47a A&P: Pregnancy

47a A&P: Pregnancy

Class Outline

5 minutes	Attendance, Breath of Arrival, and Reminders
10 minutes	Lecture:
25 minutes	Lecture:
15 minutes	Active study skills:
60 minutes	Total

47a A&P: Pregnancy

Class Reminders

ABMP Exam Coach

- "Access your ABMP account" using instructions on page A-74
- Familiarize yourself with the ABMP Exam Coach "Study Subjects" section
- Preview the preparation assignments for MBLEx Prep classes (74a, 75a, 80a, 81a, 84a, 86a, 87a)

Assignments:

- 50b Business: Marketing. B-55 for ABMP.com 'Website Builder' instructions
- 53a Internship Review Questions - due before class starts
- 55a Review Questions – due before class starts

Quizzes and Exams:

- 52a Kinesiology Quiz (brachialis, brachioradialis, flexor digitorum superficialis, and extensor digitorum)

Practical Work:

- 56a and 56b – Internship Orientation and Mock Internship – ***dress like an Intern***

Preparation for upcoming classes:

- 48b Side-lying and Pregnancy Massage: Technique Demo and Practice (Bring 3 pillows - standard size; bring 4 pillowcases - standard size
- 48b, 49b Pregnancy Massage: **These classes cannot be made up in the make-up room.** To schedule a sit-in, please contact the Student Administrator.

Classroom Rules

Punctuality - everybody's time is precious

- Be ready to learn at the start of class; we'll have you out of here on time
- Tardiness: arriving late, returning late after breaks, leaving during class, leaving early

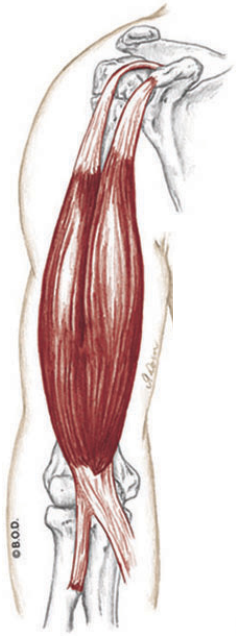
The following are not allowed:

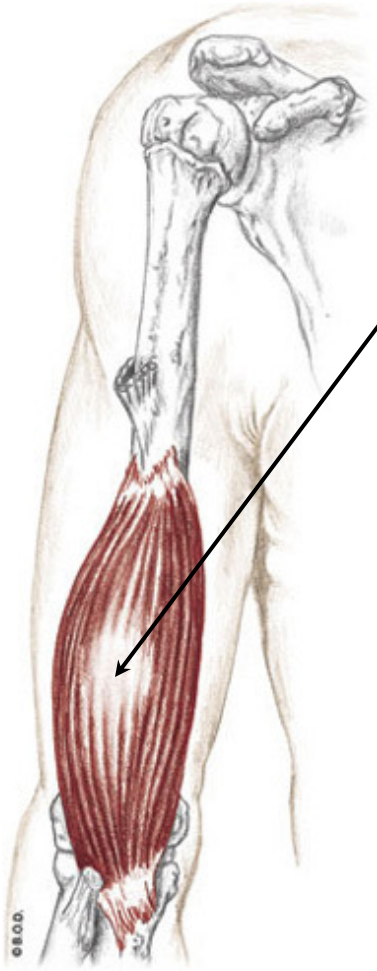
- Bare feet
- Side talking
- Lying down
- Inappropriate clothing
- Food or drink except water
- Phones that are visible in the classroom, bathrooms, or internship

You will receive one verbal warning, then you'll have to leave the room.

Brachialis

Trail Guide, Page 132





Anterior View

Brachialis is a strong elbow flexor that lies deep to biceps brachii on the anterior arm.

The girth of brachialis helps the biceps to bulge out from the arm.

Similar to the relationship between gastrocnemius and soleus, the lateral edge of brachialis is superficial and palpable.



Anterior View

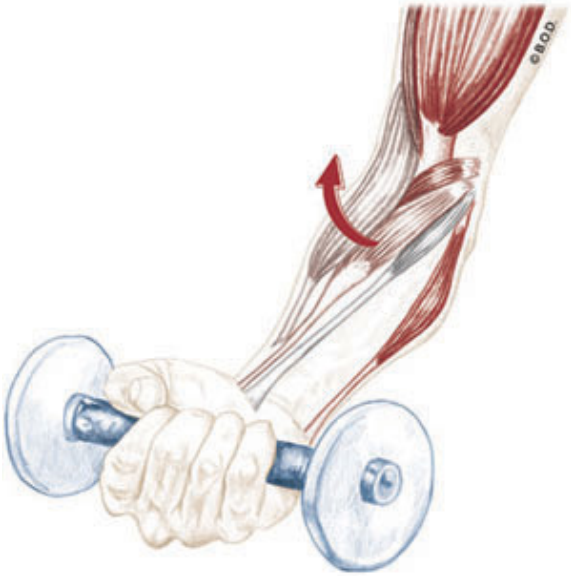
Brachialis, page 132

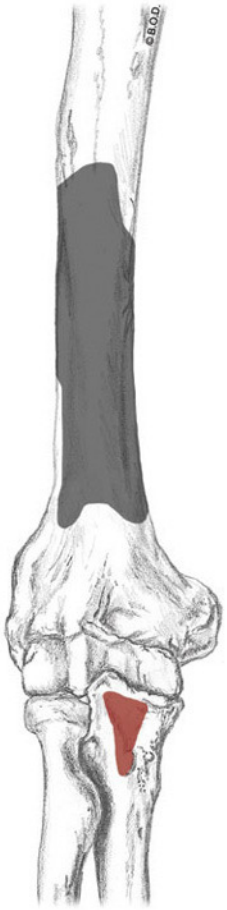
A Flex the elbow (humeroulnar joint)

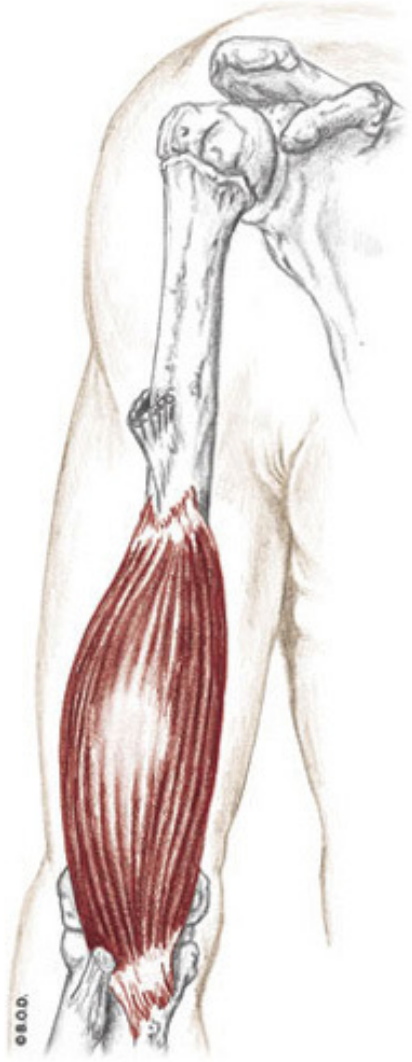
O Distal half of anterior surface of humerus

