

Massage and Pregnancy

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Introduction

Pregnancy is a sequence of events that begins with implantation, continues with embryonic and fetal growth, and ends with childbirth. Normal gestation is approximately 10 lunar months (40 weeks, 9 calendar months, or 266 days) and is divided into trimesters. The first trimester is the first 14 weeks of pregnancy (from the first day of the last period). The second trimester is week 15 to week 28. The third trimester spans from week 29 to birth, which takes place around week 40.

Pregnancy Massage and Research

Pregnancy massage is modification of techniques and body positions to meet the needs of women as they undergo changes during pregnancy and the postpartum period.

Massage therapy reduced anxiety, improved mood, promoted sleep, decreased back pain (Field, 2010; Field et al., 1999) and leg pain, and decreased depression (Field, 2010) in pregnant women. When massage therapy was used during labor, labors were, on average, 3 hours shorter in duration, there was less need for pain medication (Field, 2010), women had fewer complications, and their infants had fewer postnatal complications such as prematurity (Field et al., 1999). Reflexology reduced labor pain intensity (Moghimi-Hanjani, Mehdizadeh-Tourzani, & Shoghi, 2015; Valiani, Shiran, Kianpour, & Hasanpour, 2010), decreased labor pain duration, and reduced anxiety in women giving birth for the first time (Moghimi-Hanjani et al., 2015). The American Pregnancy Association (2017a) supports the use of prenatal massage.

First Trimester

The first trimester is the first 14 weeks of pregnancy. The fertilized ovum enters and implants into the uterus and becomes an embryo. After 8 weeks, the embryo is called a fetus. Most development occurs in this trimester. There are a few massage adjustments made for miscarriage signs and symptoms, deep vein thrombosis, morning sickness, and breast changes.

Miscarriage

Miscarriage is the premature termination of a pregnancy and occurs in approximately 20% to 30% of all pregnancies. Miscarriage is a type of spontaneous abortion. Other types of abortion are therapeutic and elective. Spontaneous abortion refers to the involuntary termination of pregnancy with or without an identifiable cause at up to 20 weeks' gestation or below a fetal weight of 500 grams. A pregnancy that is ended because its progression is harmful to a woman's health (e.g., ectopic pregnancy) is called a therapeutic abortion. If the woman does not wish to be pregnant and elects to terminate the pregnancy, it is called an elective abortion.

Ectopic pregnancy, which occurs in approximately 1 in 250 pregnancies, is implantation of a fertilized ovum outside the uterine cavity. Although 95% of ectopic pregnancies occur in the fallopian tube, they have also been found on an ovary, the cervix, the outer wall of the uterus, the peritoneal surface of the abdominal cavity, and even in the vaginal canal. Ectopic pregnancy cannot proceed normally, and, if allowed to progress, the formed placenta can penetrate the wall of the fallopian tube or major blood vessels, both of which can cause internal hemorrhage, which can lead to maternal death. Incidence rates of ectopic pregnancy have risen

over the last 20 years, probably because of the increased incidence of PID in young women. Miscarriages are also called spontaneous abortions. Ectopic pregnancies are also called tubal pregnancies. *Signs and symptoms* of miscarriage are abdominopelvic pain, cramping, and vaginal bleeding or spotting. The most common symptoms of ectopic pregnancy are sudden onset of severe abdominal or lower back pain and vaginal bleeding. In approximately 20% of cases, the first symptom is shock (disorientation, profuse sweating, increased heart and breathing rate, loss of consciousness).

Massage therapy. Postpone massage therapy if your client is experiencing any signs or symptoms of miscarriage or ectopic pregnancy and make a referral to her obstetrician or health care provider who is managing the pregnancy. This restriction is true for all trimesters. The time after miscarriage can be emotionally as well as physically taxing. Be sure your touch and presence are supportive and compassionate during this time.

Deep Vein Thrombosis

Deep vein thrombosis (DVT) is inflammation of a deep vein with blood clot formation. The most serious complication of DVT is pulmonary embolism; 90% of pulmonary emboli originate as blood clots from leg veins. Because of decreased clot-dissolving properties during pregnancy and increased clot-producing factors, pregnant women are at a five to six times higher risk for DVT. This risk remains until 10 weeks after childbirth. *Signs and symptoms* of DVT are unilateral leg swelling, heat, redness, pain, and tenderness.

