



PREGNANCY & INFANT

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PREGNANCY

- ▶ **Pregnancy is a state of wellness associated with many interrelated changes that occur throughout the woman's body as the fetus develops.**
- ▶ The main stages of the pregnancy are termed the first, second, and third trimesters. 3 months, 4-6 months, and 7-9 months.
- ▶ Pregnancy can be detected by a urine test, this test checks for high levels of the hormone chorionic gonadotropin, that may be present 35 days or earlier after conception. Some sensitive tests can read positive as early as 8 days after conception.

FIRST TRIMESTER SYMPTOMS

- ▶ Nausea and vomiting are commonly referred to as morning sickness. These symptoms are not unusual in the early stages. They tend to be more severe in the morning. These symptoms decrease by 10 weeks and generally gone by 14 weeks.
- ▶ Frequent urination, as often as every two hours during the day. This is due to a hormone called progesterone which causes relaxation of the smooth muscle of the bladder.
- ▶ Constipation, primarily due to progesterone relaxing the smooth muscle of the intestinal wall, this resulting in slower bowel movements.
- ▶ Blood pressure, usually drops due to progesterone, which relaxes the walls of blood vessels. Blood pressure usually returns to normal by 14 weeks.
- ▶ Breast changes, there is sense of increased fullness, as well as some tenderness and heightened sensitivity.

FIRST TRIMESTER SYMPTOMS

- ▶ Musculoskeletal changes, influence of estrogen, progesterone, and relaxin. Relaxin is produced as early as 2 weeks into the pregnancy and is at its **highest** levels in the first trimester, then falls 20%, until labour. It affects the composition of collagen in the joint capsules, ligaments, and fascia to allow greater elasticity.
- ▶ Taste and smell are altered in the early stages of the pregnancy.
- ▶ Mood swings, are most common in the first trimester, extreme fatigue, and anxiety.

SECOND TRIMESTER SYMPTOMS

- ▶ Months 4-6 are known as the quiet months. The risk of miscarriage is greatly reduced when pregnancy reaches this stage.
- ▶ The woman experiences the fetus, hearing the heart beat, viewing the fetus through ultra sound (sonogram) and quickening, which is feeling the movement of the fetus in the womb. The woman will start feeling the fetus between 18-21 weeks. This stage is also where the woman will receive test results indicating potential problems with the fetus. At the end of this trimester, 23 weeks, the fetus can survive a premature birth.
- ▶ **Edema:** Is common any time during the pregnancy, due to retention of fluid. As the pregnancy advances, edema of the legs occur.
- ▶ **Hypertension:** Can be chronic, existing before pregnancy or pregnancy induced (PIH). PIH may also be referred as pre-eclampsia., eclampsia or toxemia.

SECOND TRIMESTER SYMPTOMS

- ▶ Hypertension in pregnancy and its complications are a serious concern, it's the second most common cause of maternal death.
- ▶ Pre-eclampsia is first detected by a sudden increase in blood pressure. The diagnosis of pre-eclampsia is made when the increased blood pressure is in combination with proteinuria, and generalized edema.
- ▶ Proteinuria is the presence of high concentrations of protein in the urine.
- ▶ The urine test will be regularly done by a midwife or physician during the pregnancy.
- ▶ Edema in the face and hands are a better indicator of pre-eclampsia than the edema found in the lower limbs.
- ▶ Eclampsia includes all of the symptoms of pre-eclampsia with the addition of convulsions.