I Tuberosity of the ulna

Coronoid process of the ulna







Anterior View

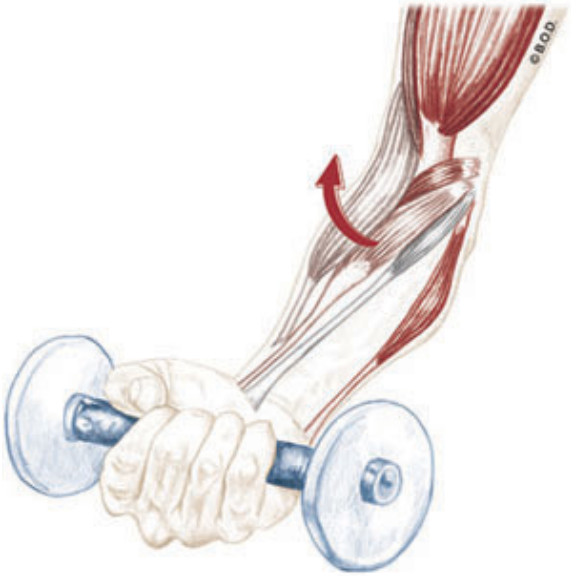
Brachialis, page 132

A Flex the elbow (humeroulnar joint)

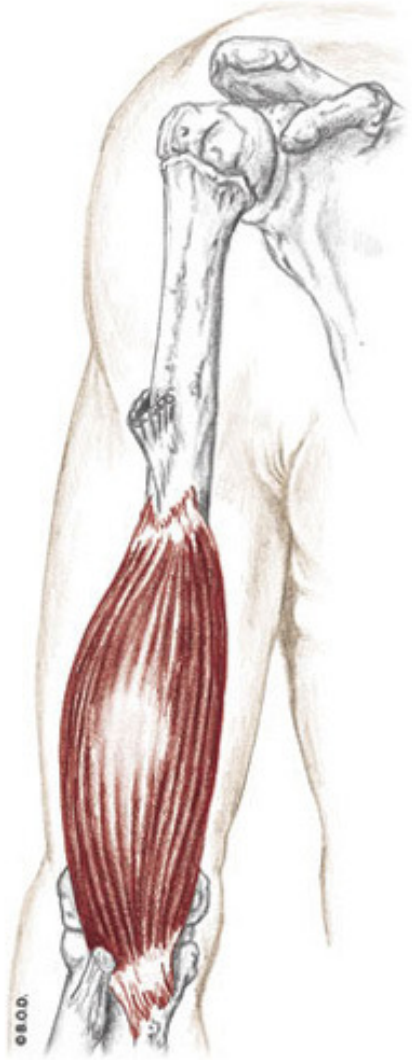
O Distal half of anterior surface of humerus

I Tuberosity of the ulna

Coronoid process of the ulna







Anterior View

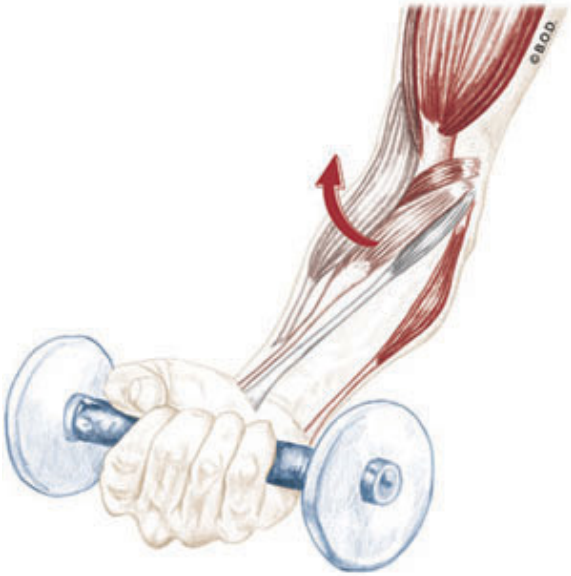
Brachialis, page 132

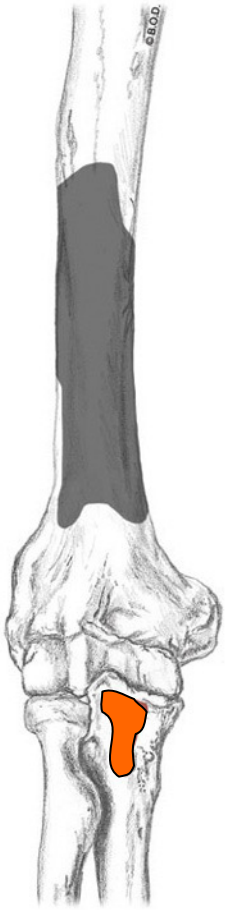
A Flex the elbow (humeroulnar joint)

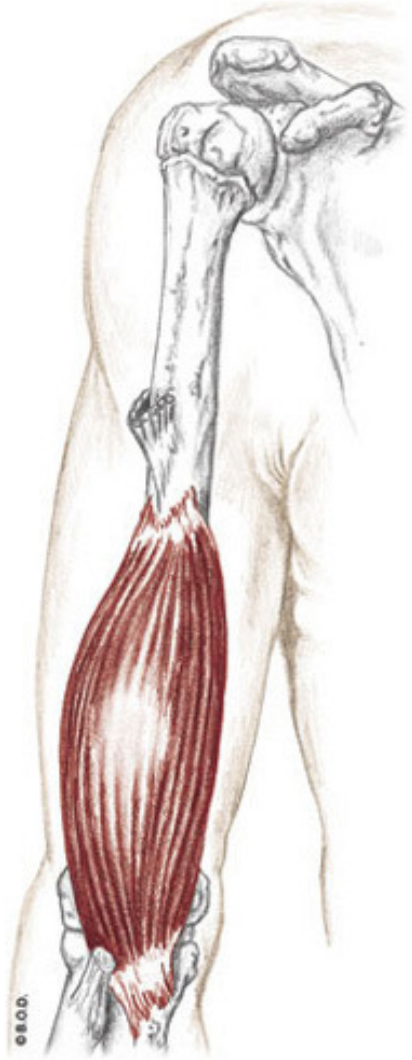
O Distal half of anterior surface of humerus

