

# Abbreviations

**AAP:** American Academy of Pediatrics

Nonprofit trade organization for 60,000 pediatricians in the United States and Canada.

**ACOG:** American College of Obstetricians and Gynecologists

A nonprofit trade association representing the interests of American obstetricians and gynecologists. An affiliate nonprofit business organization, the American College of Obstetricians and Gynecologists is a 501(c)(6).

**CDC:** Centers for Disease Control and Prevention

A U.S. agency based in Atlanta, Georgia, that studies and monitors communicable diseases as well as a broad range of other health-related issues.

**FDA:** U.S. Food and Drug Administration

A federal agency responsible for protecting the public health in America by assuring the safety of drugs, food, cosmetics, and other products that affect human health.

**HMO:** Health Maintenance Organization

An organization that provides a system between health care providers and insurance companies or individuals that centrally manages patient care through a dedicated network and a set of criteria for referral from a primary provider.

**M.D.:** Medical doctor

From the Latin *Medicinae Doctor*, a degree granted from accredited medical schools after a student has completed four years of undergraduate studies followed by four years of medical education and successfully passes the U.S. Medical Licensing Exam.

**NHS:** National Health Service (Britain)

Established in 1948 and funded by national taxes, Britain's NHS provides free universal health care to residents of the United Kingdom.

**PPO:** Preferred Provider Organization

A group of providers who have contracted with an insurer to provide services for a discount, in return for a subscription fee.

**R.N.:** Registered nurse

A nurse who has graduated from a college or university nursing program and has successfully passed a licensing exam.

**RVU:** Relative Value Units

Formula by which Medicare determines the pay for physicians for particular tasks, now also used by some hospitals to determine pay for nonphysicians by comparison to the physicians' tasks.

**WHO:** World Health Organization

A United Nations agency for public health, it currently spends about \$4 billion per year promoting global public health, of which one quarter comes from UN member states, the rest from outside donations.

# Glossary of Terms

- Adhesion** Band of scar tissue, caused by surgery, infection, or trauma, that adheres to an internal organ or other body part. In infant boys the foreskin has not yet fully separated from the glans (head) of the penis. Full separation often does not occur until age ten or eleven. Circumcision before the foreskin can retract requires forced separation, which can cause adhesions (pitting or scarring) of the glans. Abdominal adhesions are a common complication of Cesarean birth.
- All-in-ones (AIOs)** A cloth diaper attached to its waterproof cover, an all-in-one is like a washable disposable diaper, combining the convenience of plastic diapers with the reuse and environmental superiority of cloth.
- Amniocentesis** Prenatal test in which a large needle is inserted through the mother's abdomen and uterus into the amniotic sac to withdraw fluid containing cells from the fetus for testing. Normally, the sac seals and the fluid regenerates in a day or two. Just under 1 percent of amniocenteses result in miscarriage. Other risks include preterm labor and amniotic fluid embolism.
- AFP (Alpha-feto-protein) screening** Common blood test for a protein that can reveal several potential birth defects; often combined with other blood tests (AFP3, AFP4, "Quad," etc.).
- Amniotic fluid** The liquid that surrounds the unborn baby in the mother's womb during pregnancy. Amniotic fluid serves many functions, including cushioning the fetus, protecting it from injury, and helping the lungs develop as the fluid is swallowed (inhaled) and released (exhaled). Amniotic fluid is continually regenerated and reabsorbed, so the amount of fluid in a mother's uterus actually changes from hour to hour. In a normal pregnancy the volume increases as pregnancy progresses until about week thirty-six, when it starts to decrease.
- Amniotic fluid embolism** An uncommon but often fatal allergic reaction in pregnancy in which amniotic fluid or fetal tissue get into the mother's bloodstream when the amniotic sac and uterine veins have ruptured. Once almost unheard of, amniotic fluid embolism has been linked to Cytotec (misoprostol), an ulcer medication that is used off label to cause abortion and to induce pregnancy.
- Amniotic sac** The membranes that contain the amniotic fluid surrounding the fetus.
- Anesthesiologist** Physician specialized in anesthetizing patients for surgery, including local (skin-numbing), spinal (such as an epidural), and general (unconsciousness).
- Apgar** A test given to newborns to assess their condition immediately after birth and again five minutes later. Virginia Apgar was an anesthesiologist who developed the test to see how the baby was affected by anesthesia given to the mother. Breathing, heart rate, color (rosy or blue, for blood oxygen), muscle tone, and startling response when disturbed are each measured on a simple scale of 0 (none), 1 (some), or 2 (optimal), then the five are added up to give a total score from 0 to 10.
- Autologous** Transferred or derived from the same individual, as when cells taken from a newborn's cord blood are later given back to the same person to treat a disease.
- Bilirubin** A yellowish molecule in the blood, produced when hemoglobin is broken down as blood cells are replaced. Normally processed by the liver and excreted in urine (made yellow by bilirubin) and stool (likewise made brown by bilirubin). An excess of bilirubin due to physiological problems can be dangerous, but at normal levels it has the benefit of acting as an antioxidant.

- Breech birth** A baby is breech when the bottom, rather than the head, is in position to emerge first. Though most fetuses will turn to face head down, 3 to 4 percent of babies are in the breech position immediately before birth. Some breech babies turn to face downward during the birth practice. Breech positions are classified as frank, complete, or footling.
- Cavitation** Microscopic bubbles or pits (cavities) caused when a surface is struck by high-speed vibrations, like ultrasound waves, which make the surface undulate microscopically.
- Cerebral cortex** The cerebrum is by far the largest part of the human brain, occupying most of the interior of the skull and giving the brain its characteristic shape; the cortex (Latin for “bark”) is the furrowed surface of the cerebrum, where most of human cognition takes place.
- Certified nurse midwife** A registered nurse (R.N.) with advanced graduate training including specialization in midwifery, CNMs deliver babies in hospitals, birthing centers, and women’s homes.
- Chorionic villus sampling (CVS)** A method of prenatal testing by sampling tissue from the villi, rootlike extensions, the fetal placenta links into the part of the placenta supplied by the uterus. Chromosome abnormalities in the fetus are tested to identify Down syndrome or other problems. Unlike with amniocentesis, the amniotic sac is not punctured, and CVS can be done earlier in the pregnancy. Nearly 1 test in 100 will cause miscarriage.
- Circulating nurse** Surgical nurse who preps the operation, then orbits the doctors and nurses during surgery, monitoring their needs and the patient’s and exchanging things between the sterile zone and the outer part of the operating room.
- Circumcision** Elective surgery, originating in prehistoric religious and cultural practices, in which the foreskin of the penis is removed so that it no longer hoods and protects the end of the organ. Though procedures differ by doctor or traditional cultural circumciser, the middle of the tube of skin covering the penis is cut out, and the resulting ends of the skin growing together, shortening the penile skin enough to keep the head revealed. The mucous membranes at the end of the penis dry out and become hardened with keratin, the protein composing fingernails.
- Colostrum** The yellowish or clear liquid rich in protective white blood cells and antibodies that sometimes leaks out during pregnancy and is secreted from the breasts for several days before the milk comes in. Sometimes referred to as the first milk, colostrum has a laxative effect and helps a newborn establish healthy gut biota and pass meconium.
- Complete breech** A baby presents as complete breech when the bottom and feet lie against the birth canal, the legs crossed as if sitting on the ground Indian style.
- Contact dermatitis** Localized skin irritation or rash caused by contact with an allergen or other irritant.
- Cytotec** Trade name for misoprostol, a synthetic prostaglandin used to treat ulcers, induce abortion, enhance erectile function, and hasten labor. In August 2000 Searle (the manufacturer) wrote a warning letter to doctors that there had been cases of uterine rupture and death, among other complications, and asking it not be used on pregnant women.
- Direct-entry midwife** A midwife who is not also an R.N. but has trained at a school of midwifery, a university program distinct from nursing, as an apprentice or through self-study. Direct-entry midwives focus on births outside a hospital setting, such as at home or in a birthing center. In the United States, direct-entry midwives can obtain national certification as a CPM (certified professional midwife) administered from the North American Registry of Midwives. Most state governments also provide for licensure of qualified practitioners, while some states make no legal allowance for the practice.
- Double-blind experiment** A rigorous method of experimentation in which neither the experimenter nor the subject knows who is part of the control group. This protocol eliminates experimenter bias, which has been known to influence results.
- Doula** A birth attendant who offers non-medical assistance to a woman during pregnancy, labor, and after the baby is born. From the ancient Greek word for “slave woman,” the term *doula*

started to become popular in the 1970s in America when researchers found that women who had support during labor had better outcomes.

**Down syndrome** A chromosomal error in which an additional (third) copy of chromosome 21 is present in a person's DNA, resulting in a number of differences from typical development, particularly in height and cognition.

**Effacement** Cervical thinning (sometimes referred to as "ripening") that happens in preparation for labor and is estimated in percentages. The first stage of labor is complete when the cervix is fully dilated to ten centimeters and 100 percent effaced.

**Endometriosis** A painful condition in which uterine cells spread outside the uterus to other parts of the pelvis and react to the woman's hormonal cycle as the uterus does. Endometriosis can cause irregular periods and infertility.

**Endorphin** Hormone that acts as a neurotransmitter, producing pleasant feelings and inhibiting pain.

**Epidural** Pain relief for childbirth effected by injecting local anesthetic into the spinal cord, numbing everything below the site of injection. Though popular, epidurals have been associated with longer labors, a higher risk of maternal fever (leading to obstetric intervention and lower newborn Apgar scores), and lingering numbness.

**Episiotomy** Operation cutting open the perineum from the vaginal opening toward the anus, once thought to help avoid tearing of the vaginal opening during birth. Research has shown that outcomes are better without episiotomy than with it, but the practice continues among those ignorant of the medical evidence.