Rising High Blood Pressure Above Normal



Sudden Weight Gain



Protein In Urine



Blurred Vision, Headache & Irritability



Pitting Edema



Abdominal Pain

Swollen Face, Hands & Feet



Muscle Twitching



Seizures & Coma

CAUSE OF PRE-ECLAMPSIA

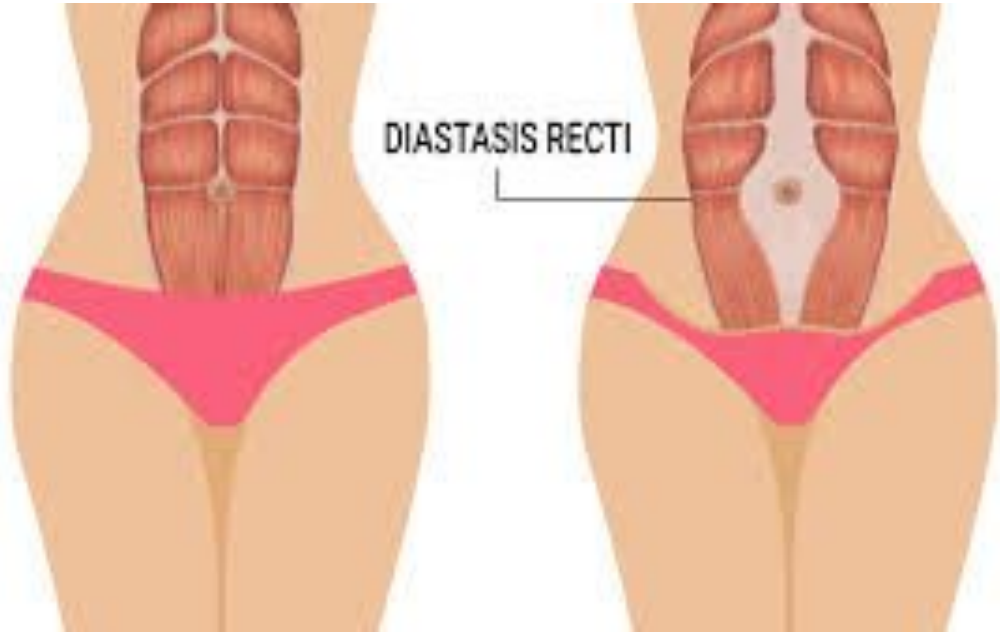
- ▶ Idiopathic
- ▶ A first pregnancy
- ▶ A multiple pregnancy
- ▶ Chronic hypertension or long term hypertension, pre-existing the pregnancy
- ▶ Chronic renal disease
- ▶ Malnutrition
- ▶ Diabetes
- ▶ A history of PIH (pregnancy induced hypertension) in the family, or in a previous pregnancy
- ▶ Younger the 20 years of age and older than 30

SECOND TRIMESTER SYMPTOMS

- ▶ **Supine hypotension:** Can occur as early as the fourth month and will continue until the end of the pregnancy. As the fetus grows, it compresses the aorta and inferior vena cava against the lumbar spine. This may cause the woman to feel faint when she is lying on her back.
- ▶ **Shortness of breath:** This may be experienced at anytime of the pregnancy. This is due to combination of both mechanical and physiological changes. Dyspnea becomes more likely as the uterus enlarges, pushing up on the abdominal contents which then push up on the diaphragm.
- ▶ **Backache:** Is a very common symptom. The softened and stretched ligaments and tendons supporting the pelvis and lumbar spine are stressed with pregnancy. The excessive mobility in these areas can cause surrounding muscles to spasm in order to provide support. The posture is altered as the increasing weight of the baby moves the center of gravity anteriorly. These factors combine to result in poor posture, such as hyperlordosis and hyperkhyphosis.

SECOND TRIMESTER SYMPTOMS

- ▶ **Abdominal P:** can be caused by all the same things that cause abdominal pain pre-pregnancy. The one concern is unexperienced P of sudden onset. The round ligament may be a source of P, this ligament supports the uterus and is located along the side of the uterus passing from its upper regions down the groin. Linea alba and rectus abdominus mm's experience intense stretching as the pregnancy advances. They potentially can separate regardless of hormone release. This results in a condition called diastasis recti. Pain from this condition is most commonly experienced starting in the second trimester, or at the start of third. This achy, nagging, occasionally sharp P is more intense on the right side than the left.
- ▶ **Diastasis symphysis pubis:** causes P, of varying severity over the pubic area and down the inner thigh. This is due to separation of the pubic symphysis.



DIASTASIS RECTI

SECOND TRIMESTER SYMPTOMS

- ▶ **Varicose veins:** The enlarging uterus compresses the veins in the pelvis, this obstructs the venous return to the heart and increases pressure in the veins of the legs. Weight gain may contribute also. Varicose veins often return with increasing severity with each subsequent pregnancy.
- ▶ **Hemorrhoids:** Varicosities in and around the rectum, often due to constipation. They will experience increased pressure with the large uterus, these rectal veins may enlarge.
- ▶ **Pigmentation:** Changes may occur in the skin. Freckles may enlarge while birthmarks, and moles may darken. The butterfly mask called chloasma may develop. This pigmentation spreads over the nose, and cheeks like the wings of a butterfly. The line from top to bottom on the abdomen darkens called linea nigra.



THRID TRIMESTER SYMPTOMS

- ▶ As the pregnancy now advances towards birth, physical discomfort increases, more so after the 8th month.
- ▶ **Gestational diabetes:** Is a type of diabetes mellitus that develops during pregnancy. There are no known risk factors.
- ▶ Diabetes mellitus may have adverse effects on the pregnancy such as, increased possibility of pre-eclampsia or eclampsia, increased risk and severity if infection, a difficult delivery or possible caesarean section due to increased size of the infant known as macrosomia (babies may weigh 10 pounds or more).
- ▶ **Ketoacidosis:** Is another danger secondary to diabetes. It is due to the increased stress experienced in the second and third trimesters and is more likely when the woman does not eat for long periods.