I Tuberosity of the ulna

Coronoid process of the ulna







Anterior View

47a A&P: Pregnancy

Packet E-89

Fertilization

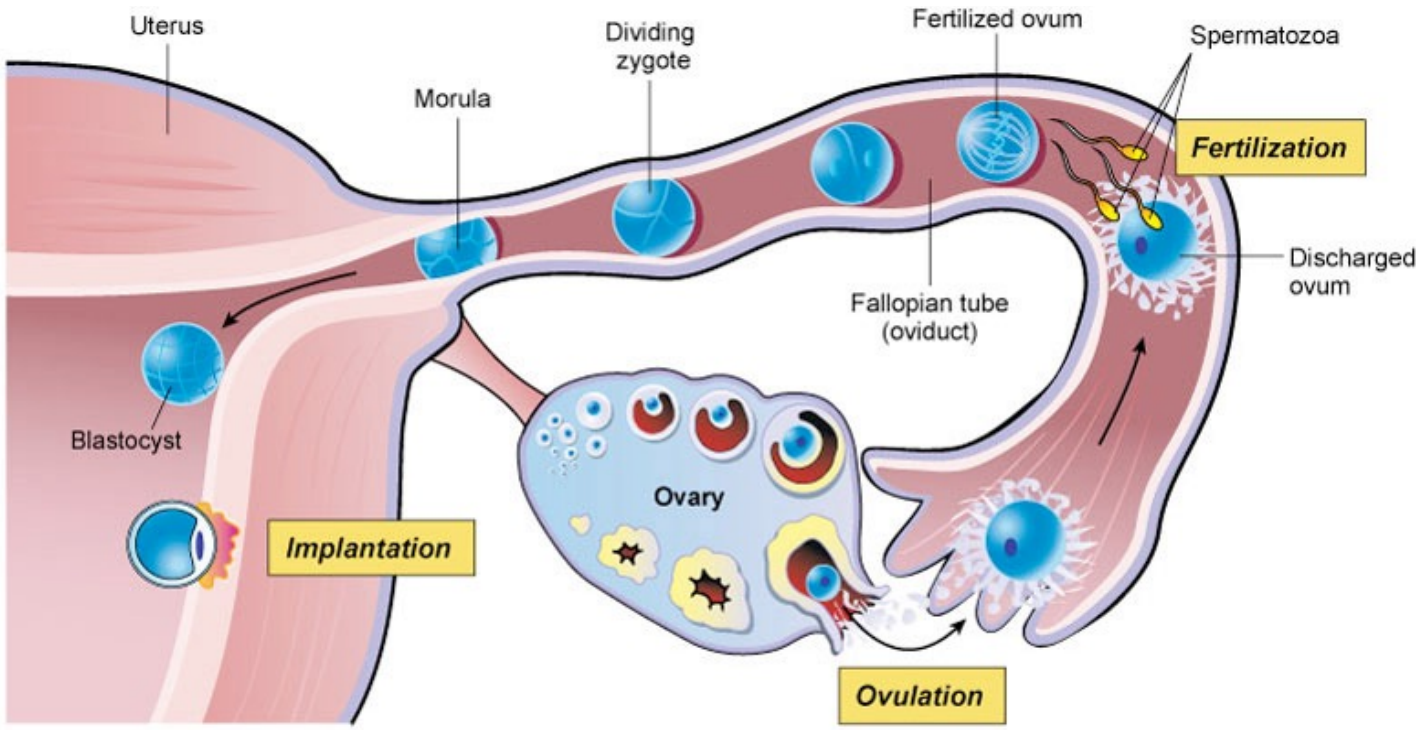
Fertilization

Zygote

Blastocyst

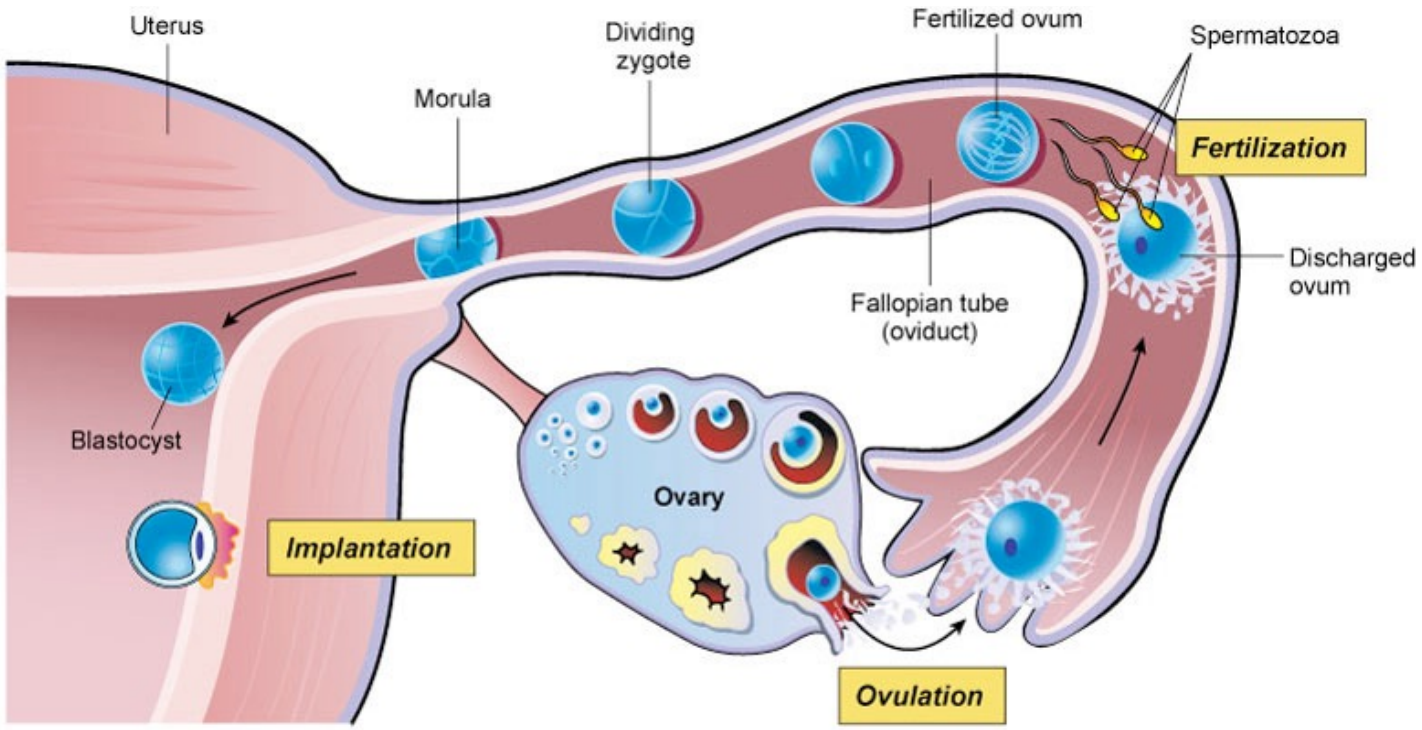
Fertilization

Fertilization Penetration of the ovum by a spermatozoon about 24 hours after ovulation resulting in a zygote.



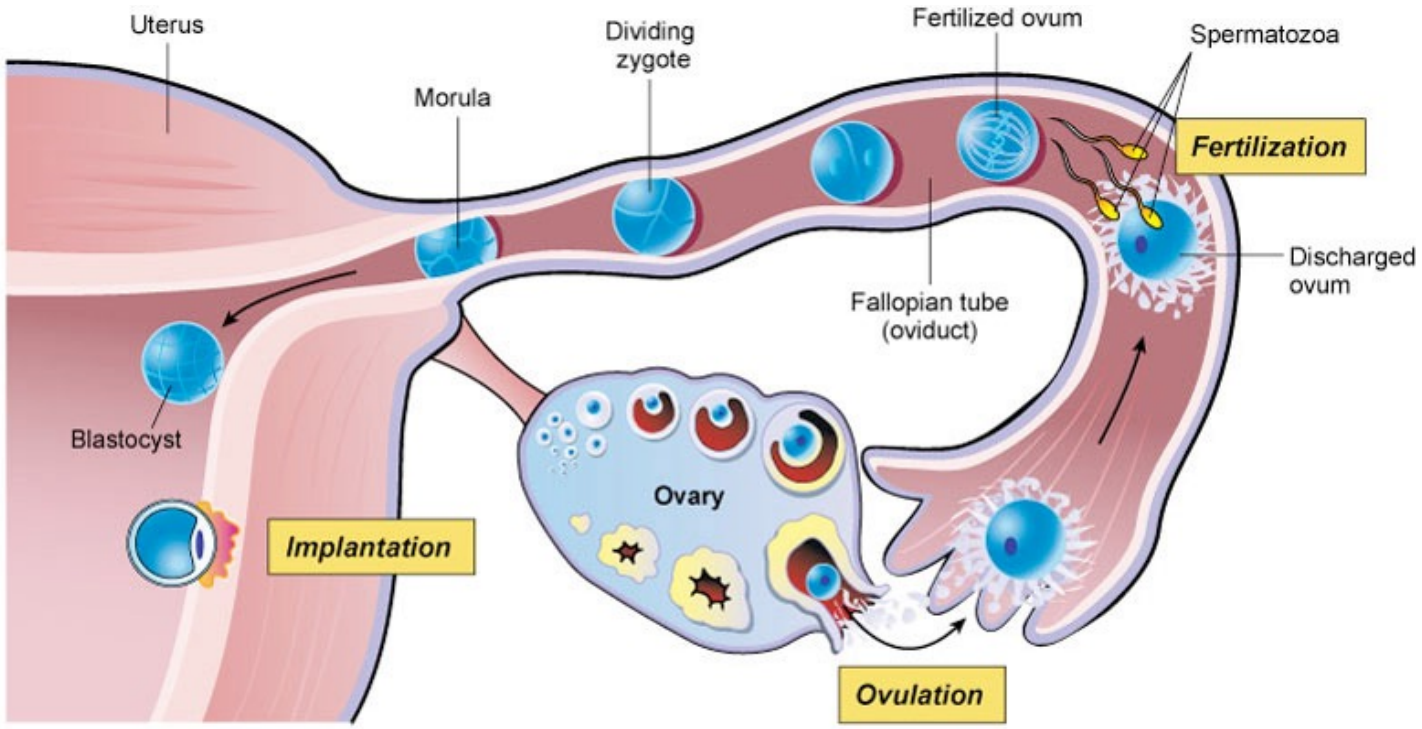
Fertilization

Zygote Fertilized ovum. Contains genetic information from each parent.



