Pregnancy Massage 101:
Cardiovascular Adaptations

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Webinar Intentions
To offer massage therapists a foundation for understanding:
• Blood, fluid, and cardiac prenatal changes
• How to adapt positioning for blood flow
• How to avoid potentially dangerous work on legs and feet
• How to adapt leg technique for edema relief and for musculoskeletal pain

Note: This webinar does not certify you to practice prenatal massage.
Terms of Participation for Pregnancy Massage 101 Webinars

- I realize that the health and well-being of my clients and their offspring are influenced by my understanding and application of this material; therefore, I am committed to the conscientious study and thorough absorption of the information presented in this webinar.
- I understand that this webinar offers reliable, yet limited education in prenatal massage therapy. I understand that it does NOT include labor, postpartum, or any clinical or hands-on instruction or evaluation; therefore, this is NOT a certification program.
- I agree not to represent myself directly or by implication in marketing activities or any communications to clients or others that I am certified, endorsed, or authorized by the Benjamin Institute or by Carole Osborne, Body Therapy Associates, or any other agency to practice or teach prenatal massage therapy on the basis of participation in this webinar.
- I recognize that, on the basis of this webinar, I am especially not prepared to work with those women whose pregnancies are complicated by medical conditions or a higher risk of complications developing; therefore, I will refer these individuals to others more thoroughly educated and certified in this specialization.
- The safety and health of the expectant woman and her child(ren) are my foremost concern; therefore, I will seek guidance from her prenatal healthcare provider prior to providing services.
- If I have any doubt as to the prudence of any somatic practices for my population(s), I will refrain from such procedures and seek guidance from her prenatal healthcare provider regarding her care.
- I agree to conduct my practice of prenatal massage therapy in accordance with the ethical and legal guidelines of the organizations to which I belong or by which I am licensed or registered.

Preview Test Questions

1. What major circulatory system changes are normal during healthy pregnancies?
2. What potential problems may arise from these changes?
3. What is supine hypotensive syndrome?
4. What characteristics of edema are associated with medical complications?
5. What pressure adaptations are advisable when massaging the legs of expectant women?
6. What areas of the feet and legs require most precaution for maximum safety?

General changes

- Total blood volume increase peak of 50%
- Heart enlarges, increased pulse and 30-50% more output
- 40% increase interstitial fluid
- More peripheral vasodilation
Normal Pregnancy-induced Edema
(lymphostatic or nonpitting edema)

- No depression left with finger pressure
- Affects lower legs & feet in later 2nd & 3rd trimesters
- Worsened by extending periods of standing or sitting
- Relieved some by elevating legs

Pelvic Veins
Lymphatics of Leg and Pelvis

Circulatory Effects of Enlarged Uterus

- Lower leg edema
- Increased femoral venous blood pressure
- Varicose and spider veins
- Thrombi

Lower Extremity Thrombi

Very high levels of estrogen and progesterone + hypercoagulation (clotting) + decreased fibrinolysis (clot dissolving) + increased fluid + restricted iliac circulation + relaxed smooth muscle in veins = \textbf{blood clots}

Worsens if reduced activity level
Lower Extremity Thrombi

In pregnancy, often without symptoms.

Signs and Symptoms:
- Edema
- Heat
- Redness
- Aching or tenderness that worsens when standing or walking
- Palpable thrombus

Vascular Changes

- Varicose veins
  - Spider veins

Blood Pressure

- Increased femoral VENOUS pressure
- Arterial BP same as non-pregnant in healthy pregnancies
- If increased arterial BP ➔ prenatal medical complication
Supine Hypotensive Syndrome
Decreased BP caused by the uterus and other organs compressing the inferior vena cava sufficiently to reduce venous return

Practice Ramifications of Circulatory Changes
Who and When to Massage
Edema vs. PIH
Pressure Guidelines
Technique Modifications
Positioning

When NOT to Massage
With this level of education, refer the following women to a more fully trained therapist or pursue in-depth, advanced training:

• Women with underlying heart conditions
• Women who are very sedentary
• Women with diagnosed blood clots or other vascular conditions
• Women with high-risk conditions affecting circulatory system
• Women with diagnosed pregnancy-induced hypertensive conditions (PIH) and other conditions necessitating bedrest
• Women with signs and symptoms of PIH
Signs and Symptoms PIH

- Elevated BP
- Systemic edema
- Pitting edema
- Rapid weight gain
- Other signs of more severe PIH (pre-eclampsia and eclampsia) include: right upper quadrant pain, severe headaches, vision disturbances, convulsions

Guidelines for Relief of Superficial, Non-pitting Edema

Skin technique

- Slow
- Repetitive
- Proximal to distal with strokes toward regional lymph nodes

Supine & Semi-reclining Positioning for Edema Relief

Elevate lower legs
Sidelying Positioning for Edema Relief

Don’t stack legs, unless symphysis pubis pain
Maintain ceiling-side leg horizontal

Pressure Adaptations on Legs
For extremity muscular tension, fascial and joint restrictions, use movement and deeper methodologies with precautions that follow.

Precautionary Areas
• Lower pelvis or inguinal area
• For several inches along and posterior to the sartorius muscles, distal to the medial knees, and along the medial tibial borders
• Areas of vascular weakness
Varicose veins

Spider Veins

Risky Techniques for Precautionary Areas

<table>
<thead>
<tr>
<th>Deep effleurage, kneading or other Swedish techniques</th>
<th>Deep tissue massage</th>
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<tbody>
<tr>
<td>Cross-fiber friction</td>
<td>Acupressure</td>
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Any technique or positioning that creates ischemic compression or stripping effect

Avoid Secondary Pressure to Medial Leg
Risky Techniques Throughout the Legs

- Percussion
- Deep vibration
- Rolling
- Wringing
- Shaking
- Brisk movements

Thromboembolism

A moving, not stationary blood clot.

6x more common in pregnancy and can be fatal

Highest Risks of Thromboembolism

- Moderate and severe varicose veins
- Smoker
- Recent use of birth control pills
- Obese
- Sedentary or on bedrest
- 4+ pregnancies
- Age over 30
- Preeclampsia/eclampsia
- Placental abnormalities
- Preeclampsia/eclampsia
- Intrauterine fetal death
- Lupus
Explaining Your Caution

- I have concern about {sign/symptom}
- Could be minor or could be serious (like a blood clot in a vein)
- I cannot say either way, cannot diagnose
- I recommend calling/seeing your doctor, ask what to do
- In the meantime, I should not press on that area or on other leg (Glen Walton, Blood clot webinar, 2011)

Precautionary Points Calf and Foot
**Calf and Foot Guidelines**

Avoid bone-to-bone pressure on
- reflex points with downbearing energetic effect
- reflex points for uterus and endocrine glands.

**Signs of Supine Hypotensive Syndrome**

- Low maternal BP
- Uneasiness
- Dizziness
- Weakness
- Nausea
- Shortness of breath

**Preventing Supine Hypotensive Syndrome**

Never position flat on back more than 3-5 minutes after the first trimester.
In 14-22 wks - use wedge under right ilium & hip
In 23 wks to term - elevate from hip to head at 45 to 75 degrees
Side lying Positioning

- Provides most unrestricted circulation to the fetus and the mother.
- Left slightly more favorable than right side, but most are safe and comfortable on either side.

References

Further Information and Training

Certification in Pre- and Perinatal Massage Therapy

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Thank You! Any Questions?

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