
Creating a Healthy Baby
Dr. Sandy
BEVACQUA

A healthy child begins when the parents are born - Daddy

- During puberty, testosterone and other hormones cause simple precursor cells present at birth to transform into mature sperm cells.
- Research indicates decline of human sperm counts; This may be related to environmental pollutants disrupting hormonal regulation of testicular development in prenatal life.
- **Denmark- sperm count related to birth year?**
  – Analysis of sperm count of 1196 men participating in 10 cross-sectional sperm studies in 3 regions of Denmark from 1986 through 1995.
  – The median sperm concentration:
  63 million/ml for men born in 1937-1949
  52 million/ml for men born in 1970 or later.
  What's your sperm count?

A healthy child begins when the parents are born - Mommy

- A woman is born with approximately two million eggs in her ovaries.
- ~300,000 ova at puberty develop into 450 eggs for your reproductive life.
- She will subsequently lose about one thousand eggs each month, until eventually no eggs remain:
  menopause.

“Diligent Parents Create Healthy Grandchildren”

Do your homework before it's due

- **Dental issues:**
  - Get your teeth cleaned regularly to control gum disease.
    - Gum disease can increase the risk of preterm delivery
  - Get it done before getting pregnant
  - Your are likely to 'bleed" more during pregnancy
    - Increased c eased vitamin C requirements
- **Vaccinations:**
  - Some vaccines can be harmful to baby and most are usually unnecessary.
  - With Measles, Mumps, Rubella (MMR) and Chickenpox vaccines, can be given to mother (use birth control) for one to three months prior to conception.
  - Tetanus or Hepatitis B shots can be given during pregnancy.
  - Women in their second or third trimesters during a severe flu season can get flu vaccination. Otherwise unnecessary.

I had a journey...

- Even with what most Americans consider a very healthy diet, I had many health issues, including infertility.
- Immune system concerns, endometriosis, PCOS, cravings, flora imbalances, allergies, asthma, obesity and low metabolism, severe hypercholesterolemia.
- Once the blood chemistry balanced, all symptoms/conditions resolved!
- Fertility magically followed.

Lifestyle do’s and don’ts

- **Smoking**
  - Lowers birth rate
  - Increases possibility of preterm labor
  - Increases childhood asthma
  - Lowers baby I.Q.

- **Alcohol: Not even 1 drink a day.**
  - Rapid stomach absorption gives a full dose to the fetus
  - Alcohol Syndrome Babies are permanently affected
  - Higher risks of premature delivery
  - Mental retardation (#1 cause)
  - Causes low-birth-weight babies and birth defects

Lifestyle do’s and don’ts

- **No Recreational Drugs:**
  - Heroin and Cocaine babies can only be healed after years of intensive therapy.
- **Be aware of your over-the-counter and prescription drugs**
  - Aspirin compounds (Anacin, Bayer, Bufferin), ibuprofen (Motrin, Rufen) and other NSAIDs can cause decreased amount of amniotic fluid
  - Cause closure of the ductus arteriosa, an important blood vessel in the baby.

Feeling tired?

- **Caffeine: Why Not?**
  - Caffeine decreases availability of certain nutrients, such as calcium, zinc, and iron
  - Limit caffeine 0-300 milligrams daily or two 8-ounce c. coffee/day.
  - Choose Swiss-processed or cold water decaffeinated coffee.
  - Be aware of caffeine in soft drinks, tea, or chocolate.
  - Caffeine affects uterine blood flow, which affects the developing fetus.
- **Want more energy?**
  - Protein!
  - B Vitamins/minerals etc
    - Green juices
  - Movement & Bodywork
  - Sleep!

Sleep is essential for healthy moms and their babies

- Sleep duration in the population has been declining.
- Women occupy an increasingly prominent place in the workforce without reducing most of their responsibilities at home.
- Consequently, sleep needs are often pushed to the bottom of women's daily priority list.
- Prior research has indicated that sleep deprivation is associated with higher levels of pro-inflammatory serum cytokines.

Diet: Important for both parents!

