



## IO1 Training Materials

### NUTRITION

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## OBJECTIVES

At the end of the module, the participants will be able to:

1. Identify a bad/good behaviour in a person's nutrition
2. Explain the differences in a pregnant woman's nutrition – what she needs more
3. Give examples on the effect on the new born of bad nutrition during pregnancy
4. Give a couple of roots for negative behaviour in nutrition
5. Use the Food Pyramid's system
6. Make a summary of how and what a pregnant women should eat



## 1. General description of NUTRITION [PHOTO] 1-2 pages

### 1.1. Context. Description/definition of NUTRITION

**"One cannot think well, love well, sleep well, if not has not dined well." Virginia Woolf-**

Nutrition is essential for health and development. W.H.O. states that through qualitative food before and during pregnancy, the future mother offers to her child a better health with a stronger immune system, opportunities to learn better, protection against diabetes or cardiovascular diseases and longevity.

This is even more true if we are careful to eat healthy and preferably organic.

**People say that we build our fortune eating healthy or we dig our grave with our teeth!**

Each of us has the right to decide on what or how to eat, but don't forget that in the case of the pregnant woman, she decides also for her child. That's why it's important for future mothers to inform themselves about wise food choices even before conception, for safer pregnancy and childbirth. The quality of placenta – the embryo home - depends on how healthy the food intake will be, months before the woman will become pregnant!

Pregnant woman can be easily exposed to the risk of malnutrition. Why? Because malnutrition means both too little or too much! Undernutrition and overweight is today an important challenge for people from low- and middle-income countries.

W.H.O. 2020 home page website

Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients. The term malnutrition addresses 3 broad groups of conditions:

- undernutrition, which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age)
- micronutrient-related malnutrition, which includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess
- overweight, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and some cancers).

W.H.O. 16 February 2018

### 1.2. The impact of NUTRITION on pregnancy /mother/child health proved

**François de la Rochefoucauld**

"To eat is a necessity, but to eat intelligently is an art."

What a woman eats and drinks during pregnancy is her baby's main source of nourishment. The strong structure and the beauty of a house lays on the quality of building materials, it's so obvious for architecture! But in a similar way, human body structure and qualities depends a lot on nutrition! If mother / both parents want a healthy and good looking child, they should focus on the proper "building blocks" hidden in the food before even conception and during all



prenatal period. Physical and psychological nourishment are both important in forming baby's brain and body structures.

So, experts recommend that a mother-to-be's diet should include a variety of healthy foods and beverages to provide the important nutrients a baby needs for growth and development.

A pregnant woman needs more calcium, folic acid, iron and protein than a woman who is not expecting, according to the American College of Obstetricians and Gynecologists (ACOG). Here is why these four nutrients are important.

\* **Folic acid** : Also known as folate when the nutrient is found in foods, folic acid is a B vitamin that is crucial in helping to prevent birth defects in the baby's brain and spinal cord, known as neural tube defects. A folic acid supplement is recommended prior to conception and up to 12 weeks of pregnancy. Don't worry if your pregnancy was unplanned and you have not been taking a daily folic acid supplement, but do start taking it as soon as you can. Risk are higher if there is a family history of neural tube defects or you have diabetes. If you're taking anti-epileptic medication, you may also need to take a higher dose of folic acid. Talk to your gynecologist or medical doctor to know what to do.

Food sources: leafy green vegetables, fortified or enriched cereals, breads and pastas, beans, citrus fruits.

\* **Calcium** : This mineral is used to build your baby's bones and teeth, and regulates the use of fluids in your body. If a pregnant woman does not consume enough calcium, the mineral will be drawn from the mother's stores in her bones and given to the baby to meet the extra demands of pregnancy, according to the Academy of Nutrition and Dietetics. Many dairy products are also fortified with vitamin D, another nutrient that works with calcium to develop a baby's bones and teeth. Food sources: milk, yogurt, cheese, calcium-fortified juices and foods, sardines or salmon with bones, some leafy greens (kale, bok choy).

