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PREGNANCY

Bio-Synergys comprehensive guide to staying fit and healthy during pregnancy.



A pregnant woman with dark hair tied back, wearing a light blue tank top, grey leggings, and bright blue sneakers, is walking on a dirt path. She is holding a clear water bottle with a blue cap to her lips and drinking. A black bag is slung over her shoulder. The background is a blurred forest of tall trees.

At few other points in a woman's life is she as acutely aware of the impact of what she eats, as when she is pregnant. Proper nutrition is absolutely critical to the health and well being of the unborn child.

While your body is changing outwardly, it is also undergoing some profound changes physiologically. The foods you eat, the way they are used, and their effects on your body and your baby play an important role in these changes. Remember to feed yourself well and you will give your baby the best possible start.

Disclaimer: Some women have unique medical and health issues that will impact their nutritional status. The following information is not intended to replace proper care from a licensed physician and any medical concerns you have should be addressed by your GP. If you are concerned about your diet then a consultation with a Nutritionist will be beneficial in understanding the special needs your body has during pregnancy.

Fewer physical problems - A study on Aerobic exercise, maternal self-esteem, and physical discomforts during pregnancy (Wallace et al.), found there to be up to 40% fewer incidences of lower back pain and pelvic discomfort in women who exercised during pregnancy compared with those who remained sedentary through pregnancy.

Better Circulation - Regular exercise helps improve your circulation. Improved circulation helps avoid uncomfortable but common pregnancy complaints such as cramps, piles, constipation and swelling.

Labour - Women who exercise through pregnancy generally have shorter, less complicated labours. Exercising during pregnancy increases your strength and stamina by working your heart and lungs -- the increased oxygen flow is passed on to the baby as well. Another benefit is that many women who have exercised during pregnancy report afterwards that being fit made the labour easier (Wolfe et al).

Feelings of Well-Being - When you exercise, your body releases hormones called endorphins. Endorphins make you feel more positive and better about yourself. Continuing to exercise through pregnancy can help a woman to accept her changing body and be proud of her bump! In particular, women who have trained regularly before getting pregnant, feel more confident and happier if they continue to do so whilst pregnant.

Improved Sleep - Many pregnant women complain of disturbed sleep patterns. Regular exercise throughout pregnancy can help you to sleep better.

Post-natal recovery - starting regular exercise shortly after giving birth has numerous physical and emotional benefits.

Reduced post-natal depression - possibly due to having time for themselves and an improved

self-image.

Reduced urine incontinence - although women who begin exercising soon after birth may initially experience some leakage during their sessions, this resolves quickly and the frequency of it occurring during activities such as coughing and laughing is less than for those who don't exercise.

Faster return to pre-pregnancy weight and percent body fat

Benefits of exercise for the baby

Tougher babies cope better with labour! - although it is difficult to objectively measure this theory, it seems that babies born to exercising mothers have a increased ability to deal with the potential problems of labour. When a pregnant woman exercises her baby's heart rate goes up and down as it adapts to the changes in oxygen delivery across the placenta. Studies have shown that despite these changes, babies born to exercising women do not have higher levels of erythropoietin (a hormone released when oxygen levels are low) at birth than babies of sedentary mothers. (Clapp, Little, et al. 1995) It seems likely then that these babies have learnt how to react to changes in oxygen levels – an adaptation that surely puts them at an advantage during a long or complicated labour. **Sunny temperaments** - once they make it to the outside world it seems that babies born to exercising mothers actually adjust better and are easier to care for. Although more research is needed, initial findings are that these babies quieten themselves down when disturbed and respond more readily to their environment. (Clapp, Simonian, et al. 1995).

Leaner more intelligent children - again more research is needed but it appears that the offspring of exercising mothers go on to be leaner and more intelligent than those born to sedentary mothers. A study comparing two groups of children (one from exercising mothers and one from non-exercisers) at age five,



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found no differences in height, limb lengths, or head and chest circumferences between the two groups. What did differ however was that the children of exercisers were not as fat and scored higher on tests of general intelligence and oral language skills. (Clapp 1996b)

Increased Calorie Consumption: Eating for two? Think Again!