- Prenatal nutrition- 6 months prior to conception
- Ask the question, “Is this good for me?”
- Take care of yourself so you don’t get tempted to use medications.
- Moms: 300 increased calories, mostly from protein.
- Nutrient dense: more color = more nutrients.
    - Yellow, orange, red, green, purple

Drink clean water

- **September 1998: Research on Tap Water**
  - Roughly 5,000 pregnant women, 19-47 yrs who drank 5oz or more of cold tap water that contained 75 ug/ml of tricloromethanes (safe levels) were 80% more likely to have miscarriages.
- **Drink half of body weight in ounces of H2O/day**
  - Amniotic fluid is primarily fetal urine.
    - Turnover every few hours
    - Reabsorbed by the membranes and umbilical cord.
  - Filtered Water
    - I recommend very clean spring water or reverse osmosis.
    - Most bottled water unregulated.
    - National brands cross state borders held to stringent federal guidelines.

Creating homeostasis

- **Stress / Depression**
  - Cortisol released during times of stress makes conception more difficult
  - Deep postpartum depression and interrupted bonding
  - Solution: Diet, exercise, rest (sleep, meditation, prayer), hydration, balanced nutrition, essential fatty acids, B vitamins, and a good support system
- **Uncontrolled Blood Sugar, Gestational, Diabetes, Obesity**
  - Baby at high risk for a variety of congenital malformations, including defects of the brain and spinal cord.
  - Associated with high prepregnancy BMI, weight gain during pregnancy.
  - Infants born large for gestational age (macrosomia) and at higher risk for cesarean delivery and hypoglycemia postpartum.
  - Solution: High protein, exercise, hydration, and fiber.

The dangers of a poor diet: Baby

- Forty years of medical research has proved that poor diets during pregnancy increase the risk of:
  - Stillborn babies
  - Low birth weight or premature babies
  - Brain damaged babies / lower I.Q.
  - Hyperactive babies with more irritability
  - Infection-prone babies with more illness
  - Increased risk of lung, kidney and liver infections
- Abruption of the Placenta - a disease in which the placenta (or "afterbirth") breaks loose inside the mother's womb, often before labor begins. The mother bleeds, and the baby dies in 50% of the cases.

A good diet will protect you and your baby from these troubles.

The dangers of a bad diet: Mom

- Anemia – caused by not enough iron, vitamins and/or proteins in the diet.
- Miscarriage - if the mother does not have a good diet, the placenta grows imperfectly and cannot meet the needs of the developing baby, and a miscarriage results.
- Metabolic Toxemia of Late Pregnancy (MTLP) - a disease caused by not enough good quality proteins and vitamins in the diet.
  Women with MTLP suffer convulsions or "fits", coma, heart failure, shock, fat in their livers, bleeding into their livers, and often death for both mother and baby. It is estimated that in the United States 30,000 babies die each year of MTLP and thousands more live with damage to their brains. They suffer cerebral epilepsy and other nervous system disorders.

A good diet will protect you and your baby from these troubles.

Preeclampsia

- Symptoms include swelling and excess protein in the urine. The cause of toxemia has not been determined, but the risk is associated with first pregnancies, advanced maternal age, African-American ethnicity, and women with a past history of diabetes, hypertension, or kidney disease. In severe cases, delivery is frequently induced early in order to save mom and baby.
- Preeclampsia: inadequate blood vessel development leads to free radicals from placenta attacking epithelial cells of moms blood vessels.
- Preeclampsia affects roughly 4-5% of all pregnant women
- Lancet 1999, Lucilla Poston
    - MultiVitamin/Mineral Supplementation Decreased Preeclampsia Risk by 50%
- Supplements for avoiding preeclampsia:
  Calcium, B Vitamins, Lycopene, Omega-3 Fatty Acids, Vitamin C, Vitamin E, Magnesium, Zinc and Vitamin D

Maternal Vitamin D Deficiency Increases the Risk of Preeclampsia

Lisa M. Bodnar, Janet M. Catov, Hyagriv N. Simhan, Michael F. Holick, Robert W.Powers, and James M. Roberts

Abstract

Context: Vitamin D has direct influence on molecular pathways proposed to be important in the pathogenesis of preeclampsia, yet the vitamin D-preeclampsia relation has not been studied.

