



Why the Poop

The Message in the Diaper

Why would anyone want to talk about baby poop? To many, it's offensive and something to be whisked into the trash or toilet without a second thought. It turns out, however, that this stuff coming out of otherwise adorable little bundles can provide us with worlds of information. Baby poop is a window into the functioning of the most vital systems in a child's body. We don't get baby's words or explanations: We get smiles or tears, and we get poop.

Yes—poop. Parents spend inordinate amounts of time worrying about what goes into their babies. All the while, what shows up in baby's diapers provides tremendous clues about baby's digestion, immune functioning, and overall wellness. The organs that house and produce this stuff are in great control of baby's immunity and nutrient absorption. The health of the digestive system also has tremendous impact on baby's lifelong risks of a wide variety of disorders from diabetes to heart disease to inflammatory bowel diseases. The symptoms that go along with disordered poops help to complete a highly informative picture—not only about what health issues may be presently going on inside baby—but about what future health risks may be threatening. A proactive response to such cues may serve to not only bring greater comfort to baby—and more sleep to those around her—but also to potentially improve the child's lifelong health.

Baby's Vulnerable Gut

The gastrointestinal (GI) tract is the chief means of contact between baby and the outside world. It not only receives food but is bombarded constantly with swallowed microbes from the world around. Because of this vulnerable position, the GI system comprises nearly 70% of the body's own immune system. There's much more, though, to the digestive system's immune forces.

You think of your baby as one organism, but actually trillions of organisms are intricately involved in protecting your child. Thousands of bacterial species inhabit baby's intestines, and they all play a central role in baby's ability to fight infections. Many of these bacteria are also vital to baby's digestion and absorption of nutrients. Some tough microorganisms are crucial for keeping the most dangerous bacteria in check.

Imbalances in baby's flora can lead to lack of tolerance to foods (food allergies), development of GI distresses and eventually GI diseases, and initiation

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of autoimmune diseases involving other parts of baby's body—such as asthma, diabetes, and arthritis. Certain bacteria, which result from poor gut health, play roles in causing obesity, which can lead to heart disease and can further increase baby's risk of developing health-impairing diabetes in later decades.

Floral balance has recently been discovered to even play a part in the development of autism—which has escalated to one in every

68 U.S. children. Food reactions have certain brain effects as well. These reactions often result from, and possibly contribute to, the development of disorders on the autism spectrum.

Even though allergies, autism, bowel diseases, and other autoimmune maladies all have genetic components, genetics are becoming less and less important to the development of these disorders that are growing at exploding rates. Early drug exposures—especially antibiotics, interferences in the birth process and in natural feeding, and a slew of other factors, from pesticides to plasticizers, have all been shown to play roles in the dramatically increased risks of chronic illnesses

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in our children and the adults they will become. The modern child's restricted contact with dirt and sunshine also contributes to these consequences as does regular use of highly sterilized water.

In this book, I will present how the seeds for all of these developments are planted in infancy—the most vulnerable and formative period—being driven chiefly by interruptions in intestinal health. I demonstrate that just because events may not have all gone entirely as planned, there are ways to help a child's gut recover and to reduce his future health risks.

Gut Beginnings

The mode of baby's birth—whether vaginal or surgical—and the place of birth—whether home, birth center, or hospital—have been found to yield tremendous impact on the establishment of baby's flora. Strongly measurable differences in long-term disease risks have been correlated to children's floral beginnings.



Newborns have little immune system functioning of their own. Breastmilk regularly coats the digestive track and provides a large portion of an infant's protection, in part by supporting a highly protective flora. Breastmilk also supplies factors that automatically wipe out various unwanted microbes and, through the broncho-entero-mammary pathway, supplies antibodies that are specifically tailored to defend against whatever microbes are currently challenging the child. Extra gut healing efforts can help mitigate the greater infection risks posed if infant formula has been introduced early.

In case of a preterm birth, it is highly valuable for expectant parents to learn about issues over which they may have some influence. Premature infants can face many critical health challenges. Most challenges have to do with feeding and with the digestive system. Even though premature infants are cared for in the hospital, with experienced medical staff performing life-saving measures, parents can take steps to increase their child's chances for optimal outcome. The value of human milk is unmatched in the health and development of premature infants, although a child born early can pose many challenges to breastfeeding. Some of the most valuable options are not standard practice in most preemie care units.

Problematic Poop

Orange, lime, black, purple, red, white; watery, seedy, mucousy, runny, pasty, hard—there's a huge spectrum of possible findings in babies' diapers. Before we can begin to talk about abnormal poop, we need to know what normal poop is. Infant stools are surprisingly different in appearance and frequency from what adults are used to, and changes in poop habits can be alarming to parents. Yet, these are the important signals that, if properly read, tell what's going on inside a child's body. Observed changes are cues to seek answers and to respond with good attention. *Baby Poop* helps parents to ascertain the options that are available for response to observed stool changes—from a need to alter baby's diet to a need to seek urgent medical care.

