

EATING FOR TWOTABLE OF CONTENTS

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Dear Expectant Mothers:

Congratulations, and welcome to the most amazing journey of your life.

When sperm meets egg, a miraculous series of biochemical events begins. The DNA of the chromosomes of the original cell divides only 50 times but results in approximately 100 trillion cells, a number that is greater than all the stars in the milky-way galaxy. Furthermore, it is estimated that each of these cells has over 6 trillion biochemical reactions per second, and each cell also knows what all the other cells are doing thru the body's own infinite intelligence.

So it is with great humility that I as a scientist attempt to convey any advice on the topic. As the mother of two incredibly healthy children, I am proud that I did the best I could to take care of myself, to give my kids the very best shot in life given what I understood at the time. My girls are 8 and 10 now. Could I have made better choices given what I know now? Sure. I have updated this document with the latest information available.

Every pregnant mother is concerned with what she eats while nurturing her unborn child. The good news is that it's not that complicated: the rules for good health during pregnancy are the same as the rules for good health during the rest of your life – it's just more important to make the right choices as they will influence the baby's health for the rest of his or her life. Basically, you should eat a large variety of vegetables, fruits, and whole grains (more than 90% of your caloric intake), get plenty of exercise, drink lots of water, and get adequate rest. And unlike the common advice that you should be eating for two, I must advise that it is not necessarily good to gain more than 25 pounds at full term. This can be accomplished by not gorging on high fat foods such as ice cream and pizza. These foods add weight, but not nutrition, to you and your baby. At the same time, this is not a good time to diet or restrict your eating either, unless you feel nausea and your body is telling you not to eat.

I want you to consider all those 6 trillion biochemical reactions that occur in each cell of our body every second. This is not to be taken for granted. That is, without proper nutrition, not all of those miraculous reactions will always take place as they should to provide optimal health for



you and your baby. When the body gets adequate nutrition, it expresses its' full complement of active enzymes that make all those trillions of reactions occur. With nutrition, all enzyme-making factories are open for business. Otherwise, the body struggles just to maintain a viable pregnancy, making a limited number of critical enzymes, and the luxuries of additional enzymes needed for optimal health go by the wayside.

For instance, if a mother is adequately nourished with plenty of fruit and vegetable nutrition, and happens to experience some stress, even though she is bound to make stress hormones such as cortisol, in a healthy placenta that cortisol will get broken down by an enzyme before it reaches the baby. But if the mother is not getting adequate nutrition, she will not express that enzyme because she lacks "the luxury of optimal health" and the cortisol will reach the baby and then the baby will be predisposed to stress for the rest of their life.

What nutrients exactly help to avoid this? We don't know yet, so don't take any chances. Give yourself the full spectrum of nutrients from all the rainbow colors found in the 25 different fruits, veggies, and berries. You might consider taking a supplement like Juice Plus, for example. I consider whole food nutritional supplements a critical part of a health regimen. Juice Plus has over 15 published, independent, peer-reviewed, university studies to back up its claims—and since this is the Mercedes Benz of prenatal nutrition, you might want to speak with your doctor about replacing your prenatal vitamins with a whole food, plant based supplement like this one. It has been known to help pregnant women with an array of problems associated with pregnancy.

I wish you the best as you welcome motherhood into your life! Mitra Ray, PhD



Evaluating Prenatal Supplements

Understanding the difference between *folic acid* in prenatal supplements and naturally occurring *folate* in whole foods

Naturally occurring folate, which is a water-soluble B vitamin (as found in leafy greens and in Juice Plus), is an important part of a healthy diet. Folate deficiency has been linked to osteoporosis, Alzheimer's and other forms of dementia, heart attack, stroke, ulcers, macrocytic anemia, and other illnesses. Additionally, folate is critical for fetal development, and as such is especially important for pregnant women. Folate aids in neural tube development, and can prevent severe birth defects of the spinal cord and brain.

Clearly, it's important to get adequate amounts of folate in the diet; but folic acid, which is the supplement form found in many fortified foods, and in multi-vitamins and prenatal vitamins, is an entirely different beast. Simply put, it is not a good idea to supplement with folic acid:

- 1. A Norwegian study published last month found that heart-disease patients whose diets included folic acid fortification and supplementation were 43% more likely to die of cancer. ¹
- 2. Another study found that while whole-food folate consumption was not associated with any increased risks, folic acid supplementation increased breast cancer risk by 32%.²
- 3. Equally alarming is the study that found that folic acid supplementation by pregnant women increases the risk of childhood asthma by 26%.³
- 4. Still other studies have linked folic acid supplementation to prostate and colorectal cancers. 4,5

¹ Ebbing M et al. Cancer Incidence and Mortality After Treatment With Folic Acid and Vitamin B12. JAMA. 2009;302(19):2119-2126.