Objectives: We aimed to assess the effect of maternal 25-hydroxyvitamin D [25(OH)D] concentration on the risk of preeclampsia and to assess the vitamin D status of newborns of preeclamptic mothers.

Design and Setting: We conducted a nested case-control study of pregnant women followed from less than 16 wk gestation to delivery (1997–2001) at prenatal clinics and private practices.

Patients: Patients included nulliparous pregnant women with singleton pregnancies who developed preeclampsia (n = 55) or did not develop preeclampsia (n = 219). Women's banked sera were newly measured for 25(OH)D.

Main Outcome Measure: The main outcome measure was preeclampsia (new-onset gestational hypertension and proteinuria for the first time after 20 wk gestation). Our hypotheses were formulated before data collection.

Results: Adjusted serum 25(OH)D concentrations in early pregnancy were lower in women who subsequently developed preeclampsia compared with controls [geometric mean, 45.4 nmol/liter, and 95% confidence interval (CI), 38.6–53.4 nmol/liter, vs. 53.1 and 47.1–59.9 nmol/liter; $P < 0.01$]. There was a monotonic dose-response relation between serum 25(OH)D concentrations at less than 22 wk and risk of preeclampsia. After confounder adjustment, a 50-nmol/liter decline in 25(OH)D concentration doubled the risk of preeclampsia (adjusted odds ratio, 2.4; 95% CI, 1.1–5.4). Newborns of preeclamptic mothers were twice as likely as control newborns to have 25(OH)D less than 37.5 nmol/liter (adjusted odds ratio, 2.2; 95% CI, 1.2–4.1).

Conclusions: Maternal vitamin D deficiency may be an independent risk factor for preeclampsia. Vitamin D supplementation in early pregnancy should be explored for preventing preeclampsia and promoting neonatal well-being.

DOI: http://dx.doi.org/10.1210/jc.2007-0718

Essential fatty acids in pregnancy and early human development

Lisa M. Bodnar, Janet M. Catov, Hyagriv N. Simhan, Michael F. Holick, Robert W.Powers, and James M. Roberts

Abstract

Context: Vitamin D has direct influence on molecular pathways proposed to be important in the pathogenesis of preeclampsia, yet the vitamin D-preeclampsia relation has not been studied.

Objectives: We aimed to assess the effect of maternal 25-hydroxyvitamin D [25(OH)D] concentration on the risk of preeclampsia and to assess the vitamin D status of newborns of preeclamptic mothers. Design and Setting: We conducted a nested case-control study of pregnant women followed from less than 16 wk gestation to delivery (1997–2001) at prenatal clinics and private practices. Patients: Patients included nulliparous pregnant women with singleton pregnancies who developed preeclampsia (n = 55) or did not develop preeclampsia (n = 219). Women's banked sera were newly measured for 25(OH)D. Main Outcome Measure: The main outcome measure was preeclampsia (new-onset gestational hypertension and proteinuria for the first time after 20 wk gestation). Our hypotheses were formulated before data collection.

Results: Adjusted serum 25(OH)D concentrations in early pregnancy were lower in women who subsequently developed preeclampsia compared with controls [geometric mean, 45.4 nmol/liter, and 95% confidence interval (CI), 38.6–53.4 nmol/liter, vs. 53.1 and 47.1–59.9 nmol/liter; $P < 0.01$]. There was a monotonic dose-response relation between serum 25(OH)D concentrations at less than 22 wk and risk of preeclampsia. After confounder adjustment, a 50-nmol/liter decline in 25(OH)D concentration doubled the risk of preeclampsia (adjusted odds ratio, 2.4; 95% CI, 1.1–5.4). Newborns of preeclamptic mothers were twice as likely as control newborns to have 25(OH)D less than 37.5 nmol/liter (adjusted odds ratio, 2.2; 95% CI, 1.2–4.1). Conclusions: Maternal vitamin D deficiency may be an independent risk factor for preeclampsia. Vitamin D supplementation in early pregnancy should be explored for preventing preeclampsia and promoting neonatal well-being.

