com/concepts/structure-and-function-of-the-skin/)**changes**

* **Stretch marks**
* [**Hyperpigmentation**](https://www.lecturio.com/concepts/malassezia-fungi/)**of:**
	+ **Face (known as [melasma](https://www.lecturio.com/concepts/melasma/), or the “mask of pregnancy”)**
	+ **Nipples**
	+ [**Perineum**](https://www.lecturio.com/concepts/vagina-vulva-and-pelvic-floor/)
	+ **Abdominal line (known as the linea nigra)**
	+ **Umbilicus**
* [**Spider**](https://www.lecturio.com/concepts/spider-bites/)**angiomata**
* [**Palmar erythema**](https://www.lecturio.com/concepts/cirrhosis/)

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**Linea nigra and**[**hyperpigmentation**](https://www.lecturio.com/concepts/malassezia-fungi/)**of the umbilicus in pregnancy**

***Image: “Linea nigra” by Daniel Lobo. License: CC BY 2.0***

**Normal Prenatal Care:**

**Appointment schedule**

**The typical schedule of prenatal visits for low-risk individuals:**

* **Every 4 weeks up through 28 wga**
* **Every 2 weeks from 28–36 wga**
* **Every week from 36 wga until delivery**

**Prenatal visits**

**Parameters to measure/monitor for healthy, uncomplicated individuals at routine prenatal visits:**

* **1st visit:**
	+ **Ultrasound to confirm the estimated date of confinement (either in-office or ordered)**
	+ **Full physical exam, including a pelvic exam**
	+ **Recommend supplements:**
		- **Folic acid (best if started prior to pregnancy)**
		- **Multivitamins with**[**iron**](https://www.lecturio.com/concepts/trace-elements/)
* **All visits:**
	+ **Weight**
	+ **Blood pressure**
	+ **Fetal HR (using [doppler](https://www.lecturio.com/concepts/ultrasound-sonography/) auscultation)**
	+ **Ask the mother about:**
		- **Abnormal bleeding**
		- **Contraction-like or cramping**[**abdominal pain**](https://www.lecturio.com/concepts/acute-abdomen/)
		- **Abnormal loss of fluid**
* **Starting at 20 wga: fundal height measurements**
* **Starting at 28 wga, ask the mother about:**
	+ **Fetal movements:**
		- **Should experience 10 movements in a 2-hour period at least once daily**
		- **Individuals who report decreased fetal movement should be evaluated.**
	+ **TDaP immunization (once)**
	+ **Rh immunoglobulin to Rh-negative women**
* **Starting at 34–36 wga: Assess fetal**[**presentation**](https://www.lecturio.com/concepts/normal-and-abnormal-labor/)**(vertex or breech).**