² Kim, Young-In. Does a High Folate Intake Increase the Risk of Breast Cancer? *Nutritional Reviews*. 2006; (1): 468-475

³ Whitrow MJ. Effect of Supplemental Folic Acid in Pregnancy on Childhood Asthma: A Prospective Birth Cohort Study. *Am J Epidemiol*. 2009 Oct 30.

⁴ Figueiredo, JC et al. *Journal National Cancer Institute*. 2009; 101 (6):432-5.

⁵ Stolzenberg-Solomon, RZ et al. Folate intake, alcohol use, and postmenopausal breast cancer risk in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial *Am J Clin Nutr* 2006;83:895–904.



Juice Plus and Perinatal Complications

While we know that folate is important to prevent neural tube deformations, there are still many other complications that may arise during pregnancy, such as preeclampsia, low birth weight, and respiratory distress syndrome in newborns. We know that a healthy baby depends on good circulation in the placenta, especially to avoid problems such as preeclampsia, which is when the mother experiences high blood pressure and the baby has to be delivered pre-term, often with respiratory distress syndrome, because of undeveloped lungs.

Dr. Doug Odom, an OB/GYN who is both a medical professor and a private practice physician, has presented research at numerous medical conferences on the topic of pregnancy outcome. His research is further evidence that Juice Plus is the Mercedes Benz of prenatal supplements.

Juice Plus and Perinatal Complications:

These findings were presented at the Nutraceuticals and Medicine autumn conference of the American Nutraceutical Association, October 11, 2003, Nashville, TN

<u>Objective</u>: To assess the effect of antioxidant supplementation on premature labor, preterm birth, preeclampsia, birth weight, and fetal growth.

Hypothesis:

- 6 25% (income related) pregnancies result in preeclampsia
- Placenta highly vascular
- 3rd trimester: rapid growth and possible higher antioxidant needed
- Mechanism unknown: studies suggest high free-radical activity and endothelium dysfunction



<u>Cited Research Studies</u>: Relationship between Oxidative Stress and Pregnancy Outcome

1. "Basic research during the past two decades has led to increased awareness of the role of lipid peroxidation in various physiologic and pathophysiologic processes. A number of reports indicate that preeclampsia is associated with elevated blood levels of lipid peroxidation products."

Hubel CA et al. Lipid peroxidation in pregnancy: new perspectives on preeclampsia. *American Journal of Obstetrics and Gynecology* 1989

2. "An imbalance between thromboxane [A1, A2 constrictor] and prostacyclin [dilator] and between lipid peroxides and antioxidant activity is implicated in pathologic states such as preeclampsia.

Wang YP et. al. Maternal levels of prostacyclin, thromboxane, vitamin E, and lipid peroxides throughout normal pregnancy. *American Journal of Obstetrics and Gynecology* 1991

Summary of Results:

	Group 1 n=178 Control	Group 2 n=179 Juice Plus
Preterm Delivery	4%	0%
Preeclampsia	21%	0%
Low Birth Weight <2500 g	12%	1%
Admissions into Neonatal	21%	0%
ICU		
Respiratory Distress	8%	0%
Syndrome		
Caesarean Delivery	66%	47%



Conclusion:

These findings suggest that an inexpensive nutritional solution (Juice Plus) may be available to effectively address common and costly obstetric complications.

Additional studies have found that Juice Plus contains plenty of bioavailable and functional folate. In at least two studies we see that folate is bioavailable and reduces homocysteine.

Samaan. J Nutrition. 2003;133:2188-93. (Australian study – healthy, active population)

- Double blind, randomized, prospective, placebo controlled, crossover
- Started in normal range, still saw 8.4% decrease in homocysteine in 30 days

Panunzio. Nutr. Research. 2003;23:1221-1228. (Italian Study – more smokers, less healthy diet)

- Crossover study for three months
- Started with an elevated homocysteine and saw a decrease of homocysteine by 33%

Both populations had homocysteine $< 8 \mu M$ after taking Juice Plus

Folate content in	Juice Plus
Orchard Blend	140 µg
Garden Blend	280 µg
Vineyard Blend	360 µg
Total	680 µa



Besides the fact that prenatals typically have isolated folic acid, which is linked to cancer as stated above, this isolated form is also not effective for prevention of preeclampsia when compared to folate in whole food supplementation.

A recent study out of Canada, reported in the January, 2008 issue of the *American Journal of Obstetrics and Gynecology*, showed that folic acid (as an isolated supplement) at doses of 1 mg or higher given in the second trimester of pregnancy is associated with a reduced risk of preeclampsia. Preeclampsia developed in 2.17% of patients taking folate and in 5.04% of those not taking supplements – a reduction of <3% in Preeclampsia using isolated folic acid.

