

PRE AND PERINATAL MASSAGE

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Circulatory Benefits

To provide for foetal needs, prenatal adaptations of the circulatory system are profound. Resulting discomforts, such as oedema, varicose veins, and high blood pressure, often respond well to appropriate massage therapy.

Elevated oestrogen and progesterone production during pregnancy increases total blood volume by as much as 30% to 50%. By weeks 24 to 34, the plasma volume alone has increased by 40%. All blood components, including white blood cells, serum protein, and serum enzymes, are elevated. Since red blood cells increase at a lower rate, many women become anaemic. Perhaps the greatest change women notice is the increase in interstitial fluid volume (oedema), which is 40% higher than non-pregnant levels in the third trimester and results in swollen legs and ankles.

Pelvic myofascial restriction and the mechanical effects of the weighty uterus contribute to swelling, working much like a cork in a bottle of effervescent liquid, restricting femoral fluid return. As a result, about 75% of women suffer normal, pregnancy-induced (non-pitting) oedema in the lower extremities, first occurring in the late second or third trimester.

Uterine compression of the iliac veins and inferior vena cava also restricts blood flow contributing to the development of varicose veins in the legs and vulva. Increased femoral venous blood pressure challenges the integrity of the valves of the femoral, saphenous, and other leg veins already compromised by progesterone's relaxation of the smooth muscle walls. A woman's heredity and diet, prolonged sitting or standing, and the position and size of her baby are important factors contributing to oedema and varicose veins. Higher levels of progesterone also dilate the peripheral blood vessels that often burst to form spider veins (spider nevi).

Swelling in the hands, face, or the entire body, or that which occurs in the first or second trimester may be indicative of a complication of pregnancy called gestational oedema proteinurea hypertension complex (GEPH). This complication is also known as preeclampsia and is typified by pitting oedema, as evidenced by a depression and blanching of the skin for several seconds to several minutes after it is pressed.

As indicated by the name, GEPH is also typified by high blood pressure. While arterial blood pressure usually remains constant prenatally, when pregnancy-induced hypertension (PIH) occurs it involves an increase of 30 systolic or 15 diastolic readings (systolic/diastolic). For a small percentage of women, oedema can result in carpal tunnel syndrome with moderate to severe pain in the arms and hands, particularly in the middle and index fingers.

"Before the massage, I had been holding water in my legs and feet. Afterwards, the swelling lessened, and my whole body felt very relaxed and ready for a peaceful nap." - Aletha

Swedish massage and lymphatic drainage massage produce autonomic vascular reflexes that promote delivery of oxygen and nutrients and removal of waste materials. Manually pumped by effleurage, petrissage, kneading, and other compression techniques, lymph capillaries are repeatedly emptied and refilled, producing a sustained increase in the rate of lymph formation and removal. Massage also opens capillary beds, which increases the total capillary surface area and temporarily increases both venous and capillary hydrostatic pressure to increase lymph filtration and formation. Specifically for the pregnant woman, this effect facilitates the physiological processes of gestation. An enhanced supply of nutrients and oxygen and accelerated removal of waste products promotes cellular respiration, improving both mother's and baby's tissue health. Techniques promoting circulation of blood and lymph, especially Swedish massage and lymphatic drainage techniques, support circulatory function. These methods decrease the negative effects of increased blood and interstitial fluid volumes.

These same circulatory techniques assist in reducing oedema. Performed rhythmically, lymphatic strokes work like a hydraulic pump shifting excess fluid from the tissues to the blood. The mechanical effects of compression strokes increase capillary blood flow and produce local vasodilatation through increased histamine release. These effects also may be induced through the autonomic vascular reflexes described above.

If myofascial restriction in the inguinal area is contributing to leg oedema and varicose veins, careful, specific deep tissue and/or passive movement techniques can help relieve oedema. Most benefit is derived from gentle work with the hip joints, tensor fasciae latae, rectus femoris, sartorius, and adductor muscles, and the inguinal ligament. Studies indicate that slow, rhythmic stroking paravertebrally from the crown of the head to the sacral area lowers high blood pressure and heart rate.

Any other methods that promote parasympathetic activity should lower blood pressure as well.