DOI: http://dx.doi.org/10.1210/jc.2007-0718

Are n-3 fatty acids essential nutrients for fetal and infant development?

Joyce A Nettleton, DSc, RD

Abstract

Recent research indicates that n-3 fatty acids (FAs) are essential nutrients in early human development. In human infants, nonhuman primates, and animal models, the n-3 FA, docosahexaenoic acid (DHA, 22:6n-3) is highly concentrated in brain and retinal tissues and accumulates during late fetal and early neonatal life.

Diets deficient in n-3 FAs are associated with reduced levels of DHA in erythrocytes and brain and retinal tissues and with abnormalities in retinal function that may be irreversible. The precursor of DHA, α-linolenic acid (LNA, 18:3n-3), may be an inadequate substitute for DHA because LNA may not be converted to DHA in sufficient amounts to meet an infant's needs.

Premature infants lose DHA from their tissues unless they are fed human milk or formula supplemented with DHA.

Fish and shellfish are the main food sources of DHA.

Women who consume fish have more DHA in their breast milk than do those who do not eat seafood. Infant formulas contain only LNA as a source of n-3 FAs.

Pregnant and nursing women should be encouraged to consume seafood on a regular basis during pregnancy and lactation to furnish DHA for their infants.

http://dx.doi.org/10.1016/0002-8223(93)92132-H

Essential fatty acid transfer and fetal development

S.M. Innis

Docosahexaenoic acid (22:6n-3) and arachidonic acid (20:4n-6) are important structural components of the central nervous system. These fatty acids are transferred across the placenta, and are accumulated in the brain and other organs during fetal development. Depletion of 22:6n-3 from the retina and brain results in reduced visual function and learning deficits: these may involve critical roles of 22:6n-3 in membrane-dependent signaling pathways and neurotransmitter metabolism. Transfer of 22:6n-3 across the placenta involves specific binding and transfer proteins that facilitate higher concentrations of 22:6n-3 and 20:4n-6, but lower linoleic acid (18:2n-6) in fetal compared with maternal plasma, or in the breast-fed or formula-fed infant. However, human and animal studies both demonstrate that maternal diet impacts fetal 22:6n-3 and 20:4n-6 accretion.
After birth, parenteral lipid, human milk and infant formula feeding all result in a marked decrease in plasma 22:6n-3 and 20:4n-6 and an increase in 18:2n-6. Estimation of fetal tissue fatty acid accretion suggests that current preterm infant feeds are unlikely to meet in utero rates of 22:6n-3 accretion.
Consideration needs to be given to whether fetal plasma 22:6n-3 and 20:4n-6 enrichment and the low 18:2n-6 facilitates accretion of 22:6n-3 and 20:4n-6 in developing tissues.

http://dx.doi.org/10.1016/j.placenta.2005.01.005

More research & studies

- **University of Oregon**
  - Study showed that women who took EPA during pregnancy had babies w/ higher I.Q.
    - Increase brain & eye health
    - EFA's come from fish, seeds, and greens
- University of Southern California
  - Pregnant women who take A, C, E, & folic acid are half as likely to have children w/ brain tumors. (antioxidants disarm toxins)

B-Complex

- Folic Acid prevents spina bifida
- Folic Acid promotes proper cell division
- Some individuals require >400mg yet some “genetically” need >1000mg!
- 96% of those with morning sickness have low B vitamins
- B’s are used up with increased stress levels, exposure to toxins, and simple carb. consumption.
- B’s increase the utilization of carbohydrates equates to a lower occurrence of gestational diabetes.

Intestinal microbiota

- There are different clusters of bacteria in different parts of the body (e.g. skin, oral, intestine)
- Intestinal microbiota
  - Tens of trillions of microorganisms
  - Total weight 2 kilograms
- It is estimated that 1/3 of the intestinal microbiota in humans is common; however, 2/3 is distinct.