\* **D Vitamin** : This vitamin is often lacking in the diet. It is particularly important for the growth and development of your baby's bones and helps to maintain the health of your bones too. It is also very important for many other processes in your body such as immune function. Low vitamin D intake has been linked with an increased risk of preeclampsia. This potentially dangerous complication is characterized by high blood pressure, swelling of the hands and feet and protein in the urine. Food sources : salmon is one of the very few natural sources of vitamin D. On another side your skin produces vitamin D when it is exposed to sunlight. Consequently as a pregnant or breastfeeding women, you should exposed to enough sunlight, preferably in the morning to get the most vitamin D.

\* **Iron** : Pregnant women need 27 milligrams of iron a day, which is double the amount needed by women who are not expecting, according to ACOG. Additional amounts of this mineral are needed to increase the blood volume to supply the baby with oxygen. This is particularly important during the third trimester. Getting too little iron during pregnancy can lead to anemia, a condition resulting in fatigue and an increased risk of infections, early delivery and low birth weight. Iron works with sodium, potassium, and water to increase blood flow. This helps ensure that enough oxygen is supplied to both you and your baby.

Food sources: meat, poultry, fish, dried beans and peas, iron-fortified cereal. To increase the absorption of iron, include a good source of vitamin C at the same meal when eating iron-rich foods, ACOG recommends. For example, have a glass of orange juice at breakfast with an iron-fortified cereal or berries, and bell peppers with your meal. On the contrary tea and coffee are not



recommended during your meal because they decrease the amount of iron that your body absorbs from the green leaves vegetable that you eat.

### \* **Omega-3 fatty acids**

Long chain omega-3 fatty acids, are important for the development of your baby's brain and eyes. Should you decide to take a supplement make sure it is suitable for pregnant women, as some fish oil supplements contain a high amount of vitamin A (such as cod liver oil), which you should avoid during pregnancy since vitamin A is important for good health and for the healthy development of your baby, but large amounts can harm your unborn baby, causing malformations

\* **Protein:** More protein is needed during pregnancy, but most women don't have problems getting enough protein-rich foods in their diets, said Sarah Krieger, a registered dietitian and spokeswoman on prenatal nutrition for the Academy of Nutrition and Dietetics in St. Petersburg, Florida. She described protein as "a builder nutrient," because it helps to build important organs for the baby. Protein is critical for ensuring the proper growth of fetal tissue, including the brain and the heart. It also helps with breast and uterine tissue growth during pregnancy. It even plays a role in your increasing blood supply, allowing more blood to be sent to your baby. To avoid a lack in protein you need to have the 8 essential amino acids, this is ensure by eating meat or cereals and legumes if you are vegetarian.

Food sources: meat, poultry, fish, dried beans and peas, eggs, nuts, tofu.

Cari Nierenberg - Live Science Contributor January 10, 2018

Video : <https://www.youtube.com/watch?v=FpG9OCD5G1g>

It is important for pregnant women to find these supplements in their food, here is what WHO says :

### **Multiple micronutrient supplementation during pregnancy**

Micronutrients are only needed in very small quantities but are essential for normal physiological function, growth and development. Deficiencies of micronutrients such as vitamin A, iron, iodine and folate are particularly common among during pregnancy, due to increased nutrient requirements of the mother and developing fetus. These deficiencies can negatively impact the health of the mother, her pregnancy, as well as the health of the newborn baby.

The most current evidence shows that giving multiple micronutrient supplements to pregnant women may reduce the risk of low birth weight and of small size for gestational age .....

WHO internet

### 1.3. The root of negative behavior – how behavior starts in general [PHOTO]

Future parents are in general young people who want to build a successful career, to have a home, to face the challenges life offers them in this period. How many of them have a healthy diet? Time constraint, convenience, advertising, addictive behaviors, lack of information, push many young people (and not just them) to unhealthy eating: fast food, cheap food, frozen food, junk food - food made quickly to be eaten quickly and to stimulate all the senses! What are the consequences? It will be quite late when the harsh health effects begin to appear...