We often hear the expression - eating for two in reference to pregnant women. In fact, pregnant women require only an additional 300 kcal (calories) per day in the second and third trimesters. There is no additional requirement for energy (calories) in the first trimester. These 300 kcal are needed to support the rapid growth of the fetus and are in addition to the approximately 2000 kcal most pre-pregnant women should consume, bringing the total daily caloric consumption to 2300 kcal. This extra 300 kcal is approximately the same amount of energy supplied by a bowl of cereal with low-fat milk or a tuna fish sandwich. Women who are very physically active and engage in exercise may need to consume more energy based on their activity level and lifestyle.

300 extra kcal could be:

- 2 toasted crumpets with a teaspoon of peanut butter
- A bagel filled with low fat soft cheese
- A large bowl of fruit salad topped with a pot of low fat yoghurt
- A wholemeal sandwich with lean ham, chicken salad or low fat tuna mayonnaise
- A bowl of wholegrain cereal with a small chopped banana and low fat milk

Weight Gain

A healthy birth weight baby is the result of proper nutrition and adequate maternal weight gain. Recommendations for women who enter pregnancy at or around their ideal weight are 10-12 kilograms (22-28 pounds). Women who enter pregnancy below their ideal weight may be advised by their GP to gain more; women who are overweight prior to pregnancy may be advised to gain less. However, it is not advisable-nor is it healthy for the developing fetus to begin a weight-loss diet regime during pregnancy.

Special Nutrients During Pregnancy

Your body and your baby require more of almost everything when you are pregnant. Optimal growth of the baby depends on the mother accumulating extra body stores during pregnancy. This means that pregnancy is not the time to diet, to hold back on important nutrients or to worry about weight gain. Yet before you take this as a license to eat five chocolate bars a day, remember that the QUALITY of your food also impacts baby's health.

Nutritionists recommend you divide your plate into five food groups: bread, other cereals and potatoes; fruit and vegetables; milk and dairy foods; meat, fish and alternatives; foods containing fat and foods containing sugar. Aim to choose a variety of foods from the four largest groups every day to ensure that you obtain the wide range of nutrients. More foods should be eaten from the bread, other cereals and potatoes group and the fruit and vegetables group compared with the milk and dairy foods group and the meat, fish and alternatives group. Foods in the smallest group - foods containing fat and foods containing sugar - add choice and palatability but foods from this group should either be used sparingly if they are eaten every day (such as butter and spreads) or not eaten too often (such as sweets and crisps).

The key message from the Balance of Good Health is that having a balance and variety of foods in the diet is important for health. Aiming to achieve this balance every day is a sensible and practical approach, although it is not



necessary to achieve it at every meal. Choosing different foods from within each group is also important as this adds to the range of nutrients consumed, as well as variety to the diet.

Proteins & Fats

When you are pregnant, your body metabolizes macronutrients (carbohydrates, proteins and fats) quite differently than it did before pregnancy. Pregnant women require more protein to support fetal growth, and fat is stored more readily because it is used as a fuel source during pregnancy and lactation.

Currently there are no recommendations for increased fat consumption during pregnancy because our society has no shortage of fatty foods and in general women consume adequate fat when they increase their overall caloric intake. However, avoid trans fats, which are found in foods that contain hydrogenated vegetable oils (often the label reads hydrogenated soybean oil, vegetable shortening, hydrogenated palm kernel oil, etc). Many snack foods, processed foods (crackers, pastries, candies) and the oil used in deep-frying fast foods contain hydrogenated oils.

Vitamins & Minerals

The requirements for many vitamins and minerals increase during pregnancy. The following are some of the most important. **Folic Acid:** Folate is a key vitamin in the development of the fetus and maternal folate status is recognised as being important in the avoidance of neural tube defects, e.g. spina bifida. For this reason it is recommended that all women of child bearing age take a supplement of 400 micrograms of folic acid per day (folic acid is the synthetic form of the vitamin folate). In particular, this supplement should be taken before conception and continued until week 12 of pregnancy. A larger supplement (4 mg/day) is recommended for women who have already had an NTD pregnancy, to help prevent recurrence. In addition, it is recommended that all women of child bearing age eat more folate-rich foods.

If you are of child-bearing age and considering becoming pregnant, it is advisable to take this prenatal supplement because neural tube defects occur in the very early weeks post-

conception, a period when most women have no idea they are pregnant.