Effects of Swedish Massage and Lymphatic Drainage During Pregnancy:

- Assist in reducing oedema
- Reduce varicose vein development and pain
- Promote increased blood and lymph circulation
- Open capillary beds
- Promote cellular respiration
- Reduce blood pressure
- Improved Physiological Functioning

Skin stimulation research

The skin's importance to the human being is evidenced by a few pertinent facts: it is one of the largest organs in the body, measuring 6% to 8% of total body weight, and a quarter-sized area of the skin contains over three million cells, including extensive sensory nerves endings and blood supply. Ashley Montagu, anthropologist and "skin scholar," describes the brain as "the inside layer of the skin, and the skin the outside layer of the brain." This analogy is supported by embryological development, as the skin tissue is the first to differentiate, and it evolves out of the same tissue as the brain. Research on the far-reaching effects of skin stimulation powerfully argues the potential benefits of pre- and perinatal massage therapy.

Swedish Massage (Circulatory): Traditional European massage which employs a variety of pushing, pulling, lifting, percussive, and compressing strokes to affect the underlying muscular and vascular systems; also employs "gymnastic" passive movements; may be performed very slowly and softly (Esalen style).

Methodological Precautions and Contraindications

Circulatory system and massage therapy precautions.

During pregnancy, the blood's clotting capacity increases to four or five times higher than non-pregnant levels. Because the clot-dissolving capacity (fibrinolysis) decreases dramatically, women are more protected from potential haemorrhaging during childbirth; however, they also are more likely to develop blood clots (thrombi). Thrombi are also the result of the growing gravid uterus restricting iliac and femoral circulation and contributing to sluggish blood flow; higher progesterone levels relaxing vascular smooth muscles; and increased metabolic demands elevating blood and interstitial fluid volumes.

Thrombosis can occur in any vein during pregnancy; however, clot formation is greatest in the veins where blood is most stagnant. The veins most likely to harbour clots during pregnancy are the deeper iliac, femoral, and saphenous veins. When clots accumulate in these vessels, they may create some discomfort, but they pose no major threat, unless inflammation and/or infection (thrombophlebitis) develops. Deep vein thrombosis is more serious when clots dislodge, move into circulation, and occlude smaller vessels in the lungs (pulmonary embolism), heart (coronary thrombosis), or brain (cerebral embolism). These types of thromboembolisms occur five to six times more frequently in pregnancy.

While most women will develop clots, the more sedentary a woman is, the higher the likelihood of thrombi. Women on bed rest are especially prone to clot production, as are women over 30, those who are obese, have lupus, or are expecting their fourth or more baby. Abruption of the placenta, preeclampsia/eclampsia, and intrauterine foetal death all increase clot formation, sometimes leading to a further serious complication involving generalised activation of the coagulation process (disseminated intravascular coagulopathy).

The characteristic symptoms of leg thrombi include increased oedema in the foot and/or leg, localised swelling, heat, redness, and painful, achy legs. While these symptoms may indicate the presence of thrombi, swollen and achy legs unrelated to thrombosis are common in pregnancy. A clear determination of the presence of clots is also difficult because often thrombi are asymptomatic.

Given the hypercoagulable state of pregnancy and potential harm of freely circulating clots, eliminate procedures which have the potential to flush thrombi from their likely harbours. Follow these guidelines.

- Do not press deeply into the abdomen, especially in the inguinal area.
- Use only superficial, whole-hand pressure throughout the medial surface of the legs where problematic veins traverse, specifically along and posterior to the sartorius muscles, distal to the medial knees, and along the medial tibial borders.
- Perform no deep, pointed, or stationary pressure sufficiently sustained to restrict localised blood flow (ischaemic pressure) in these areas, regardless of the type of technique and its otherwise potential benefits.
- Eliminate tapotement (percussion) from Swedish leg work, and limit cross-fiber friction, trigger point therapy, deep tissue, acupressure, and any other deep pressure to other, safer body parts.
- Eliminate leg work entirely when client is on bed rest, or if placental abruption, preeclampsia, reduced foetal movement, or other conditions increasing clot risks occur.

Following these guidelines will also protect vascular areas weakened by the hormonal effects of progesterone, including spider veins and varicose veins. Varicose veins and clots are most frequently found in the same blood vessels. In any areas of varicose or spider veins, additionally modify massage therapy techniques according to the severity of the condition:

Mild (visible, convoluted, rosy veins):

use only appropriate Swedish and lymphatic drainage strokes at moderate pressure.

Moderate (palpable veins with convoluted pathways):

appropriate Swedish and lymphatic drainage strokes using a light pressure.

Severe (palpable, raised veins, purplish, bruised surrounding tissue):

use only featherlight touch; use other procedures that help relieve pelvic congestion