Fertilization

Blastocyst A zygote that has undergone multiple cell divisions and transformation from a solid mass to a hollow fluid-filled ball of cells.



Response Moment

Fertilization

Zygote

Blastocyst

Response Moment

Fertilization Penetration of the ovum by a spermatozoon.

Zygote

Blastocyst

Response Moment

Fertilization Penetration of the ovum by a spermatozoon.

Zygote Fertilized ovum.

Blastocyst

Response Moment

Fertilization Penetration of the ovum by a spermatozoon.

Zygote Fertilized ovum.

Blastocyst Zygote that has undergone multiple cell divisions.

Pregnancy

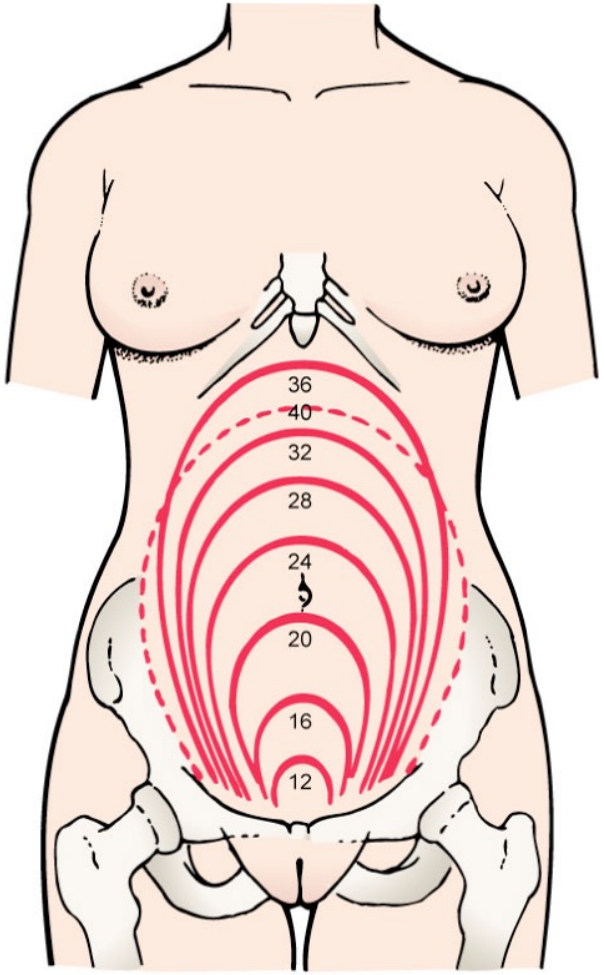
Pregnancy

First trimester

Second trimester

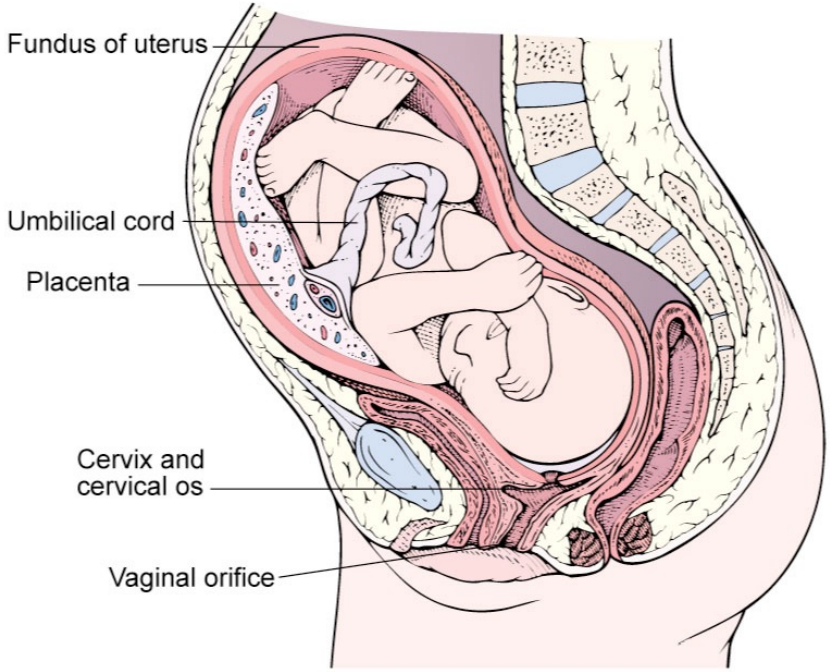
Third trimester

Lactation



Pregnancy

Pregnancy Sequence of events that includes implantation, embryonic and fetal growth and ends with birth. This process of gestation takes about _266_ days and is divided into _3_ trimesters.



Pregnancy

First trimester Trimester in which the most embryonic development occurs and the pregnant client experiences few structural changes. Developments include: 3 primary germ layers, head and tail shape, G.I. tract, brain, heart, and placenta.

Pregnancy

Second trimester Trimester in which the pregnant client begins to "show". By the end of this trimester the pregnant client should feel the baby move. The former embryo is now a fetus and grows to approximately 11 inches in length and weighs about 1.5 lb.

Pregnancy

Third trimester Trimester in which the pregnant client finds themself heavy with the baby and postural changes are evident. The fetus grows to about 20 inches in length and between 5 and 9 lbs. in weight. The pregnant client may experience occasional, preparatory contractions in which the uterus hardens and then returns to normal. The early form of breast milk, colostrum, may leak from the breasts.



Pregnancy

Lactation Secretion and ejection of milk by the mammary glands. Facilitated by the pituitary hormones prolactin for milk production and oxytocin for milk expression.

Response Moment

Pregnancy

First Trimester

Second Trimester

Third Trimester

Lactation

Response Moment

Pregnancy Implantation, embyro growth, fetus growth, and birth.

approximately 266 days or 38 weeks, divided into 3 trimesters.

First Trimester

Second Trimester

Third Trimester

Lactation

Response Moment

Pregnancy Implantation, embyro growth, fetus growth, and birth.

approximately 266 days or 38 weeks, divided into 3 trimesters.

First Trimester Lots of embryo development. 3 primary germ layers develop.

Second Trimester

Third Trimester

Lactation

Response Moment

Pregnancy Implantation, embyro growth, fetus growth, and birth.

approximately 266 days or 38 weeks, divided into 3 trimesters.

First Trimester Lots of embryo development. 3 primary germ layers develop.

Second Trimester Pregnant client begins to show. Embryo is now a fetus.

Third Trimester

Lactation

Response Moment

Pregnancy Implantation, embyro growth, fetus growth, and birth.

approximately 266 days or 38 weeks, divided into 3 trimesters.

First Trimester Lots of embryo development. 3 primary germ layers develop.

Second Trimester Mother begins to show. Embryo is now a fetus.

Third Trimester Heavy with baby. Lots of postural changes. Braxton-Hicks contractions and colostrum.