But it's never too late when you want to change habits and improve your life! This change should occur before a couple plan to have a child! How long before? At least six months if not a year, say scientists! Why? Because semen and the cells structures which nourish ovum are directly influenced by the quality of food and it takes time to get rid of the harmful substances brought by the inadequate food that hides in the cellular structures!

Many prospective parents are although interested about changing behavior before child conception or at least at the very beginning of pregnancy! They need information, good will and perseverance and all these could be fulfilled for the sake of the child!

Here are some examples of behaviors which should be changed before conception, not only by future mother but by future father too (both contribute to the formation of a healthy egg cell!)

- Prospective parents could have a low income with a poor, imbalanced diet. Healthy food is not always expensive; if they have information they can find ways to respect the dietary principles for a good health in pregnancy
- Pre-pregnancy weight of future mother: if she is underweight, she is more likely to give birth to a small baby, even she can gain some weight during pregnancy; if she is overweight, she can have an increased risk for gestational diabetes and /or high blood pressure. In both cases is important to balance BMI (body mass index= the ratio of Weight (kg) to Height (m) per square, which should be between 18,5 and 25) through proper diet recommended by dieticians
- Pre-pregnancy weight of future father has an impact on sex hormones and sperm structure, these changes influencing the conception of the health of the future child
- Eating habits before conception: women with food preferences in the category of refined foods, sugar, fats presented a much higher risk for preterm birth
- Quality of food before conception: ultra-processed products, with additives, or preservatives, excessive consumption of mammalian meat, poultry and milk because these foods may contain hormones and antibiotics
- Excessive intake of alcohol, coffee, other stimulants, drugs, smoking of both future parents influence negatively the conception process, the mother and child health, the safety of childbirth
- Medications such as birth control pills can reduce nutrient metabolism, resulting in decreased levels of vitamin B6 and folate. This is why future mother should supplement her diet with B complex vitamins or eat food rich in these elements immediately after stopping pills!
- Choosing the closest and more accessible food store or fast foods because the home location does not give easy access to nutritious food store. The lower nutritional composition found in fast food affects the daily nutritional needs of a pregnant woman

In conclusion, bad nutrition severity is directly related to the causes of the problem, which include personal choice, poverty, increasing food prices and easy access to non-nutritious foods which are very common within the young population.

Sara Tomm; Updated December 27, 2018

## 2. Main researches/ studies concerning NUTRITION. [PHOTO] 3-4 pages

### 2.1. Conclusions about negative aspects of future parents behaviors concerning NUTRITION and the impact on children health

#### a) Obesity



The researchers showed that obesity of a prospective mother before conception could increase the risk for the child to be born with increased birth weight, to become overweight and obese later in life or to develop diabetes mellitus in adult life, because the child pancreas could suffer structural modifications during prenatal period.

Michele J. Josey et al. Published online 2019 Aug 7

A study showed that a pregnant woman being overweighted could have a child who will have a lower intellectual development during childhood. This is due to the fact that the cells of the baby will be affected by the adiposity of the mother during their formation.

J Epidemiol Community Health. 2019 Jul 29.

Another study reinforced the idea that a mother having obesity before conception shows a high risk of having a child with obesity. It is important for overweighted woman willing to have a child to search for help and support before conception, in order to learn how to manage her weight and prevent obesity of her child.

Nicola Heslehurst, Conceptualization et al. Published online 2019 Jun 11.

#### **b) Iode**

It is particularly during the first trimester that the development of the brain of the fetus is vulnerable to a lack of iode. So the woman willing to have a baby should start to eat food providing enough iode in order to insure a good amount of that micronutrient during the first three months of her pregnancy. She will find iode in ananas, garlic, blackberries, algues, fish, eggs and milk products. Iode is one of the principal components of the thyroidian hormones which play an important rôle for the regulation of the heat body and reproduction, and for the production of blood which is so important during pregnancy.

#### **c) Vitamine D**

Following this research, the intake of vitamin D is very important for a pregnant woman because it is associated with the neurocognitive development of her child in early childhood, albeit with a small, but nonetheless important, effect size.

Andrea L Darling et al. Published online 2017 Jul 12.