Massage therapy. Screen all pregnant clients for DVT by looking for signs and symptoms. If your client has any signs or symptoms of DVT, postpone the massage and refer the client to her obstetrician or appropriate health care provider for evaluation and treatment. This restriction is true for all trimesters and continues until week 10 postpartum. Left-sided DVT is more common during pregnancy than right-sided DVT (Chan, Spencer, & Ginsberg, 2010).

Morning Sickness

Morning sickness is nausea that occurs during pregnancy. The term is misleading, as morning sickness can occur at any time of the day or night. Morning sickness can begin as early as day 10 and is most prevalent during the first trimester but can occur throughout pregnancy. Morning sickness affects approximately 75% of pregnant women and is also called nausea and vomiting of pregnancy (NVP). Some cases become severe and require hospitalization. *Signs and symptoms* of morning sickness are feelings of nausea with or without vomiting.

Massage therapy. Consider using a semireclining or upright position during most of the session because this position may reduce nausea. Massage promoted relaxation and reduced the negative impact of severe NVP during pregnancy (Agren & Berg, 2006). Acupressure reduced NVP symptoms (Lee & Frazier, 2011), as did acupressure applied to pericardium 6 (P6) using human hands (Werntoft & Dykes, 2001) or a wristband (Norheim, Pedersen, Fønnebo, & Berge, 2001; Steele, French, Gatherer-Boyles, Newman, & Leclaire, 2001) used to apply constant pressure over this point. P6 is an acupoint located three finger widths above the wrist on the anterior surface of the forearm. Avoid techniques that cause the client to rock or shake because excessive body motion may worsen nausea. Anecdotal evidence suggests that sucking on lemon drops, peppermints, or ginger candy may reduce mild nausea.

Breast Changes

Female breasts undergo many changes during pregnancy. Fat accumulates, and blood supply increases, causing breasts to enlarge in size. These changes begin by week 8. In the third trimester, breasts may leak colostrum (early breast milk) in preparation for their job of infant nourishment. *Signs and symptoms* are that breasts become larger, heavier, and tender. Some women notice visible veins on their breasts during pregnancy.

Massage therapy. Use supportive cushions and positional modifications to make your client as comfortable as possible. In addition, several table manufacturers offer massage tables with recesses that allow the pregnant client to lie in the prone position or offer specially designed bolstering systems that lie on the table top. If she elects to wear a bra during the massage, modify your technique to work around the bra or ask if you can unhook the bra to work the mid-back area. Be sure to memorize the hook position and rehook the bra when the massage to the mid-back is complete. Contact or occupational exposure to breast milk does not pose any health risk to the therapist. The CDC (2014) does not list breast milk as a body fluid that requires special handling precautions (unless there is frequent exposure, such as for persons working in a milk bank).

Hot Immersion Baths and Pregnancy

Pregnant women should not use hot immersion baths, hot tubs, or spa tubs, as they have been linked to neural tube defects and spontaneous abortion (Chambers, 2006).

Essential Oil Safety and Pregnancy

The following essential oils are to be avoided during pregnancy: aniseed, cypress, dill, hyssop, Spanish lavender, and star anise (Buckle, 2015).

Second Trimester

The second trimester spans week 15 to week 28. Many discomforts of the first trimester have resolved, and the mother-to-be begins to feel more energetic. She will begin to experience her baby moving between weeks 18 and 22 for first-time mothers and earlier for women who have had previous advanced pregnancies. There are a few massage adjustments to reduce the risk of supine hypotensive syndrome and for conditions such as preeclampsia and gestational diabetes mellitus.

Supine Hypotensive Syndrome

Supine hypotensive syndrome is a drop in blood pressure caused by compression of the pregnant uterus against major abdominal blood vessels, especially the abdominal aorta inferior vena cava. Signs and symptoms are usually transient and resolve with change in positioning. Supine hypotensive syndrome is also called aortocaval compression syndrome. *Signs and symptoms* of supine hypotensive syndrome are dizziness, shortness of breath, pallor, nausea, and agitation.

Massage therapy. Use a side-lying position or a left lateral tilt while your client is supine from about week 22 to prevent supine hypotensive syndrome.

Side-lying. The American Pregnancy Association (2017c) recommends sleeping on the left side because it helps blood travel from the heart to the placenta and prevents the enlarged and heavy uterus from putting pressure on the liver. Stacey et al. (2011) found a slight connection between women in late pregnancy who slept on their backs/right sides and stillbirth. Although body positions used while sleeping many hours are not

the same as body positions used when receiving 30-, 60-, or 90-minute massages, it appears that the left side is the safest choice for the unborn.

