Women's Health Risks Associated with Orthodox Medicine – Part 1

by Gary Null, PhD, Debora Rasio, MD, and Martin Feldman, MD

During the past century, a medical establishment has evolved that has positioned itself as the exclusive provider of so-called scientific, evidence-based therapies. For the first 70 years of the 20th century, little effort was made to challenge the establishment's paradigm, which we call the orthodox medical approach. In the past 30 years, however, there has been a growing awareness of the importance of an alternative approach to medical care, one that, either on its own or as a complement to orthodox medicine, emphasizes nontoxic and noninvasive treatments and prevention.

Unfortunately, this new perspective has been fought vigorously. We've been told that it is only the treatments of orthodox medicine that have passed careful scientific scrutiny involving double-blind placebo-controlled studies. We've also been told that alternative or complementary health care does not have any science to back it up, only anecdotal evidence. These two ideas have led to the widely accepted "truths" that anyone offering an alternative or complementary approach is depriving patients of the proven benefits of safe and effective care, and that people not only do not get well with alternative care but actually are endangered by it.

With this report, we question the status quo in one area of orthodox medicine: practices related to women's health. Our review of the medical literature shows that the safety and effectiveness of many orthodox treatments cannot be assumed. We present dozens of research summaries which reveal that conventional treatments may not deliver the expected benefits or may be associated with an increased risk of various health disorders.

This review will be presented in three parts, covering topics ranging from the use of oral contraceptives to surgical practices such as hysterectomies and cesarean sections. In Part 1, we focus on prenatal care, fetal heart monitoring, home versus hospital deliveries, and breast-feeding versus formula feeding.

Note that all of the studies included in this report come from mainstream medicine's own respected journals, such as the *Journal of the American Medical Association* and *The Lancet*. There is nothing subjective or political about the conclusions drawn here. The criticism of various therapies in this series comes not from the "alternative" world but from the very heart of orthodox medicine itself.

The journal articles speak for themselves. We are a society that claims to live by the gold standard of scientific research, but this report shows that statement to be at odds with reality. It shows that we routinely cause iatrogenic conditions and unnecessary suffering – as well as waste vast sums of money – through a systemic negligence of the facts. This situation must be challenged and remedied.

Prenatal Care

If you assume that more prenatal care equals better pregnancy outcomes, the following research reports may come as a surprise. Several studies have found that fewer prenatal visits to the doctor or fewer medical procedures resulted in similar or better outcomes than more visits or more care.[1-2]

Other studies show that routine ultrasound screening of low-risk women does not translate to improved health in newborns.[3-4] *And when it comes to detecting cases of Down's syndrome, traditional screening by ultrasound and maternal age is just as effective as the more costly method of blood serum screening.*[5]

The results of this study, conducted on over 57,000 women, show that those who received the most amount of prenatal care by their physicians had the worst pregnancy outcomes and the highest rate of cesarean sections and induced labor.

– Gissler M, Hemminki E, Amount of antenatal care and infant outcome. *Eur J Obstet Gynecol Reprod Biol* 1994 Jul; 56(1):9-14.

The results of this study show that the introduction of a new program of prenatal care consisting of an average of 2.7 fewer than usual prenatal visits was associated with maternal and infant outcomes that were similar to those of women receiving standard number of prenatal visits.

– McDuffie RS Jr, Beck A, Bischoff K, Cross J, Orleans M, Effect of frequency of prenatal care visits on perinatal outcome among low-risk women. A randomized controlled trial. *JAMA* 1996 Mar 20; 275(11):847-51.

This randomized study, conducted on approximately 16,000 women in Zimbabwe, evaluated the effects of a new prenatal program for pregnant women consisting of fewer physician visits (an average of 4 instead of 6 visits), and fewer medical procedures per visit, on maternal and infant outcomes. Women who received less prenatal visits and less medical procedures had significantly lower risk of delivering preterm babies and of experiencing severe hypertension and eclampsia. Other outcomes were similar in the two groups.

– Munjanja SP, Lindmark G, Nystrom L, Randomised controlled trial of a reduced-visits programme of antenatal care in Harare, Zimbabwe. *Lancet* 1996 Aug 10; 348(9024):364-9.