Lebba V. et al. Digest Dis, 2011; 29; 531-539 in Cabana, M. (2013). Perinatal probiotics for pediatric allergy & asthma prevention [presentation]. Annual Probiotic Symposium: Current Perspectives and Controversies.

Factors influencing the microbiota

- Colonization at birth
  - Vaginal delivery vs. C-section
- Diet
  - Breastfeeding vs. infant formula
  - Introduction of new foods
  - Types of foods introduced
- Environment (e.g., rural or urban setting)
- Pet exposure
- Hospitalization and antibiotic exposure

Johnson, CL, et al., Pediatrics, 2012; 129; 950-960 in Cabana, M. (2013). Perinatal probiotics for pediatric allergy & asthma prevention [presentation]. Annual Probiotic Symposium: Current Perspectives and Controversies.

Factors influencing the microbiota

Observational studies suggest that the intestinal microbiota is different for infants who do not develop allergies compared to those infants who later develop allergies.

Cabana, M. (2013). Perinatal probiotics for pediatric allergy & asthma prevention [presentation]. Annual Probiotic Symposium: Current Perspectives and Controversies.

Observational studies suggest that the intestinal microbiota is different for infants who do not develop allergies compared to those infants who later develop allergies.

Cabana, M. (2013). Perinatal probiotics for pediatric allergy & asthma prevention [presentation]. Annual Probiotic Symposium: Current Perspectives and Controversies.

- C. difficile colonization associated with increased likelihood of eczema (OR: 1.40; 955 CI: 1.02, 1.91), recurrent wheeze (OR: 1.75; 95% CI: 1.09, 2.80) at 2 years of age
- E. coli colonization associated with increased likelihood of eczema (OR: 1.87; 95% CI: 1.15, 3.04) at 2 years of age
- Children with atopic sensitization at 12 months of age had more clostridia (p=0.04); and a reduced ratio of bifidobacteria to clostridia (p=0.03) at 3 weeks of age

Cabana, M. (2013). Perinatal probiotics for pediatric allergy & asthma prevention [presentation]. Annual Probiotic Symposium: Current Perspectives and Controversies.

Method of birth and the microbiota

- **C-section**
  - Infant gut colonization more closely resembles maternal skin colonization (e.g., *Staphylococcus spp*.)
- **Vaginal delivery**
  - Infant gut colonization represents the maternal vaginal and intestinal microbiota
  - Greater total numbers and diversity of microbiota
  - Predominant bacteria are *bifidobacteria*

Dominguez-Bello, MG., et al. Proc Natl Acad Sci USA. 2010; 107; 11971-11975.
Biasucci, G., et al. J Nutr. 2008; 138; 1796s-1800; Huurre, A., et al. Neonatology, 2008; 93; 236-40.

Now let’s look at diet

- 3-5 c. or more vegetables
- 2-3 c. calcium foods (green leafy, dairy, yogurt, cheese)
- 2-4 c. fruit Eat Clean!
- 1-2 whole grains 1/2c. Eat Organic!
- 1-2 legume 1/2c.
- 3-4 ‘palms’ of protein
- 1 fistful of raw nuts
- 1-2 Tbsp. seed or seed oil

- **Vegetables Raw or Lightly Steamed/Cooked:** 3-5 or more servings, such as 2 medium whole carrots; 1-2 c. dark leafy greens (kale, chard, spinach, parsley, etc.); 1 cup broccoli or cauliflower
- **Fruits:** 2-4 cups apple, orange, pear, banana, pineapple, berries, or melon
- **Meat, poultry, fish, eggs, nuts, seeds, sprouts, and beans:** 3-4 servings, such as 2-3 oz. cooked eggs, poultry, seafood, or bison. 2-3 oz. sprouts or sprouted legumes, seeds, grains
- **Dairy:** 3 servings: such as 8 ounces milk, kefir, yogurt or 1 oz. cheese. Consider hypo-allergenic goat or sheep dairy or additional greens
- **Fats & oils:** 2-3 serv. fatty fish, seeds or seed oil, avocado, olive, nuts, rice bran
- **Grains:** 1-2 servings, such as 1 c. brown rice, whole grain sprouted tortilla, slice stone ground whole grain/sprouted bread, 1 cup whole oats or other whole grain (quinoa, millet, amaranth, buckwheat, rye, barley) cooked or raw