For a side-lying position, ask your client to lie on her left side and to slide backward until both hips and shoulders are approximately 4 inches from the table edge. Placing your hands at the appropriate distance helps the client know when to stop sliding across the table. This placement on the table accomplishes two things. First, it is easier to massage the back when it is closer to the table's edge. Second, it provides extra room in front of the client for pillows that will be placed on the tabletop.

Place the first pillow beneath the client's head. The client's wrist can rest on this pillow. The next pillow is placed in front of the client's chest for the arm (i.e., arm not lying directly on the table). The next pillow is needed for the client's leg (i.e., leg not lying directly on the table). Be sure that the upper and lower extremities are the same height (i.e., shoulder, elbow, and wrist at same height and hip, knee, ankle at same height). A small pillow or towel roll is used to support the opposite ankle. When done properly, the client's spine is in a neutral position and not rotated. Having the upper hip, knee, and ankle aligned in the same horizontal plane also reduces overstretching of the sacroiliac joint. A properly supported side-lying position also stabilizes the client; she is less likely to roll forward or backward as pressure is applied during the massage. Be sure to remove all pillows before asking your client to get up and get dressed.

Left lateral tilt. To create a left lateral tilt while she is in the supine position, place a small cushion beneath her right hip to tilt her body toward the left. This elevation of the right hip moves the uterus off the abdominal blood vessels. Be sure the client is also in a semireclining position while supine. This modification also should be used in the third trimester while the pregnant client is in the supine position.

High Risk Pregnancies

High-risk pregnancies are ones that are more likely to have complications, including disease and death to the mother, the developing fetus, or both. Elaine Stillerman, pregnancy massage expert, divides high-risk pregnancies into several categories, such as low-level and high-level factors, with accompanying massage modifications.

Low-level risk factors and massage therapy. These include maternal age (<15 and >35), twins, triplets, or higher order multiples, use of assisted reproductive technologies (ARTs) such as in vitro fertilization, complications from previous pregnancies, multiple past miscarriages, and fetal genetic abnormalities. Low-level risk factors do not necessitate special treatment modifications other than those recommended for normal pregnancy.

High-level risk factors and massage therapy. These include preeclampsia or eclampsia, gestational diabetes mellitus, placenta previa, placental abruption, premature labor, and lack of fetal movement in 8 to 10 hours. High-level risk factors do require treatment modifications and usually involves postponement of the massage.

Preeclampsia

Preeclampsia is persistent high blood pressure with protein in the urine that develops after 20 weeks of gestation and returns to normal levels after childbirth. If left untreated, preeclampsia can damage retinal and kidney blood vessels. Preeclampsia occurs in 5% to 8% of all pregnancies. Preeclampsia is more common in first pregnancies, women with many prior pregnancies, women who are young or of advanced maternal age, and women who are pregnant with multiple babies. Preeclampsia is also called pregnancy-induced

hypertension (PIH). Eclampsia is a severe form of preeclampsia that involves seizures. If left untreated, eclampsia can lead to placental abruption (see section on High-Risk Pregnancies), pulmonary edema, and death. Eclampsia is rare and occurs in less than 1% of all pregnancies. *Signs* include widespread edema, hypertension, and protein in the urine. Some pregnant women with severe preeclampsia or impending eclampsia have headaches, dizziness, spots before the eyes (floaters), abdominal pain, nausea, and vomiting. Women with eclampsia will have seizures.

Massage therapy. Postpone the massage if your client has preeclampsia. In addition, screen your clients for preeclampsia starting at week 20. If you notice widespread edema, postpone massage and refer her to the obstetrician or health care provider who is managing her pregnancy for evaluation and treatment. This restriction is true for the third trimester, as well.

Gestational Diabetes Mellitus

Gestational diabetes mellitus (GDM) is a form of diabetes that develops in some pregnant women. GDM occurs in 2% to 5% of all pregnancies and is more common among obese women, women of advanced maternal age, and women with a family history of diabetes. Women diagnosed with GDM have a 50% chance of developing diabetes mellitus, type 2 later in life. Fetal complications related to GDM include excessive growth, respiratory distress syndrome, and premature birth. Hormones produced by the placenta may block insulin's action, causing or contributing to GDM. Most pregnant women are screened in the second trimester because this is when GDM usually develops. Most cases are controlled by changes in diet and increased physical activity. In approximately 10% to 20% of cases, insulin is prescribed. GDM is also called gestational glucose intolerance. *Signs and symptoms:* Most pregnant women are asymptomatic, whereas others experience excessive urination, excessive thirst, and excessive hunger. Malaise and blurred vision may also be present.