THRID TRIMESTER SYMPTOMS

- ▶ **Edema:** can occur in the legs, hands, and especially fingers and face.
- ▶ **Compression syndromes:** such as TOS, and carpal tunnel syndromes. Sciatic nerve compression, piriformis syndrome.
- ▶ **Backache:** May increase because of the centre of the gravity shifts as the baby gets bigger and heavier, combines with the effects of the hormones progesterone, and relaxin.
- ▶ **Sacroiliac P:** can cause intense P over the sacrum, it is often worse with rotational movement, such as turning sideways in bed and may make walking difficult.
- ▶ **Leg cramps:** Especially in the gastroc may become more frequent in the last trimester. The P is usually intense and can wake them up at night. Leg cramps can also be a sign of DVT (deep vein thrombosis).

THRID TRIMESTER SYMPTOMS

- ▶ **Pelvis discomfort:** Is present in the third trimester. This is due to softening of the ligaments of the pelvic girdle and the accompanying extra mobility of the joints.
- ▶ **Costal margin P:** Occurs as the pregnancy advances and the uterus compresses lower ribs. More experienced on the R side, 30th- 34th week.
- ▶ **Frequent urination and incontinence:** may occur with the increased pressure of the uterus on the bladder, weight gain, and with influence of hormones on the urethra and pelvis floor mm's.
- ▶ **Fatigue:** Increases again, as the woman becomes heavier.
- ▶ **Insomnia and restlessness:** Some woman find it difficult to get in a comfortable position. Heartburn, fetal movement, and the need to urinate contribute the sleeping difficulties.

FOURTH TRIMSTER OR POST PARTUM PERIOD

- ▶ **Physical changes:** This period contains, ligaments are at their longest and the joints at their most unstable. Therefore, low back P may continue, after delivery. Neck and shoulder P continue due to poor posture while breast feeding, lifting the baby up from the crib, and carrying the baby for prolonged periods.
- ▶ **Post-surgical recovery:** Caesarean or episiotomy, if a caesarean was performed the woman will recover from major abdominal surgery. 4-6 weeks with no complications.
- ▶ **Breasts:** May be sore and cracking around the nipples from breast feeding.
- ▶ **Emotional:** A woman may feel extreme joy, but also sadness, fear, anger or anxiety. In a mild form of postpartum blues. Commonly felt by 7/10 mothers, these symptoms may last a few hours to weeks. Post partum depression which involves strong feelings of sadness, anxiety or hopelessness.

SIGNS OF POST PARTUM DEPRESSION

- ▶ Post partum blues that last more than 2 weeks or strong feelings of depression or anger a few months after child birth.
- ▶ Increasingly intense feelings of anger, hopelessness and sadness that interfere with the mothers activities of daily life.
- ▶ Inability to sleep, even when tired, or sleeping most of the time even when the baby is awake.
- ▶ Extreme changes in appetite.
- ▶ Worrying about the baby excessively or taking little interest in the baby and family.
- ▶ Panic attacks.
- ▶ Fears if harming the baby or herself.
- ▶ If the client appears to have postpartum depression, the therapist should refer her to see her physician.

CONTRAINDICATIONS

- ▶ Essential oils should not be used in the first 3-4 months, there is high risk of miscarriage.
- ▶ Abdominal and sacral massage is comprised of only light strokes or should be avoided, if the risk of miscarriage is present during the first trimester, as a precaution.
- ▶ Deep massage and fascial techniques are CI'd over the low back during the first trimester.
- ▶ Care is taken when massaging over the abdomen during the entire pregnancy, After 4 months, an abdominal massage is usually very enjoyable for both mother and the growing baby.
- ▶ Fascia should be assessed for any stabilizing role in the clients posture before using techniques to stretch it.
- ▶ Aggressive jt play and mobilization techniques are avoided for the entire body, because of the increased joint laxity, during the whole pregnancy and up to 6 months after delivery.

