Lactation Diet

**Purpose:**

During both pregnancy and lactation recommended dietary allowances should have a substantial increase in the intake of dietary energy, protein, and other nutrients. The National Research Council of the USA concluded that the amount of manual work a nursing mother does is much more than a more sedentary existence.

**Criteria to assigning the diet:**

RDA's for lactating women varies tremendously from community to community. The RDA's for pregnancy and laceration are derived on a simple incremental basis. The energy needs of a moderately active women are assumed to be around 2,200 kilocalories a day, lactating women should consume an additional 550 kilocalories a day, to equal approximately 2,750 kilocalories a day.

**Rationale for Diet:**

The WHO/FAO Ad Hoc Expert Committee have said that the average lactating mother should produce approximately 850ml of milk per day for up to 6 months. This equals out to a total amount of extra dietary energy that would be required to make up this amount of milk is approximately 135,000 kcal, based on the assumption that dietary energy is converted to milk energy with an efficiency of 90%. This is based on the assumptions that the total fat store resulting from pregnancy is on average 36,000 kilocalories; the net needed to produce the additional calories is 100,000 kilocalories. Equally important is the additional calories needed to continue normal manual labor. Therefore the theoretical energy needs of a lactating mother need to be increased further to reach on average 3,300 kilocalories a day.

**Biochemical and Nutrient Needs:**

According to the NRC, the following graphs present the extra daily nutrient allowances for pregnancy and lactating women.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Non-pregnant,non-lactating</th>
<th>Lactating</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal)</td>
<td>2100</td>
<td>2600</td>
<td>500</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>44</td>
<td>64</td>
<td>20</td>
</tr>
<tr>
<td>Retinol (μg)</td>
<td>800</td>
<td>1200</td>
<td>400</td>
</tr>
<tr>
<td>Vitamin D (μg)</td>
<td>7.5</td>
<td>12.5</td>
<td>5</td>
</tr>
</tbody>
</table>
Extra daily nutrient allowances for lactation (NRC 1980)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Non-pregnant</th>
<th>Pregnant</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal)</td>
<td>2100</td>
<td>2400</td>
<td>300</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>44</td>
<td>74</td>
<td>30</td>
</tr>
<tr>
<td>Retinol (μg)</td>
<td>800</td>
<td>1000</td>
<td>200</td>
</tr>
<tr>
<td>Vitamin D (μg)</td>
<td>7.5</td>
<td>12.5</td>
<td>5</td>
</tr>
<tr>
<td>Vitamin E (mg)</td>
<td>8</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Riboflavin (mg)</td>
<td>60</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Nicotinic acid (mg)</td>
<td>1.3</td>
<td>1.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Vitamin B₆ (mg)</td>
<td>14</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Folate (μg)</td>
<td>400</td>
<td>800</td>
<td>400</td>
</tr>
<tr>
<td>Thiamin (mg)</td>
<td>1.1</td>
<td>1.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Calcium (mg)</td>
<td>800</td>
<td>1200</td>
<td>400</td>
</tr>
<tr>
<td>Iron (mg)</td>
<td>18</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Zinc (mg)</td>
<td>15</td>
<td>20</td>
<td>5</td>
</tr>
</tbody>
</table>

Extra daily nutrient allowances for pregnancy (NRC 1980)

General Guidelines:

A nursing mother produces approximately 23 to 27 ounces of milk per day. This equals 330 milligrams of calcium per quart of breast milk. The quality of the breast milk depends entirely on the mother's diet and nutrition. If a woman lacks sufficient nourishment, the body will put its nutrition to the production of breast milk, before providing nourishment and nutrients to the mother.

-First and foremost a lactating women should increase her water consumption by one quart a day, totaling 2.5 to 3 quarts. Do not drink too much liquid though; this can cause milk production to slow.

-The best idea is to spread your caloric intake over 5 smaller meals: breakfast, lunch, afternoon snack, dinner, and an extra snack in the evening. During each snack drink water, eat a low fat dairy product, and a piece of fruit.
-Foods containing Vitamin B9, folic acid, this is the vitamin that is vital to the development of the baby's nervous system. Folic acid can be found abundantly in asparagus, cabbage, corn, chickpeas, and spinach. Other foods like wheat and orange juice also have sources of folic acid.

-Zinc is another important vitamin for nursing women to obtain. Lactating women should consume 15-20 milligrams of zinc per day. Sources include eggs, meat, whole flour and oats.

-Stay away from tobacco products, nicotine passes directly through the mother’s blood stream to the breast milk. If you choose to smoke, allow at least an hour between this and your next feeding session.