Calcium: As vital as it is to your bones, it is equally critical to the bone and teeth development of your baby. The recommended intake for calcium is 700 mg/day. This can be obtained through three or more servings of calcium-rich dairy products: low-fat milk, cheese or yogurt.

A small number of women are intolerant to lactose (the carbohydrate found in dairy products). Some people with lactose intolerance are better able to tolerate hard cheese and yogurt, than milk and so should include these foods in their diet along with calcium-fortified soy or rice milk, calcium-fortified tofu (soybean curd) and calcium-fortified orange juice. Legumes, nuts, dried fruits and dark leafy green vegetables such as cabbage, kale, collards and turnip greens also are high in calcium. However some of the calcium in spinach, chard and beet greens is bound with oxalic acid which makes the calcium unavailable to the body.

Iron: Another mineral needed both by mother and baby as it is a critical component of your blood. Many women find themselves deficient in iron during pregnancy which can lead to iron-deficiency anaemia. Iron is needed for the production of new blood cells (your blood volume increases 50% during pregnancy) and many women do not have sufficient iron stores. The last trimester is the time of the highest iron utilization by the fetus. Iron is best absorbed from red meats, however, other iron-rich foods include bread and cereal products, breakfast cereals, green leafy vegetables, eggs, beans such as baked beans, lentils and dried fruits.

Vitamin C aids in iron absorption from non-meat sources of iron, so try to consume vitamin C-rich foods with iron-rich foods at the same meal. Most physicians will test for iron deficiency at some point during your pregnancy and if needed will recommend a supplement.

***Vitamin A:** An important nutrient essential because of its role in the immune system, reproduction and vision. However, the recommended dietary allowance does not increase during pregnancy. In fact megadoses of vitamin A (retinol) has been linked to birth defects. The recommendation for

The recommendation for protein increases to 60 grams per day (from 50 grams per day for a non-pregnant woman 25-50 years old) Good protein sources include dairy products; lean meats, fish; legumes and tofu.

Folate is found in green leafy vegetables, orange fruits, strawberries, broccoli, cantaloupe, asparagus, cooked dried peas, beans, wheat germ and fortified cereals and breads.

pregnant women is 800 RE (retinal equivalent). The risk for birth defects due to vitamin A supplementation is highest in the first trimester. It is not advisable to take a vitamin A supplement in addition to the prenatal vitamins. In addition, limit your consumption of foods with a high concentration of vitamin A, specifically liver and pate made from liver.

Nausea and Morning Sickness

It can be very challenging to eat properly when you are feeling queasy or are having trouble keeping food down. The best way to deal with mild morning sickness is to be sure to consume a small snack first thing in the morning, or even before you get out of bed (keep a box of whole grain crackers by the bedside table) and to sip water or decaffeinated tea throughout the day. Continue with small bites of crackers or whatever else you can manage. While it seems counterintuitive, eating small amounts throughout the day can help with the nausea.

Lactation

Much of the fat that your body accumulated during pregnancy is intended as stores for lactation. Proper nutrition for nursing mothers is essential. Your food choices are not directly impacting your baby quite to the extent as they did during pregnancy. Yet what you eat will impact the nutritional profile of your breast milk and will certainly impact your physical well-being and energy levels. In fact, your body uses more energy producing milk for your baby than it does making the baby!

The energy needs of women vary based on how much milk they are producing. The daily volume of breast milk consumed by a baby can range from 340 to 1,000 milliliters per day. The average is between 600 and 900 ml per day. Making this milk requires increased calories, protein, vitamins and minerals.

Although maternal diet has virtually no effect on the protein, total fat and energy composition of breast milk, the fatty acid composition (the types of fat eaten) of a woman's diet will influence the fatty acid profile (the amounts and types of fat present) of her milk. This is important, especially with regard to the amount

of essential fatty acids present as they are needed for brain development. In particular the long chain omega-3 fatty acids found in oily fish are known to be important so it is a good idea to include oily fish in the diet, such as herring, trout, mackerel, salmon, sardines. There is no special recommendation for the consumption of oily fish for pregnant or breast-feeding women. Current advice for everyone is to eat at least two portions of fish per week, one of which should be oily.