Lactation

Response Moment

Pregnancy Implantation, embyro growth, fetus growth, and birth.

approximately 266 days or 38 weeks, divided into 3 trimesters.

First Trimester Lots of embryo development. 3 primary germ layers develop.

Second Trimester Mother begins to show. Embryo is now a fetus.

Third Trimester Heavy with baby. Lots of postural changes. Braxton-Hicks contractions and colostrum.

Lactation Pituitary hormones trigger milk production (prolactin) and milk expression (oxytocin).

Germ Layers

Heinz Christian Pander, a Baltic German–Russian biologist, has been credited for the discovery of the three germ layers that form during embryogenesis;

Ectoderm

Mesoderm

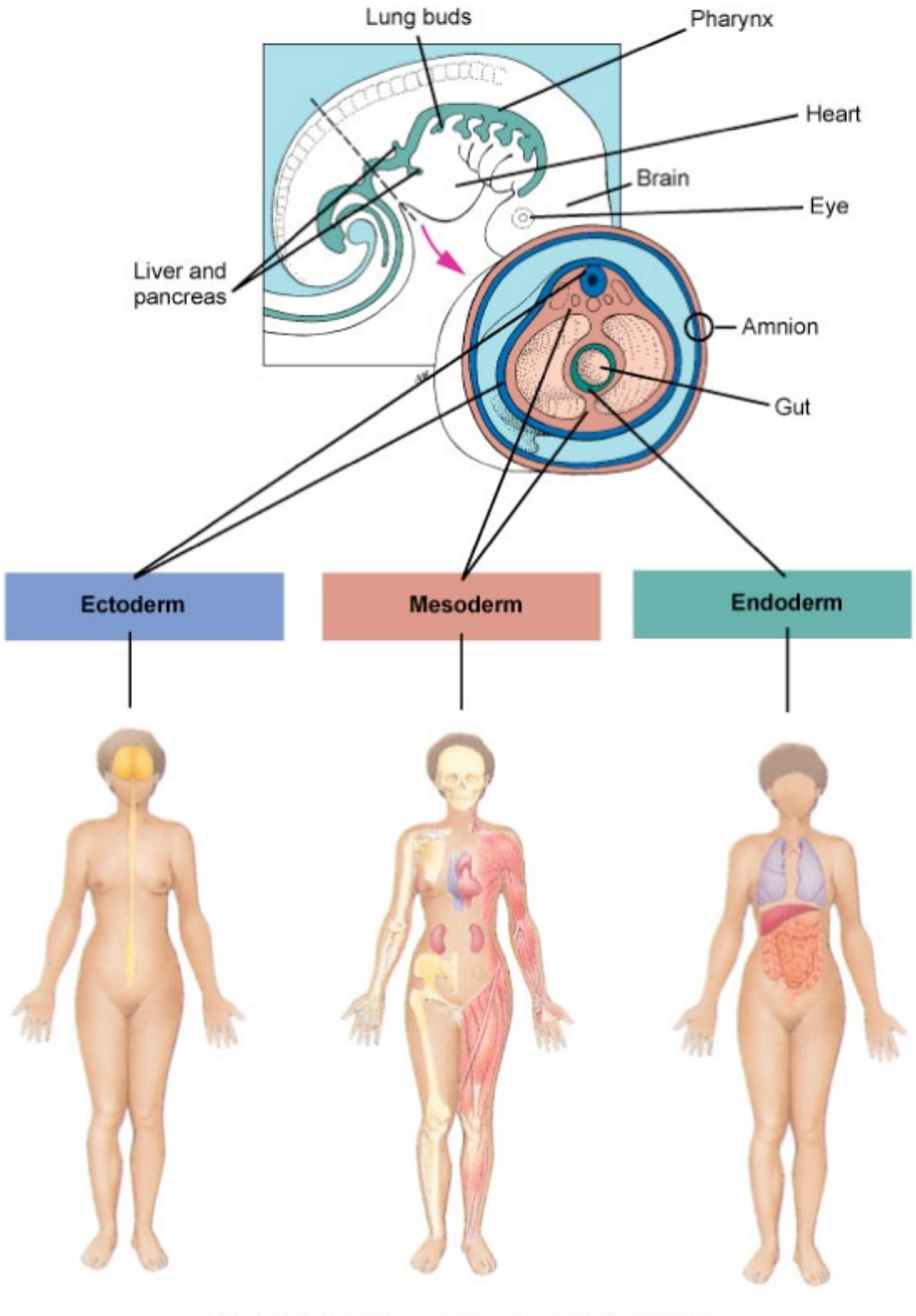
Endoderm

Germ Layers

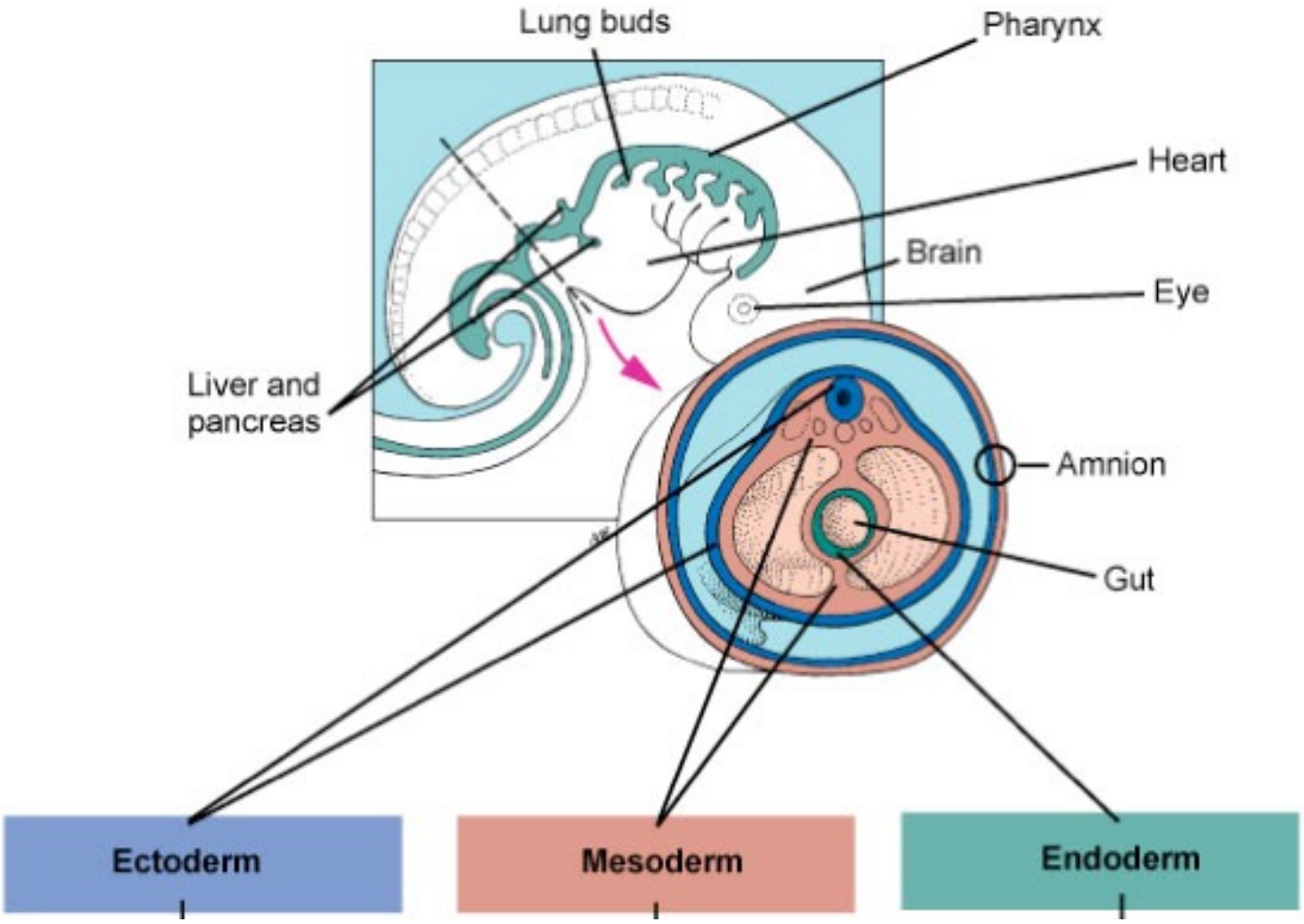
Ectoderm

Mesoderm

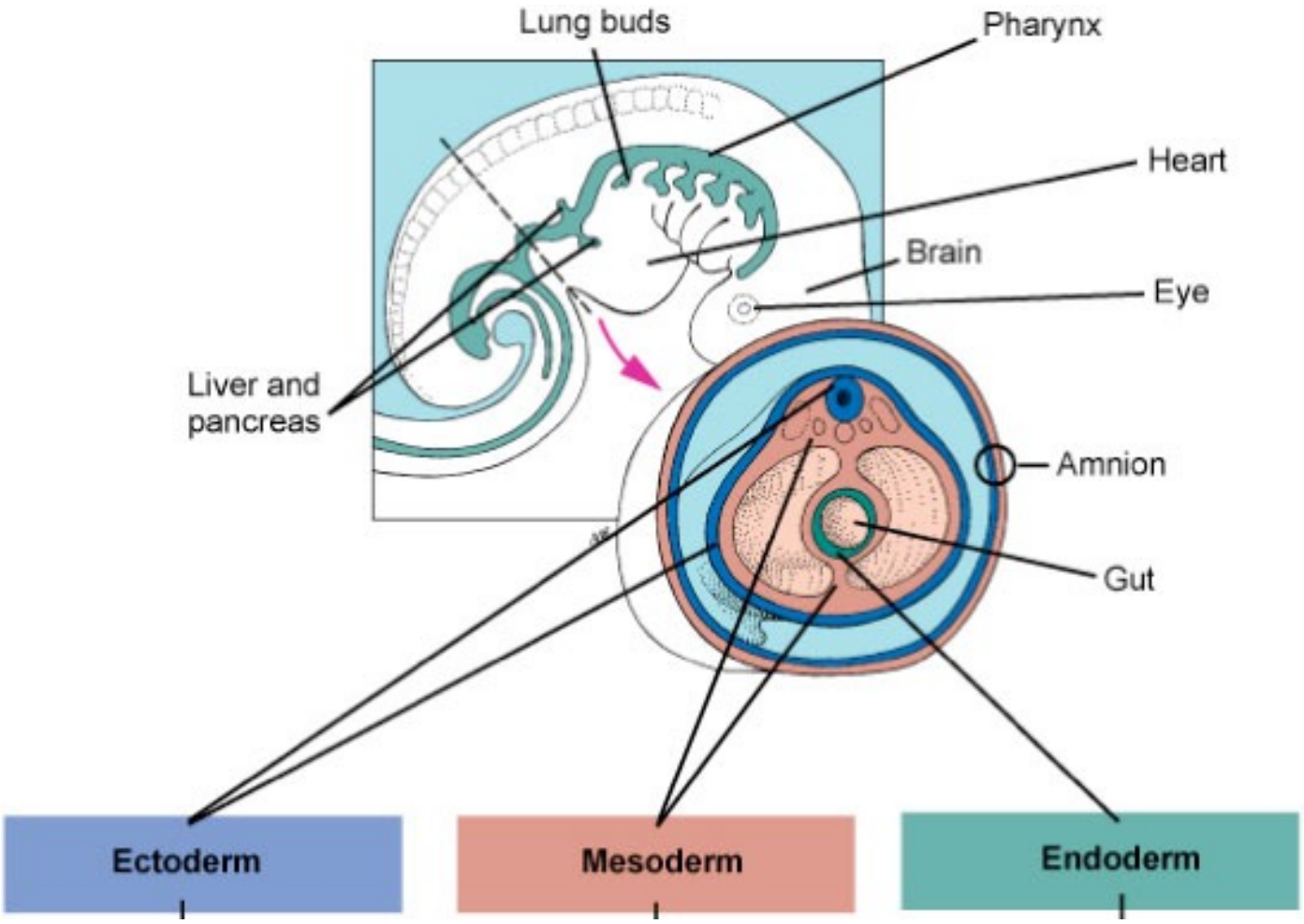
Endoderm



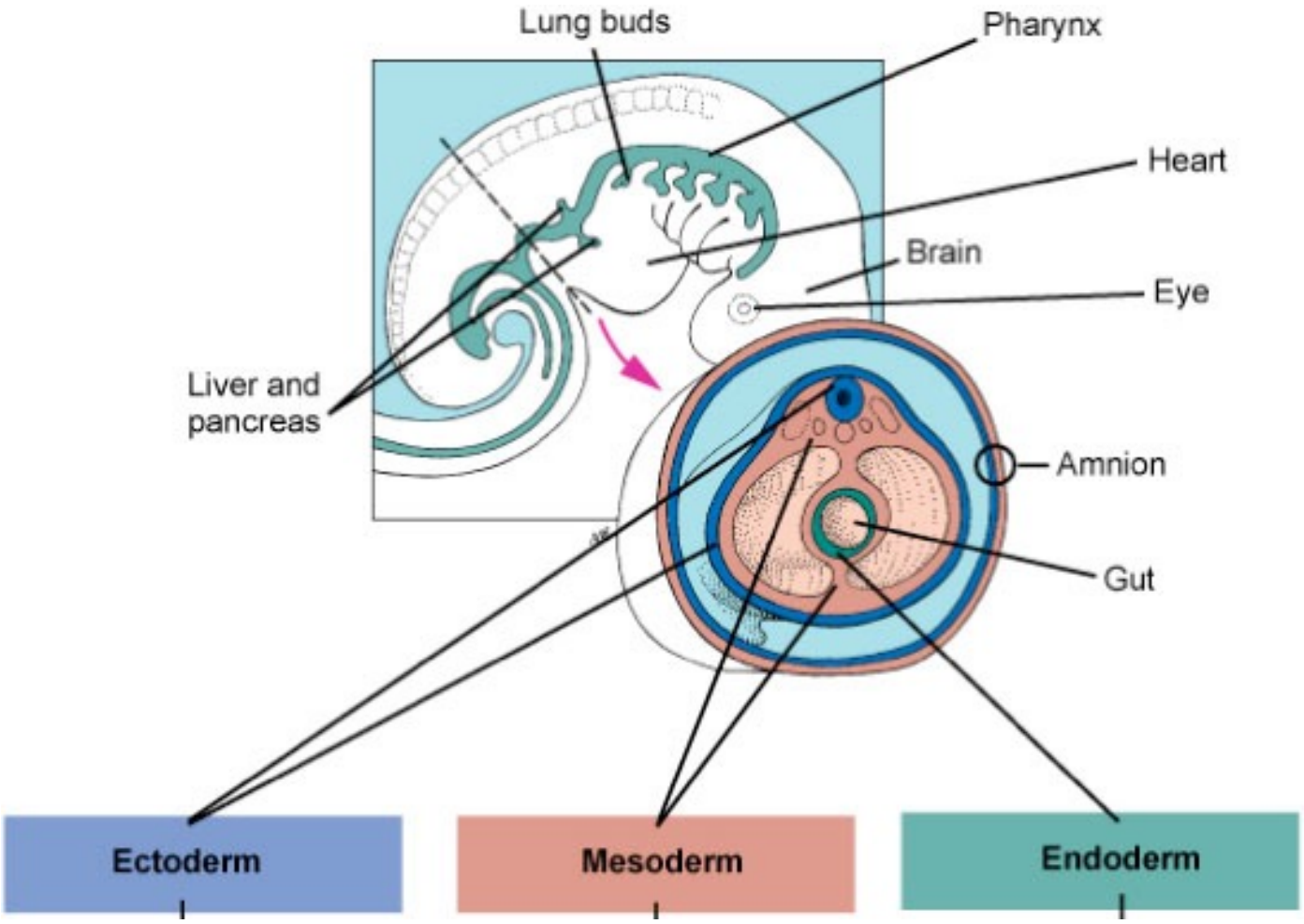
Ectoderm Outermost germ layer that gives rise to the nervous system including the special senses (retina, taste buds, olfactory bulb, inner ear), mucosa of the mouth and anus, epidermis of the skin, fingernails, hair, skin glands, and pituitary.