**Excitatory cells** Neurons (brain cells) that tend to propagate nerve signals by releasing glutamate. Inhibitory cells, by contrast, release GABA (gamma-aminobutyric acid), which inhibits the signal propagation.

**Fetal Survey** A detailed ultrasound assessing the size and physiology of a fetus, given typically between eighteen to twenty weeks gestation.

**Flatulence** The release of gas generated by bacteria in the large intestine and colon, commonly called farting.

**Footling breech** In footling breech, the feet push against the birth canal opening without the baby's bottom nearby.

**Forceps** Obstetrical forceps are large gripping tools with plierslike handles and spoon-shaped loops of metal for holding the fetus's head to pull it out of the mother's pelvis.

**Foreskin** Tube-like overlap of skin covering the glans (head) of the penis that protects the skin of the glans, which is a mucous membrane, contains erogenous tissue, and acts as a lubricated sheath for the penis to glide in and out of during intercourse.

**Frank breech** A frank breech is when the baby's bottom faces the birth canal with the legs sticking straight up in front so that the feet are close to the head, like a diver doing a jackknife.

**Germ cells** Undifferentiated cells in the brain or elsewhere in the body that have the capacity to grow into various types of specialized cells.

**Gestational diabetes** Temporary high levels of glucose (sugar) in the blood during pregnancy, a common condition without the dangers of type 1 or type 2 diabetes, readily controlled by diet and lifestyle changes.

**Glucose tolerance test** A test usually given between twenty-four and twenty-eight weeks of gestation to detect pregnancy-induced diabetes, involving quickly drinking a large dose of pure glucose sugar and then being monitored to evaluate how well the body processes it.

**Gray matter** Gray matter, which makes up most of the surface of the brain, consists of nerve cells and their supportive tissue, other specialized cells in the brain (glial cells), and capillaries. Gray matter includes regions of the brain involved in cognition, speech, muscle control, memory, emotions, and sensory perception.

**Gynecologist** Physician specialized in the female reproductive system. Most are also specialized in obstetrics, which concerns women and their children during and immediately following pregnancy.

- Halitosis** An unusually unpleasant odor in the breath.
- Hemorrhoids** Natural blood vessels in the anus, which can become a problem when they become and remain engorged with blood, a common occurrence in pregnancy. Hemorrhoids can also develop postpartum caused by a woman delivering vaginally flat on her back.
- High-risk pregnancy** Pregnancy is medically considered to have higher risks when the mother is particularly young or old, petite or obese, or with any of a long list of complicating factors. Diseases can complicate a pregnancy, whether congenital (such as maternal birth defects making birth difficult), acquired (such as cancer), or contagious (such as venereal diseases). Otherwise healthy women may be classified high-risk because of doctor or hospital protocol, prior Cesarean birth, or prenatal testing.
- Hydraulic fracturing** (“fracking”) Pumping water and chemicals into natural cracks in underground bedrock, forcing them open to allow oil and natural gas far below to rise up for extraction. Oil and gas can be obtained from areas inaccessible to conventional drilling, increasing the supply of fossil fuels, at the cost of changing the rocky strata of the Earth’s crust, and filling deep underground strata with polluted water.
- Hypoglycemia** Abnormally low level of blood sugar (glucose) in the blood.
- Iatrogenic** “Physician-induced,” referring to any problem, injury, or reaction caused by the action of a physician or by a medical procedure. “Iatros” means *physician* in Greek, and “genic,” means *generated*. Childbed fever, caused by doctors not washing their hands after dissecting corpses or treating ill patients, was an iatrogenic disease.
- Implantation** When a woman’s egg, within a few days after being fertilized by a sperm, implants itself in the prepared lining of the uterus, where it is nourished and begins to develop part of itself into the placenta.
- Inhibitory cells** Brain cells (neurons) that work to restrain stimulation. The transmission of stimuli in the brain is guided by a balance between excitatory cells, which promote it, and inhibitory cells, which restrain it.
- Insulin** A hormone regulating metabolism, insulin governs how the body deals with glucose sugar. When blood sugar levels rise, insulin is released by the pancreas, which causes the body to pull the glucose out of the blood and store it. If tissues become resistant to insulin, diabetes can develop.
- Intrauterine Growth Restriction (IUGR)** A term used to describe fetuses thought to weigh less than 90 percent of fetuses of the same gestational age. Also known as fetal growth restriction, this condition can be caused by malnourishment, high altitude, twins, maternal high blood pressure, infection, or a congenital disorder. Since it is difficult to accurately measure a fetus’s size in utero and is normal for some women to gestate more slowly, IUGR is often misdiagnosed, leading to unnecessary interventions like preterm C-section.
- Intussusception** A sudden intestinal blockage where a part of the intestine pulls into itself, intussusception can result in bleeding, infection, shock, and dehydration. This serious condition sometimes requires emergency surgery and can be fatal.
- Ionizing radiation** Radiation of a kind and intensity that can electrically charge atoms, which turns the atom into a differently charged version called an ion. Ions react differently from the original form, so an ionized atom in your body won’t work quite the same as the original. Ionizing radiation can break chemical bonds in molecules such as DNA. No amount of ionizing radiation is considered safe, though some exposure from the natural environment is unavoidable. All X-rays are ionizing radiation.
- Jaundice** A yellow skin tone caused by an excess of bilirubin in the bloodstream, affecting more than half of all newborns as the infant’s metabolism catches up with the hemoglobin cycle in the blood. In the vast majority of cases jaundice is a normal condition that disappears in one to two weeks.
- Kernicterus** Damage to an infant’s brain by excessive bilirubin levels in the blood, resulting from the breakdown of red blood cells. Usually caused by mother and fetus having different Rh blood types or by a genetic disorder.

- Low-risk pregnancy** A normal healthy pregnancy with no known complications (i.e., not high risk); over 90 percent of pregnancies in the United States fall into this category, which is typically used to describe the candidates for a vaginal birth unlikely to require medical intervention.
- Meatal stenosis** A narrowing at the tip of the penis of the opening of the hole that urine passes through (the urethra), that interferes with normal urination. Usually caused by swelling and irritation from a circumcision that results in scar tissue growing across the urethra. This condition can lead to painful urination, urinary tract infection, bleeding from the end of the penis, daytime incontinence, and bed-wetting. An operation to enlarge the urethra is often necessary.
- Medicaid** Government program providing limited payment for health care for some low-income Americans.
- Midwife** Birth attendant who specializes in physiological (natural) childbirth. Midwives assist women in delivering their children vaginally and with prenatal and postnatal care. The midwifery model of care is to follow the normal course of birth and facilitate successful vaginal delivery. Midwives monitor for complications requiring intervention, transferring care if necessary to obstetricians, who specialize in the illnesses and complications that can arise in pregnancy and birth. Compared to OBs, births with midwives have lower infant and mother mortality and fewer complications and interventions.
- Minicolumn** A vertical arrangement of neurons in the layers of the cerebral cortex. The brain develops a fine three-dimensional structure of cells, necessary to normal cognitive function. When these stacks of cells are too tightly or too loosely spaced, intellectual function is abnormal.
- Naturopath** Physician educated at a naturopathic medical school, following a holistic medical model emphasizing diet and botanical treatments as an alternative to drugs when possible.
- Necrotizing** Condition in which cells die abnormally and are not cleared away by the body, leading to dead tissue rotting while attached to living tissue. Often self-spreading, if not removed surgically, necrotizing can lead to gangrene, ending in amputation or death.
- Neural tube defects** Birth defects in which the neural tube, which forms the spinal cord and brain, fails to close completely in the development of the fetus, leading to complications of various severity.
- Nurse anesthetist** Registered nurse who specializes in giving anesthesia. These nurses do epidurals and spinals.
- Otitis media** Normally harmless infection between the eardrum, the Eustachian tube, and the inner ear, also known as an ear infection.
- Otoscope** Cone-shaped viewer, mounted on a handle, that is used by physicians to examine inside the ear; bane of children, second only to the tongue depressor.
- Ovulate** Part of menstrual cycle in which a mature ovum (egg) or ova (eggs) are released from the ovary, ready to travel down the fallopian tube to the uterus to be fertilized by sperm and implanted into the uterus, resulting in pregnancy.
- Oxytocin** Hormone that causes uterine contraction during and after birth, oxytocin is also released during breastfeeding. In the brain, it is active in producing feelings of empathy and bonding.
- Pediatrician** Physician specialized in the primary care treatment of children from birth through adolescence.
- Perineum** The area (skin and underlying tissue) between the genitals and anus. The woman's perineum stretches and thins to make way for the baby's head during childbirth.
- Physician** Health care provider who diagnoses and treats disease or injury. Though often thought synonymous with M.D., physicians also include D.O.s (osteopathic doctors), N.D.s (naturopathic doctor), D.C.s (doctor of chiropractic), and N.P.s (nurse practitioner).
- Pitocin** Synthetic (artificial) form of the hormone oxytocin used to induce labor in pregnant