Compare the power of whole foods with the still yet undiscovered mystery of over 25,000 phytonutrients working together: Dr. Odom works with a particularly susceptible, low-income patient-base where normally they see about a 20% or higher percentage of preeclamsia and still, in the study cited above, there was a drop from 21% to 0% - a reduction of 21% in preeclampsia using Juice Plus (with naturally occurring folate).



So you can feel safe that you are doing the best for you and your child by choosing Juice Plus as your prenatal of choice. Anecdotally speaking, nurses, doctors, and new parents are reporting that Juice Plus babies are having notably high APGAR scores. What is that? It is a score based on reactions of the baby a few minutes after birth:

	Sign	0 Points	1 Point	2 Points
Α	Activity (Muscle Tone)	Absent	Arms and legs flexed with little movement	Active Movement
Р	Heart Rate (Pulse)	No Pulse	<100 beats per min	>100 beats per min
G	Grimace (Reflex Irritability)	No response to stimulation	Facial movement only (grimace) after stimulation	Sneeze, cough, pulls away
Α	Appearance (Skin Color)	Blue-gray or pale all over	Normal, except for extremities	Whole body is normal
R	Respiration	No Breathing	Irregular and/or slow	Crying, which is good



Some extra advice

Having had two healthy pregnancies, I speak from first-hand experience. I have also had many friends with healthy "Juice Plus babies." Nutrition is so important for a healthy, happy baby, not to mention a healthy, happy mother. It is crucial to consume adequate quantities of nutrients from fresh fruits and veggies, essential fats, and water.

Here is the regimen that I recommend during pregnancy and breast-feeding. Don't be overwhelmed; it took a long time for me to adopt this diet and to achieve this level of nutritional intake daily. Start slowly and don't feel guilty about what you can't do.

- 1. Taking all three blends of Juice Plus capsules is a must, and so easy to do compared to the other suggestions below. Take one orchard, one garden and one vineyard in the am, and one of each again in the pm. The vineyard blend was not available when I was pregnant but I wish it had been. Pregnancy is a highly vascular process and the vineyard blend will further enhance the results seen with just the fruits and veggies blends.
- 2. I took no pre-natal vitamins. That part was easy.
- 3. Drink a minimum of 2 liters of water a day.
- 4. Eat 1/3 cup of ground up flax seeds (also known as linseeds in EU; brown or gold) daily, which can easily be added to your morning in a smoothie. I used to recommend fish oils, but they can go rancid so easily on the shelf and in your body. The best way to ensure enough omega-3 fatty acids is from a whole food source, such as freshly ground flax seeds, which needs to be in the presence of lots of liquid to be bioavailable. So flax seed bread or muffins aren't really helping



you much. You can buy them pre-ground (called flax meal if they're already ground) in the refrigerated section of a health food store, or buy organic flax seeds and grind them up daily or even weekly, as long as they are stored in an air-tight, dark container in the fridge. If you are travelling and don't have access to a blender, you can soak flax seeds overnight in water and drink it down in the morning or put it on your whole-grain cereal.

- 5. I make a smoothie at least 4-5 days of the week using the following easy recipe:
 - 1 serving of Juice Plus Complete
 - 1/3 cup of organic flax seeds ground up
 - 2-3 servings of fruit (1/2 cup blueberries, pineapple with core, etc.)
 - add reverse osmosis filtered water, juices, non-dairy milks (e.g. low fat/no added sugar or flavors - oat milk, soy milk, almond milk, hemp milk) to desired consistency
 - 3-4 leaves of kale or other leafy greens
 - mix thoroughly in a good blender, food processor, or Vita-mixer
 (you don't need to pre-grind flax seeds if you have a Vita-mixer)

Another alternative is to use all the above ingredients but mix into muesli or other whole grain cereals for breakfast.

6. Eat at least 5 fruits and 5 vegetables a day, preferably raw. Salads are the easiest way to do this. In fact, I highly recommend that over 90% of your calories come from plants. Did you know that most green vegetables have more protein, bio-available iron, calcium, and other minerals than steak or dairy? Did you know that there is no such thing as lean meat (chicken, fish, eggs, red meat, dairy, etc. all have too much fat and cholesterol)? If you want to grow a healthy baby and



not gain excess body weight in the process, stick to lots of fruits, veggies, and whole grains such as quinoa, brown rice, red rice, millet, oats, barley, kamut. Try not to use oils, including olive oil, in your cooking or even in your salads. If you must use oil, use very little and only canola (rapeseed) oil. Try sautéing your onions, mushrooms, etc. in water or low sodium vegetable stock. It works.