Mesoderm Middle germ layer that gives rise to the muscles and connective tissues such as fascia, tendons, retinaculum, ligaments, cartilage, bone, mesenteries, dermis, hypodermis, blood, lymph, related vessels, pleurae, pericardium, peritoneum, and urogenital tract.



Endoderm Innermost germ layer that gives rise to the lining of the gastrointestinal tract, lining of the respiratory passages, and most tissues of organs and glands.



Response Moment

Ectoderm

Mesoderm

Endoderm

Response Moment

Ectoderm Outermost germ layer.

Nervous system, special senses, epidermis, and mucosa.

Mesoderm

Endoderm

Response Moment

Ectoderm Outermost germ layer.

Nervous system, special senses, epidermis, and mucosa.

Mesoderm Middle germ layer.

Muscles and connective tissues (fascia, tendon, ligament, bone blood, lymph, vessels, serous membranes, dermis, and hypodermis.

Endoderm

Response Moment

Ectoderm Outermost germ layer.

Nervous system, special senses, epidermis, and mucosa.

Mesoderm Middle germ layer.

Muscles and connective tissues (fascia, tendon, ligament, bone blood, lymph, vessels, serous membranes, dermis, and hypodermis.

Endoderm Innermost germ layer.

Lining of G.I. tract and respiratory tract. Coverings for most organs and glands.

Introduction

Therapists will encounter unique individuals with special needs and some physical, emotional, and health-related challenges.

Massage is safe during all stages of life if tailored to the client's health and particular situation and circumstance.

Modifications might involve placing a client in advanced pregnancy on their side.

General Suggestions

When your client mentions his or her special need or disability when making an appointment, spend time **preparing for the session**.

The best source of **information comes from the client**.

Each situation will be different, and you must be willing to **be open-minded, patient, tolerant, and flexible**.

Each client will teach you, if you are willing to listen and learn.

Pregnant Clients

Benefits of Massage for Pregnant Clients

Precaution for all Trimesters

Massage in the First Trimester

Massage in the Second Trimester

Massage in the Third Trimester

Benefits of Massage for Pregnant Clients

Pregnancy massage has many benefits for the expectant client:

- Reduce stress
- Decrease swelling in the arms and legs
- Relieve aches and pains in muscles and joints
- Reduce anxiety and depression

Precaution for all Trimesters

If client has severe abdominopelvic pain, cramping, or vaginal bleeding:

- Seek immediate medical attention
- Medical clearance is needed with subsequent massage

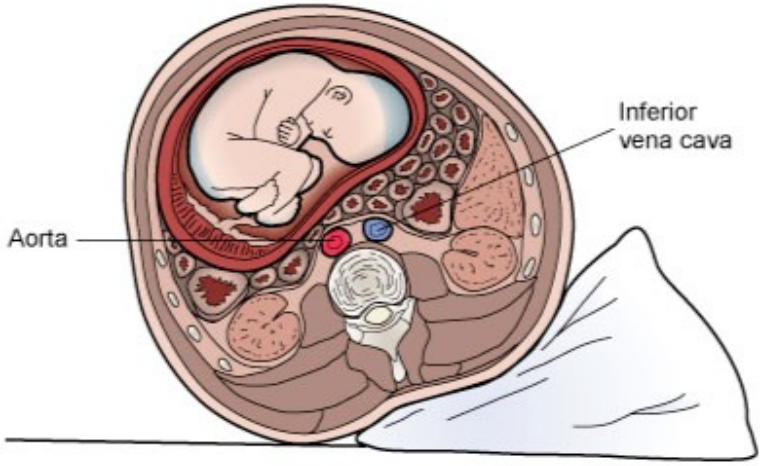
Massage in the First Trimester

Massage is safe during this 14 week long period.

Massage in the Second Trimester

- As the client's body changes, the pregnancy begins to show
- Pressure on blood vessels occurs when they are lying supine
- A small foam wedge or pillow under their right hip tilts the abdomen just enough to move the baby off the abdominal blood vessels





Massage in the Third Trimester

- Baby's growth is greater
- Postural changes in the mother are evident
- Use positional and technique modifications listed below as needed
- Expectant clients may notice occasional, preparatory, or Braxton Hicks contractions in which the uterus contracts and then relaxes
- Colostrum, the early form of breast milk, may leak from the breasts resulting in many clients leaving on their bras during massage

Response Moment



General suggestions for pregnant clients

Situations addressed by massage for pregnant clients

Precautions for all Trimesters

First trimester precautions

Second trimester precautions

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients

Precautions for all Trimesters

First trimester precautions

Second trimester precautions

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients Stress, edema, aches and pains in muscles and joints, anxiety, and depression.

Precautions for all Trimesters

First trimester precautions

Second trimester precautions

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients Stress, edema, aches and pains in muscles and joints, anxiety, and depression.

Precautions for all Trimesters Abdominopelvic pain, cramping, or vaginal bleeding. Immediate medical attention and medical clearance before massage.

First trimester precautions

Second trimester precautions

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients Stress, edema, aches and pains in muscles and joints, anxiety, and depression.

Precautions for all Trimesters Abdominopelvic pain, cramping, or vaginal bleeding. Immediate medical attention and medical clearance before massage.

First trimester precautions Massage is safe.

Second trimester precautions

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients Stress, edema, aches and pains in muscles and joints, anxiety, and depression.

Precautions for all Trimesters Abdominopelvic pain, cramping, or vaginal bleeding. Immediate medical attention and medical clearance before massage.

First trimester precautions Massage is safe.

Second trimester precautions Elevating the right hip in supine alleviates pressure on the abdominal blood vessels.

Third trimester precautions

General suggestions for pregnant clients Prepare in advance. Listen carefully while the client tells you how THEY are experiencing pregnancy. Be open-minded, patient, tolerant, and flexible.

Situations addressed by massage for pregnant clients Stress, edema, aches and pains in muscles and joints, anxiety, and depression.

Precautions for all Trimesters Abdominopelvic pain, cramping, or vaginal bleeding. Immediate medical attention and medical clearance before massage.

First trimester precautions Massage is safe.

Second trimester precautions Elevating the right hip in supine alleviates pressure on the abdominal blood vessels.

Third trimester precautions Braxton-Hicks contractions. Colostrum.

Massage and Common Discomforts of Pregnancy

Fatigue

Nausea and Vomiting

Nasal Congestion

Lower Back Pain

Leg Cramps

Deep Vein Thrombosis and Blood Clots

Varicose Veins

Edema

Frequent Urination

Massage and Common Discomforts of Pregnancy

Fatigue Feeling unusually tired.

- Eating, breathing, and eliminating for two requires a great deal of energy
- Reduce treatment time to 30 minutes and use lighter-than-normal pressure
- If dizzy when getting up from the massage table, have them sit up slowly and remain seated for at least 30 seconds before standing. Be ready to assist.