You will need to consume 500 kcal more per day than you did prior to becoming pregnant. However, remember that these extra calories should come from healthy foods: fruits and vegetables; lean meats and poultry; fish; low fat dairy and whole grains.

Protein needs increase from 45 grams per day during pregnancy to 56 grams per day during the first 6 months of your baby's life. Protein is found in meat, fish, poultry, eggs, milk and soybeans. One glass of milk provides 8 grams of protein. One egg provides 7 grams of protein. After the first 6 months you should consume 53 grams of protein per day.

Your iron needs do not change from 14.8 mg per day during lactation, but eating iron-rich food (combined with vitamin C) remains important and your calcium needs increase to 1,250 mg per day. Include plenty of calcium-rich dairy foods every day.

Most women either have nausea first thing in the morning, or in the early evening. Many women have a queasy feeling throughout the day but can eat some foods without ill effects. If you are not able to hold any foods down it is important to discuss this with your physician. Usually these symptoms subside by the second trimester.

IMPORTANT ADVICE

Avoid eating raw eggs and food containing raw or partially cooked eggs. Only eat eggs cooked enough for both the white and yolk to be solid. This is to avoid the risk of salmonella, a type of food poisoning. Always wash your hands after handling raw meat, and store raw foods separately from other foods. This is to avoid other types of food poisoning from meat (salmonella, campylobacter and E. coli O157).

Avoid the following foods because they can contain high levels of listeria, bacteria that can cause miscarriage, stillbirth or severe illness in a newborn baby:

- Soft mould-ripened cheese, such as Camembert, Brie and blue-veined cheese. There is no risk of listeria with hard cheeses (such as Cheddar), cottage cheese and processed cheese
- Pâté (any type, including vegetable)
- Uncooked or undercooked ready-prepared meals. Make sure you heat ready-prepared meals until they're piping hot all the way through

Only eat meat that has been well cooked. Take particular care with sausages and minced meat. Always wear gloves when you're gardening or changing cat litter and wash your hands afterwards. This is to avoid toxoplasmosis, an infection caused by a parasite found in meat, cat faeces and soil. The infection can be harmful to unborn babies.

Avoid eating shark, swordfish and marlin and limit the amount of tuna you eat. You shouldn't eat more than one tuna steak a week (weighing about 140g cooked or 170g raw) or two medium-size cans of tuna a week (with a drained weight of about 140g per can). For canned tuna, this means about six rounds of tuna sandwiches or three tuna salads. These fish contain high levels of mercury which is harmful to your baby's neurological development and is also harmful to adults.

Caffeine

Limit the amount of caffeine you have each day. Caffeine occurs naturally in a range of foods, such as coffee, tea and chocolate, and it's also added to some soft drinks and 'energy' drinks.

Do not consume more than 300 mg of caffeine a day. This is because high levels of caffeine can result in babies having a low birth weight, or even miscarriage.

Each of these contains roughly 300 mg of caffeine:

- 3 mugs of instant coffee (100 mg each)
- 4 cups of instant coffee (75 mg each)
- 3 cups of brewed coffee (100 mg each)
- 6 cups of tea (50 mg each)
- 8 cans of cola (up to 40 mg each)
- 4 cans of 'energy' drink (up to 80 mg each)
- 8 (50 g) bars of chocolate (up to 50 mg each)

If you eat a bar of chocolate and drink 3 cups of tea, a can of cola and a cup of instant coffee in a day, you'll have reached your 300 mg limit.

Remember that caffeine is also found in certain cold and flu remedies, so always check with your GP or another health

professional before taking any of these.

Alcohol

Current advice for alcohol consumption during pregnancy is to avoid drinking more than 1 or 2 units of alcohol, once or twice a week.

A unit is half a pint of standard strength beer, lager or cider, or a pub measure of spirit. A glass of wine is about 2 units and alcopops are about 1.5 units.

Peanuts

Pregnant women who are atopic (suffer from any sort of allergy) or whose husband or sibling of the unborn child has an atopic disease may wish to avoid peanuts and peanut products during pregnancy. The same advice applies during lactation. This does not guarantee the absence of peanut allergy in the unborn child, as to date the evidence of a relationship is inconclusive. This advice does not apply in the absence of atopy



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