

## Pregnancy and Psychomotricity

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Pregnancy is a physiological condition in which the woman who conceived and leads into womb a new individual, developing. Pregnancy begins with fertilization and ends with childbirth. The diagnosis is based on amenorrhea, the presence of vomiting and nausea, the increase in volume of the uterus and on the pregnancy test. Fertilization occurred in the part of the tuba piuclose to the ovary, with the penetration of the sperm into the egg cell, the development of the conception that takes place in the womb through 3 stages (40 weeks).

#### Growth and development of the fetus

Blasphemy period: lasts about 2 weeks. The zygote migrates to the uterine cavity. Meanwhile, the primordial cell multiplies to obtain 3 days about a small cell cluster called morula (because of its similarity to a blackberry).

Two parts differ: one from which the placenta (trophoblast) will derive and one from which it will form the embryo (embryoblast). At the beginning of the 2nd week, the journey ends by reaching the interior uterus. Now the embryo, to continue its development, must come into contact with the vessels maternal blood that can find in the uterine wall (endometrium) that has thickened and prepared for receive the masser that lurks in the wall by digging with enzymes and producing chorionic villi which penetrate the tissue from which the placenta will develop. At this stage they differentiate first 2 layers, ectoderm (it will form the nervous system, the dermis ...) and endoderm (it will form the liver, pancreas, thyroid, inner lining, digestive system), called embryonic leaflets.

Embryonic period: 3<sup>rd</sup>-8<sup>th</sup> week. The most important event is the formation of the third leaflet, among the first 2, the mesoderm.

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From this, according to a temporal order, all the main organs are formed so that the product of conception takes on a human form. Meanwhile, the membranes are also completed fetal structures with protective, nutritive and excretory functions. (calf sack, placenta, cord umbilical...).

Fetal period: 9<sup>th</sup> week - at birth. Organs improve and grow. The body is covered with caseous paint, lipid substance that will protect the skin until birth. At birth has the following characteristics: length 48-51 cm; pink skin covered with caseous paint; shoulder circumference 35 cm; weight 2800-3200 g; in the male descent of the testicles into the scrotum; presence of ossification cores.

### The function of embryonic annexes

The placenta: it is an organ that is formed from the union of the villi in the endometrium. It is of maternal and fetal origin and develops throughout pregnancy. It is rich in blood vessels which form the blood vessels of the fetus. The 2 types of blood don't mix. The placenta is an organ adhering to the uterine wall with a thickness of 3-4 cm, weight of 500-600 g and diameter of 15-20 cm. From the 3<sup>rd</sup> month the nutrition takes place through this.

The functions of the placenta are 3: 1-Metabolic function: through the wall barrier capillary, the substances pass from the mother to the baby. These include glucose, amino acids and i fats, water, minerals and vitamins. There are respiratory exchanges. Immunoglobulins they are the only proteins capable of crossing the placenta. 2-Endocrine function: it is home to hormonal production (gonadotropin that allows the maintenance of pregnancy, lactogen hormone and thyrotropin. These have the function of determining modifications in the physiology to ensure fetus survival and growth. There are also estrogens and progesterone which guarantees that there are no uterine contractions. 3-Immunological function: ensures safety to the fetus against microorganisms and toxic substances including pharmaceuticals mother.

The placenta is the excretory organ of the fetus, its breathing surface and its source of nourishment. The umbilical cord: connects the placenta and fetus and is 50-60 cm long. Inside there are blood vessels that transport oxygen and nutrients and bring back to placenta waste substances. These vases are wrapped in a connective tissue of an aspect slimy that prevents the formation of knots. The amnios: between ectoderm and trophoblast there is one

cavity, the amnios, with an external wall lined with amnioblasts. Inside the cavity (bag amniotic) rich in clear and watery liquid, the fetus is accepted. The amniotic fluid is the content of the amniotic sac and during gestation increases in quantity and becomes opal in appearance and milky. Its functions are: to maintain the temperature; ensure the active movements of the fetus; protection from trauma due to maternal movements and help in carrying out childbirth.