**Routine pregnancy laboratory and imaging studies**

**All pregnant individuals should have certain labs done at different points during their pregnancy. These include:**

* **At their 1st obstetrics appointment:**
	+ **CBC**
	+ **Blood type and screen (may indicate future compatibility issues with fetal blood type)**
	+ [**Urinalysis**](https://www.lecturio.com/concepts/urinary-tract-infections-in-children/)
	+ [**Rubella**](https://www.lecturio.com/concepts/rubella-virus/)**immunity status**
	+ [**HIV**](https://www.lecturio.com/concepts/anti-hiv-drugs/)
	+ [**Hepatitis B**](https://www.lecturio.com/concepts/hepatitis-b-virus/)**surface**[**antigen**](https://www.lecturio.com/concepts/vaccination/)
	+ **Rapid**[**plasma**](https://www.lecturio.com/concepts/transfusion-products/)**reagin test for**[**syphilis**](https://www.lecturio.com/concepts/syphilis/)
	+ [**Gonorrhea**](https://www.lecturio.com/concepts/gonorrhea/)**and**[**chlamydia**](https://www.lecturio.com/concepts/chlamydia/)**testing**
	+ [**Pap smear**](https://www.lecturio.com/concepts/cervical-cancer-screening/)**(only if due for routine Pap**[**screening**](https://www.lecturio.com/concepts/preoperative-care/)**)**
	+ [**Screening**](https://www.lecturio.com/concepts/preoperative-care/)**for inherited diseases based on ethnicity (e.g., [hemoglobinopathies](https://www.lecturio.com/concepts/anemia-overview/),**[**cystic**](https://www.lecturio.com/concepts/fibrocystic-change/)[**fibrosis**](https://www.lecturio.com/concepts/bronchiolitis-obliterans/)**)**
* [**Screening**](https://www.lecturio.com/concepts/preoperative-care/)**for fetal aneuploidy (e.g.,**[**trisomy 21**](https://www.lecturio.com/concepts/down-syndrome/)**):**
	+ **Multiple options available**
	+ **Options include different combinations of multiple serum analytes and ultrasound.**
	+ **A common option used is a test assessing the cell-free fetal**[**DNA**](https://www.lecturio.com/concepts/dna-types-and-structure/)**found in maternal serum (often referred to as noninvasive prenatal testing (NIPT)).**
* **Other tests:**
	+ **Full anatomic assessment of the fetus,**[**placenta**](https://www.lecturio.com/concepts/placenta-umbilical-cord-and-amniotic-cavity/)**, and**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**/**[**cervix**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**at 18–22 wga**
	+ **1-hour**[**glucose**](https://www.lecturio.com/concepts/lactose-intolerance/)[**tolerance**](https://www.lecturio.com/concepts/pharmacokinetics-and-pharmacodynamics/)**test (GTT) at 24–28 wga**
	+ **CBC is often repeated with GTT.**
	+ **Group B**[***Streptococcus***](https://www.lecturio.com/concepts/streptococcus/)**culture at 35–37 wga**
	+ **Bedside ultrasound to check fetal**[**presentation**](https://www.lecturio.com/concepts/normal-and-abnormal-labor/)**(vertex/head down, breech/buttocks down) around 35 wga**

**Diet, exercise, and weight gain:**

| **Table: Safe and unsafe diets in pregnancy** |
| --- |
| **Safe** | **Unsafe** |
| * **Moderate**[**caffeine**](https://www.lecturio.com/concepts/stimulants/)**intake**
* **Artificial sweeteners**
* [**Fish**](https://www.lecturio.com/concepts/chromosome-testing/)**:**[**limit**](https://www.lecturio.com/concepts/invasive-mechanical-ventilation/)**to < 12 oz/week**
 | * **Excess**[**caffeine**](https://www.lecturio.com/concepts/stimulants/)**intake**
* **Saccharine**
* **Unpasteurized foods, especially dairy (risk of**[**listeria**](https://www.lecturio.com/concepts/listeria-monocytogenes-infections/)**)**
* **Swordfish, shark, king mackerel, or raw**[**fish**](https://www.lecturio.com/concepts/chromosome-testing/)**(risk of**[**mercury**](https://www.lecturio.com/concepts/renal-tubular-acidosis/)**poisoning)**
 |

**Weight gain:**

**The recommended weight gain during pregnancy is based on the individual’s prepregnancy**[**BMI**](https://www.lecturio.com/concepts/obesity/)**. Normal weight-gain recommendations:**

* **Underweight (**[**BMI**](https://www.lecturio.com/concepts/obesity/)**< 18.5): 28–40 lbs**
* **Normal weight (**[**BMI**](https://www.lecturio.com/concepts/obesity/)**18.5–24.9): 25–35 lbs**
* **Overweight (**[**BMI**](https://www.lecturio.com/concepts/obesity/)**25–29.9): 15–25 lbs**
* **Obese (**[**BMI**](https://www.lecturio.com/concepts/obesity/)**> 30): 11–20 lbs**
* **Note:**[**Weight loss**](https://www.lecturio.com/concepts/bariatric-surgery/)**is not recommended during pregnancy.**

