

# Introduction

This book is not about medical advice or medical decisions. Those are strictly between you, the reader, and your physician. This book is about reducing health risks for your child's immune system, and it provides strategies you can use based on the latest scientific research. The information on immune risk provided in this book is our effort to give readers a science-based equivalent of a consumer's report for helping your baby develop a well-balanced immune system.

The truth is that most people don't give much thought to the immune system. The average person understands that when they have an infection or the flu, their immune system is what fights it off and helps them get better. Because of HIV/AIDS, we've all seen what happens when the immune system is severely compromised. But when pollen fills the air and your hayfever acts up, is your immune system the first thing on your mind? How about when you can't get a breath of air, and you reach for your inhaler? Perhaps these common ailments prompt some thought of the immune system. What about when the body turns against itself, as in the case of lupus or type I diabetes? Those illnesses often set off serious concern about immune issues, yet they don't help create better understanding of how the diseases develop. Least understood from the viewpoint of the immune system are conditions like childhood leukemia, multiple sclerosis, chronic fatigue syndrome, sarcoidosis, Parkinson's disease, autism and autism spectrum disorders (ASDs), atherosclerosis and male infertility. Is it really possible for all of these conditions to have an immune component?

If all of the research from the past five to ten years is accurate, the picture that has formed answers that question with a resounding, yes. Not only is the immune system intimately involved in the development of many illnesses, but research has shown that this involvement occurs far earlier than has ever been suspected. A tremendous wealth of data has begun to show that while the baby is still in its mother's womb, at the very period in time when the immune system is developing (across all trimesters), the immune system is the most vulnerable to often permanent, potentially irreversible damage that will affect the child for life.

Why has it taken so long to discover this unsettling reality? The reason is that knowledge about damage to the immune system is relatively new. When the first observations were reported 30 to 35 years ago, the pioneers in the field did the best they could given the level of understanding and technology at that time. They knew that exposure to a toxin during the first three months of pregnancy could completely suppress the immune system and kill the fetus. In fact, up until just a few years ago regulators looked at profound immunosuppression as the principle cause for concern when examining the possible impact chemicals or pharmaceuticals could have on the immune system. Until recently, death due to infection or cancer was the main negative outcome tied to immune system trauma.

However, over the last five years, greatly improved research techniques and technologies have allowed researchers to understand just how intricate, interwoven and finely tuned the immune system really is. We now know: 1) what comprises the immune system, 2) the many different ways it can be damaged, 3) when it begins to develop and 4) many of the developmental stages it goes through while the baby is in utero. Some of these stages will never be duplicated again in the individual's lifetime. Now we're able to see changes that affect the developing immune system yet don't kill the fetus and to track the outcome of these changes over a lifetime. We're beginning to discover how permanent changes in the developing immune system combine with genetic predisposition for illness to create chronic lifelong health challenges. We are learning that there is no safe period during pregnancy to smoke, drink alcohol, be exposed to unsafe levels of pesticides or even to take some medications and herbs.

All too slowly, researchers have developed the wherewithal to detect the harm, track the changes, and witness the breakdown in health or cognitive functions as the child grows older. With this new understanding comes the recognition that the impact of toxic exposures during pregnancy can be compounded over a lifetime. Enter the era of Developmental Immunotoxicology, the era when researchers now understand that certain environmental exposures of the fetus in utero may make it impossible for the child's immune system to mature sufficiently to protect it from the normal immune challenges he/she will face throughout life. Instead, its immune system will often remain frozen in an almost fetal state, acting like a pre-born fetus' immune system in an adult body as it responds to real-world viruses and bacteria. Sometimes it will fight off intruders, but just as likely it will fight against itself. Often, it resides in a highly revved up state as if it's always under attack when no attacker is present, and this creates chronic inflammation throughout the body. Yet, when the individual is exposed to a real virus or bacteria, rather than going into an even higher gear to fight off infection, the immune system shuts down instead, much like your computer when you have opened one too many websites at once. It reacts in entirely unpredictable ways to vaccinations and immunizations causing harm in various parts of the body and to different systems. Sometimes coming in contact again with the toxin that created the damage before birth will cause an unpredictable response. An immune system that was hit by a toxic exposure in the womb is an immune system gone haywire later in life.

Let's take the case of JM as an example. Her mother worked as a proofreader in a publishing company in the 1950's and 60's. In those days, inks were made with heavy metals like lead, mercury, chromium and hexavalent cadmium. Nasty stuff for mom; even nastier for a baby. The proofing room was upstairs from the printing presses, and ventilation in those days carried fumes upward. Plus, mom received wet copy to proof immediately, and a quick return was in order to get the manuscript back to the typesetters so the book could be printed. She was pregnant for several months before finally taking maternity leave.

The pregnancy itself was uneventful and a small daughter was born. Within days, however, problems began to arise. First, an allergy to cow's milk created intense colic for the first six months until solid foods were

introduced. And the child never seemed able to fight off infections. Not only did they come rolling in, colds, flus, strep throat, bronchitis, but many required repeated rounds of increasingly stronger antibiotics.

As the child grew, her health problems did not improve. In fact, her parents and her doctor had to start being very careful about which vaccinations and medications she received. When she was just three or four years old, she had an intense, adverse reaction to the MMR vaccine and came close to being hospitalized. She never did get a tetanus shot, even into adulthood because nobody felt “lucky” enough on any given day that she would react reasonably to it.

JM continued the pattern of “sickliness” as she went through school. She didn’t just get double mumps (in spite of having been vaccinated against it) and chicken pox; she got them one right after another in quick succession. Not a year went by without chronic bronchitis all winter. The continuous use of antibiotics taken repeatedly took a toll, and she was hospitalized near death when only eight because she could no longer keep food or drink down, her gut bacteria had been so destroyed.

Even in her teens and 20s, JM continued to develop new and unusual patterns of illness. Her milk allergy had been mild but by her mid-20s, it was joined by an allergy to beef so severe that even tiny amounts elicited a strong reaction. She was hyper-sensitive to many medications, and her doctors had to be increasingly careful about what they prescribed for her. To her list of year-round allergies she added an allergy to tobacco smoke that nearly made her pass out at the scent of stale smoke on clothing.

She had developed mild fibromyalgia in high school that gradually worsened. By her late 20s, she had irritable bowel syndrome. Twenty years later she would add chronic fatigue syndrome to the list of continuing challenges, and the fibromyalgia worsened to the point that it was now a force to be reckoned with. All of her ailments had a component of uncontrollable inflammation that contributed to bouts of clinical depression and chronic insomnia.

Because of her childhood susceptibility to the strep bacteria and chronic sinus infections, she had become resistant to all but two of the strongest antibiotics. It had been a life of chronic rolling infections and increasingly more devastating illnesses, most of them focused on one

immune challenge after another, challenges it seemed her immune system was not capable of handling appropriately.

This, by the way, is a real case history, though no names will be revealed. While the large number of illnesses may seem unusual and the development of an illness after receiving vaccination against it contradictory, such interrelated health problems are more common than we think (see Chapters 11 and 19).