Massage therapy. Postpone massage until the condition is well managed (determined by the health care provider). At this time, proceed using the aforementioned guidelines for pregnancy massage. Avoid vigorous massage and heat/ice applications over sites of recent subcutaneous injections for 24 hours. Massage therapy was found to increase insulin absorption administered by subcutaneous injection (Berger, Cüppers, Hegner, Jörgens, & Berchtold, 1982; Linde, 1986). The increased absorption produced by massage could cause or contribute to complications such as hypoglycemia. Be sure to ask the client if she carries a glucose meter or glucose tablets or gel and, if so, where they are in case they are needed during a possible hypoglycemic episode.

Third Trimester

The third trimester is week 29 to birth, which is around week 40. As the baby grows, postural changes in the mother are evident. As a reminder, use a left side-lying position or left lateral tilt position while she is in the supine position during the third trimester. A seated position may also be used. There are a few massage adjustments for the effects of relaxin, heartburn, lower back pain, edema in the legs, ankles, and feet, varicose veins, frequent urination, stretch marks, placenta previa, and placental abruption.

Relaxin

Relaxin is a hormone produced by the ovarian corpus luteum and by the placenta. It is believed that relaxin promotes implantation in the first trimester and premature birth in subsequent trimesters by relaxing the uterus. Relaxin also helps the cardiovascular and urinary systems adapt to the increased demand for

oxygen and nutrients as well as waste removal during pregnancy. Toward the end of pregnancy, relaxin helps the cervix relax and dilate and relaxes ligaments to increase the flexibility of the pelvis in preparation for childbirth. Relaxin may have a slight effect on all joints in pregnant women by making them hypermobile. Pregnant women have 10 times the normal amount of relaxin compared with nonpregnant women, and the effects of relaxin remain in the body for 4 to 6 months after childbirth. *Signs and symptoms* include joints that feel loose, and some women report pelvic girdle pain from hypermobility. Some women report instability or clumsiness while walking.

Massage therapy. Because of relaxin's effects on connective tissue, joint mobilizations may need slight modifications, such as supporting beneath the joint with one hand while mobilizing the joint with the other hand. Avoid manual traction of lower extremities, because it may cause separation and pain over the sacroiliac and pubic symphysis joints.

Heartburn

Heartburn is a burning sensation in the chest behind the sternum. This sensation is often experienced in the area near the heart, hence the name heartburn. Pregnancy hormones such as relaxin and progesterone relax the lower esophageal sphincter (LES), allowing gastric juice to enter the esophagus. In addition, an enlarged uterus puts pressure on the stomach and pushes its contents into the esophagus. Heartburn most often occurs 30 to 60 minutes after eating or at night. Heartburn is also associated with gastroesophageal reflux disease (GERD). *Signs and symptoms* include burning sensations in the chest that worsen when the person is lying down. The person may have difficulty swallowing or may belch and express vomitus into the mouth.

Massage therapy. If your pregnant client has heartburn, the Mayo Clinic (2017) recommends waiting 3 hours to lie down after consuming a meal. Discuss this with your client and consider scheduling the massage appointment accordingly. If this is not possible, the Mayo Clinic also recommends elevating the upper body in a semireclining position while lying supine to reduce heartburn symptoms. Be sure to place a small cushion beneath your client's right hip while she is supine to promote a left lateral tilt and to help move her pregnant uterus off abdominal blood vessels. This position reduces the risk of supine hypotensive syndrome. A seated position also can be used.

Lower Back Pain

Lower back pain affects approximately 50% to 70% of pregnant women during the third trimester. This type of pain is often associated with postural changes such as leaning backward while standing and walking to compensate for the increased abdominal girth. Leaning backward may cause the pelvis to tilt anteriorly, placing strain on the lumbar spine and pelvic joints. Ligament laxity resulting from pregnancy hormones may cause or contribute to lower back pain. Uterine ligaments, such as the broad and round ligaments, may become overstretched as the uterus enlarges. *Symptoms* are pain and discomfort in the lower back, buttocks, or hips.