-Avoid regular consumption of alcohol; this also passes through the blood stream very quickly, and into breast milk. Alcohol is able to travel through milk in less than an hour, and if the baby were to consume this in large quantities, it can cause retardation in growth. If you do choose to drink alcohol, save it for after a feeding session.

Education Material:

Food Groups

1. Bread, cereals, pasta, rice and potato group - aim to eat 6-11 portions per day

What counts as one portion?
1 large slice of bread (about 30-40 g) 3 small crackers, 1/2 cup cooked pasta (macaroni, spaghetti etc.) 1/2 cup cooked cereal (rice, buckwheat or oatmeal) 3/4 cup (about 30g) ready-to-eat dry cereal 1 medium potato (100g)

Foods from this group provide you with your main source of energy. They also contain many other important nutrients, such as calcium, iron, zinc and B vitamins. Potatoes are also a good source of vitamin C.

Unrefined cereals and whole grain bread are good sources of fiber which prevents constipation which you may experience more of during pregnancy.

Some breakfast cereals may be fortified with vitamins such as folic acid - check the label.

Try to eat a variety of foods from this group, including whole grain and rye breads, macaroni, spaghetti, rice, buckwheat, oatmeal or your traditional cereal and potatoes.

2. Vegetables and fruits group - aim to eat at least 5 portions per day (more than 400g)

What counts as one portion?
1/2 cup (about 100 g) of vegetables (for example: carrots, onions, beets, leeks, turnip etc. – including that eaten in soups and stews)
1 cup of green leafy vegetables (cabbage, lettuce, spinach, broccoli, etc.)
1 medium tomato 1/2 cup of sprouted beans 1 medium piece of fruit (1 apple or 1 pear or 2 small plums) 1/2 cup (about 100 g) of fresh, preserved, or cooked berries 160 ml fruit or vegetable juice (pure 100% juice – try fresh carrot and orange squeezed and mixed)

Vegetables and fruits provide the best source of many vitamins and minerals, including folate and iron, which are important to prevent you becoming anemic during pregnancy. Remember, vitamins such as vitamin C are needed both by you and your baby and cannot be stored in your body. Thus, it is important to eat plenty of vegetables and fruits every day, especially those that are locally grown.
Each of the following will give you enough vitamin C every day: 1 large pepper or 3 medium potatoes or 160 g of cabbage.

In addition vegetables contain many protective components, which help keep us healthy: fiber, flavonoids and many more substances, which we have not even discovered yet! This is one reason why vitamin and mineral tablets cannot replace the vegetables we eat.

Fresh vegetables and fruits may sometimes be difficult to find. Out of season, when fresh produce may not be available, don’t forget about frozen, home-preserved, tinned, pickled and dried varieties - they also contain essential nutrients. You might like to try “sprouting” beans when no other sources of vitamin C are available.
The following fresh weight of sprouted beans will provide 10 mg vitamin C: Black-eyed beans Fenugreek, Mung beans, green lentils Haricot, Alfalfa 50 g 70 g 90 g

Remember, that vitamin C is lost during storage and preparation. Therefore it is important to cook vegetables in a minimum amount of boiling water for only 5 to 10 minutes. Try steaming, baking or microwaving instead of boiling. Try to eat raw fresh or lightly cooked vegetables every day and try not to add excess fats, oils and salt.

3. Milk and dairy products group - aim to eat 3 portions a day

What counts as one portion?
1 cup (about 200 ml) of yogurt/kefir 45 g of hard cheese (the size of matchbox) 1,5 cup (about 250 g) of cottage cheese 1 glass (300 ml) of milk

Dairy products are one of the richest sources of calcium in your diet. Calcium is essential for the development of healthy bones and teeth of your baby; in lactation it is important for the formation of your own breast milk. However if you do not eat calcium containing foods your baby will not suffer since calcium will be taken from your body stores. But for your own health it is important that you replace your stores of calcium.

Dairy products are also a good source of protein and other minerals and vitamins, such as some B vitamins, vitamin A and sometimes iodine depending on whether or not the cows are fed iodine fortified fodder.
Contrary to the beliefs of some people, creamy, high-fat milk and dairy products are not healthier than low-fat alternatives. Where possible choose low-fat milk, kefir and low-fat milk products - they contain more calcium and protein and have a lower fat content, so are good for all of the family.

Remember, that neither butter (made from the cream of milk) nor cream contributes calcium or protein to your diet, only fat.