Many pediatricians are uninterested in most stool color or consistency changes. Generally, they'll assume these are from either a change in diet or a little stomach bug and usually this is the case. Yet, baby poop and a few other symptoms are all we have to go by in terms of determining the presence or absence of some disorder.

Diarrhea is the body's means of rushing anything unwanted quickly out of the body. This is particularly important in the case of food or chemical poisoning. It helps to rid a child of bacterial or viral infection as well. Our primary goal is not to stop the diarrhea; rather, our goal is to determine the cause and decide how best to prevent or treat it. Baby's doctor needs to be involved when baby is sick with infectious diarrhea or when the cause is not known, but it's still the parents' job to continue baby's care at home. Besides GI infections, a great deal of diarrhea in children results from hypersensitivity reactions to foods. Regardless of the cause, any significant amount of diarrhea can lead to dangerous dehydration. *Baby Poop* provides information for dealing with the home care of children who have diarrhea from various causes and for preventing future cases.

Constipation can quickly turn into a serious problem, or can become a chronic problem for years. On the other hand, infants can go 10 days or more without presenting any poop and still not be constipated. This is rather common, but is it healthy? Baby will benefit greatly when caretakers vigilantly note the frequency with which a slow pooper moves his bowels and the consistency in which the poop arrives. Once problems are detected, early healing efforts can reduce lifelong stool challenges.

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Food allergy and intolerance join the ranks of other rapidly growing disorders in children and are often the first signs of future GI ailments and autoimmune diseases. Food reactions are largely the cause of early colic, reflux, constipation, diarrhea, sleeplessness, rashes, and many more symptoms. Outside of genetic tendencies, which are becoming less and less necessary for food allergy development, challenges to infant gut health are at the root of such food reactions.

Industrialization and Disease

Infectious disease rates are high in many less developed parts of the world, with high infant and child mortality rates. Infectious diarrhea is second only to pneumonia as a cause of death among children in developing nations. Appropriate sanitation and hygiene, adequate food and financial resources, and available medical care bring infectious disease rates far lower in industrialized nations—but industrialization, medicine, and money are not the end-all answers to optimal child survival. Even though the United States ranks Number 1 in health expenditures—with one third more money spent per person than the next highest country—55 nations rank better than the United States in infant survival. In terms of child survival rates before the age of five, 44 countries

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are better than the United States. The United States has the 10th highest rate of cesarean sections, at one third of all births. Although occasionally valuable, cesarean births can cause lasting impairments in children's floral balance, which is reflected in their overall health. Maybe this high cesarean rate saves more mothers? No. Forty-eight nations have better maternal survival rates

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than the United States, including some developing or recently developed countries such as Serbia, Bulgaria, and Kuwait—and the U.S. maternal death rate has recently been rising—a 50% increase from 1990 to 2013. The United States is the only industrialized nation with increasing maternal mortality, and anesthesia complications are a major cause of this increase.

Clearly there's more that can be done to protect our children and mothers. *Baby Poop* brings answers from science and medical studies and from the collective wisdoms of mothers, midwives, lactation consultants, and other infant care specialists—answers that are shown to optimize children's health.

Bacterial staph infections have long been an enemy in hospital patient care. Today's medical practices have not only created a super-strain of *Staphylococcus* that resists antibiotic drugs but also have altered the floral balance of whole populations, which has allowed this new strain—known as MRSA—to flourish in communities throughout Europe and the Americas. In 2011, the number of U.S. MRSA deaths per citizen was more than triple the rate of polio deaths during the peak of the polio epidemic.

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Although MRSA commonly affects the skin and other areas, its chief reservoir is the gut, including the intestines of a large percentage of young children.

Even more recently, a bacterial GI infection, *Clostridium difficile*, has actually surpassed MRSA in its devastating impact—caused again by excess antibiotic use and allowed to flourish due to many other gut-damaging practices. An especially toxic new strain of *C. diff* is appearing frequently in young children, both in hospitals and in the community.

Dangerous strains of *E. coli* are currently making inroads as well—especially affecting premature infants. This occurrence is strongly linked to the provision of antibiotics to mothers during labor.

Infectious diseases are far more avoidable than they once were, and lifespans greatly lengthened, yet chronic, chiefly autoimmune illnesses have soared. It's common to blame the growing predominance of chronic diseases on our longer lifespans, but these diseases are appearing at ever younger ages. The percentage of children suffering from asthma has increased to 10%, up from 2% in the 1960s. Childhood obesity tripled between 1980 and 2002, now at 17%. Nearly 25% of children suffer from food hypersensitivities, up from negligible levels 50 years before. Lastly, 2 in 1,000 U.S. children have already developed diabetes by the age of nineteen, 5 times as many as in 1935.

Looking far down the road in a child's life—where there's chronic inflammation, there's a great risk of cancer. Colon and other digestive system cancers are strongly linked to the kinds of early GI assaults and maladies that are described throughout this book.