### Effects of pregnancy on mother

During pregnancy, a load of the maternal organism, anatomical changes and changes in physiology. Anatomical modifications: (physiological) the uterus increases in volume until it occupies the largest part of the pelvic cavity and pushes higher and higher into the abdominal cavity. Before childbirth instead it reaches the level of the sternum. As a result, the ribs and chest are widened. This leads to the modification of the center of gravity of the pregnant woman and there is an accentuation of the lumbar curvature with back pain. Relaxin, hormone produced by the placenta, leads to a relaxation of the pelvic ligaments and the pubic symphysis which become more flexible to facilitate the passage of the fetus and can also cause an unstable gait in the last period of pregnancy.

Variations in physiology: (functional) Digestive system: nausea until it fits with high levels of progesterone and estrogen. Heartburn due to compression of this is because the esophagus has moved compressing the stomach. One problem is constipation because intestinal peristalsis decreases. Urinary tract: the kidneys work harder because they have to dispose of also fetal waste and produce more urine. Urination becomes more frequent even uncontrollably for compression of the uterus on the bladder. Respiratory system: the nasal mucosa swells and yes congestion due to the effect of estrogen with consequent rhinorrhea and rhinorrhage. Increase capacity vital (max volume of gas expelled after a forced exhalation) and respiratory rate, but decreases the residual volume (amount of air that remains in the lungs after an exhalation) and you can have difficulty breathing towards late pregnancy.

Cardiovascular system: major changes. The water in the body increases and the volume of the blood rises from 25 to 40%, this also to remedy the possible loss of blood during childbirth. They increase blood pressure and pulse rate like cardiac output. Because the uterus compresses the pelvic vessels, the venous return from

the lower limbs can be impeded causing dilation of the blood vessels (varicose veins). The most obvious changes, however, are those with the skeletal muscle system. The column vertebral must increase their physiological curves, thanks to a greater elasticity of the ligaments, the muscles of the abdominal wall in particular are stretched and subjected to a considerable mechanical stress, both due to traction than for increased work. Everything stems from a need for "space" that the fetus with his accretion gains by "pushing" on organs, viscera, tissues and muscles. The system is getting ready for one new life. Disturbances related to these changes occur, largely due to an imbalance muscle and joint, both for the previous situation and for the compensation positions that you are get hired.

In such a context the kinesiologist assumes a fundamental role, which he will have in carrying out the Its task is to have a holistic approach to the patient where holistic means multi systemic, which accompany the changes that affect the new mother. The approach will essentially have to take account of postural changes, changes that must be incorrect but guided so that maintain their physiological characteristics, that is, give the body a new balance in in relation to weight gain.

Immediately after childbirth, the body and muscles undergo countless changes and are "stressed" by hormonal disturbances that occurred during pregnancy are often not very tonic, flaccid and heavy. The kilos gained during gestation, although the weight decreases in part after the birth of the child, they make their responsibility felt, weighing down the figure.

Finding your physical shape and your inner balance becomes, therefore, fundamental for the new mother who, without undergoing low-calorie diets and slimming diets, must work in concert with the kinesiologist to improve his appearance with positive effects not only from the point of view aesthetic, but above all physiological and psychological.

### Anatomy physiology of the birth

The term pregnancy, as we said, lasts 40 weeks and is counted from the start from the first day since the last menstruation.

Presentation occurs at the time the baby appears through the vaginal opening.

You can have it:

- Head presentation (cephalic or vertex), in about 93% of cases
- Presentation of foot or breech, in about 5% of cases
- Anomalous presentations in about 2% of cases

### Doglie

They are caused by uterine contractions, and are described as pain in the lower part of the back. As labor continues, the pain becomes more noticeable and localized to the lower abdomen.

The pains occur at regular intervals of 2-3 minutes, lasting 30-60 seconds.

The following are fundamental parameters to be monitored:

- Duration of contractions (time between the beginning of a contraction and the relaxation of the uterus)
- Interval or frequency of contraction (time elapsed between the start of a contraction and the next contraction).

### Labor

Labor is the period that describes all childbirth processes.