The results of this study show that routine ultrasound screening during pregnancy is not associated with improved newborn health. The study was conducted on 15,151 low-risk pregnant women randomized into two groups. Women in the first group received two ultrasound tests during their pregnancy, those in the second group received an ultrasound scan only if their doctor saw a specific medical need for the exam. No differences in perinatal outcome were detected between the two groups, indicating that routine ultrasound screening in low-risk women may increase health care costs without improving the health of women and their newborns.

– Ewigman BG, Crane JP, Frigoletto FD, LeFevre ML, Bain RP, McNellis D, Effect of prenatal ultrasound screening on perinatal outcome. RADIUS Study Group. *N Engl J Med* 1993 Sep 16; 329(12):821-7.

The results of this study show that routine ultrasonographic screening in low-risk pregnant women is not associated with higher rates of abortion for congenital anomalies or with improved health outcomes of infants born with treatable malformations.

– Crane JP, et al., A randomized trial of prenatal ultrasonographic screening: impact on the detection, management, and outcome of anomalous fetuses. The RADIUS Study Group. *Am J Obstet Gynecol* 1994 Aug; 171(2):392-9.

The results of this study show that blood serum screening, introduced as the most effective screening method for Down's syndrome since 1993, is no more effective than traditional screening by ultrasound and maternal age at detecting cases of Down's syndrome, and is significantly more costly. The retrospective study was conducted on all women who gave birth at one institution in the period 1993 to 1998. Overall, there were 31,259 deliveries, including 53 cases of Down's syndrome. The traditional method of screening using maternal age in combination with ultrasound scans detected 68% cases of Down's syndrome, corresponding to the same effectiveness of screening through blood

markers. Traditional screening has been replaced by blood screening based on the unverified assumption that traditional screening could only detect one-third of Down's cases. This study, however, demonstrates that the benefits of blood screening may be much less than supposed, and undermines the costs-benefit arguments for it.

– DT Howe, et al., Six year survey of screening for Down's syndrome by maternal age and mid-trimester ultrasound scans. *BMJ* 2000; 320:606-610 (4 March).

Fetal Heart Monitoring

Electronic monitoring of fetal heart rates gets a negative report card from the research presented here in terms of its ability to improve fetal outcomes. These studies suggest that the practice is unnecessary and perhaps harmful.

One study found that fetal heart monitoring does not lead to a reduced incidence of neurological complications or perinatal mortality,[6] while another found that premature babies monitored electronically have a worse neurological outcome than those monitored with periodic auscultation.[7]

Electronic fetal monitoring also is associated with an increased rate of cesarean deliveries and a low Apgar score,[8] which is a numerical rating of a baby's health immediately after delivery.

This article emphasizes that, despite early results from uncontrolled trials documenting the beneficial effects of fetal monitoring, randomized trials have consistently failed to demonstrate its efficacy in improving fetal outcome. Electronic monitoring of fetal-heart rates does not result in a decreased incidence of neurological complications or perinatal mortality and is, therefore, unnecessary.

– Kaiser G, Do electronic fetal heart rate monitors improve delivery outcomes? *J Fla Med Assoc* 1991 May; 78(5):303-7.

This article presents evidence from randomized controlled trials indicating that fetal heart rate monitoring does not improve fetal outcome, and its use is therefore unjustified.

– Parer JT, King T, Fetal heart rate monitoring: is it salvageable? *Am J Obstet Gynecol* 2000 Apr; 182(4):982-7.

The results of this study indicate that premature babies who undergo electronic fetal heart rate monitoring have a worse neurological outcome, compared to those monitored with periodic auscultation. In the study, 189 premature babies were randomly assigned to either electronic fetal monitoring or periodic auscultation. Neurological assessment performed at the age of 4, 8, and 18 months revealed that babies monitored electronically had lower mental- and psychomotor-development scores, compared to those monitored by periodic auscultation. In addition, babies who underwent electronic monitoring had a 2.5-fold increased incidence of cerebral palsy, compared to those followed by auscultation. Median time to delivery after the recognition of an abnormal heart rate pattern was 104 minutes in babies monitored electronically and 60 minutes in those monitored by auscultation. These data indicate that fetal heart monitoring is ineffective in improving neurological outcome in prematurely born babies, and its use may be associated with harm.

– Shy KK, et al., Effects of electronic fetal-heart-rate monitoring, as compared with periodic auscultation, on the neurologic development of premature infants. *N Engl J Med* 1990 Mar 1; 322(9):588-93.