Massage therapy. Massage therapy is indicated and was found to reduce back pain in pregnant women (Field, 2010; Field et al., 1999). Spend extra massage time on the lower back, especially the lumbosacral and gluteal areas. If your client experiences lower back pain while repositioning herself or while getting on or off the massage table related to the uterine ligaments, suggest that she lie back down slowly and remain there until the pain subsides. After a few moments, ask her to try again, moving more slowly this time.

If lower back pain is severe or does not subside after the massage, refer the client to her health care provider, as this pain may be related to a medical condition such as kidney infection or preterm labor.

Edema in Legs, Ankles, and Feet

Edema, or swelling, may occur in the legs, ankles, and feet in the third trimester. This occurs from several factors. First, fluid volume increases up to 50% during this time. Next, an enlarged uterus compresses vessels and impairs circulation of blood and lymph in the lower extremities. Last, pregnancy hormones may contribute to swelling. *Signs and symptoms:* Legs, ankles, and feet enlarge, and the person may experience feelings of heaviness or tightness, as well as aching or discomfort in the affected or adjoining areas. Edema tends to be more severe at the end of the day and during summer months.

Massage therapy. For mild swelling of the legs, ankles, and feet, elevate your client's lower extremities by placing them on pillows or cushions. Use gentle gliding effleurage applied centripetally. Massage proximal to the affected area first and then proceed distally (e.g., massage the thigh, then the leg, and the ankle and foot last). According to lymph drainage techniques developed by Dr. Bruno Chikly (n.d.), the recommended pressure to move lymph is approximately 5 grams of pressure, or about the weight of a nickel. **Caution:** While mild swelling of the legs, ankles, and feet during pregnancy is normal and not a contraindication for massage, unilateral swelling or widespread swelling require referral to the client's obstetrician or health care provider who is managing her pregnancy. Unilateral leg swelling, especially in the presence of heat, redness, pain, and tenderness, could be a sign of a blood clot related to DVT. Widespread edema could be a sign of preeclampsia. In both cases, massage should be postponed until the condition is assessed and treated by the appropriate health care provider.

Varicose Veins

Varicose veins are dilated veins from incompetent valves. Women may develop varicose veins during pregnancy or find that varicose veins present before pregnancy worsen. Factors that contribute to varicose veins during pregnancy are increased blood volume combined with decreased blood return — an enlarged uterus compresses blood vessels and impairs blood flow. The compression also increases the pressure in veins located within the lower extremities. These factors add to the burden on an already compromised venous system. In addition, progesterone relaxes smooth muscles and dilates peripheral blood vessels, which contribute further to varicose vein development. *Signs and symptoms* include veins that are bluish-purple lines in the skin that may be bulbous and tortuous. The person may feel achiness or heaviness in the legs, and the area may itch. Signs and symptoms worsen after sitting or standing for prolonged periods of time.

Massage therapy. Avoid the affected area while your client is pregnant and for 10 weeks postpartum because of the increased risk of blood clots within veins.

Frequent Urination

A pregnant woman in the last trimester usually urinates more frequently. An enlarged uterus moves deeper into the pelvis and compresses the urinary bladder, leaving less space to store urine. Hormonal changes also contribute to frequent urination by stimulating urine production. *Signs and symptoms:* The pregnant woman experiences the urge to void more often compared with a non-pregnant woman. Most pregnant women indicate that they also void more frequently at night, especially when edema is present in the legs, ankles, and feet.

Massage therapy. Suggest that your client void before the massage as a comfort measure, and be prepared for a toilet break during the session. Have a robe available if the toilet is not connected to the massage room.

Stretch Marks

Stretch marks are caused by extreme skin stretching, which reduces its thickness. Stretch marks are most often located on the abdomen, breasts, hips, buttocks, and thighs. Approximately 50% of pregnant women acquire stretch marks. The likelihood and severity of stretch marks depend on genetic factors, the degree of skin stress from weight gain, and elevated levels of cortisone, as cortisone weakens elastin fibers within the skin. *Signs and symptoms* are marks that begin as pink, red, purple, reddish brown, or dark brown marks on the skin, depending on skin color; these marks later fade. Stretch marks may be slightly depressed and have a texture different from that of normal skin.

Massage therapy. Lighter-than-normal pressure is indicated over stretch marks. Massage will not reduce stretch marks because they are not caused by a build-up of collagen such as occurs in scar tissue.