It is divided into three phases:

- EXPANSION, begins with the appearance of regular contractions, and ends when the cervix has reached its maximum size. The contractions are initially distant in the time and are more frequent with the approach of birth, with a frequency that varies from one every 30 minutes to one every 3 minutes or less;
- EXPULSIVE, The infant enters the birth canal and remains there until birth. Breaking the amniotic sac following fetal movements. The amniotic fluid is generally clear: a greenish or yellow-brown liquid may indicate fetal distress during labor (meconium-dyed liquid);
- SECONDATION, occurs after the birth of the child and consists in expulsion placenta, umbilical cord, amniotic sac tissues and lining inside the uterus.

The period of pregnancy is characterized by profound changes, not only organic, but also structural and psychological. The increase in hormone levels is primarily responsible for this indispensable adaptation to the mother to feed the baby, prepare her own body to labor-delivery and subsequent breastfeeding. All organs are

involved in these physiological mutations which, however, can sometimes be accompanied by health problems or discomfort for the woman.

### Weight factor

The general appearance of the woman changes essentially due to water retention (edema) in the tissues. An increase of 11-12 kg is considered ideal in a normal weight woman: 2 kg in the first 20 weeks and then 400-500 gr per week until the end. There are many but the influencing factors: the weight before conception, the degree of edema, the metabolism, diet, vomiting or diarrhea, the amount of amniotic fluid and the size of child. Schematically the ideal weight distribution achieved at the end of pregnancy is: muscle and fat 2.2 kg; blood and liquids 2,5 kg, breasts 900 gr; uterus 900 gr; placenta 500-600 gr, amniotic fluid 900 gr, fetal weight 3000 gr. The main ailments are swelling for hands and feet, for water retention (especially in the third quarter); hemorrhoids and varices vulvari, sore legs and tendency to varices due to the compression exerted by the weight of uterus and fetus on venous return, vertebral and muscular pains, fatigue, dyspnea.

### Cardio-circulatory system

The work required to meet the needs of the fetus determines a progressive increase the systolic range (i.e. the volume of blood circulated by the heart every minute). There heart rate increases on average by 10-15 beats/minute. As the uterus grows increases in volume the diaphragm rises making the heart rotate forward and to the left.

Subjectively sometimes arrhythmias can be complained (feeling of an extra beat) or more rarely tachycardia.

Blood pressure remains unchanged or lowers slightly due to vasodilation peripheral determined by progesterone which promotes blood flow to the fetus, this can sometimes causing fainting especially in situations of prolonged standing or decubitus backbone. A minimum pressure greater than 90 mmHg and maximum is considered pathological greater than 140 mmHg found at rest in at least two successive measurements.

The increase in the hormonal liquid affects the blood mass and lymph. There deviation of the circulation to the genital sphere still increases the blood mass circulating with dilation of the vessels, which causes increased work of the heart muscle.

The uterine volume hinders the return circulation and promotes the stasis of liquids interstitial in the lower limbs, sometimes causing the formation of varices, hemorrhoids, edemas. There progressive elevation of the thoracic diaphragm, due to the compression of the viscera abdominals, creates an additional disturbance to the work of the heart.

### Breathing

The elevation of the diaphragm not only affects cardiac activity but, above all, a starting from the fifth month of pregnancy, it causes a decrease in respiratory debt giving give rise to a decrease in gas exchange just as from this moment, the mother's and baby's need for oxygen grows. Oxygen necessary for tissue oxidative processes, it must penetrate the tissues of the mother and the child. Its renewal is ensured permanently by the ventilation that brings air into the lungs and the circulation that carries the oxygen fixed by hemoglobin not only to placenta but, through the uterine artery, also to the fetus.

There is a synergy of three functions: ventilation, circulation, tissue respiration. Normally, ventilation and circulation adapt according to tissue needs, hence the whole the importance we give to the ventilatory function, to the work of the inspiratory muscles and expiratory, in controlled breathing, with a privileged place for the diaphragm muscle.

This muscle, in difficulty in the expiratory phase due to the movement of the viscera and the increase in the volume of the uterus tends to widen and open the rib cage, changing the angle of Charpy.