### **2.2. Conclusions about positive behaviors concerning NUTRITION and the impact on children health**

Dietary patterns seems to be important during pregnancy and have an influence on the child's diet and health, following these studies :

1. These researchers realized a study on the effects of three different ways of eating during pregnancy. The women who ate 'fruit and vegetables' showed a better nutrient profile compared with the women in the 'meat and potatoes' and 'white bread and coffee' diet. Also it seems that at some point the growing child will have preferences for the food that the mother ate during



pregnancy. So improving the diets, or diet education, of pregnant women could potentially help improve the dietary habits of their children during childhood.

Ana Amélia Freitas-Vilela et al. Published online 2016 Oct 9.

2. Another study showed that women eating ‘meat and potatoes’ during pregnancy or ‘white bread and coffee’ had children with lower mean IQ at 8 years of age, when compared to children of mothers whose food habits were fruit and vegetables. This reinforces the fact that what the woman eats during pregnancy will affect the neurodevelopment of her child and imply that the money and time used for support for good nutrition during pregnancy is likely to be rewarded by a healthy child.

Ana Amélia Freitas-Vilela et al. Published online 2017 Mar 2.

3. Diabetes : This study confirms that a pregnant woman eating fruit and vegetable will help preventing a risk of diabetes for her child.

Mirmiran P. et al. 2019 Jul.

### 3. Recommendations (WHO) Examples of evidence based interventions

©World Health Organization 2013

#### **Nutrition**

1. Screening for anaemia and diabetes
2. Supplementing iron and folic acid
3. Information, education and counselling
4. Monitoring nutritional status
5. Supplementing energy- and nutrient-dense food
6. Management of diabetes, including counselling people with diabetes mellitus
7. Promoting exercise
8. Iodization of salt

### 4. How behavior can change- the role of professionals [PHOTO] 1-2 pages

Pregnant women with negative nutritional behaviors can change their habits with some attention and support, but it can take time and effort. That's why young people willing to have a child should pay attention to their diet soon enough. Effectively side effects of bad nutrition don't happen overnight. They develop over time from eating a diet lacking in vital nutrients and making poor lifestyle choices. Focusing on a healthy diet that includes fresh fruits and vegetables, nuts, whole grains, low-fat dairy products, legumes, fish, poultry and unsaturated fats, while eliminating processed and junk food, may help avoid the side effects of bad nutrition.

Karen Curinga

Nevertheless, if you are pregnant and you had and still have bad nutritional behavior and you are willing to change, several methods or professionals are there to help you in modifying your bad habits :



1. lectures of books, information and videos on internet :  
 books to buy : <https://www.amazon.co.uk/Pregnancy-Diet-Childcare-Books/b?node=534496>  
<https://www.amazon.com/Real-Food-Pregnancy-Prenatal-Nutrition-ebook/dp/B079H8LL9L>  
 articles on line : <https://www.nutrition.org.uk/healthyliving/healthydiet.html>  
 videos on line : <https://youtu.be/Gh52dzNSMbM>  
<https://youtu.be/0Ym95FL-mJ4>  
<https://youtu.be/Xb8aVX6nA88>
2. cuisine classes on internet or in your locality : here is a list of free classes on line which can help you learn how to cook or cook better while staying home  
<https://theculinarycook.com/learning-to-cook-online/>  
<https://cookingdude.com/>  
<https://learntocook.com>  
<https://thewelcomingtable.com/how-to-learn-to-cook-for-beginners>  
<https://www.deliaonline.com/learn-to-cook>  
<https://www.instructables.com/class/Cooking-Class>  
<https://www.chef2chef.net/learn-to-cook>  
 videos [https://youtu.be/RlVtE\\_0LThI](https://youtu.be/RlVtE_0LThI) for cooking soup  
<https://youtu.be/rjCtJpZlhX8> from schools teachers  
<https://youtu.be/Jj1fhYZJjek> for beginners  
<https://youtu.be/ojZlIgeX7Xo> to learn by episodes
3. Dietitian : A dietitian will receive you and ask you questions about your health and nutritional habits. In accordance with other professionals taking care of you during your pregnancy such as midwife, nurse, medical doctor, gynecologist etc.. s(he) will identify the best way of modifying your diet and support you in making those changes.
4. Counseling : a pregnant woman will have natural nutritional counseling all around her. She can find it by herself in books or internet, but very often she will have it directly from people in her surrounding. Effectively, as soon as you mention the fact that you are pregnant to someone, that person sees you differently and will probably be willing to help you in some way. Your parents, members of your family, friends or other woman who have been pregnant can all be sources of nutritional counseling. Nevertheless be careful that they give you good advice. Select what you hear with attention because it is your pregnancy's experience.
5. Psychologist : sometimes the nutritional aspect is linked to a more affective aspect and you might need counseling in joining a support group for families or going to a doctor's office. Talking to a doctor is a reasonable thing to do if you feel you need help and support from a professional counselor.