Massage and Common Discomforts of Pregnancy

Nausea and Vomiting Massage is contraindicated.

Massage and Common Discomforts of Pregnancy

Heartburn Burning sensation in the chest. Common during the third trimester.

Massage and Common Discomforts of Pregnancy

Nasal Congestion

- 30% of pregnancies have congestion without any other cold symptoms.
- Usually starts in the third month and can last until the baby is delivered.

Massage and Common Discomforts of Pregnancy

Lower Back Pain

- As the uterus expands, the body may lean backward to compensate.
- Temporary relief: spend extra time on the lumbosacral area and buttocks.



Massage and Common Discomforts of Pregnancy

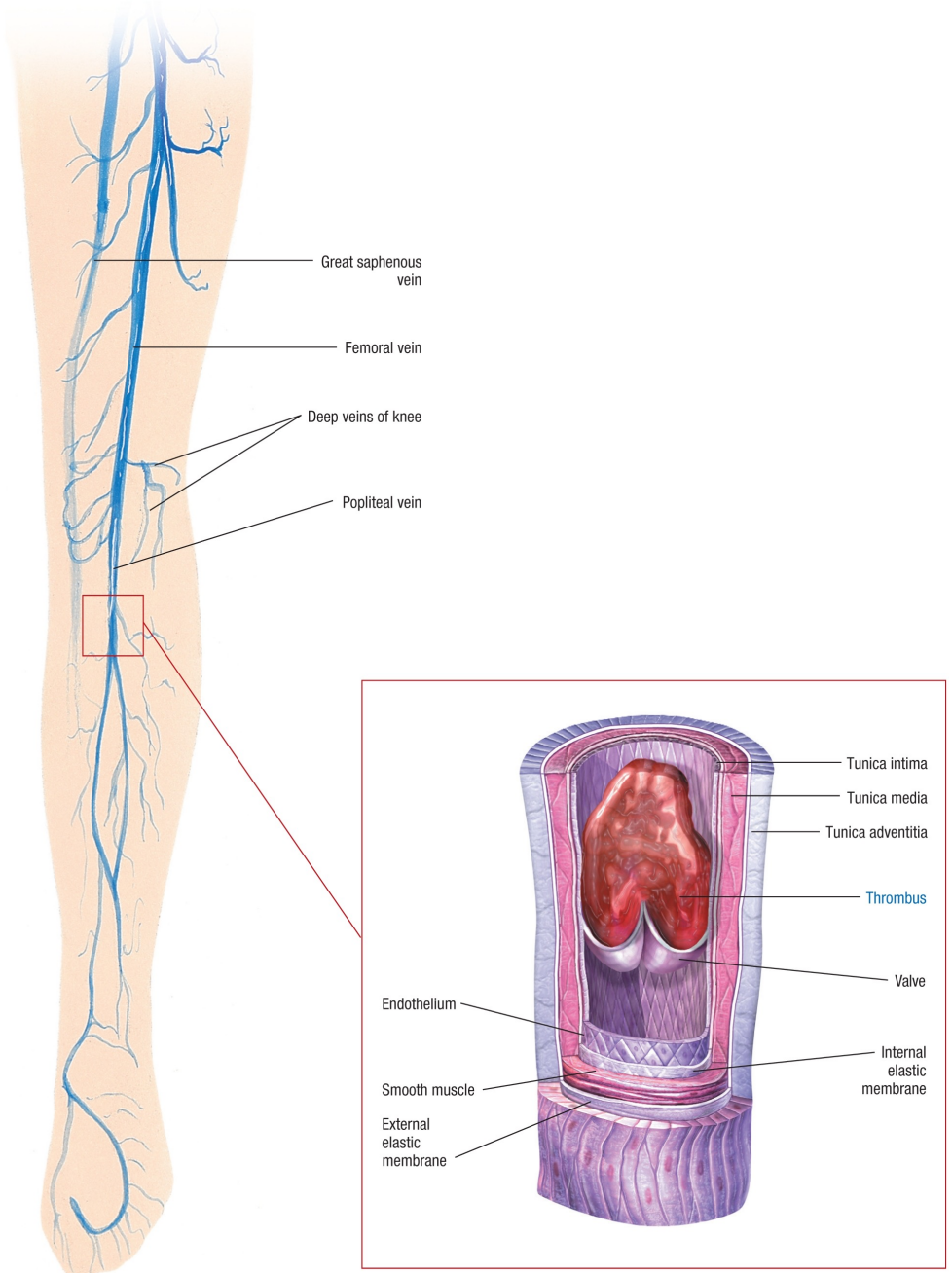
Leg Cramps (AKA: Charley Horse)

- Heavy uterus presses on blood vessels compromising blood flow to the legs.
- To prevent plantarflexion, undrape or use a light drape while supine
- If cramping occurs, dorsiflex the ankle to stretch the calf muscles.

Massage and Common Discomforts of Pregnancy

Deep Vein Thrombosis and Blood Clots

- Decreased clot-resolving properties, and increased clot-producing factors
- 5 to 6 times greater risk for blood clots
- To assess for DVT, lightly palpate entire leg feeling for hot spots


Great saphenous vein
Femoral vein
Deep veins of knee
Popliteal vein
Tunica intima
Tunica media
Tunica adventitia
Thrombus
Valve
Endothelium
Internal elastic membrane
Smooth muscle
External elastic membrane

Massage and Common Discomforts of Pregnancy

Varicose Veins

- Developed or worsened during pregnancy
- Locally contraindicated if pressure causes pain
- Use bolsters or pillows to elevate legs above the heart



Massage and Common Discomforts of Pregnancy

Edema

- Swollen feet and ankles due to fluid volume increases in the third trimester and enlarged uterus pressing on abdominal blood vessels
- More prevalent at the end of the day. Worse during summer months

- Pitting edema: dents left when edematous skin is compressed and released

- For mild edema, elevate the affected area during massage
- Widespread and pitting edema requires medical clearance





Massage and Common Discomforts of Pregnancy

Frequent Urination

- Caused by an enlarged uterus pressing on the urinary bladder
- Hormonal changes also cause the retention of and the release of fluids
- Suggest that the client void before the session or during if needed

Additional Suggestions

Technique Restriction

- No connective tissue and deep myofascial release techniques due to relaxin
- No manual traction of the legs to avoid separation of the pubic symphysis
- Joint mobilizations must be adjusted to protect and support lax joints

Additional Suggestions

Body Temperature

- Avoid hot packs, heating elements, and hot stones
- Remove the blanket and uncover their arms and legs
- Place a cool washcloth over the forehead or across the base of the neck
- An oscillating fan may also be used

Additional Suggestions

No Abdominal Bodywork

Comfort

- Be willing to make adjustments in techniques, pressure, or position
- Be responsive to your pregnant client's mood
- If your client is experiencing sadness or is grieving, be accepting and supportive of emotional expressions such as crying

Additional Suggestions

High Risk Pregnancies Pregnancies that put the client, the developing fetus, or both at higher-than-normal risk for complications during or after the pregnancy and birth.

- Twins, triplets, higher-order multiples
- History of pre-term labor or delivery
- Age of less than 15 or greater than 35
- Vaginal bleeding
- Complications caused by pregnancy itself, such as gestational diabetes or pre-eclampsia **(high blood pressure and signs of damage to a system such as the kidneys)**
- Abnormalities or infections of the urogenital tract
- History of miscarriage
- Pre-pregnant weight is less than 100 lb **or** the client is obese (BMI = 30)
- When pre-natal tests indicate fetal abnormalities

Additional Suggestions

Review the Packet Pages:

Considerations for Prenatal/Pregnancy Massage

E-96a and E-96b

47a A&P: Pregnancy