**Exercise:**

* **Purpose: controls weight gain, improves delivery, improves**[**weight loss**](https://www.lecturio.com/concepts/bariatric-surgery/)**after pregnancy**
* **Recommendation: moderate exercise for 30 minutes on most days of the week**
* **In general, women can continue performing exercises they were doing prior to pregnancy at the same level of intensity (goal: maintain fitness level rather than increasing exercise intensity).**
* **Avoid contact sports and/or activities associated with the risk of falling or abdominal trauma (e.g., soccer, horseback riding, downhill skiing).**
* **Avoid exercising in hot weather.**
* **Air travel is safe for up to 36 weeks (after which, the risk of**[**labor**](https://www.lecturio.com/concepts/normal-and-abnormal-labor/)**or complications on board ↑).**
* **Precautions to prevent deep vein**[**thrombosis**](https://www.lecturio.com/concepts/epidemic-typhus/)**during long trips (both flights and road trips):**
	+ [**Compression**](https://www.lecturio.com/concepts/blunt-chest-trauma/)**stockings**
	+ **Frequent hydration**
	+ **Frequent ambulation in the airplane or at rest stops (every 1–2 hours)**
* **Frequent handwashing**
* **Avoid kitty litter (to ↓ risk of**[**toxoplasmosis**](https://www.lecturio.com/concepts/toxoplasma-toxoplasmosis/)**).**

**11:20**

**52Common Discomforts of Pregnancy:**

[**Pain**](https://www.lecturio.com/concepts/physiology-of-pain/)

* **Pregnancy**[**hormones**](https://www.lecturio.com/concepts/hormones-overview/)**(e.g.,**[**progesterone**](https://www.lecturio.com/concepts/gonadal-hormones/)**, relaxin) cause ligaments to stretch more easily and ↑ water retention**
* **Common pains:**
	+ **Pelvic**[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**from stretching at the**[**pubic symphysis**](https://www.lecturio.com/concepts/vagina-vulva-and-pelvic-floor/)**and sacroiliac joints → maternity support belts can help**
	+ [**Round ligament**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**(described subsequently)**
	+ [**Foot pain**](https://www.lecturio.com/concepts/ankle-and-foot-pain/)
	+ **Low**[**back pain**](https://www.lecturio.com/concepts/back-pain/)**(from shifting center of gravity)**
	+ [**Carpal tunnel syndrome**](https://www.lecturio.com/concepts/carpal-tunnel-syndrome/)
* [**Round ligament**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**:**
	+ **Round ligaments attach the**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**to the pelvic sidewall.**
	+ **As the**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**grows, the round ligaments can stretch and cause**[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**.**
	+ **Differentiating**[**round ligament**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**(**[**benign**](https://www.lecturio.com/concepts/fibroadenoma/)**) from more concerning**[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**:**
		- [**Round ligament**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**is often unilateral.**
		- **On exam, push the**[**uterus**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)**toward the painful side; if this maneuver relieves**[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**, it is likely**[**round ligament**](https://www.lecturio.com/concepts/uterus-cervix-and-fallopian-tubes/)[**pain**](https://www.lecturio.com/concepts/physiology-of-pain/)**.**
* **Analgesics:**
	+ [**Acetaminophen**](https://www.lecturio.com/concepts/acetaminophen/)**is the safest analgesic.**
	+ **Try to avoid**[**NSAIDs**](https://www.lecturio.com/concepts/primary-vs-secondary-headaches/)**due to their effects on the fetal**[**kidneys**](https://www.lecturio.com/concepts/kidneys/)**.**

**Gastrointestinal symptoms**

* [**Nausea**](https://www.lecturio.com/concepts/antiemetics/)**and**[**vomiting**](https://www.lecturio.com/concepts/hypokalemia/)**:**
	+ **Common especially in early pregnancy (colloquially, “morning sickness”)**
	+ **More common in the mornings but may occur throughout the day**
	+ **Often improves in the early 2nd trimester**
	+ **Management:**
		- [**Vitamin B6**](https://www.lecturio.com/concepts/water-soluble-vitamins-and-their-deficiencies/)**supplementation**
		- **Dietary changes: eat 1st thing in the morning. Consume smaller meals more frequently.**
* **Acid reflux/**[**heartburn**](https://www.lecturio.com/concepts/gastroesophageal-reflux-disease/)
* [**Constipation**](https://www.lecturio.com/concepts/constipation/)