## 5. Education for future parents/population for a healthy life style concerning NUTRITION and in general – the role of educational programs, the role of community, schools. How information can be spread [PHOTO] 3-4 pages

### Nutrition during pregnancy.

“Vegetables are a must on a diet. I suggest carrot cake, zucchini bread and pumpkin pie.” -Jim Davis

#### 1.What, when and how much to eat.

First of all make sure you drink enough water every day. This is essential for you and your baby. Pregnant women have a tendency not to drink to avoid going to the toilets but you should know that drinking is the most important part of your nutrition during pregnancy as your blood volume increases by up to 1.5 liters. It will also help you prevent constipation and urinary infections which are quite common for pregnant women. As a rule, drink water everytime you feel thirsty, the recommendation being between 1 and 2 liters per day in function of each individual. If you feel anxious, tired, headaches, bad mood or lack of memory, try to drink a little bit more and see if it goes away.

	What	When and which quantity
Folic Acid a B vitamin (Folate)	citrus fruits such as oranges, berries, beetroot, dried beans and lentils, dark leafy green vegetables, whole grains such as oatmeal, whole-wheat pasta or breads, brown rice, liver, eggs, nuts, peanut butter,	400 micrograms per day for at least one month before becoming pregnant and up to 12 weeks of pregnancy then increase the amount to 600 to 800 micrograms a day
Iron	Red meat such as lean beef and lamb, poultry, fish, dried beans and peas, whole grain cereals, pulses, eggs, dark green leafy vegetable such as watercress, wholemeal bread, dried fruit such as nuts, enriched bread and cereals	27 milligrams a day, which is double the amount needed by women who are not expecting, according to ACOG
Calcium	Dairy foods such as milk, yogurt and cheese, canned oily fish with soft bones (such as canned sardines or pilchards) sardines or salmon with bones,	Pregnant women age 19 and over need 1,000 milligrams of calcium a day; pregnant teens, ages 14 to 18, need 1,300 milligrams daily, according to ACOG. Essentially



	some dark leafy greens (kale, bok choy, rocket, pak choi and watercress), cabbage, tofu, eggs, pudding, some nuts and seeds such as almonds, brazil nuts, hazelnuts and sesame seeds, calcium-fortified juices and foods,	during the latter stages of pregnancy and during lactation
D vitamin	Sunlight, oily fish, fish liver oil, fat spreads, eggs, dairy foods such as milk, yogurt and cheese	all pregnant and breastfeeding women are advised to take a daily supplement containing 10 µg
Protein	Meat such as lean beef and pork, poultry such as chicken, fish such as salmon, dried beans and peas, eggs, tofu, dairy foods, such as milk, yogurt and cheese, cottage cheese, nuts and seeds, peanut butter, whole grains such as wheat, oats and quinoa	
Omega 3 fatty acids	oily fish such as salmon, sardines and mackerel, dogfish, sea bass, sea bream, turbot, halibut and crab, fish liver oil cans of tuna (no limit), eggs,	140 g twice per week, not more because of possible pollutants

#### Remarks :

\* eating eggs is very important since they contain a little bit of every nutrient you need as a pregnant woman. They contain many vitamins, minerals, high-quality protein, calories, fat and above all choline which is important for the brain's development of your baby as well as to avoid defecation of the neutral tube;

\* dark green vegetables such as broccoli, kale and spinach are also very important in your diet since they contain many nutrients such as vitamins A, C and K, folate, calcium, iron, potassium and fiber which can help avoiding constipation, a usual problem that pregnant women encounter (berries will also help constipation). They are also rich in antioxidants and in plant compounds which help the immune system and digestion, and diminish the risk of low weight birth.