- women or stimulate uterine contractions once labor has already started. It is synthesized from the pituitary glands of cattle and contains the preservative chloroform.
- Placenta** Two-part organ connecting the uterus and fetus, with part formed from each of them, the placenta allows gases, fluid, nutrients, and waste to be passed between mother and fetus.
- Placenta previa** Obstruction of the cervical opening by the placenta, which can cause a variety of problems, including hemorrhage.
- Preeclampsia** Syndrome combining high blood pressure and protein in the urine during pregnancy, which can lead to various hypertension problems, blood cell dysfunction, and other complications, and in a small percentage of cases to full eclampsia with its associated seizures.
- Prepuce** Synonym for foreskin.
- Public aid** Any system of financial assistance for low-income needs, including health care, as in Medicaid or the Illinois Public Aid medical program.
- Pulmonary embolism** A blockage in the main artery of the lungs, either by a clot or by amniotic fluid; a major cause of maternal mortality. A danger to anyone who remains lying immobile for extended periods.
- Sciatica** Pain in the large nerves running down the backs of the legs. A frequent condition in the second and third trimesters of pregnancy as the growing baby puts pressure on the mother's sciatic nerve.
- Scrub nurse** Nurse who assists a surgeon and remains within the sterile area of the operating room.
- Septicemia** Blood poisoning from harmful bacteria that often occurs with severe infections. Chills, high fever, rapid breathing, rapid heartbeat, and discoloration of the skin can be signs of septicemia.
- Serial Sequential Testing**, also called serial sequential screening. A series of tests for Down Syndrome and other congenital problems, compounding an ultrasound of skull development with two successive blood tests. The nuchal fold ultrasound is the first test in this series, and must be performed before fifteen weeks.
- Shoulder dystocia** When a baby's head emerges from the birth canal but a shoulder gets stuck behind the mother's pubic bone. This is a dangerous place for delivery to stop, as the blood supply from the umbilical cord is likely to be cut off. Several techniques, as simple as pulling the mother's knees to her chest or rolling her onto all fours, resolve the problem in the majority of cases.
- Smegma** Secretion of skin oils and exfoliated cells under the foreskin that cleans, lubricates, and protects the glans (head) of the penis. There is little of it in childhood; it increases at puberty.
- Sonogram** Also called an ultrasound, imaging of a fetus (and the interior of the mother's abdomen) by making an echo-reflection image using very-high-frequency sound waves.
- Sonography** The process or practice of using ultrasound to image the interior of the body.
- Spinal** Anesthesia delivered directly into the spine to completely numb everything below for surgery. Often used with women who are having elective Cesarean sections.
- Stem cells** Cells that can turn into any of a variety of specialized cell types. These self-perpetuating cells are found in many places in the adult body, where they are used to replace dying cells. In the first several days after a human ovum is fertilized, before it implants in the uterus and begins to develop from a blastocyst into a differentiated embryo, *all* of the cells are stem cells that can become *any* type of human cell.
- Superabsorbent polymer (SAP)** Molecule that bonds chemically to water molecules and bonds to itself to form long molecular chains. In this way it can occupy three hundred times the SAP's own weight in water, and the water cannot be squeezed out because it has become part of the molecule.
- Transverse** Dimension of the body in which torso-twisting movements are performed; a plane

parallel to the floor. Contrasted to coronal and sagittal planes of the body. A fetus is transverse when lying horizontally across the mother's uterus. A transverse Cesarean incision is made horizontally.

- Ultrasound** Imaging of a fetus (and the interior of the mother's abdomen) by making an echo-reflection image using very high-frequency sound waves. The intensity of the waves is not regulated, leading to possible risks to the fetus. According to the FDA, "There are no federal radiation safety performance standards for diagnostic ultrasound." Though user education and licensure exist, they are not required in most states.
- Urethra** Tube conducting urine from the bladder out to be eliminated. In women, it emerges in the vulva, above the vagina.
- Uterus** The womb; the organ in which implantation of the fertilized egg takes place and the fetus matures.
- VBAC** Pronounced "vee-back," vaginal birth after cesarean. Giving birth vaginally after a previous C-section has been found to be as safe as or safer than Cesarean birth, even for a woman who has had a previous C-section. However, because the uterine scar could separate and result in uterine rupture (often caused by pregnancy induction and aggressive labor management with Pitocin) and the fear of litigation, many hospitals do not allow women to attempt VBAC.
- Ventricles** The two larger chambers in the heart (left and right ventricles) that do the main work in pumping blood throughout the body.
- Vernix** A waxy secretion covering the fetus in utero and the newborn's skin at birth. Vernix protects and lubricates the delicate skin of the newborn, holding in heat and moisture, and perhaps acting as a barrier to harmful bacteria while it lasts.
- X-rays** High-frequency light used to image structures inside the body. X-rays are a form of ionizing radiation, which can break chemical bonds between atoms and change their electron charge. Scientists agree that no amount of ionizing radiation is safe and that there is no lower limit below which there are no health risks.



# Appendix

## RESOURCES

### PREGNANCY SUPPORT

**Birthing From Within** (805-964-6611, <http://www.birthingfromwithin.com/>)—Birth empowerment organization started by midwife, writer, and VBAC mom, Pam England, that offers childbirth classes, events, and information for expectant parents and birth companions.

**Centering Healthcare Institute** (857-284-7570, <https://www.centeringhealthcare.org/index.php>)—A nonprofit founded by Sharon Rising that provides consultations, trainings, and materials to clinical practices to begin group care (Centering Pregnancy, Centering Parenting).

**Childbirth Connection** (212-777-5000, <http://www.childbirthconnection.org/>)—Nonprofit dedicated to helping women, their partners, and health professionals make scientific and evidence-based decisions about best maternity care practices. Their website is loaded with helpful, referenced articles about pregnancy, labor, and delivery.

**Planned Parenthood Federation of America** (212-541-7800, <http://www.plannedparenthood.org/>)—Nonprofit organization that runs health care centers throughout the United States to give women and their partners access to free or low-cost pap smears, birth control, pregnancy testing, and abortion.

### CHILDBIRTH SUPPORT

**Coalition for Improving Maternity Services** (866-424-3635, <http://www.motherfriendly.org/>)—Coalition of individuals and national organizations dedicated to promoting evidence-based mother-friendly childbirth.

**DONA International** (888-788-DONA, <http://www.dona.org/>)—International nonprofit organization that trains, certifies, and promotes doulas (birth assistants) and helps expectant families find doula support.

**Midwifery Alliance of North America** (888-923-MANA, <http://mana.org/>)—Nonprofit organization promoting collaboration and support among midwives.

**Waterbirth International** (954-821-9125, <http://www.waterbirth.org/>)—Nonprofit organization dedicated to helping women have waterbirths.

### BREASTFEEDING SUPPORT

**La Leche League International** (800-LA-LECHE, <http://www.llli.org/>)—Nonprofit organization that promotes breastfeeding through mother-to-mother support. Trained volunteers run

monthly support groups for new moms in every state in America and dozens of countries around the world.

**To buy breast milk:** Only the Breast (<http://www.onlythebreast.com/>) is an online community of moms who want to buy, sell, and donate breast milk.

**To find free breast milk near you:** Human Milk For Human Babies (<http://www.facebook.com/hm4hb>) is a global network that has local chapters in Oregon, Washington, Oklahoma, South Carolina, and elsewhere. Each chapter has their own Facebook page where moms who have extra milk and moms who need milk can find each other.

**To obtain breast milk from a milk bank:** The Human Milk Banking Association of North America (817-810-9984, <https://www.hmbana.org/>) collects donated breast milk, processes it, and then ships it to babies with a doctor's prescription indicating medical need. Some insurance companies cover the cost of the milk.

## POSTPARTUM SUPPORT

**Doulas of North America** (888-788-DONA, [http://www.dona.org/mothers/faqs\\_postpartum.php](http://www.dona.org/mothers/faqs_postpartum.php))—Doulas are not only of great assistance during childbirth, they also can help families adjust to a new baby. They attend to the basic needs of the new mom and educate her and the family about appropriate care of an infant.

**Postpartum Support International** (800-944-4PPD, <http://www.postpartum.net/>)—Nonprofit to support awareness, prevention, and treatment of postpartum depression and other mental health issues that arise after giving birth.

## DIAPERING AND POTTING SUPPORT

**Diaper-Free Baby** (<http://www.diaperfreebaby.org/>)—Volunteer-led nonprofit that runs local support groups to educate and help parents who want to practice elimination communication.

**Real Diaper Association** (<http://www.realdiaperassociation.org/>)—Nonprofit trade association for the cloth diaper industry that educates parents about cloth diapering, promoting it as a cheaper, safer, and more environmental diapering choice.

## INFORMATION ABOUT CIRCUMCISION

**American Academy of Pediatrics**, the trade organization of American pediatricians, issued "Technical Report: Male Circumcision" (August 2012) from its task force that concludes that the benefits of male infant circumcision outweigh the risks but not enough to recommend routine circumcision for all newborn males, that the choice should be up to the parents, and that insurance companies should pay for the procedure. The full report is available online: <http://pediatrics.aappublications.org/content/130/3/e756.full>.

**Circumcision Information and Resource Pages** (CIRP) contains an exhaustive reference library of research, history, and statistics related to circumcision: <http://www.cirp.org/>.

**Circumcision Resource Center** (<http://www.circumcision.org/>)—Nonprofit educational organization that raises awareness about male circumcision with the goal of discouraging parents from doing the procedure.

**Intact America** (<http://www.intactamerica.org/>)—Nonprofit child advocacy organization overseen by a board of health professionals that educates parents about the harms of circumcision.

**The Royal Australasian College of Physicians**—Professional organization of doctors in Australia and New Zealand. They have written a twenty-eight-page referenced position statement on male circumcision, “Circumcision of Infant Males” (2010), detailing the anatomy of the foreskin, the medical debate, and the reason it is not recommended or routinely done in Australia or New Zealand: [http://www.kids.vic.gov.au/downloads/male\\_circumcision.pdf](http://www.kids.vic.gov.au/downloads/male_circumcision.pdf).

## INFORMATION ABOUT VACCINES

**CDC** (800-232-4636, <http://www.cdc.gov/vaccines/>)—The American government’s Centers for Disease Control and Prevention post exhaustive information on their website about childhood vaccines, including current immunization schedules, breaking news, revised recommendations, vaccine ingredients, and adverse effects. Detailed information slated toward health care providers can be found at: <http://www.cdc.gov/vaccines/hcp.htm>.