The results of this study show that electronic fetal monitoring does not improve delivery outcome, while being associated with an increased rate of cesarean deliveries and low Apgar score.

– McCusker J, Harris DR, Hosmer DW Jr., Association of electronic fetal monitoring during labor with Cesarean section rate and with neonatal morbidity and mortality. *Am J Public Health* 1988 Sep; 78(9):1170-4.

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Home Versus Hospital Delivery

The medical literature offers some encouraging news about the option of delivering at home. A handful of studies, most published since 1995, attest to the safety and effectiveness of home deliveries.

These studies attribute a variety of positive results to midwife-managed care. In one study, the risk of infant and neonatal death and the likelihood of delivering a low-birth-weight baby were lower in midwife-attended births, compared with physician-attended births.[9] Another study found that women in midwife-attended deliveries were less likely to undergo a cesarean section and that fewer diagnoses of fetal distress were made.[10]

In total, the studies point to less intervention in midwife-assisted deliveries. A 1996 study in The Lancet *found that labor was initiated less often in women attended by midwives only than in women attended by physicians and midwives. Significantly more women were satisfied with the midwife-managed care than with the care managed by a physician and midwife.[11]*

The results of this study show that the pregnancy outcome of women who delivered their first baby at home is as good as that of women who gave birth to their first baby in the hospital. On the other hand, women who gave birth to at least one child and planned to deliver at home had significantly better pregnancy outcomes than those who planned to deliver in the hospital, indicating that home delivery is as safe, or safer, than hospital delivery.

– Wiegers TA, Keirse MJ, van der Zee J, Berghs GA, Outcome of planned home and planned hospital births in low risk pregnancies: prospective study in midwifery practices in The Netherlands. *BMJ* 1996 Nov 23; 313(7068):1309-13.

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This letter was written in reply to an article published in the *Times* of May 20, describing hospital delivery as being 3 times safer than home delivery. The letter emphasizes that the author of the *Times* article compared data from different countries to reach his conclusions, although data were actually not comparable. Evaluation of the National Birthday Trust survey of home births in the U.K., a certainly more appropriate approach to the question of safety of home versus hospital delivery, shows that within a group formed by 3,896 women who delivered at home, there was only one neonatal death (occurring from 0 to 27 days after birth) and no stillbirths, compared to 2 neonatal deaths and 2 stillbirths in a control group of similar, low-risk women who delivered in the hospital. The author concludes that there is no evidence indicating that home delivery carries more risk than hospital delivery in properly screened women. The letter emphasizes that women should receive accurate, up-to-date information, so that they may properly choose between home and hospital delivery.

– Chamberlain G, Choosing between home and hospital delivery. Risk of home birth in Britain cannot be compared with data from other countries. Letter. *BMJ* 2000; 320:798 (18 March).

This randomized study, conducted on 1,299 low-risk pregnant women, evaluated pregnancy outcome in women attended by midwives only, or by a combination of midwives, hospital doctors and general physicians. Labor was initiated significantly more often in women followed by physicians and midwives than in those followed by midwives only (33.3% vs. 23.9% of cases). Women attended only by midwives were more likely to have an intact perineum and less likely to undergo episiotomy (surgical enlargement of the vulval orifice during delivery). Perineal tears and rate of complications were similar in the two groups. Significantly more women expressed satisfaction with the midwife-managed care than with the physician-midwife managed care.

– Turnbull D, et al., Randomised, controlled trial of efficacy of midwife-managed care. *Lancet* 1996 Jul 27; 348(9022):213-8.

The results of this study, conducted on all women who in 1991 delivered by the vaginal route a single baby at 35-43 weeks gestation, show that the risk of infant and neonatal death is 19% and 33% lower, respectively, in midwife-attended births compared to physician-attended births. The likelihood of delivering a low-birth-weight infant is 31% lower in midwife- versus physician-assisted deliveries. These results suggest that delivery care provided by midwives may be superior to that provided by physicians.

– MacDorman MF, Singh GK, Midwifery care, social and medical risk factors, and birth outcomes in the USA. *J Epidemiol Community Health* 1998 May; 52(5):310-7.

The results of this study show that women attended by midwives are 30% less likely to undergo cesarean section compared to those attended by physicians. Furthermore, a diagnosis of fetal distress is made 50% less often in babies delivered by midwives, compared to those delivered by physicians.