\* avocados contain a lot of healthy (monounsaturated) fatty acids which is important for your baby's skin, tissues and brain development. They are rich in vitamins B (folate), C, E, K, fiber, copper and potassium (even more than in bananas) which can help leg cramps, a usual pregnant women problem.

## 2.What not to eat.

**Fish with high levels of mercury** such as swordfish, shark, king mackerel, marlin, orange roughly and tilefish since methyl mercury is a toxic chemical that can pass through the placenta and can be harmful to an unborn baby's developing brain, kidneys and nervous system.

**Unpasteurized food such as** feta, Brie, Camembert, blue-veined cheeses, queso blanco and queso fresco.



Hot dogs, luncheon meats and cold cuts unless heated to steaming hot before eating to kill any bacteria.

Store-bought deli salads, such as ham salad, chicken salad, tuna salad and seafood salad.

Unpasteurized refrigerated meat spreads or pates.

**Raw meat** including rare, raw or undercooked meats and poultry; raw fish, such as sushi, sashimi, ceviches and carpaccio; raw and undercooked shellfish, such as clams, mussels, oysters and scallops; raw or undercooked eggs, such as soft-cooked, runny or poached eggs; foods containing undercooked eggs, such as raw cookie dough or cake batter, tiramisu, chocolate mousse, homemade ice cream, homemade eggnog, Hollandaise sauce; raw or undercooked sprouts, such as alfalfa, clover; unpasteurized juice or cider.

Avoid these foods since it could give a Toxoplasma infection to your baby and lead to blindness and mental disability later in life.

**Of course alcohol** since alcohol goes to your blood and can pass directly to your baby through the umbilical cord and then lead to physical problems, learning or behavioral difficulties.

### 3. Food to limit

#### \* **Avoid too much vitamin A**

Vitamin A is important for the healthy development of your baby nevertheless malformations can occur with large amounts intake. You will easily find the right amount of vitamin A in your daily meals. Consequently you should not take any supplements containing vitamin A and avoid eating liver and liver products (such as liver pate) because they are very high in vitamin A. For example you can eat 100-150 gr per day of sweet potatoes which are very rich in beta-carotene, a plant compound that your body converts into vitamin A; sweet potatoes also contain fiber which reduces blood sugar peaks and improves digestion.

#### \* **Caffeine:**

200 mg of caffeine a day is the maximum you should intake per day in order to avoid any health problem for your baby.

\* **Dried fruits** : Prunes are very rich in potassium, sorbitol and in fiber (so helping prevent constipation) and dates are rich in potassium, iron, plant compounds and in fiber too. Eating dates during the third trimester in a regular way may help facilitate cervical dilatation and reduce the need of induced labor.

Nevertheless you should limit carefully the amount of dried fruits you eat since they have a large amount of natural sugar. And above all, avoid the dried fruits which are enriched in sugar.

#### \* **Fish:**

Salmon and sardines contain omega-3 fatty acids, a healthy fat that's good for the heart.

Nevertheless you should not eat more than twice 140 g per week of fatty fish because they may contain Mercury which is a metal that can be harmful to the development of your baby's brain. Also prefer eating canned light tuna which has less mercury than albacore "white" tuna.

### 4. Weight

You will probably gain weight during your pregnancy in function of your own weight. If you are overweight you will probably gain less weight during your pregnancy, on the contrary if you are underweight before pregnancy you should gain a good part of weight. This is normal because the extraweight provides nourishment to your baby and will also be used later on for breastfeeding.

So don't worry about gaining weight, and if you do so the best thing to do is ask your medical doctor if everything is ok for you and your baby.