**National Vaccine Information Center** (703-938-0342, <http://www.nvic.org/>)—Nonprofit educational vaccine safety watchdog group that is dedicated to preventing vaccine-induced injuries. Funds research into vaccine safety, lobbies the government to better identify which children may be prone to an adverse vaccine reaction, and provides exhaustive and up-to-date information on vaccine ingredients, current guidelines, legal issues, and informed consent.

**The Vaccine Adverse Event Reporting System VAERS** (<http://vaers.hhs.gov/index>)—National vaccine safety surveillance program cosponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). Parents can access reports submitted to VAERS (<http://vaers.hhs.gov/data/index>) and report vaccine reactions online, by fax, or by mail (<http://vaers.hhs.gov/esub/index>).

## RECOMMENDED READING

Suzanne Arms, *Immaculate Deception II: Myth, Magic, & Birth*

Naomi Baumslag, M.D., and Dia L. Michels, *Milk, Money, and Madness: The Culture and Politics of Breastfeeding*

Grantly Dick-Read, *Childbirth Without Fear: The Principles and Practices of Natural Childbirth*

Ina May Gaskin, *Ina May’s Guide to Childbirth*

David Gollaher, *Circumcision: A History of the World’s Most Controversial Surgery*

Christine Gross-Loh, *The Diaper-Free Baby: The Natural Toilet Training Alternative*

Lise Eliot, Ph.D., *What’s Going on in There?: How the Brain and Mind Develop in the First Five Years of Life*

Susan Markel, M.D., *What Your Pediatrician Doesn’t Know Can Hurt Your Child*

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Gabrielle Palmer, *The Politics of Breastfeeding: Why Breasts Are Bad for Business*

Robert W. Sears, M.D., *The Vaccine Book: Making the Right Decision for Your Child*

Alecia Swasy, *Soap Opera: The Inside Story of Procter & Gamble*

Marsden Wagner, M.D., *Born in the USA: How a Broken Maternity System Must Be Fixed to Put Women and Children First*

Diane Wiessinger et al., *The Womanly Art of Breastfeeding*

## NORWEGIAN CHILDHOOD VACCINE SCHEDULE, BIRTH TO AGE 5

### **No routine vaccines given before 3 months of life\***

#### **At 3 months, 5 months, and 12 months:**

Diphtheria  
Tetanus  
Acellular pertussis  
Hib  
Polio  
Pneumococcal conjugate

#### **At 15 months:**

Measles, mumps, and rubella vaccine

\*Hepatitis B given to at-risk groups only

## AMERICAN CHILDHOOD VACCINE SCHEDULE, BIRTH TO AGE 5

#### **At birth, 1–2 months, 6–18 months:**

Hepatitis B

#### **At 2, 4, 6, 15–18 months:**

Diphtheria  
Tetanus  
Acellular pertussis

#### **At 12–23 months:**

Hepatitis A

#### **At 2, 4, 6, 12–15 months:**

Hib  
Pneumococcal conjugate

#### **At 6–23 months and every year thereafter:**

Influenza

#### **At 2, 4, 6–18 months, 4–6 years:**

Polio

#### **At 2, 4, 6 months (or 2, 4 months depending on vaccine):**

Rotavirus

#### **At 12–15 months, 4–6 years:**

Measles  
Mumps  
Rubella

#### **At 12–18 months, 4–6 years:**

Varicella (chickenpox)

Source: WHO vaccine-preventable diseases: monitoring system 2012 global summary

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Illustration 2: Belly shot, photo by Jennifer Margulis

Illustration 3: Young Woman at Bus Stop, photo by Jennifer Margulis

Illustration 4: Chicago's Lying-In Hospital, photo courtesy of the University of Chicago Medical Center

Illustration 5: Woman Prepped for a C-section, photo by Ginny Adkins

Illustration 6: Baby Oliver Just After Birth, photo by Jennifer Margulis

Illustration 7: Screen shot of Circumstraint advertisement, photo from <http://www.quickmedical.com/olympicmedical/circumstraint/immobilizer.html>

Illustration 8: Sign, "Go Ahead & Breastfeed, We Like Both Babies and Boobs!" photo by Jennifer Margulis

Illustration 9: T. Berry Brazelton in Pampers Advertisement, photo by Jennifer Margulis

Illustration 10: Infant with a Band-Aid, photo by Jennifer Margulis

Illustration 11: Mom, Baby, and Pediatrician at a Well-Baby Visit, photo by Jennifer Margulis

Illustration 12: Anna's First Birthday, Korean Style, photo courtesy of Christine Gross-Loh

Illustration 13: Three Children Walking Away, photo by Jennifer Margulis

# Notes

## Introduction

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## Chapter One: Gestation Matters: The Problem with Prenatal Care

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- 12 *cornstarch and sugar, to name just a few*: Another ingredient, Carnauba (*Copernicia Cerifera*) Wax, which is also used in automobile wax and shoe polish, is made by bleaching the naturally occurring wax found on a plant native to South America, so it is not necessarily an unnatural product.
- 12 *gummy vitamin was contaminated with high amounts of lead*: “Consumers Warned of Pitfalls with Some Multivitamins and Vitamin Waters: Testing by ConsumerLab.com Uncovers Problems with Many Brands,” news release, ConsumerLab.com, May 21, 2004, accessed at [http://www.consumerlab.com/news/Mutivitamin\\_Vitamin\\_Waters\\_Tests\\_Supplements/5\\_21\\_2004/](http://www.consumerlab.com/news/Mutivitamin_Vitamin_Waters_Tests_Supplements/5_21_2004/).
- 12 *did not contain the amount of nutrients listed*: This June 15, 2011, report did not find problems with three prenatal brands, but did find gross inaccuracies in vitamins for children, and that the price of the vitamins had no relationship to the accuracy of the labeling. (Linda Carroll, “Many Multivitamins Don’t Have Nutrients Claimed in Label,” Diet and Nutrition on MSNBC.com, updated June 20, 2011, accessed at [http://www.msnbc.msn.com/id/43429680/ns/health-diet\\_and\\_nutrition/t/many-multivitamins-dont-have-nutrients-claimed-label/#.T1\\_Bf5hR4mE](http://www.msnbc.msn.com/id/43429680/ns/health-diet_and_nutrition/t/many-multivitamins-dont-have-nutrients-claimed-label/#.T1_Bf5hR4mE).) When ConsumerLab.com compared Rite Aid Prenatal Tablets with Folic Acid, which costs 4 cents per day, they found it provided the same vitamin and minerals as Stuart Prenatal, which cost 30 cents per day, over seven times as much. ConsumerLab.com, Product Review, “Multivitamin and Multimineral Supplements Review,” June 28, 2011, accessed at [https://www.consumerlab.com/reviews/review\\_multivitamin\\_compare/multivitamins/](https://www.consumerlab.com/reviews/review_multivitamin_compare/multivitamins/) (available to members only).
- 13 *The manufacturer does not even have to*: “Food: Overview of Dietary Supplements,” FDA, last updated October 14, 2009, accessed at <http://www.fda.gov/food/dietarysupplements/consumerinformation/ucm110417.htm>.
- 13 *“I had her switch each day”*: Tod Cooperman, M.D., president, ConsumerLab.com, in an interview with the author, March 14, 2012.
- 13 *\$26.7 billion on supplements in 2009*: “What’s Behind Our Dietary Supplements Coverage,” ConsumerReports.org, last updated January 2011, accessed at <http://www.consumerreports.org/health/natural-health/dietary-supplements-coverage/overview/index.htm>.
- 13 *30 cents a pill*: <http://children.costhelper.com/prenatal-vitamins.html>.
- 14 *“These include Vitamine E”*: As quoted by Jennifer Margulis in “Wheat? Whole Wheat? What?” *Pregnancy Magazine*, April 2004, 86.
- 14 *“Unlike vitamins and minerals, phytochemicals”*: Ibid.
- 15 *“They have more fiber”*: Ibid.
- 15 *A 2012 meta-analysis of available research on white rice*: E. A. Hu et al., “White Rice Consumption and Risk of Type 2 Diabetes: Meta-analysis and Systematic Review,” *British Medical Journal* 344, no. 7851 (April 7, 2012): e1454, accessed at <http://www.bmj.com/content/344/bmj.e1454>.
- 15 *“They do a high-volume practice”*: This and subsequent quotations: Paul Qualtere-Burcher, M.D., obstetrician, in an interview with the author, March 8, 2012.
- 16 *Relative Value Units*: Relative Value Units (RVUs) are a way physicians groups and hospitals calculate compensation for staff by using a formula tied to various physician services.
- 16 *At Qualtere-Burcher’s last job*: He was employed by PeaceHealth Medical Group, a nonprofit Catholic community health organization that owns eight hospitals and forty-two clinics in Alaska, Washington, and Oregon.