– Butler J, Abrams B, Parker J, Roberts JM, Laros RK Jr., Supportive nurse-midwife care is associated with a reduced incidence of Cesarean section. *Am J Obstet Gynecol* 1993 May; 168(5):1407-13.

The results of this study show that pregnancy outcomes in women whose pregnancy has been followed by midwives are similar to those of women followed to obstetricians, indicating that routine visits of low-risk pregnant women to obstetricians are unnecessary. Women who experienced complications during labor were promptly recognized by midwives and transferred to obstetrician care.

– Law YY, Lam KY, A randomized controlled trial comparing midwife-managed care and obstetrician-managed care for women assessed to be at low risk in the initial intrapartum period. *J Obstet Gynaecol Res* 1999 Apr; 25(2):107-12.

The results of this study show that pregnancy outcomes in women who choose to deliver at home and are attended by midwives are similar to those of women who choose to deliver in hospital and are attended by obstetricians. Women who delivered at home received significantly less medication and fewer medical interventions, compared to those who delivered in the hospital. In the case of complications or suspected complications, women were transferred to the hospital and were followed up by obstetricians.

– Ackermann-Liebrich U, et al., Home versus hospital deliveries: follow up study of matched pairs for procedures and outcome. Zurich Study Team. *BMJ* 1996 Nov 23; 313(7068):1313-8.

Breast-feeding Versus Formula Feeding

Nearly 20 studies conducted since the late 1980s have identified negative effects of formula feeding or positive effects of breast-feeding. In this body of research, breast-feeding emerges as a clear winner over formula feeding.

The World Health Organization helps protect breast-feeding with a code that regulates the marketing of milk substitutes. As reported in the British Medical Journal, *however, widespread violations of the code have been reported by several health agencies. The author notes that the resulting use of commercial preparations is associated with much harm. Bottle-fed babies have significantly higher rates of childhood diseases and impaired cognitive development; they also have a higher risk of cardiovascular diseases as adults.*[12]

Many of the studies that follow bear out this potential for harm. The research shows that bottle-fed babies have an increased risk of neurological dysfunction, diarrhea, middle ear infections, and respiratory infections, as well as allergic disorders, cardiovascular disease, and diabetes later in life.[13-20]

On a positive note, other studies show that breast-fed infants not only have lower rates of infection and gastrointestinal illnesses[21-22] *but also demonstrate higher (and long-lasting) levels of cognitive development. A recent study in* Pediatrics *states that children who were breast-fed as infants had significantly higher IQs and scholastic performances at every point they were tested – from first grade through high school.*[23]

The results of this study show that women who receive informational material publicizing infant formulas at their first prenatal visit are almost 6 times as likely to interrupt breast-feeding before leaving the hospital, compared to women who receive research material promoting the benefits of breast-feeding. Women exposed to company-produced advertisement material are also almost twice as likely to cease breast-feeding before 2 weeks compared to those who receive research material. Babies who are breast-fed have improved health outcomes such as lower rates of infections, allergies and chronic diseases, compared to formula-fed babies. The authors emphasize that information material produced by formula manufacturers should not appear in doctors' offices, prenatal clinics and hospitals, especially considering that the World Health Organization's code regulating marketing of milk formulas "prohibits the distribution of free samples, the promotion of formula in health care facilities, and the use of pictures idealizing artificial feeding."

– Howard C, Howard F, Lawrence R, Andresen E, DeBlieck E, Weitzman M, Office prenatal formula advertising and its effect on breast-feeding patterns. *Obstet Gynecol* 2000 Feb; 95(2):296-303.

The results of this study show that women who, upon delivery, received a hospital discharge package containing a manual breast pump, continued to breast-feed their baby significantly longer (4.2 weeks) than women who received a hospital discharge package containing an infant formula (2.8 weeks). Furthermore, women who felt that relief from nighttime feeding was important, were significantly more likely to breast-feed for more than 8 weeks if

they received in the package the manual breast pump instead of the infant formula.

– Dungy CI, Christensen-Szalanski J, Losch M, Russell D, Effect of discharge samples on duration of breast-feeding. *Pediatrics* 1992 Aug; 90(2 Pt 1):233-7.