- 7. Be sure to get your sunshine (direct on your arms and legs for 20 minutes whenever you can), which is the best way for the body to make Vitamin D. Recent studies with vitamin D (which is a misnomer from the old days as it is really a hormone and not a vitamin) show that women should be concerned with their vitamin D levels before, during and after pregnancy. Vitamin D deficiency in pregnancy can cause permanent injuries to fetal brains. Get your 25(OH)D levels checked every 3 months, especially if you live in areas with little sunshine, to see if you need additional D3 supplementation.
- 8. Some doctors advise people who are on a strict plant-based diet to take 5 micrograms of B12 during pregnancy. This may be a good precaution, unless you are eating lots of organic carrot, beets, and tubers and allowing a little dirt to get into your system.
- 9. Walk briskly 3-5 times a week for 30-60 minutes.
- 10. Do pre-natal yoga 3-5 times a week. I prefer Kundalini style during pregnancy and Hatha yoga for recovery.

I have had two very healthy natural childbirths. I introduced capsules into my daughters' diets once they started solid food by sprinkling a part of a capsule into their meals (1/3 capsule per 10 lbs. of body weight). Teaching them to drink water is an ongoing activity,



and a very important one. Dry powders can add to the common problem kids have of staying hydrated once they stop drinking breast-milk as their main source on nutrition.

Breastfeeding is the best option for the first two years. Most pediatricians are not well trained in nutrition, and don't always have the healthiest advice when it comes to feeding babies and young children. Many women are discouraged early on because breastfeeding can be difficult to establish. They may encounter challenges along the way, and are then encouraged by their pediatrician (or well-meaning friends and family) to stop breastfeeding and introduce soy or dairy-based formula. If you are having a difficult time establishing a milk supply, getting your baby to adequately latch, or with any pain or discomfort, consult sources such as Le Leche League (http://www.llli.org/) before giving up on breastfeeding. There are local chapters with leaders who are well-trained and eager to help.

Goat milk may be a last resort option in the first two years if breastfeeding is impossible due to another impending pregnancy while breastfeeding. After the first two years, the baby can make their own cholesterol and there should be no need for any milk or animal products in their diet. The mother never needs dietary cholesterol during pregnancy or breastfeeding, so there is never a need for the mother to eat animal products.

The most important thing you can do for your kids is to not give them refined foods or animal products. Avoid sodas, cookies, crackers, processed foods such as macaroni and cheese products, or hotdogs and lunch meats. This will also eliminate food colors and flavor enhancers. Also avoid all products with hydrogenated oil. Introduce them early to a plant-based diet. A child's biggest exposure to antibiotics, dangerous microbes, animal fat, cancer-causing animal protein, and artery-clogging saturated fat and cholesterol is animal products. Even if it is hard for you to change, give your kids a head start in life.



Books and other resources

Even though these aren't on pregnancy, they are about optimal nutrition, which is ideally what we want to practice during pregnancy:

- <u>Do You Have the Guts to Be Beautiful?</u> by Mitra Ray, Ph.D. and Jennifer Daniels,
 M.D.
- <u>The China Study</u> by T. Colin Campbell
- Eat to Live (and other books and DVDs) by Dr. Joel Furman
- Prevent and Reverse Heart Disease by Dr. Caldwell B. Esselstyn, Jr.
- www.nealbarnard.org Dr. Neal Bernard (President of Physicians Committee for Responsible Medicine). He also has loads of books and DVDs
- www.drjohnmcdougal.com Dr. John McDougall has loads of great books, DVDs and excellent free e-newsletter.
- <u>The Rave Diet</u> by Mike Anderson. Book and DVD are pretty straight to the point.
 Book has loads of recipes.



Sample Menus and Meal Suggestions

Breakfast ideas

- Green Drink as described in my book Do You Have the Guts to Be Beautiful?
- Fruit bowl
- Whole grain cereal try with a variety of fruit/berries, Juice Plus Complete, plant-based milk (oat milk, rice milk, almond milk, soy milk), and ground up flax seeds
- Herbal tea

Lunch ideas

- Veggie sandwich on whole meal bread (e.g. avocado, tomato, cucumber, hummus, leafy greens)
- Pita pockets with falafel, hummus and veggies
- Last night's leftover dinner

Dinner ideas

- Steamed or baked veggies
- Large salad with one pot leftovers from previous dinners as dressing
- One pot dishes: throw together some beans, whole grains, and your favorite spices and water; cook until grains and beans are done, and throw in cut up veggies for last 5 min.

Possible grains: quinoa, millet, barley, brown rice, bulgur wheat
Possible veggies to chop up: eggplant/aubergine, zucchini/courgette,
mushrooms, beans, carrots, celery, sweet potato, beets, corn, peas, etc.

Beans: Can buy dry beans and soak overnight.