- 17 *"They're looking for the billable opportunity"*: Edward Linn, M.D., in an interview with the author, August 18, 2011. A follow-up interview was conducted on March 18, 2012.
- 18 *"When the outcomes aren't great you need to change the system"*: Sharon Rising, founder and CEO, Centering Healthcare Institute, in an interview with the author, March 18, 2012.
- 18 *"Dreger, a pants-wearing omnivore"*: Alice Dreger, "The Most Scientific Birth Is Often the Least Technological Birth," *Atlantic*, March 20, 2012, accessed at <http://atmo4.theatlantic.com/health/archive/2012/03/the-most-scientific-birth-is-often-the-least-technological-birth/254420/>.
- 18 *"was committed to being much more modern"*: Ibid.
- 19 *"The medical model of obstetrics is reactive"*: Stuart Fischbein, M.D., obstetrician, in an interview with the author, November 15, 2011.
- 19 *"If they have a patient who gets into trouble"*: This and subsequent quotations: Paul Qualtere-Burcher, M.D., obstetrician, in an interview with the author, March 8, 2012.
- 20 *"We have never allowed 'free' pharmaceutical samples"*: Brian Price, M.D., obstetrician, email communication with the author, September 26, 2012.
- 21 *American College of Obstetricians and Gynecologists gross receipts*: The exact number was 80,522,676.
- 21 *Average salary of a high-risk obstetrician*: 2011 MGMA National Survey Data.
- 21 *Average salary of a hospital midwife*: MGMA Physician Compensation and Production Survey: 2012 Report Based on 2011 Data.
- 21 *Total costs of prenatal visits with a doctor*: The actual number is \$3,942.49. The total cost of prenatal visits with a doctor varies widely, depending on the practice, location, and level of care. This number is based on an average of thirteen prenatal appointments (women have typically from eleven to fifteen) multiplied by \$180 per visit, plus two ultrasound scans, one at less than fourteen weeks (\$842.08), and one five-month anatomy scan (\$761.41), which is typical for southern Oregon, where I live.
- 21 *Total costs of prenatal visits with a homebirth midwife*: Homebirth midwives in our area charge between \$50 to \$150 per prenatal visit and usually see clients on a schedule similar to a doctor's (thirteen visits multiplied by \$100 per visit equals \$1,300). The cost of ultrasound scans, which are not always part of homebirth care in low-risk pregnancies in our area, would be extra.
- 21 *Cost per minute to have pregnancy supervised by a doctor*: Calculated based on a doctor spending twenty minutes on average with a pregnant patient.
- 21 *Cost per minute to have pregnancy supervised by a homebirth midwife*: Homebirth midwives spend an average of one hour with their patients.
- 21 *Nine-month supply of brand-name prenatal*: One bottle of Trimesisyn 800 mg, which is a one-month supply, costs \$129.95, though it is offered at \$69.95 as a trial price. Accessed on September 26, 2012, <http://www.trimesisyn.com/>.
- 21 *Nine-month supply of generic prenatal*: One bottle of CVS women's prenatal with DHA, which is a one-month supply, costs \$14.99 (though if you buy it from the web, it was discounted to \$11.24) on September 26, 2012. Accessed at <http://www.cvs.com/shop/product-detail/CVS-Womens-Prenatal--DHA-Vitamins-&-Minerals?skuId=460461>.
- 21 *Jennifer Penick*: As told to the author on September 14, 2012.

## Chapter 2: Sonic Boom: The Downside of Ultrasound

- 25 *couldn't prescribe pain medication*: Karen Bridges, parent, in an interview with the author, April 9, 2012.
- 25 *First used for obstetrics by a Scottish doctor*: Historians differ on the exact date sonograms were introduced. F. G. Cunningham et al., *Williams Obstetrics*, 23rd ed. (New York: McGraw Hill, 2010), 349, gives 1958 as the date. Margaret B. McNay and John E. E. Fleming, "Forty

- Years of Obstetric Ultrasound 1957–1997: From A-scope to Three Dimensions,” *Ultrasound in Medicine & Biology* 25, no. 1 (1999): 50, says they were introduced in 1957.
- 25 *ultrasounds had become a routine part*: By the mid-1960s, obstetric ultrasound was being used in many hospitals and doctors had begun buying scanning equipment for private practices. For an extended discussion of this, see McNay and Fleming, “Forty Years of Obstetric Ultrasound 1957–1997: From A-scope to Three Dimensions,” *Ultrasound in Medicine & Biology* 25, no. 1 (1999): 3–56.
- 25 *67 percent of pregnant women*: National Center for Health Statistics, 2002. As quoted in F. G. Cunningham et al., *Williams Obstetrics*, 22nd ed. (New York: McGraw Hill, 2005), 390.
- 25 *three ultrasounds per woman*: What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa: Public Health Agency of Canada, 2009. Available online at <http://www.phac-aspc.gc.ca/rhs-ssg/pdf/survey-eng.pdf>, 13.
- 25 *high-risk pregnancies*: According to current American obstetrical practices, a high-risk pregnancy includes women carrying multiples and any mother over age thirty-five.
- 25 *twenty-five ultrasounds per pregnancy*: In response to the question “How Many Ultrasounds Will You Have While Pregnant?” at The Stir (blog), one mom wrote that because she was carrying twins, was considered high risk, and was punched in the stomach by her ex (which caused her to miscarry one of the twins), she had a total of twenty-five ultrasounds in the thirty-seven weeks she gestated (see [http://thestir.cafemom.com/pregnancy/1686/How\\_Many\\_Ultrasounds\\_Will\\_You](http://thestir.cafemom.com/pregnancy/1686/How_Many_Ultrasounds_Will_You)). While that was an unusual situation, discussions on pregnancy chat groups reveal that many women expect between four and eight ultrasounds per pregnancy.
- 26 “*We recommend an eighteen-week ultrasound*”: Stephanie Koontz, M.D., obstetrician, in discussion with the author, December 15, 2010.
- 27 “*the skill of the technician reading the scan*”: Felicia Cohen, M.D., obstetrician, in an interview with the author, August 24, 2011. When I checked this quote with Dr. Cohen for accuracy, she asked me to add the following: “Ultrasound technology has great value as a diagnostic tool, especially earlier in pregnancy, when it can detect a lot of potential complications that a physical exam alone would miss. And even late in pregnancy, it can help us decide whether an elective induction or Cesarean section is indicated, especially for complicated obstetrical patients. But as a tool for estimating fetal weight in a full-term patient? We know it’s not especially accurate for that, and I counsel my patients that the actual fetal weight could be a pound or so lower or higher” (email communication with the author, September 25, 2012).
- 27 *gender identification before fourteen weeks*: B. J. Whitlow et al., “First trimester diagnosis of gender,” *Ultrasound in Obstetrics and Gynecology* 13 (1999): 301–304.
- 28 “*Ultrasound can’t promise us a healthy baby*”: This and subsequent quotations: Colleen Forbes, midwife, in an interview with the author, August 12, 2011.
- 28 “*My husband and I liked the tests*”: Rachelle Eisenstat, parent, in an interview with the author, November 3, 2011.
- 28 *this stress can have a lasting effect*: E. J. H. Mulder et al., “Prenatal Maternal Stress: Effects on Pregnancy and the (Unborn) Child,” *Early Human Development* 70 (December 2002): 3–14.
- 29 “*I think it’s a psychological lie for women*”: Louana George, midwife, in an interview with the author, October 26, 2011.
- 29 *carries a risk of miscarriage*: J. W. Seeds, “Diagnostic Mid Trimester Amniocentesis: How Safe?” *American Journal of Obstetrics and Gynecology* 191, no. 2 (August 2004): 607–615.
- 29 *carries a miscarriage rate of between 1 in 100*: Mayo Clinic Staff, “Down Syndrome: Tests and Diagnosis,” April 7, 2011, accessed at <http://www.mayoclinic.com/health/down-syndrome/DS00182/DSECTION=tests-and-diagnosis>.
- 29 *and 3 in 100*: According to the CDC, the risk is from between 1 in 100 to 1 in 200; see: CDC, “Chorionic Villus Sampling and Amniocentesis: Recommendations for Prenatal Counseling,” in *Morbidity and Mortality Weekly Report (MMWR)* 44, no. R-99 (July 21, 1995): 1–12. A more recent analysis of the risk of miscarriage from CVS conducted at just one clinic

- found the risk of miscarriage over a twenty-year period to be 3.12 percent overall; see: A. B. Caughey, M.D., Ph.D., et al., "Chorionic Villus Sampling Compared with Amniocentesis and the Difference in the Rate of Pregnancy Loss," *Obstetrics and Gynecology* 108, no. 3, part 1 (September 2006): 612–616.
- 29 *small risk of uterine infection*: G. G. Rhoads et al., "The Safety and Efficacy of Chorionic Villus Sampling for Early Prenatal Diagnosis of Cytogenetic Abnormalities," *New England Journal of Medicine* 320 (1989): 609–617.
  - 29 *having a baby with a limb missing*: F. J. Hsieh et al., "Limb Defects After Chorionic Villus Sampling," *Obstetrics and Gynecology* 85, no. 1 (January 1995): 84–88.
  - 29 "I feel like all the testing": Stephanie La Croix Hinkaty, parent, in an interview with the author, November 7, 2011.
  - 30 *a false positive rate of 5 percent*: Cunningham, *Williams Obstetrics*, 23rd ed., 293.
  - 30 "It depends on how you're reimbursed": Edward Linn, chair of obstetrics and gynecology, Chicago Cook County Health and Hospitals System, in an interview with the author, August 18, 2011.
  - 31 "[T]his practice-based trial demonstrates": Bernard G. Ewigman and the RADIUS Study Group et al., "Effect of Prenatal Ultrasound Screening on Perinatal Outcome," *New England Journal of Medicine* 329, no. 12 (September 16, 1993): 821–827, accessed at <http://www.nejm.org/doi/full/10.1056/NEJM199309163291201#t=abstract>.
  - 31 *more likely to experience intrauterine growth restriction*: J. P. Newnham, "Effects of Frequent Ultrasound During Pregnancy: A Randomised Controlled Trial," *The Lancet* 342, no. 8876 (October 9, 1993): 887–891, accessed at <http://www.ncbi.nlm.nih.gov/pubmed/8105165>.
  - 31 *Ironically, intrauterine growth restriction is*: For a more extended discussion of this study, see Marsden Wagner, "Ultrasound: More Harm Than Good?" *Midwifery Today*, no. 50 (Summer 1999), accessed at <http://www.midwiferytoday.com/articles/ultrasoundwagner.asp>. When the lead author of the 1993 *Lancet* study followed up to test the children's intelligence at eight years of age, he and his team did not find evidence of long-term neurological damage. However, "Reassurances provided by our results do not lessen our need to undertake further studies of potential bio-effects of prenatal ultrasound scans," the authors write. ". . . In view of the widespread and liberal use of this technology we are responsible for ensuring the safety of its use. Uncertainty remains about several potential issues . . ." See John P. Newnham et al., "Effects of Repeated Prenatal Ultrasound Examinations on Childhood Outcome Up to 8 Years of Age: Follow-up of a Randomised Controlled Trial," *Lancet* 364 (December 2004): 2038–2044, <http://www.slredultrasound.com/Filesandpictures/Risk3.pdf>.
  - 31 *did not reveal lasting neurological damage*: Newnham, "Effects of Repeated Prenatal Ultrasound Examinations on Childhood Outcome Up to 8 Years of Age: Follow-up of a Randomised Controlled Trial."
  - 31 *experience long-term developmental delays*: Y. Leitner et al., "Six-Year Follow-up of Children with Intrauterine Growth Retardation: Long-Term, Prospective Study," *Journal of Child Neurology* 15, no. 12 (December 2000): 781–786.
  - 31 *prenatal exposure to ultrasound waves changed*: Pasko Rakic et al., "Prenatal Exposure to Ultrasound Waves Impacts Neuronal Migration in Mice," *PNAS* 103, no. 34 (August 2006): 12903–12910.
  - 32 "We should be using the same care with ultrasound as with X-rays": "Ultrasound Effects on Fetal Brains Questioned," *RSNA News* 16, no. 11 (November 2006): 8, accessed at <http://www.rsna.org/uploadedFiles/RSNA/Content/News/nov2006.pdf>.
  - 32 *Parkinson's disease*: Parkinson's disease occurs when the nerve cells in the brain that make dopamine, which is used to control muscle movement, are destroyed. Without dopamine, the nerve cells in the substantia nigra can't send messages properly, leading to abnormal motor (tremors, rigidity) and nonmotor (mood, sleep disturbances) features, which worsen over time. See Stanley Fahn and Serge Przedborski, "Parkinson Disease," in *Merritt's Neurology*,