Swimming and walking are good exercises during pregnancy to insure that you use up all extra and unnecessary weight.



## 5. Food pyramid

As images are more attractive than words about every country in the world has tried to represent the good way of eating using tables, images, or different designs.

The most popular is the food pyramid where nutrients are represented with colored images in a very talkative way.

The most important nutrients are at the bottom and the less important seats at the top.

## 6. How to eat

The most important thing for the pregnant woman is to eat twice as well not twice more. Of course she will choose a healthy diet, fresh fruits and vegetables in abundance and she will drink a lot of water to the extent of her abilities, but without forcing (see Food Pyramid). She will avoid smoking and the proximity of people who smoke, alcohol and any source of strong or weak drug (cf section 2 Cyprus).

But below all, she will pay special attention to **the way she eats**.

- In pregnant women, the feeling of emotions is amplified by the increasing activation of the hormonal system throughout pregnancy. Indeed, the mother will naturally secrete endorphins, welfare hormones and oxytocins, attachment hormones in order to establish a better contact with her baby who becomes her partner in this life experience. In general, the mother knows that she physically feeds her baby through the placenta. What she does not know is that it is also true of **emotions and thoughts**. From the second month, the baby perceives the emotions of his mother. In order for the emotional system to build up properly and healthily, it is essential that the mother communicate with her baby aloud to explain what she perceives. Her baby will have a clear idea of what emotions are and how to manage them. So, the mother will explain to her baby as much as possible what is going on in her emotionally and also in terms of her thoughts that feed her baby through the placental barrier.
- The mother will **be aware** that her baby in-utero is eating at the table with the family, that he perceives what is said through the emotions of the mother. She will also be able to realize that the baby reacts sometimes during some discussions that she can have. As much as possible, she will **talk with the baby** to explain what is happening and make him feel that his presence is recognized. She will try to create the place of the baby in the family before birth because the baby in-utero is already a person with whom exchanges are crucial for its development: they will forge its character and health.
- She will **eat in peace**, thinking about what she eats, the food that has been made by nature to feed us. She can even be grateful for this food.

**Positive thoughts** promote the well-being of the person by increasing hormonal secretions such as oxytocin, and endorphin that is 200 times stronger than morphine. The 4 Laws of Positive Thinking are (Mongan, M.F. (2008)) :

- echo law: every thought, every emotion we project in the world come back to us as it is.
- physiological law: every thought, every emotion that we have has an effect on our body.
- law of repetition: the concepts to which we are often exposed are inscribed with time in our thoughts.
- motivation law: when the mind is motivated, the body can perform unusual tasks

- She will **chew for a long time** so that she not only feeds her physical body, but also her psyche because the mouth is the first stomach that captures the subtle particles of food,



the stomach receiving and distributing to the organs the physical materials of food swallowed.

- She will also think of **breathing well** while she eats. She will also be careful to intake clean air, and breathe deeply to feed her baby with oxygen. Walks in nature are recommended.

## Conclusion

A program is necessary to be taught in schools, universities and social enterprises in order to spread information about good ways of eating when you want a baby or you are expecting one.

It is even more efficient if you start taking care of your nutrition well before wanting a baby.

Nutrition is one of the major aspects of your life in order to stay in good health all over the years and to give birth to a healthy and joyful baby.

Our recommendations :

- Before any purchase, read the labels. Avoid pesticides, chemical fertilizers, food additives especially colorings (eg E100), taste enhancers (sodium glutamate E621), sodium nitrate, artificial sweeteners (aspartane), glucose syrup
- Buy local as much as possible or at least the products of your country
- Avoid waste (expiration dates are often excessive)
- Give preference to organic when possible
- Prefer fresh products that have not traveled
- Avoid plastic bags, prefer bulk food
- Wash food well and peel it if it is not organic
- Reduce meat especially that coming from foreign countries where the breeding is not controlled
- Replace the meat by eating cereals and legumes at the same meal

You will find scientific advice from W.H.O. at <https://www.who.int/health-topics/nutrition>, concerning health and wellbeing starting from the earliest stages of development.



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