# **The Brewer Pregnancy Diet**- Joy M. Jones, R.N.

The Brewer diet consists of 14 food groups which a mother can choose from daily or weekly. However, the diet can be summarized as having four basic components: 2600 calories, 120 grams of protein, salt to taste, and unrestricted weight gain. The specifics of the diet have been compiled by Dr. Tom Brewer, an obstetrician, after years of studying the research and information available since 1929, on the effects of nutrition in pregnancy. He has been able to see his philosophy used to prevent or treat complications of pregnancy such as pre-eclampsia, toxemia, high blood pressure, abruption of the placenta, intra-uterine growth [restriction], 'gestational diabetes', premature labor, anemias, damage of the liver and kidneys, and low birth weight (which can cause babies to be hyperactive or infection prone). All of these problems have a common source- food deficiency and low blood volume [constricted blood volume].

**The Importance of Blood Volume**

One of the main functions of the pregnant body is to preserve the pregnancy and nourish the baby. The body's ability to do this well depends a great deal on its ability to increase the mother's blood volume. Normally, this blood volume is expected to increase by 50-60%. For a woman with a pre-pregnant weight of 130 lbs., this would be an increase of about 2.1 quarts of blood (from 3.5 quarts to 5.6 quarts).

The liver makes albumin to facilitate this blood volume expansion. Albumin is similar to egg white. When it is in the mother's bloodstream, it has osmotic pressure which pulls fluid out of her tissues and back into the blood circulating in her blood vessels. The only way the liver can make this albumin is from protein which the mother eats. However, if the mother is trying to restrict her weight gain to someone's 'ideal' number, even by going on a high protein, but low-calorie diet, much of the protein that she eats will get burned up for calories. Brewer has found that when a woman eats 1/3 less calories than the 2600 that he suggests (i.e., 1734 calories), half of the protein that she eats gets burned for calories. So only 60 of her 120 grams of protein would get used to make albumin (and baby, and uterus), and she may have trouble expanding her blood volume adequately.

Salt also has osmotic pressure which helps pull fluid out of the tissues and into circulation. While salt restriction may be helpful for pregnant women who have unhealthy hearts or kidneys, it is dangerous in healthy women. A woman's taste buds are usually the most accurate indicator of the amount of salt that she needs, and studies have shown that it is not possible for a pregnant woman to eat too much salt. Her kidneys simply excrete whatever extra salt she eats. In fact, it has also been shown that after just 2 weeks of 'salt in moderation', the mother's blood volume begins to drop.

When the blood volume stops increasing or drops, the body has no way of knowing that the mother is just eating less. All it knows is that the blood volume is less than it is supposed to be. So it starts the same processes that it uses when the blood volume is dropping due to hemorrhage. The internal organs must be preserved, at the expense of the limbs, if necessary. So the kidneys secrete a protein called rennin, which causes the blood vessels to constrict. During a hemorrhage, this is a very helpful stop-gap measure while help is on the way. During pregnancy, however, this blood vessel constriction causes a rise in blood pressure.

Attempting to treat this rising blood pressure with salt restriction, weight restriction, or diuretics only causes the blood volume to fall even more, leading to further formation of renin and blood vessel constriction. And the blood pressure continues to rise.

Meanwhile, the kidneys are desperately trying to increase the blood volume by reabsorbing as much water and salt as they can from the fluid they have filtered out of the blood. They return this reabsorbed fluid and salt to the circulation. However, since there isn't enough albumin and salt in the circulation to hold this reabsorbed water, much of it leaks out into the tissues. The kidneys keep reabsorbing water at one end of the process, the water keeps leaking out of the capillaries at the other end and the mother sees rapid swelling and rapid weight gain (from extra water in the tissues). She presents herself to her birth attendant who tells her she is having pre-eclampsia. If her nutrition is not improved quickly, or if salt restriction or diuretics (in drugs, herb teas, or homeopathic remedies) are prescribed, her blood volume will continue to drop, and she will develop eclampsia (toxemia). Toxemia can culminate in convulsions, coma, and death. Many sources maintain that there is no known cause of toxemia, and therefore many practitioners try to treat the symptoms alone, but without success. The symptoms not only persist, but the mother also continues to experience one complication after another.