- 12th ed., edited by Lewis P. Rowland and Timothy A. Pedley (Philadelphia: Lippincott, Williams & Wilkins, 2010), 751–769.
- 32 *Alzheimer's*: According to the Alzheimer's Foundation of America, "Alzheimer's disease is a progressive, degenerative disorder that attacks the brain's nerve cells, or neurons, resulting in loss of memory, thinking and language skills, and behavioral changes. These neurons, which produce the brain chemical, or neurotransmitter, acetylcholine, break connections with other nerve cells and ultimately die. For example, short-term memory fails when Alzheimer's disease first destroys nerve cells in the hippocampus, and language skills and judgment decline when neurons die in the cerebral cortex."
- M. F. Casanova et al., "Clinicopathological Correlates of Behavioral and Psychological Symptoms of Dementia," *Acta Neuropathologica* 122, no. 2 (August 2011): 117–135, accessed at <http://www.ncbi.nlm.nih.gov/pubmed/21455688>.
- 32 *all the neurons in the line*: These findings are described in Mountcastle's two seminal papers: V. B. Mountcastle et al., "Response Properties of Neurons of Cat's Somatic Sensory Cortex to Peripheral Stimuli," *Journal of Neurophysiology* 20, no. 4 (July 1957): 374–407; and V. B. Mountcastle, "Modality and Topographic Properties of Single Neurons of Cat's Somatic Sensory Cortex," *Journal of Neurophysiology* 20, no. 4 (July 1957): 408–434.
- 32 *"minicolumns"*: "Mini" because they are microscopic (they span a tiny amount of tissue too small to see with the naked eye, 25–60 microns) and "columns" because the neurons seemed stacked upon each other.
- 32 *higher cognitive functions*: M. F. Casanova and C. Tillquist, "Encephalization, Emergent Properties, and Psychiatry: A Minicolumnar Perspective," *The Neuroscientist* 14, no. 1 (February 2008): 101–118.
- 33 *abnormal in the brains of autistic children*: Peter Mundy and Courtney Burnette, "Joint Attention and Neurodevelopmental Models of Autism," *Handbook of Autism and Pervasive Developmental Disorders*, 3rd ed., edited by Fred R. Volkmar et al. (Hoboken, N.J.: John Wiley and Sons, 2005), 650–681.
- 33 *brains of autistic patients*: M. F. Casanova, "Minicolumnar Pathology in Autism," *Neurology* 58, no. 3 (February 12, 2002): 428–432, accessed at <http://www.neurology.org/content/58/3/428>.
- 33 *"You know that a shower curtain"*: Manuel Casanova, M.D., neuroscientist, in an interview with the author, October 27, 2011.
- 33 *known to deform cell membranes*: In the ear, a sound wave makes the tympanic membrane vibrate, which activates mechanisms to allow you to hear. Ultrasound waves work the same way. Casanova says that the energy of sound can put pressure on, and even penetrate, the cell membrane. The cell membrane itself is a liquid formed of fats and therefore easier to penetrate than a solid. When sound puts pressure on the water surrounding the cell, that water can do two things depending on the force of the sound: (1) it can form gas bubbles from the water, which subsequently spin and implode, thereby disrupting the cell membranes of nearby cells; and (2) the water can place mechanical pressure on the cell membrane itself. Both the implosion of bubbles (otherwise known as cavitation) and the force of the water pressure can disrupt the cell membrane, making transient holes. This brief break in the boundaries of the cell can let molecules both in and out, which acutely alter how the cell behaves and which have the potential to alter its behavior long term as well.
- 33 *use of ultrasound to treat bone fractures*: California Department of Health Care Services, "Osteogenesis Stimulator Devices to Accelerate the Healing of Selected Bone Fractures," *Criteria Manual*, chap. 13.2, R-19-99E, accessed at [http://www.dhcs.ca.gov/services/medical/Documents/ManCriteria\\_35\\_OstStimDev.htm](http://www.dhcs.ca.gov/services/medical/Documents/ManCriteria_35_OstStimDev.htm).
- 33 *increases cell division*: N. Doan et al., "In Vitro Effects of Therapeutic Ultrasound on Cell Proliferation, Protein Synthesis, and Cytokine Production by Human Fibroblasts, Osteoblasts, and Monocytes," *Journal of Oral and Maxillofacial Surgery* 57, no. 4 (April 1999): 409–419.
- 33 *Prolonged or inappropriate ultrasound exposure*: E. L. Williams and M. F. Casanova, "Potential



- Teratogenic Effects of Ultrasound on Corticogenesis: Implications for Autism,” *Medical Hypotheses* 75, no. 1 (July 2010): 53–58.
- 34 *High-risk women who receive multiple ultrasound*: Pregnancies deemed high-risk due to diabetes, hypertension, and obesity have all shown to be at higher risk of autism: see <http://www.webmd.com/baby/news/20110511/diabetes-hypertension-obesity-linked-to-autism>. Women of advanced maternal age—also considered high-risk—have a greater tendency to have autistic children: see Janie F. Shelton, “Independent and Dependent Contributions of Advanced Maternal and Paternal Ages to Autism Risk,” *Autism Research* 3, no. 1 (February 2010): 30–39, accessed at <http://onlinelibrary.wiley.com/doi/10.1002/aur.116/abstract>. And women carrying multiples, who receive an average of six scans per pregnancy, are also at higher risk: see C. Betancur et al., “Increased Rate of Twins Among Affected Sibling Pairs with Autism,” *American Journal of Human Genetics* 70, no. 5 (May 2002): 1381–1383, accessed at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC447617/?tool=pubmed>.
- 34 *Autism is much more common among educated*: Maureen S. Durkin et al., “Socioeconomic Inequality in the Prevalence of Autism Spectrum Disorder: Evidence from a U.S. Cross-Sectional Study,” *PLoS ONE* 5, no. 7 (2010): accessed at <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0011551>.
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- L. A. Croen, “Descriptive Epidemiology of Autism in a California Population: Who Is at Risk?” *Journal of Autism and Developmental Disorders* 32, no. 3 (June 2002): 217–224.
- Simon Baron-Cohen, “Does Autism Occur More Often in Families of Physicists, Engineers, and Mathematicians?” *Autism* 2, no. 3 (September 1998): 296–301.
- 34 *In Somalia, autism is virtually unheard of*: Minnesota Department of Health, “Autism and the Somali Community—Report of the Study Fact Sheet,” 2008, accessed at <http://www.health.state.mn.us/omh/projects/autism/reportfs090331.cfm>.
- David Kirby, “Minneapolis and the Somali Autism Riddle,” November 14, 2008, accessed at [http://www.huffingtonpost.com/david-kirby/minneapolis-and-the-somal\\_b\\_143967.html](http://www.huffingtonpost.com/david-kirby/minneapolis-and-the-somal_b_143967.html).
- M. Barnevik-Olsson, “Prevalence of Autism in Children Born to Somali Parents Living in Sweden: A Brief Report,” *Developmental Medicine and Child Neurology* 50, no. 8 (August 2008): 598–601.
- 34 *Amish, are at lower risk for autism*: Dan Olmsted, “The Age of Autism: The Amish Anomaly,” United Press International, April–May 2005, accessed at <http://www.putchildrenfirst.org/media/e.4.pdf>.
- 34 *the entire population of Finland*: See Population Register Centre at <http://vrk.fi/default.aspx?site=4>.
- 34 *diagnosed with attention disorders*: CDC, “Attention-Deficit/Hyperactivity Disorder: Data and Statistics in the United States,” accessed at <http://www.cdc.gov/ncbddd/adhd/data.html>.
- 34 *one in every eighty-eight children in America*: CDC, “New Data on Autism Spectrum Disorders,” accessed at <http://www.cdc.gov/Features/CountingAutism/>.
- 34 *Norway*: J. Isaksen et al., “Observed Prevalence of Autism Spectrum Disorders in Two Norwegian Counties,” *European Journal of Paediatric Neurology* (February 18, 2012).
- 34 *industrialized nations that are seeing*: F. E. Yazbak, “Autism Seems to Be Increasing Worldwide, if Not in London,” *British Medical Journal* 328, no. 7433 (January 24, 2004): 226–227.
- C. M. Zaroff and S. Y. Uhm, “Prevalence of Autism Spectrum Disorders and Influence of Country Measurement and Ethnicity,” *Social Psychiatry and Psychiatric Epidemiology* 47, no. 3 (March 2012): 395–398.
- 34 *and Japan*: Kishi R et al., “Japanese Women’s Experiences from Pregnancy Through Early Postpartum Period,” *Health Care for Women International* 32, no. 1 (2011): 57–71.
- 35 *No single genetic or environmental factor*: Caroline Rodgers, “Questions About Prenatal Ultrasound and the Alarming Increase in Autism,” *Midwifery Today*, no. 80 (Winter 2006): accessed at <http://www.midwiferytoday.com/articles/ultrasoundrogers.asp>.