4. Fish, poultry, meat and bean group - aim to eat 2 portions a day

What counts as one portion?
1 cup (about 150-200 g) of cooked beans 2 eggs 70-80 g of cooked lean fish, poultry or meat

This group includes beans and lentils, fish, meat, poultry, eggs and nuts, which are all rich in protein. Try to eat a wide variety, especially beans, lentils, nuts and fish, these are especially healthy for you and your family. Meat, especially organ meats (such as liver and kidney), provides some of the best sources of iron. Iron from meat is absorbed better than iron from plant sources. However, liver should be taken in moderation to avoid excess intake of vitamin A.

Choose lean varieties of meat or cut the fat off when possible, think about limiting the amount of smoked and salt-cured sausages if you eat these often because it is better not to eat too much salt and fat.

5. Lard, butter, margarine, oils, sugar, sweets and salt group - use sparingly

This group includes butter, margarine, oils, lard, sugars, candies, sweet desserts, pastry, sweetened drinks: in other words foods that have a high fat, salt and/or sugar content.

These foods are dense in calories but provide little in the way of other nutrients. Therefore it is better not to indulge in these products at the expense of more nutritious foods from the other food groups.

Try to use oils (such as olive, canola or rapeseed oil) instead of animal fats as much as possible, but if this is not possible then just try to reduce the total amount of fat you eat.

Remember, eating a diet low in fat and, especially low in animal fat, reduces your and your family’s risk of getting certain cancers and cardiovascular disease - the two major “killers” of the population.

Consume salt in moderation (up to 6 g per day in total): try to use less salt at the table and in cooking, eat less salty or pickled foods. This will decrease your risk of high blood pressure and related health problems.

Try whenever possible to get salt which is iodized to ensure that you and especially your baby
get enough iodine during pregnancy and breastfeeding.

**Foods to Avoid:**

1. **Alcohol**
   Try not to drink alcohol during pregnancy. An occasional glass of wine at special events is OK.

   Alcohol crosses placenta and can lead to physical, growth and mental problems in some babies. It is especially important not to drink alcohol at the time of conception and during the first 3 months of pregnancy when the embryo is most vulnerable to the toxic effects of alcohol.

2. **Smoking**
   Try not to smoke during pregnancy or at least try to reduce smoking substantially. Mothers who are heavy smokers are at much higher risk of having low birth weight babies. Smoking can also be a cause of premature birth, miscarriage and stillbirth and may impair your child’s growth and development.

   Remember: it is never too late to stop or at least reduce smoking or drinking. Your baby will benefit from each alcoholic drink or cigarette you give up!

3. **Caffeine**
   Effects of caffeine on the fetus are not well established yet. Tea, cocoa and cola-type drinks contain about the same amount of caffeine while coffee contains about twice as much. Try to limit your coffee intake to 3-4 cups a day.

   Remember also, that tea and coffee tend to impair your ability to absorb iron from foods, such as beans and cereals, and iron supplements.

4. **Medications**
   Many medications can adversely affect your baby and are contraindicated for pregnant women or women who are breastfeeding. Consult your doctor before taking any medications, including aspirin and vitamin supplements.

**Guidelines for successful breastfeeding**

Breastfeeding can be a wonderful experience both for you and your baby.

Remember:

- Breast milk is by far the best food for your newborn baby; no commercial-made baby formula as well as any other food or drink can match breast milk.

- Breastfeeding (as compared to artificial feeding) protects against common infections, especially
diarrhea and respiratory diseases as well as urinary tract and ear infections.

• Breastfeed as often as baby wants, do not restrict frequency of feeding according to a timetable;

• Let the baby come off the breast spontaneously, do not take baby off the breast before the baby is finished.

• Try to breastfeed exclusively for 6 months and then continue for as long and often as possible (exclusively means giving your baby only breast milk for 6 months – no other fluids, including water, tea or glucose!).

• Anemia is not a contra-indication to breastfeeding and even if you are anemic you should continue to breast-feed.

• Weight loss is not a contra-indication to breastfeeding and even if you have lost weight you should continue to breast-feed.

• You should not stop breastfeeding even if you are smoking or occasionally consume alcohol – your milk is still the best food for your baby.

Bibliography

http://womenshealth.about.com/cs/breastfeeding/a/nursingdiet_2.htm

http://parenting.ivillage.com/newborn/nbreastfeed/0,,3x5f,00.html

http://www.babycenter.com/0_diet-for-a-healthy-breastfeeding-mom_3565.bc

http://www.euro.who.int/document/e73182.pdf