Placenta Previa and Placental Abruption

Placenta previa occurs when the placenta partially or totally covers the cervical opening, or passage between the uterus and the cervix. Placenta previa occurs in 0.4% to 0.6% of all pregnancies. Common causes of placenta previa are past procedures that involve the uterine lining, an oversized placenta or multiple placentas from a pregnancy with more than one fetus, and advanced maternal age. Pregnant women diagnosed with placenta previa are placed on bed rest, pelvic rest (avoidance of anything in the vagina), and watchful waiting. If this condition does not resolve before the mother's due date, a cesarean delivery is usually required. *Signs and symptoms* include painless vaginal bleeding that is bright red. Some women also experience contractions with vaginal bleeding. In some cases, bleeding does not start until labor begins and the cervix dilates.

Placental abruption is the premature detachment of the placenta from the uterine wall. Placental abruption can cause hemorrhage in the mother and reduced oxygen and blood supply to the baby. This condition is more common in the third trimester, especially the last few weeks before childbirth. Evidence of placental abruption, which is any degree of placental detachment before labor, is seen in approximately 1 in 150 deliveries. Risk factors include abdominal trauma, substance use, pregnancy with more than one fetus, and advanced maternal age. In mild cases, the pregnant woman is placed on bed rest and pelvic rest (nothing in the vagina), and she and the baby are monitored. If the mother and/or baby is in danger, a cesarean delivery is usually required. *Signs and symptoms*, which usually appear suddenly, include severe abdominal pain and tenderness and vaginal bleeding. Bleeding may not be evident vaginally, especially if hemorrhage is inside the placental margins. The woman also may have back pain and cool, clammy, and pale skin, and rapid uterine contractions.

Massage therapy. Massage is postponed until the condition has been resolved or the child is born and the mother has fully recovered.

Additional Information: Prenatal and Postpartum Depression

Prenatal depression is a depressive mood disorder that occurs during pregnancy. Approximately 14% of women experience depression during pregnancy. Postpartum depression (PPD) is a depressive mood disorder that begins after childbirth and lasts beyond 6 weeks. It is usually short lived but can last several months.

Approximately 15% of childbearing women experience PPD. Prenatal depression can be a precursor to PPD if not properly treated. PPD is also called postnatal depression. *Symptoms* are the same as those of major depressive disorder, and can include a lack of concern for or even negative feelings toward the baby. Some women with PPD express overconcern for their babies.

Massage therapy. The overall effect of massage should be nurturing and relaxing. Massage decreased prenatal depression, reduced stress and anxious behaviors (Field et al., 2012; Field, Diego, Hernandez-Reif, Schanberg, & Kuhn, 2004; Field, Grizzle, Scafidi, & Schanberg, 1996), lowered cortisol (Field et al., 2004; Field et al., 1996) and norepinephrine levels, and increased dopamine and serotonin levels (Field et al., 2004). Depressed pregnant women who received massage reported less leg and back pain (Field et al., 2012; Field et al., 2004). Women with prenatal depression who combined psychotherapy and massage therapy experienced greater decreases in depression and anxiety and reductions in cortisol levels compared with women who did not receive massage with psychotherapy (Field, Deeds, et al., 2009). Field, Diego, Hernandez-Reif, Deeds, and Figueiredo (2009) found that pregnant women diagnosed with major depression who received massage by their significant other experienced lowered depression during the pregnancy period, and this effect extended into the postpartum period.

Newborns benefited from massage their mothers received while dealing with depression during pregnancy (Field et al., 2004; Field, Diego, et al., 2009). Depressed women who were massaged while pregnant experienced fewer childbirth complications, such as prematurity and babies with low birthweight, when compared with the nonmassaged group. Also, their newborns performed better on the Brazelton Neonatal Behavior Assessment (Field et al., 2004; Field, Diego, et al., 2009).

Foot reflexology massage reduced fatigue, stress, and depression in postpartum women (Choi & Lee, 2015). Onozawa, Glover, Adams, Modi, and Kumar (2001) found that both support group meetings and combining support group meetings with infant massage classes decreased postpartum depression, but only the infant massage group significantly improved the interactions between mother and infant. In addition, the American Pregnancy Association (2017b) promotes postnatal massage for decreasing depression.

Susan G. Salvo

facebook.com/susansalvo

MassagePassport@gmail.com

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