- 35 *But all these countries do have one thing in common*: Ibid.
- 35 *"I have spent most of my working life in medical research"*: Varyanna, "Autism Links to Ultrasound and Other Obstetrical Procedures," Banned from Baby Showers (blog), April 30, 2009, accessed at <http://banned-from-baby-showers.blogspot.com/2009/04/autism-links-to-ultrasound-and-other.html>.
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- 36 *miscarriage, mental retardation, and birth defects*: Cunningham, *Williams Obstetrics*, 23rd ed., 915.
- 36 *leukemia and other kinds of childhood cancer*: John D. Boice Jr. and Robert W. Miller, "Childhood and Adult Cancer After Intrauterine Exposure to Ionizing Radiation," *Teratology* 59, no. 4 (April 1999): 227–233. See also T. Sorahan et al., "Childhood Cancer and Paternal Exposure to Ionizing Radiation: A Second Report from the Oxford Survey of Childhood Cancers," *American Journal of Industrial Medicine* 28, no. 1 (July 1995): 71–78.
- 37 *"We were super excited when"*: This and subsequent quotations: Lisa Nguyen, parent, in an interview with the author, April 9, 2012.
- 37 *"We never limit the number of guests you can bring"*: Before the Stork 4D, <http://www.beforethestork4d.com/>.
- 37 *Fetal Fotos has branches*: Fetal Fotos, <http://www.fetalfotosusa.com/location.aspx?i=34>.
- 38 *"the person performing the scan may not be adequately trained"*: Sheiner, Shoham-Vardi, Abramowicz, "What Do Clinical Users Know Regarding Safety of Ultrasound During Pregnancy?"
- 38 *the fetus is often being exposed to sound waves*: U.S. Food and Drug Administration, "Avoid Fetal 'Keepsake' Images, Heartbeat Monitors," Consumer Update, March 24, 2008, accessed on September 28, 2011, at <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm095508.htm>.
- 38 *The long-term effects of tissue heating*: Ibid.
- 38 *"The baby looked like it was in pain"*: Danielle Driscoll, parent, in an interview with the author, October 26, 2011.
- 39 *ultrasound has not been proven to be effective*: ACOG Practice Bulletin Number 101, "Ultrasonography in Pregnancy," *Obstetrics & Gynecology* 113, no. 2, part 1 (February 2009): 451–461.
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### Chapter 3 Emerging Expenses: The Real Cost of Childbirth

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- 48 *as late as 1974*: A certified nurse midwife practicing in Atlanta saw Twilight Sleep drugs being administered to every patient when she was doing her training in 1974. As she described to investigative journalist Jessica Mitford, “I can recall we would have hordes of laboring women—the doctors would knock them out . . . with scopolamine, an amnesia drug, heavy-duty narcotics, and sedatives. The women would be thrashing about in bed and yelling—but totally unaware of any of this. You had to put the rails up to keep them safe . . . those women were left alone in there for hours. They were drugged up and knocked out. And the babies were often born unconscious themselves. You’d have to give them drugs to reverse the narcotics the mother had, and they’d stay sleepy for days.” Mitford, *The American Way of Birth*, 56–57.
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toring with intermittent listening to the baby's heartbeat confirmed ACOG's earlier findings. The reviewers discovered that though continuous monitoring was found to be associated with a reduction in already rare neonatal seizures, electronic fetal monitoring made no difference in the number of babies who died during or shortly after birth, or in the incidences of cerebral palsy. But fetal monitoring did make a significant difference in *how* a baby was born: continuous monitoring was associated with a significant increase in Caesarean section and instrumental vaginal births.

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- 67 *almost five times more likely*: The maternal death rate in Iceland in 2008 was 5 per 100,000 live births, according to the CIA. In the United States it was 24 per 100,000 live births in the same year. (See CIA, *World Factbook*, "Country Comparison: Maternal Mortality Rate.") However, according to the meticulous record keeping done by the Icelandic government, there were no maternal deaths in Iceland in 2008. (Directorate of Health Annual Report, 2008, accessed at <http://www.landspitali.is/lisalib/getfile.aspx?itemid=24179> in chapter xvii, page 25.) Regardless of which statistics are correct, it is much safer to give birth in Iceland than in America, and this has been the case for at least the past twenty years.
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- 68 *Lawsuits . . . are not nearly as common*: Ibid.
- 68 *a matter of public record*: Ibid.
- 68 *14.6 percent*: The most-up-to-date health statistics in Iceland, made available by the Directorate of Health, can be found at <http://landlaeknir.is/Heilbrigdistolfraedi/Faedingar>.
- 68 *32.8 percent*: B. E. Hamilton, J. A. Martin, S. J. Ventura, "Births: Preliminary Data for 2010," *National Vital Statistics Reports* 60, no. 2 (2011): 1-25. Available at [www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60\\_02.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_02.pdf).
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- 68 *At the largest hospital in the country*: Helga Sigurðardóttir, head midwife, post- and prepartum, Landspítali, in an interview with the author, September 12, 2011.



- 69 *virtually the same*: In the year 2009, 5,015 infants were born in Iceland, of whom 21 were stillborn, 4 died in the first week after birth, and 5 died from day 8 to day 365. In the year 2010, 4,903 infants were born in Iceland, of whom 17 were stillborn, 5 died in the first week after birth, and 5 died from day 8 to day 365. This is summarized in papers from Landspítali <http://www.landspitali.is/gagnasafn?branch=4810.40> (year 2003–2010) and the Directorate of Health <http://landlaeknir.is/Heilbrigdistolfraedi/Faedingar> (for the year 2010).
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- 70 *Hildur, however, does not champion unmedicated birth*: Hildur Harðardóttir, M.D., head of obstetrics, Landspítali, email communication with the author, November 15, 2011.
- 70 *a midwife in Selfoss*: Selfoss is a small town located east of Reykjavik.
- 70 *“Doctors-in-training train with midwives”*: Dagný Zoega, midwife, in discussion with the author, September 6, 2011.
- 70 *“after her birth ended disappointingly in a C-section”*: Anonymous parent, in discussion with the author, September 5, 2011.
- 71 *birthed her second baby at home*: Emma Swift, midwife, in an interview with the author, August 15, 2011.
- 71 *meet face-to-face with the midwife or obstetrician*: Guðrún Eggertsdóttir, head midwife, labor ward, Landspítali, in an interview with the author, September 12, 2011.
- 71 *“We are human. We make mistakes”*: Guðrún Eggertsdóttir, head midwife, labor ward, Landspítali, in an interview with the author, September 12, 2011.
- 71 *Average charge for C-section*: Ryan Ramos, M.S., M.A., et al., *Complications of Pregnancy and Childbirth in Orange County* (Santa Ana, Calif.: Orange County Health Care Agency, August 2011), accessed at [http://www.ochealthinfo.com/docs/admin/ComplicationsPregnancyChildbirth\\_OC.pdf](http://www.ochealthinfo.com/docs/admin/ComplicationsPregnancyChildbirth_OC.pdf).
- 71 *Average charge for vaginal birth in a hospital*: Ibid.
- 71 *Average cost of homebirth in Southern California*: Homebirth midwives charge between \$2,000–\$7,000 for all prenatal care and the delivery, depending on the state. The average is about \$3,000. In our area, a homebirth midwife would charge between \$500 and \$1,000 to attend the birth and provide postpartum care.
- 71 *Average time to deliver a baby vaginally in hospital*: <http://www.mountsinai.org/patient-care/health-library/treatments-and-procedures/labor-and-delivery-vaginal-birth>.
- 71 *Average time to deliver a baby via C-section*: <http://womenshealth.gov/pregnancy/childbirth-beyond/labor-birth.cfm>.
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#### Chapter 4 Cutting Costs: The Business of Cesarean Birth

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## Chapter 5 Perinatal Prices: Profit-Mongering After the Baby Is Born

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## Chapter 6 Foreskins for Sale: The Business of Circumcision

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## Chapter 7 Bottled Profits: How Formula Manufacturers Manipulate Moms

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- 163 *Amount donated by Abbott*: Numbers calculated for 2004–2012 from the AAP’s “Honor Roll of Giving,” published each September in the *AAP News*.
- 163 *Formula industry donations to the AAP*: Ibid.
- 163 *Net profits of Abbott*: *Abbott 2011 Annual Report* (Abbott Park, Ill.: Abbott, 2012), accessed at [http://www.abbott.com/static/content/microsite/annual\\_report/2011/downloads/Abbott\\_AR2011\\_Full.pdf](http://www.abbott.com/static/content/microsite/annual_report/2011/downloads/Abbott_AR2011_Full.pdf).
- 163 *Net profits of Mead Johnson*: *Hitting Our Stride: Mead Johnson Nutrition Annual Report 2011* (Glenview, Ill.: Mead Johnson Nutrition, 2012), accessed at <http://www.annualreports.com/HostedData/AnnualReports/PDF/MJN2011.pdf>.
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- 163 *Cost of formula for an infant for 12 months*: A 23.4-ounce tub of Enfamil premium costs around \$26. Each tub has twenty-one servings (one serving equals one bottle). If a baby has an average of five bottles a day, then one tub will last around four days. There are ninety-one four-day segments in a year. Ninety-one times twenty-six equals \$2,366.
- 163 *Maria*: As told to the author by Maria on June 2, 2011.

