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From No More Antibiotics

Medicine hasn't always been about drugs

The practice of medicine has changed a great deal through the years, and there have been many different models practiced. It is important to understand these models of medicine to understand how we got to the model we are currently using, the "drug" model.

Hippocrates, a Greek physician who is known as the Father of Medicine, founded what is referred to as the "ecological model" of medicine. Hippocrates was born in 460 BC, and at that time Greeks believed that sickness could be attributed to divine intervention. However, Hippocrates tried to find natural causes for sickness and health. He believed that the body had a natural tendency to heal itself, and if patients could heal themselves, they should take some responsibility for their health. This philosophy was later adopted by Andrew Taylor Still when he founded the Osteopathic profession. (See chapter 6).

In the Dark Ages, however, medicine followed a religious model. During this thousand-year period, people believed that disease resulted from our sins and healing came from certain religious activities. With the advent of the Renaissance, science broke away from the confines of the church, and the door was opened to new scientific methods. In the 1600s, the microscope was invented, changing forever the approach to medicine. The microscope led to the establishment of the "specific etiology" model of medicine, which was based on the germ theory. The specific etiology model reasons that for any disease there is a specific etiology or cause, such as bacteria or viruses. In turn, a specific treatment, such as an antibiotic, kills the bacteria causing the disease. This "magic-bullet" concept is still the dominate medical model today, particular in the United States.

Since the mid-1900s and the discovery of antibiotics, the United States has very strongly supported the "specific etiology" model. It appears to me that the pharmaceutical companies who produce drugs,

including antibiotics exert enormous control and influence over the medical profession. So it should be no surprise that the primary treatment for ear infections is antibiotics.

What Did We Do Before Antibiotics?

Until the beginning of the use of antibiotics in the 1940's, there was no real treatment for ear infections in this country. Putting a hot water bottle on the ear and taking aspirin was about all there was available. Other countries and societies did have treatments though. I will discuss some of these other treatments in later chapters. In this country, not only was there no treatment for ear infections, at the same time there appeared to be fewer ear infections in children. A child who had one ear infection did not necessarily have chronic ear infections as we so often see today. As I have already pointed out, the statistics on the number of children who currently will have one or more ear infections and the cost of medicating them and performing surgery on them is so high it is startling.

What is an ear infection?

I have looked in hundreds of ears and rarely see a truly infected one. I believe ear infections are over diagnosed and over treated. Many doctors look into the ear canal and see a reddish or pink canal or tympanic membrane and diagnose an ear infection. However, if the child is screaming and crying or has a fever when the doctor tries to look into the ear, the ear will be red from the screaming and crying and the fever, not necessarily from an infection. It is easy to look into the ear canal and say the ear is infected if it is a little pink, or if it is red from the child crying. Also the inside of the ear will be red if the outside of the ear is red. So look at the outside part of the ear first. If it is red, the inside will most likely be red too. It does not mean the child has an ear infection. The tympanic membrane (ear drum) may be yellow, not red, in up to half of the cases of ear infections.

When you take your child to the doctor, the doctor has been taught to believe that you came there for a prescription. I have been told many different times in my medical training that you, the patient, wants a prescription when you visit a doctor's office. If you do not get the prescription that you will find another doctor who will give you what you want. Some doctors will diagnose an ear infection in order to justify giving you the prescription the doctor believes you want.

In addition, many parents do not realize that for antibiotics to be effective, they must be

administered against *bacterial* infections. Just because you do not feel good or just because you have an infection, does not mean that antibiotics are the solution. Doctors know this but often do not use this knowledge appropriately. Many doctors are treating ear and respiratory infections with antibiotics without really knowing whether the patient has a bacterial infection that can be effectively treated with antibiotics or if that patient has a viral infection, against which antibiotics will be useless.

Currently, there is no definite laboratory test to determine if a patient actually has an ear infection. In addition, no single therapy for ear infections is universally effective.

English, GM: "Choosing the right therapy for acute otitis media," *The Journal of Respiratory Diseases*, July 1985.

The drug amoxicillin is considered to be the first line drug for the treatment of ear infections. It is also very cost-effective. However, in many cases when the fluid was actually evaluated by puncturing the tympanic membrane, there were no bacteria present.

Puncturing the tympanic membrane is not routinely done, so we do not really know which, if any, bacteria is responsible for the symptoms. However, it has been shown that certain antibiotics are effective against most of the likely bacteria. This is why doctors just write a prescription for amoxicillin when they suspect a child has an ear infection. It's really just a guess though. The doctor is "playing the odds". Some research indicates that amoxicillin may no longer be an effective "first line" antibiotic for ear infections. This would be because of bacterial resistance. If that is the case, the "bugs" have won another round against us.

What if it really is a bacterial infection?

I question the practice of prescribing powerful antibiotics across the board as the first line treatment for ear and respiratory infections in children. Even if the patient has a bacterial infection, does the patient even need an antibiotic treatment or can the infection heal on its own without the use of antibiotics? The answer may surprise you. ***Studies show that 90 percent of all ear infections will heal on their own, without medical treatment.***

In the 1970s, a study in the United States measured the effectiveness of treatment of ear infections with antibiotics. This was a study which evaluated the records of children who were treated

with and without antibiotics from 1950 to 1964. In other words, the researchers obtained charts from 1950-1964 of children who had ear infections during that period of time. Interesting enough, the group that had received antibiotics demonstrated slower healing, and had a significantly higher percentage of recurrences. When antibiotic treatment was started on the first day of diagnosing the ear infection, the frequency of recurrence was almost three times that of the patients who did not use antibiotics at all.

There is no question this study indicated that the sooner a child was given an antibiotic for an ear infection, the longer the infection would last and the more recurrences there would be.