This study documented the extent of violation of the World Health Organization's code regulating the marketing of milk substitutes worldwide. Marketing efforts of milk substitutes' manufacturers have altered the perception of breast-feeding in women, and distribution of free samples of milk formulas and of advertisement material has resulted in a significant number of women opting for using commercial preparations rather than breast-feeding. This practice, however, is associated with significant harm, in that babies who have been bottle-fed have significantly higher rates of childhood diseases, impaired cognitive development, and higher risk of cardiovascular diseases in adulthood. The most devastating consequences of bottle-feeding occur in the developing countries, where neonates and infants are particularly at risk of contracting infectious diseases from contaminated water added to the formula. As reported in an editorial published in the same issue of the *BMJ* (*BMJ* 1998;316:1103-1104), the World Health Organization estimated that 1.5 million deaths could be prevented every year if women would breast-feed rather than bottle-feed their babies. To ensure protection of breast-feeding the WHO developed a regulative code that prohibits the distribution of free samples of milk formulas to women or health facilities (except for professional research). In addition, the code forbids the provision of incentives to health care workers, which has been associated with an increased likelihood of promotion of a particular product and with the lack of support of breast-feeding. The article highlights how several agencies have reported widespread violations of the code, but the companies have consistently rejected any allegation as unreliable and distorted by activists. This study monitored compliance to the WHO code by conducting a systematic, random survey of women and health care professionals in one city in each of Bangladesh, Poland, South Africa, and Thailand. Women were asked if they had been given free samples of milk substitutes, bottles and teats, while they were pregnant or in the six months after delivery. In addition, three health care workers in each facility were interviewed to assess whether the facility had received free samples of milk substitutes or gifts from companies involved in their production or distribution. The results of the survey showed that overall, 10% of all women (range 0-26%) and 25% of all health care facilities (range 8-50%) interviewed had been given free samples of milk, bottle, or teats for research purpose. Thirty percent of health facilities had received violating information and 11% of health care professionals had received gifts. These findings, which are likely underestimating the real dimension of the problem in the majority of the countries, point to the extent of violation of the WHO code by breast milk substitutes' manufacturers. The consequences of these violations in terms of increased mortality and loss of health are staggering.

– Taylor A, Violations of the international code of marketing of breast milk substitutes: prevalence in four countries. *BMJ* 1998; 316:1117-1122 (11 April).

This article reports on the findings of an external audit demonstrating multiple violations of the World Health Organization's code of marketing of breast milk substitutes in Pakistan perpetrated by Nestlé. The discovery came after a former Nestlé employee exposed internal documents demonstrating that the company offered gifts to doctors as a recompense for promoting its products. In addition, the company was charged with offering free infant formulas to mothers and health care professionals, practices that are forbidden under the code's requirements.

– Yamey G, Nestlé violates international marketing code, says audit. News. *BMJ* 2000; 321:8 (1 July).

The results of this study show that bottle-fed infants have a 50% increased risk of neurological dysfunction, compared to breast-fed infants. The authors propose that the presence of longer-chain polyunsaturated fatty acids, found in breast milk but not in most formula-milks, may be a factor involved in the excess risk, since these fatty acids play a vital role in brain development.

– Lanting CI, Fidler V, Huisman M, Touwen BC, Boersma ER, Neurological differences between 9-year-old children fed breast-milk or formula-milk as babies. *Lancet* 1994 Nov 12; 344(8933):1319-22.

The results of this meta-analysis, conducted on 20 previously published studies, show that breast-fed infants have significantly higher levels of cognitive development, compared to formula-fed infants. The differences were observed at 6-23 months and remained thereafter. The longer the duration of breast-feeding, the stronger the benefits observed on cognitive development. Premature children were found to benefit the most from breast-feeding.

– Anderson JW, Johnstone BM, Remley DT, Breast-feeding and cognitive development: a meta-analysis. *Am J Clin Nutr* 1999 Oct; 70(4):525-35.

This study evaluated cognitive development in children aged 2 through 5 fed by different modes when infants. Breast-fed children were found to score significantly higher in developmental tests at all time points, compared to bottle-fed children.

– Rogan WJ, Gladen BC, Breast-feeding and cognitive development. *Early Hum Dev* 1993 Jan; 31(3):181-93.

The results of this study show that the improved performances in cognitive tests observed in breast- versus bottle-fed children early in life are maintained throughout childhood and young adulthood. Children who had been breast-fed as infants had significantly higher intelligence quotients and scholastic performances at all points tested, from first grade through high school. The longer the children were breast-fed, the better their cognitive development and academic performances into early adulthood.