## Chapter 8 Diaper Deals: How Corporate Profits Shape the Way We Potty

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- 168 *“I began to realize if you allow”*: T. Berry Brazelton, M.D., pediatrician and founder, Child Development Unit, Boston Children’s Hospital, in an interview with the author, December 13, 2010.
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- 169 *replace the cellulose in the diaper’s core*: Gladwell, “Annals of Technology.”
- 169 *in this case superabsorbent synthetic*: Ibid., 132.
- 169 *died of toxic shock syndrome after*: Alecia Swasy, *Soap Opera: The Inside Story of Procter & Gamble* (New York: Touchstone, 1993), 130–131.
- 170 *Despite the fact that the company knew*: Ibid., 133.
- 170 *sixty million sample packets to American households*: Ibid., 134.
- 170 *Procter & Gamble could no longer ignore*: Ibid., 130.
- 170 *their babies’ bottoms were breaking out*: Ibid., 152.
- 170 *making Ultra Pampers with carboxymethylcellulose*: Ibid., 154–155.
- 171 *“Pediatricians are most valued”*: Procter & Gamble, “Benchmark Survey January 1998. Wave II Survey July 1998,” Brazelton Papers, Box 78, Folder 162. Francis A. Countway Library of Medicine Center for the History of Medicine, Boston.
- 171 *Personable, polite, and enthusiastic*, *Brazelton*: Brazelton Papers. Countway Library of Medicine, Boston.
- 171 *“I had to watch them”*: This and subsequent quotations: T. Berry Brazelton, M.D., pediatrician and author, in an interview with the author, December 13, 2010.
- 172 *Brazelton graduated from Princeton*: T. Berry Brazelton, M.D., curriculum vitae, prepared May 2010. Courtesy of Suzanne Otcasek, executive assistant to T. Berry Brazelton, Brazelton Touchpoints Center, Boston.
- 172 *He wrote three more books*: Ibid.
- 172 *“Our market capitalization”*: “Purpose & People: The Power of Purpose,” Procter & Gamble, accessed on July 19, 2011, at [http://www.pg.com/en\\_US/company/purpose\\_people/index.shtml](http://www.pg.com/en_US/company/purpose_people/index.shtml).
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- 172 *“a fairly blatant conflict of interest”*: As quoted in Goode, “Two Experts Do Battle Over Potty Training.”
- 172 *“This child and all the others”*: Beverly Beckham, “Flush Harvard Baby Doc’s Diaper Pitch,” *Boston Herald*, January 15, 1999.
- 172 *From 1983 until the last one*: According to the show’s producer, there were 221 episodes of *What Every Baby Knows* plus several one-hour specials and 26 episodes of *Brazelton on Parenting*, for a total of more than 247 episodes. They started producing the shows in 1983 and mastered the last one in May 2000.
- 173 *“During the 1980s you had”*: Henry O’Karma, producer and founder, New Screen Concepts, in an interview with the author, July 18, 2011.
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- 173 *“Procter & Gamble came to me”*: T. Berry Brazelton, M.D., pediatrician and founder, Child

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- 173 *Brazelton worried that accepting*: This and subsequent quotations: T. Berry Brazelton, M.D., in an interview with the author, December 13, 2010.
- 174 "I don't like that": When my research assistant followed up with Brazelton's executive assistant, Suzanne Otcasek, via email, to ensure that what I had written was accurate, Suzanne responded on Brazelton's behalf that the way I framed our conversation, "gives the impression that he holds himself to a more lenient standard than the one to which he holds other physicians. His position is that physicians need detailed knowledge about whatever they recommend, and their recommendations should never be motivated or influenced by their own financial interests. Again, the services for which Procter & Gamble paid Dr. Brazelton allowed him to express his carefully researched conclusions that he had arrived at long before engaging with that company and that did not change in any way as a result of that engagement." (Suzanne Otcasek, executive assistant to Dr. T. Berry Brazelton, in email communication with Melissa Chianta, July 13, 2012.)
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- 174 *One child who experienced social ostracism*: Brigid Schulte, "Girl's Suspension a Sign of the Times for Potty Training," *Washington Post*, January 30, 2011, accessed at <http://www.washingtonpost.com/wp-dyn/content/article/2011/01/29/AR2011012904520.html>.
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- 178 "We don't give away Pampers": This and subsequent quotations: Kai Abelkis, sustainability coordinator, Boulder Community Foothills Hospital, in an interview with the author, January 27, 2010. A version of this discussion about the environmental harm of plastic diapers originally appeared in *Mothering* magazine.
- 179 "I know toddlers": Shawna Cummings, parent, in an interview with the author, November 23, 2009.
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- 184 *In Niger . . . plastic diapers are so uncommon*: I lived in Niger, West Africa, in 1992–1993 and again in 2006–2007.

- 184 *A traveler to Ghana, Togo, Benin*: These are all countries that I have visited and this is an experience I have had firsthand.
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- 186 *“I began to realize”*: Ibid.
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- 187 *DiaperFreeBaby*: In 2011 DiaperFreeBaby had mentors—moms who help other women interested in learning EC—in more than thirty-five states and eleven countries. “Connect Online: About DiaperFreeBaby,” updated February 22, 2011, accessed at <http://www.diaperfreebaby.org/aboutdfb.htm>.
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- 189 *Cost of cloth diapers*: Twenty-four diapers times \$20 per diaper. Many cloth diapers cost much less but many families buy more than two dozen diapers.
- 189 *Errol Matherne*: Errol Matherne, parent, as told to the author, February 10, 2012.

## Chapter 9 Boost Your Bottom Line: Vaccinating for Health or Profit?

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- 192 *At four months of age a baby receives*: Ibid.
- 192 *children receive no fewer than*: Department of Health and Human Services, Centers for Disease Control and Prevention, “Recommended Immunization Schedules for Persons Aged 0 Through 18 Years, United States, 2012,” <http://www.cdc.gov/vaccines/recs/schedules/downloads/child/0-18yrs-11x17-fold-pr.pdf>.
- 192 *more than four times as many injections*: According to Barbara Loe Fisher, executive director of the National Vaccine Information Center (NVIC), in the late 1970s, most children received five DPT shots (fifteen doses of three vaccines) and five doses of oral polio virus at two, four, six, and eighteen months of age, and between four and six years, plus one dose of MMR

- between twelve and fifteen months. More information about vaccine licensure dates can be found at [www.immunize.org/timeline](http://www.immunize.org/timeline), a website operated by the Immunization Action Coalition and funded by the CDC. See also Paul A. Offit, M.D., and Louis M. Bell, M.D., *Vaccines: What You Should Know* (Hoboken, N.J.: John Wiley & Sons, 2003), 99.
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- 192 *“I don’t know any rational person”*: Centers for Disease Control and Prevention community meeting, Ashland Middle School, Ashland, Oregon (January 10, 2009).
- 193 *Martin G. Myers, M.D.*: Martin G. Myers and Diego Pineda, *Do Vaccines Cause That?! A Guide for Evaluating Vaccine Safety Concern* (Galveston, Tex.: Immunizations for Public Health, 2008).
- 193 *98 percent of the world*: I got this number by the following calculation: The U.S. State Department recognizes 195 independent countries in the world. Six of them, according to the WHO, still have some cases of wild polio. U.S. Department of State, “Independent States in the World,” Fact Sheet, Bureau of Intelligence and Research, January 3, 2012, accessed at <http://www.state.gov/s/inr/rls/4250.htm>.
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- 194 *“How can these vaccinations”*: Michele Pereira, registered nurse, in an interview with the author, June 28, 2012.
- 195 *Hepatitis B is not common*: “Vital Hepatitis Statistics & Surveillance: Table 3.1 Reported Cases of Acute, Hepatitis B, by State—United States, 2006–2010,” Centers for Disease Control and Prevention, page last updated June 6, 2012, last accessed at <http://www.cdc.gov/hepatitis/Statistics/2010Surveillance/Table3.1.htm>.
- 196 *can also contract the disease*: “Hepatitis B FAQs for Health Professionals,” Centers for Disease Control and Prevention, page last updated January 31, 2012, accessed at <http://www.cdc.gov/hepatitis/HBV/HBVfaq.htm#overview>.
- 196 *their infant has little, if any, chance of getting the disease*: The only plausible way an American infant in a hepatitis B–negative home could get it is if he needed a blood transfusion and was exposed to hepatitis B–tainted blood. While this can be common in developing countries that lack strict controls, donated blood in the United States is carefully screened and is tainted with hepatitis B only 1 in every 65,000 to 500,000 blood units (Robert W. Sears, *The Vaccine Book: Making the Right Decision for Your Child*, Completely Revised and Updated [New York: Little, Brown & Company, 2007], 47). An older child could theoretically contract the disease from another child if he were bitten or had sexual contact.



- Only thirty infants a year become infected with hepatitis B, with virtually all of these cases contracted from their mothers. Sears, *The Vaccine Book*, 50.
- 196 “*The hepatitis B vaccine*”: This and subsequent quotations: Larry Palevsky, M.D., pediatrician, in personal communication with the author, March 1, 2011.
- 196 “*If I’m a rational person*”: The hepatitis B vaccine was licensed in 1981 and recommended for people in known high-risk groups. In 1991 the recommendation was extended to include all infants.
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