CONTRAINDICATIONS

- ▶ Avoid deep massage over varicose veins.
- ▶ Massage is CI'd if a change in blood pressure is noted and if it is combined with other symptoms of pre-eclampsia. Refer to a physician immediately.
- ▶ If the client has diabetes, a snack or juice should be eaten just prior to treatment to maintain blood sugar levels.
- ▶ In the second and third trimesters the client must be carefully positioned on her back to avoid compression of the aorta, and inferior vena cava. If nausea or discomfort is experienced, despite appropriate modifications, the position is changed to side lying or seated or the treatment is discontinued.
- ▶ Women experiencing heart burn, two hours should elapse after a meal before having the massage. This prevents regurgitation of stomach acid, which can happen because of the stomach's upward displacement by the enlarged uterus.

WARNING SYMPTOMS-IMMEDIATE REPORTING TO PHYSICIAN

- ▶ Vaginal bleeding in the first 24 weeks of pregnancy.
- ▶ Severe continuous abdominal P.
- ▶ Breaking of water or rupture of membranes that precedes the onset of labour is the first symptom in 40% of premature labours.
- ▶ **Pre-eclampsia warning signs:** mistiness, blurring or change in vision, elevated blood pressure. Continuous severe headache. Swelling of the hands, especially the fingers, and face.
- ▶ P on the upper right side of the abdomen.
- ▶ Temperature of 38.5 or more.
- ▶ Frequency of urination and P with urination.
- ▶ Absence of fetal movement.
- ▶ Excessive vomiting . Excessive itching (potential liver dysfunction).

MASSAGE FIRST TRIMESTER

- ▶ **Positioning:** The goal is to promote a healthy pregnancy by including relaxation techniques and providing a supportive environment as part of every massage. Prone, supine, or side lying.
- ▶ **Hydro** for any trimester: Warm foot bath
- ▶ Heat to Hypertonic mm's, back, gluteals and neck.
- ▶ Contrast or cold baths or wraps to the feet and legs.
- ▶ Cold figure eight wraps around breasts with decrease congestion and P.
- ▶ General relaxation treatment, position accordingly.
- ▶ Abdomen, low back, and sacral areas are tx'd with gentle stroking and petrissage only or avoided.

MASSAGE

SECOND AND THIRD TRIMESTER

- ▶ Positioning: Side lying, supine, and seated.
- ▶ Supine hypotension may occur, and can be relieved by placing a folded towel under the clients right hip. This repositions the weight of the fetus off the vascular structures.
- ▶ The massage is performed in the context of a relaxation treatment.
- ▶ Effleurage, petrissage to musculoskeletal structures to assist with the added postural stress. Hyperlordosis may be present. Starting on the torso, treating the lumbar area.
- ▶ Finger tip kneading along the iliac crest.
- ▶ Stripping at intercostals mm's and serratus anterior muscles.
- ▶ Glutes are treated with a focus on the pirformis muscle.
- ▶ Legs are now treated in side lying positiong and supine.
- ▶ Supine position, treating the head neck and shoulder. A face massage is very soothing for the client.

MASSAGE

SECOND AND THIRD TRIMESTER

- ▶ Breast tenderness is treated using cold hydro and lymphatic drainage.
- ▶ Abdominal massage is useful in treating constipation to facilitate relaxation. Clockwise direction over the abdomen, specific mm stripping or pressure points along the costal boards and iliac crest.
- ▶ Passive ROM throughout the body to maintain joint health.
- ▶ Aggressive jt play techniques are avoided, but carefully applied to hypomobile jts.

SELF CARE DURING PREGNANCY

- ▶ DDB
- ▶ Self massage to costal border.
- ▶ If client complains of leg cramps, AROM of the ankle, toes, and knee.
- ▶ Light strength training due to postural imbalances.
- ▶ Refer to physiotherapy for specific exercises for diastasis recti.
- ▶ Strengthening exercises to pelvic floor mms due to frequent urination.

SELF CARE AFTER DELIVERY

- ▶ Specific remedial exercise program is recommended to restore postural alignment of the client.
- ▶ Hydro appropriate is encouraged to specific areas.
- ▶ Relaxation strategies such as breathing exercise, a support network, and arranging time out are important.

INFANT MASSAGE

- ▶ Just as an adult, infants can benefit from positive touch and massage. Pre-term babies, special needs (HIV or cocaine exposure) can have a positive result from treatment.
- ▶ **Positioning:** Supine to prone
- ▶ **Treatment:** Neck, back or chest, legs, arms and head are treated for 5 mins, followed by flex and extension movements of the right arm, left arm, right leg, left leg, and both legs together, than another 5 mins of massage.
- ▶ Techniques applied are gentle effleurage, petrissage to all areas.
- ▶ Abdominal stroking in a downward or clockwise direction and back stroking and kneading can be soothing.
- ▶ Gentle rhythmic techniques, rocking and gentle shaking.