To help prevent your child from joining any of these statistics, gut healing and continued gut health efforts are worthwhile, especially if your child expresses any of the symptoms of concern discussed in this book, has been exposed early to antibiotic drugs, has had early exposure to formula feeding, or has experienced multiple GI infections.

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Industrialized Nutrition

Another chapter in the story of industrialization's progression from widespread infectious diseases to a predominance of chronic illnesses is the tale of advancement from a low food supply to an excess of poorly nourishing and even toxic foods.

Economics, and later, bad science, led to vitamin D-filled (when animals lived outdoors) butter and lard being replaced with toxic trans fats from hydrogenated vegetable oils. Well known today for their serious heart-damaging effects, chronic inflammation caused by consumption of trans fats begins where they enter the body: the gut. Although the life-threatening dangers were recognized in the 70s, it wasn't until 2005 that U.S. federal guidelines weakly recommended against the consumption of trans fats.

Fish and liver consumption dropped throughout the 1900s, leaving everyone deficient in the important omega-3 fatty acids, DHA and EPA. This deficiency

has largely contributed to the development of food allergies and to chronic inflammation in general. For unknown reasons, “meat by-products” became vil-lainized and their consumption also decreased. As a result, consumption of the omega-3 fatty acids, which the by-products contain, dropped even more. Also found in these joint and organ tissues are joint-building and intestinal-healing factors such as glucosamine, hyaluronic acid, MSM, and chondroitin sulfate. These too vanished from our diets—these being already quite reduced when bone broths disappeared from common consumption during the 1800s.

Infant Guts in the Industrialized World

Baby Poop is about child health dilemmas faced in industrialized nations. These are distinctly different from the challenges in less developed countries as most of these challenges are caused directly by modernization. Below are some of the important issues that will be discussed in this book:

- 15 to 25% of U.S. babies suffer from colic and/or reflux.

Today, nearly the same number of babies who were once labeled with colic are now diagnosed with reflux—concordant with the emergence of expensive new reflux drugs. Other symptoms such as green stools, diarrhea, or constipation often go along with colic and spitting up, and they help to determine the true root causes of baby’s discomfort.

- 4 to 8% of infants receive the newer, expensive reflux medicines today.

These drugs have not been proven to reduce the crying, spitting up, and other symptoms for which they are prescribed, yet they have some concerning side effects. Examining the symptoms and exploring more effective solutions can bring a happier, healthier baby.

- The most common cause of colic, reflux, non-infectious diarrhea, and constipation is food hypersensitivity—whether to formula, solid foods, or to foods in nursing mother’s diet.

Food reactions and other allergies have grown immensely in the industrial-ized world, as a direct result of many modern practices. Finding and avoiding irritating foods and taking other steps to heal the gut not only bring greater comfort to baby but help prevent future diseases.

- 10% of infants who experience colic continue to have colic symptoms past a year.

Even more children continue other GI symptoms from infancy. Contrary to common medical lore, a large portion of babies don’t just “grow out” of colic;

rather, they “grow in” to new symptoms that can haunt them into adulthood when not addressed early.

- 35% of Americans aged 20 years or older today have pre-diabetes.

This autoimmune disease is growing at an alarming rate in industrialized nations, as are other autoimmune diseases. Early gut health is the biggest factor, and efforts that move toward normalizing baby poop are the key to reducing a child’s future health risks.

- Infectious diarrhea accounts for over 1.5 million outpatient visits for U.S. children.

Medications for these infections are seldom much help and often make matters worse. Good monitoring, consistent hydration, and support of the immune system will bring optimal results.

- Frequent, small amounts of soft or watery poops are generally a sign of constipation.

Potty training age is the most common time for a child to develop withholding. This can lead to stool blockage and uncontrollable leaking around the impaction.

- 20 to 30% of young children who have constipation problems continue to have significant constipation challenges into adulthood.

Constipation in young children is highly common, but greatly ignored, even though one simple case of constipation can quickly turn into a serious problem.

- Adults who had been exposed to antibiotics before the age of one are over 5 times more likely to develop irritable bowel syndrome than those with no childhood antibiotic use.

Researchers today are realizing that early antibiotic exposures can have large consequences for the lifelong health of children. These exposures are shown to increase a child’s vulnerability to the later development of any one or combination of the following: inflammatory bowel disease, celiac disease, allergies, autism, diabetes, and obesity.

Healing Baby’s Gut

The good news is that studies with probiotics and other healing measures are revealing that positive impacts can be made on baby’s flora and intestinal health—thereby reducing later risks of many chronic diseases. The first step is to discover and remove any gut-irritating factors.

Baby Poop: Becoming a parent means becoming an expert not only on what goes into your baby but also on what comes out.

These pages will tell you how. I encourage parents to take charge of their own child's health while keeping healthcare professionals in the loop.

This book is designed to assist parents in making choices that are best suited to their own family's needs and priorities—and choices that can make a real difference. I believe that becoming a parent means becoming an expert not only on what goes *into* your baby but also on what comes *out*.