– Horwood LJ, Fergusson DM, Breastfeeding and later cognitive and academic outcomes. *Pediatrics* 1998 Jan; 101(1):E9.

The results of this study show that infants aged 0 to 3 months who are breast-fed have significantly lower rates of infections and hospitalization compared to children who are bottle-fed.

– Fallot ME, Boyd JL 3d, Oski FA, Breast-feeding reduces incidence of hospital admissions for infection in infants. *Pediatrics* 1980 Jun; 65(6):1121-4.

The results of this study show that infants who have been breast-fed for at least 13 weeks have significantly lower rates of gastrointestinal illnesses and hospitalizations during the first year of their life, compared to those who have been bottle-fed from birth. Breast-feeding for less than 13 weeks is not associated with reduction of gastrointestinal disease.

– Howie PW, Forsyth JS, Ogston SA, Clark A, Florey CD, Protective effect of breast feeding against infection. *BMJ* 1990 Jan 6; 300(6716):11-6.

The results of this study, conducted on 153 Peruvian newborns, show that during the first 6 months of their life infants who received other liquids in addition to breast milk had a 2-fold increased incidence of diarrheal disease, compared to those who received exclusively breast-milk. The incidence of diarrheal disease in infants in whom breast-feeding was discontinued during their first 6 months of life was 4 times higher than that of exclusively breast-fed infants. Rates of upper and lower respiratory infections and of skin infections were also lower in exclusively versus partially breast-fed infants.

– Brown KH, Black RE, Lopez de Romana G, Creed de Kanashiro H, Infant-feeding practices and their relationship with diarrheal and other diseases in Huascar (Lima), Peru. *Pediatrics* 1989 Jan; 83(1):31-40.

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The results of this study show that children who have been exclusively bottle-fed have an 80% increased risk of developing diarrhea and a 70% increased risk of developing middle ear infections, compared to those who have been exclusively breast-fed.

– Scariati PD, Grummer-Strawn LM, Fein SB, A longitudinal analysis of infant morbidity and the extent of breastfeeding in the United States. *Pediatrics* 1997 Jun; 99(6):E5.

The results of this study, conducted on 1,058 Chinese infants, show that those who were exclusively bottle-fed were twice as likely to be hospitalized for respiratory infections during their first 18 months of life, compared to those who were partially or exclusively breast fed.

– Chen Y, Yu SZ, Li WX, Artificial feeding and hospitalization in the first 18 months of life. *Pediatrics* 1988 Jan; 81(1):58-62.

The results of this study, conducted on 152 infants aged 1 month to 1 year admitted to a Brazilian hospital for pneumonia and 2,391 matched controls, show that those who have been exclusively bottle-fed had an overall 17-fold increased risk of being hospitalized for this complication, compared to those who have been exclusively breast-fed. The risk was particularly high for children younger than 3 months, for whom bottle-feeding was associated with a 61-fold increased risk of pneumonia, and decreased down to 10 for older children. Strikingly, the study also found that the addition of solid foods to the diet of infants younger than 3 months of age was associated with a 175-fold increased risk of hospitalization for pneumonia, down to a 13-fold increase in children of all ages.

– Cesar JA, Victora CG, Barros FC, Santos IS, Flores JA, Impact of breast feeding on admission for pneumonia during postneonatal period in Brazil: nested case-control study. *BMJ* 1999 May 15; 318(7194):1316-20.

The results of this study show that children who have been partially or exclusively bottle-fed during the first 15 weeks of life have an almost 2-fold higher risk of developing respiratory illness later in childhood, compared to those who have been exclusively breast-fed. Exclusive bottle-feeding was also associated with significantly higher levels of blood pressure later in childhood, compared to breast-feeding. In addition, the introduction of solid foods to the diet of infants younger than 15 weeks was found to be associated with an over 2-fold higher risk of wheeze during childhood, and with significantly increased percentage body weight and fat.

– Wilson AC, Forsyth JS, Greene SA, Irvine L, Hau C, Howie PW, Relation of infant diet to childhood health: seven year follow up of cohort of children in Dundee infant feeding study. *BMJ* 1998 Jan 3; 316(7124):21-5.