Special nutrition concerns

- **Pica:** the ingestion of nonfood substances – associated with anemia and can be a source of lead poisoning, bacterial infection, and dental problems. Pregnant women who attend to mineral and probiotic needs are likely to avoid pica. (Vita-Lea, Optiflora, Fiber Plan, minerals)
- **Constipation:** increased consumption of EFA's, whole grains, fruits, and vegetables, as well as increased fluid intake physical activity and relaxation. (fiber, EFA's, Herb-Lax, water)
- **Nausea and Heartburn:** avoid offending foods (and their odor). Some pregnant women find that spicy, fatty foods can increase problems with nausea and heartburn. Most women respond extremely well to a food supplement grade prenatal and B complex supplementation. (Vita-Lea, B-Complex, Optiflora, Omega Guard, increased protein)
- **Food cravings:** are common and are not cause for concern, provided other nutrient needs are met and weight gain is appropriate. Usually, cravings subside when protein, mineral, fat, and B-vitamins needs are met. (180 shake, ESP, Vita-Lea, B-Complex, EFA's, minerals, water)

Mothers beware!

- **No Nitrates/Nitrites:**
  - No hot dogs, lunch meats, processed meats.
    - 2.6 times more likely for babies to be born with brain tumors or acute lymphocyte leukemia.
    - Children who eat these also have an increased risk of developing several types brain tumors.
- **Bread should be stoned ground or sprouted grain.**
  - “Wheat flour” or “enriched wheat flour” products are overused, highly processed and contribute to:
    - Poor bowel function, increased constipation and future IBS, yeast infections, nutrient deficiency, increased cradle cap, oral thrush and digestive and immune system problems in the child.
- **Shark, swordfish, king mackerel, or tilefish (white snapper) contain high levels of mercury** - Eat clean fish

Yes, I'm talking to you

- Avoid fried, processed, overly cooked, chemically laden or old foods (leftovers).
- Limit Sugar/Flour Processed Snacks
  - decrease immune system function for 5-6hrs
  - Increased chances of gestational diabetes and preeclampsia
- Avoid soda or other sweet/carbonated drinks
  - FDA-approved sweeteners (Equal, NutraSweet, Splenda) are unacceptable during pregnancy.
  - Saccharin crosses the placenta and is stored in fetal tissues.
- Say "YES" to limited amounts of raw honey, agave nectar, or FOS.

Which company to choose?

- Natural whole foods
- Beyond Organic
- Created by scientists who have completed millions of dollars of research “out of house”
- Cutting edge technology
- 568 different quality tests
- Balance of nutrients
- Thoroughly tested and safe
- Rapid normalization of blood chemistry

“Can you get everything you need from the foods you eat”?
The answer is probably “No”

- **Moms**
  - Vita-Lea w/ Iron (4/day), 180, Vita-C, Optiflora (pre/pro), B-Complex, Vita D, Omega Guard, GLA Complex, Lecithin, Osteomatrix, Vita-E, 180 Snack bars, Fiber Plan
  - Third Trimester: 80-100g protein plus EFAs is essential for Baby’s brain development!
- **Dads**
  - Vita-Lea w/out Iron, 180, Zinc, Vita-C, Vita-E, Optiflora (pre/pro), Omega Guard, GLA Complex, Lecithin, Osteomatrix

Need Help? Contact Us!

Web: www.DrSandyBevacqua.com

Email: team@DrSandyBevacqua.com

Office Tel: +1 520-743-0575

FaceBook: www.facebook.com/LetYourHealingBegin/

Instagram: https://www.instagram.com/dr.sandybevacqua/