**Treating Pre-eclampsia**

One way to treat pre-eclampsia is to educate the mother about the cause of her illness, to strongly encourage her to eat the Brewer Diet, and to suggest that she eat something every hour that has protein in it. When the problem seems to need an immediate remedy, the birth attendant can give the mother albumin intravenously, and sometimes put her on antibiotics (to lessen the load on the liver by aromatic toxins in the intestines). Brewer tells of a mother who, unable to find a doctor to give her albumin, brought her blood pressure down by eating 52 eggs and drinking 6 quarts of milk in 3 days.

**Other Complications of Malnutrition**

All the other complications mentioned earlier are related to blood volume or lack of adequate nutrition in a similar way. If the malnutrition is not corrected, some liver tissue can die and hemorrhage, leading to small hemorrhages in the mother's adrenals, lungs, brain, and lining of the heart. The cells lining the capillaries in the kidneys can be damaged as well, and the falling blood volume can cause kidney dysfunction. Abruption of the placenta (when the placenta becomes detached) can happen when the blood volume is so low that the maternal pool of blood behind the placenta begins to clot. 'Gestational diabetes' can result from a decreased carbohydrate tolerance, otherwise known as starvation diabetes, which in turn can be caused by not eating enough carbohydrates. Growth [restriction] and low birth weight can result from the lack of nutrients in the mother's blood and from low pressure of the blood behind the placenta. The baby can suffer neurological impairment due to this lack of nutrients and calories when his brain is at the most critical stage of its development.

Ninety percent of premature labor is caused by inadequate nutrition and falling blood volume. It has also been noted that the blood volume necessary to prevent premature labor increases in proportion to the number of babies the mother is carrying. The exact mechanism is unknown, but there is speculation that it is due to the fact that an undernourished placenta is less capable of producing the muscle-relaxant which keeps the uterus quiet during pregnancy, or that an inadequate blood volume somehow triggers an increase in the production of oxytocin by the pituitary. In any case, premature labor can be prevented with a proper diet and it can be stopped with the use of IV fluids (without medications), or IV albumin.

In addition, malnutrition can lead to several labor complications. 1) Inadequate nutrition can mean that a small baby is more difficult to push out than a large one is. When the baby is small because of food deficiency, the uterus is also malnourished and less capable of functioning at its full potential. 2) The pelvis is designed to stretch during labor. An undernourished placenta may produce less of the hormones needed

to stretch to allow the baby through. 3) With a lower than normal blood volume, the mother is more prone to dehydration. In case of extra bleeding she doesn't have the fluid reserves to draw from that she could have been building, had she been on a better diet. 4) In fact, postpartum hemorrhage is more likely with a malnourished mother, since her liver damage can cause her clotting mechanisms to malfunction.

**When is the Diet Important?**

The Brewer Diet is important in all three trimesters of pregnancy. In the first trimester, the Brewer Diet is important to prevent ketosis (the accumulation of ketones in the blood from the breakdown of body fat) and morning sickness, as well as for promoting blood volume expansion and tissue building (baby and uterus). In the second trimester, good nutrition is important for optimal placental development. If one has been on the Brewer Diet, one doesn't need to worry about the placental function if the baby happens to become 'overdue'. In the third trimester, this diet is important to build up reserves for labor, to ensure that the placenta is nourished well enough to keep functioning, and because the baby's brain goes through its most rapid rate of growth in the last 2 months of gestation. The problem with limiting a mother to a certain number of pounds is that she will often reach that number before the end of her pregnancy and then starve herself for the rest of the pregnancy.

Some birth attendants scare mothers away from using this diet, with dire predictions of weight gain that will be difficult to lose after the baby is born. This fear of weight gain often shows an unfamiliarity with the weight loss associated with breastfeeding. It can also show that they are neglecting to apply the 'risk vs. benefit' test to this nutrition therapy which is commonly applied to other proposed therapies. When this test is applied to the Brewer Diet, the benefits of avoiding severe complications with the pregnancy, labor, or baby easily outweigh the risk of possibly being slightly overweight for a couple of years after the baby's birth.

The Brewer philosophy is that the number of pounds gained is not as relevant as the kind of food eaten to gain those pounds. The average weight gain on the Brewer Diet seems to be 35-45 pounds. However, if a woman can show that she is eating well and not trying to artificially limit herself to a certain number of pounds, a weight loss of 5 lbs. might be healthy, and a weight gain of 60 lbs. (or more for a multiple pregnancy) could also be healthy. The bottom line is that the first question should not be 'What have you gained this week?' The first question for every mother should be

**'What have you been eating?'**