The results of this study show that the introduction of milk formulas to the diet of infants younger than 4 months is associated with a significantly higher risk of developing asthma and allergic disorders later in life. In particular, children who had been fed non-breast milk before 4 months of age were found to have a 25% higher risk of developing asthma and a 30% higher risk of having a positive skin prick test, compared to those who had been exclusively breast-fed.

– Oddy WH, Holt PG, Sly PD, Read AW, Landau LI, Stanley FJ, Kendall GE, Burton PR, Association between breast feeding and asthma in 6 year old children: findings of a prospective birth cohort study. *BMJ* 1999 Sep 25; 319(7213):815-9.

The results of this study show that individuals who have been bottle-fed when they were babies have more risk factors for cardiovascular disease and diabetes later in adulthood, compared to those who have been breast-fed. The study was conducted on 625 adults born in Amsterdam between 1943 and 1947. Those who had been bottle-fed had higher plasma glucose concentration after a glucose load test and higher cholesterol levels, compared to those who had been breast-fed. These data support previous research indicating an increased risk of cardiovascular diseases associated with bottle-feeding.

– Ravelli AC, van der Meulen JH, Osmond C, Barker DJ, Bleker OP, Infant feeding and adult glucose tolerance, lipid profile, blood pressure, and obesity. *Arch Dis Child* 2000 Mar; 82(3):248-52.

The results of this study show that children who have received cow's milk-containing formulas when they were younger than 3 months have a 52% increased risk of developing insulin-dependent diabetes mellitus (IDDM or Type 1 diabetes), compared to those who have been exclusively breast-fed. Duration of exclusive breast-feeding for 3 months or longer was found to be associated with a 44% reduced risk of Type 1 diabetes.

– Verge CF, Howard NJ, Irwig L, Simpson JM, Mackerras D, Silink M, Environmental factors in childhood IDDM. A population-based, case-control study. *Diabetes Care* 1994 Dec; 17(12):1381-9.

The results of this study show that the introduction of supplementary infant formulas into the diet of infants younger than 3 months is associated with a 52% higher risk of developing Type 1 diabetes later in life. Exclusive breast-feeding during the first 2 months of life, on the other hand, is protective, and is associated with a 40% lower risk of developing diabetes.

– Virtanen SM, Rasanen L, Aro A, Ylonen K, Lounamaa R, Tuomilehto J, Akerblom HK, Feeding in infancy and the risk of type 1 diabetes mellitus in Finnish children. The 'Childhood Diabetes in Finland' Study Group. *Diabet Med* 1992 Nov; 9(9):815-9.

The results of this study show that the introduction of supplementary milk feeding to the diet of infants younger than 3 months is associated with a 53% higher risk of developing Type 1 diabetes, compared to the introduction of milk formulas after the age of 3 months.

– Hypponen E, Kenward MG, Virtanen SM, Piitulainen A, Virta-Autio P, et al., Infant feeding, early weight gain, and risk of type 1 diabetes. Childhood Diabetes in Finland (DiMe) Study Group. *Diabetes Care* 1999 Dec; 22(12):1961-5.

Resources (Midwives):

The North American Registry of Midwives
Established by Midwives Alliance of North America
5462 Madison Street, Hilliard, Ohio 43026 USA
888-84-BIRTH (888-842-4784)
Web site: www.mana.org/narm

Citizens for Midwifery
P.O. Box 82227, Athens, Georgia 30608-2227 USA
888-CFM-4880
Web site: www.cfmidwifery.org

American College of Nurse-Midwives
818 Connecticut Avenue NW, Suite 900, Washington, DC 20006
202-728-9860 / Fax: 202-728-9897
Web site: www.acnm.org

The Birth Book: Everything You Need to Know to Have a Safe and Satisfying Birth
By William Sears, MD, and Martha Sears, RN
(Little, Brown & Company, New York, NY, 1994)

Resources (Breast-feeding):

La Leche League International
1400 N. Meacham Road, Schaumburg, Illinois 60173-4048 USA
847-519-7730
Web site: www.lalecheleague.org

Breastfeeding.com
Woodside, California
Web site: www.breastfeeding.com

The Breastfeeding Book
By Martha Sears, RN, and William Sears, MD
(Little, Brown and Company, New York, NY, 2000)

The Womanly Art of Breastfeeding
La Leche League International
(A Plume Book, the Penguin Group, New York, NY, Sixth Edition, 1997)

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