Some might argue that inferior antibiotics were the cause of the study's findings because the antibiotic drugs were not as good 25 years ago as they are now. It is true that the antibiotics of the 1950s and 60s were more limited and did not kill as broad a spectrum of bacteria as the ones we have today. Certainly, we do have access to many different antibiotics now that affect broader spectrums than the ones we had 40 years ago. Could our misuse and abuse of antibiotics actually be the reason that our children are having more infections today? I think it is possible.

A more recent study showed that ear infections had a high rate of spontaneous resolution. More than 90% of children studied were managed successfully without antibiotics. There was no increase in complications either. The group that received antibiotics actually demonstrated slower healing and had a significantly higher percentage of recurrences, just as the 1970 study had shown.

Adverse reactions and side effects of antibiotics

Every parent should know there are some possible adverse affects from using antibiotics. All drugs have side effects and the adverse side effects should be always be weighed against the positive effects. Inappropriate and repeated use of antibiotics can adversely affect the immune system. Over use of antibiotics can result in antibiotic-resistant bacteria. Some people development sensitivities and allergies with repeated exposures to antibiotics. Another side effect of taking antibiotics is that they can change the make-up of your gastrointestinal (GI) tract. The antibiotics kill the good bacteria in your GI tract, while they are killing the bad bacteria that is causing you to be ill. Without this good bacteria you cannot break down foods properly. Digestion may be affected. (See chapter 8)

Studies show that when an antibiotic treatment was started on the first day of the infection, the

frequency of recurrence was 3 times higher in those who used antibiotics than in those who did not use antibiotics. In addition, there has been evidence since 1985 that the use of perforating the tympanic membrane with the insertion of tubes may lead to permanent structural damage of the tympanic membrane. It can lead to atrophy of the ear drum and hearing loss.

A frightening statistic reported by the Centers for Disease Control and Prevention estimates that even though evidence is mounting that antibiotics are not effective against most middle ear infections. Antibiotics may even contribute to recurring infections because they interfere with the body's own immune system. Antibiotics are prescribed 99% of the time when there is not an infection at all but only fluid in the middle ear.

Just In Case Theory

One mother took her child to the pediatrician because he had a low-grade fever and was acting fussy. The pediatrician could find nothing wrong after thoroughly examining the child--ears, throat and nose all looked fine. The doctor even did blood work, and the lab work came out completely normal. Then the pediatrician prescribed an antibiotic "just in case." Just in case of what? This is totally inappropriate. The child could have had a viral infection, not a bacterial infection. An antibiotic will do nothing to help a viral infection. This type of prescription writing has brought us where we are today with antibiotic resistance.

This parent did not fill the prescription because she did not want to use antibiotics inappropriately. She also found a new pediatrician. In this case, since there was no apparent focus for the infection, there was no reason to prescribe antibiotics. This is just a shotgun approach. As physicians we must be more specific in our diagnosis and recommendations. That is why I will do a throat culture before prescribing antibiotics for a sore throat. If the results of the throat culture show no signs of strep or other pathogenic bacteria, then I do not prescribe an antibiotic. Because a strep infection can have serious consequences, an antibiotic is appropriate. A throat culture should be done first to make sure strep is present. A physician cannot determine that a person has a strep infection simply from looking. Some of the worst looking infections I have seen were not strep and some of the mildest have actually been strep. A throat culture must be done to know the difference. In today's

"Managed Care" environment it is cheaper to just give the patient a prescription for an antibiotic than do the throat culture. However, cheaper medicine does not often equate with good medicine.

My approach in medicine involves trying to find the underlying cause of a health problem and fix that cause whenever possible. No matter what the problem is, using drugs usually means just treating the symptoms, not the underlying cause of those symptoms. If we can figure out what is underlying the ear and respiratory infections we can usually treat it. Then the patient no longer needs to take the medications to control the symptoms, because they no longer have the symptoms.

In order to encourage a more conservative use of antibiotic therapy, it is important that we as physicians offer patients another treatment for infections, a treatment that will not place our health in jeopardy. This book contains such a treatment.

So Why Do Doctors Continue To Prescribe Antibiotics?

There are several reasons why doctors continue to prescribe antibiotics even though antibiotics are counter-indicated for most respiratory and ear infections. As I explained, drugs are the mainstay of the medical profession. Doctors are trained to give drugs. Most of them do not know other treatments or modalities. So they keep doing what they know, even when research indicates otherwise.

Many physicians feel pressured to do something. As physicians, we are often told that our patients want and expect to receive a prescription when they come to our offices. We are told if we do not give them a prescription, that they will go find another doctor, one who will prescribe medication. After all, the public has been brainwashed to believe that drugs are the answers to all our ills too. The drug companies are now marketing directly to the public through television.

To test patient's attitudes about prescription drugs, in a 1997 open trial, doctors followed one of three strategies for patients diagnosed with sore throats: (1) a 10-day cycle of antibiotics, (2) a delayed prescription (a 10-day cycle of antibiotics if symptoms did not clear up in three days) or (3) no prescription at all. Interestingly enough, the percentage of patients whose symptoms had resolved in three days did not differ significantly in the three groups, nor did their time away from work or school. However, the patients who were initially given antibiotics were more likely to *believe* the antibiotics were effective in treating a sore throat. Researchers concluded that although the use of antibiotics did not

improve the outcome, it "medicalized" the illness by leading patients to believe that antibiotics are the best treatment for sore throat.

Little P. et al, "Open Randomized Trial of Prescribing Strategies in Managing Sore Throat," BMJ, 1997, Mar. 8; 314:722-7.

But I have seen a different attitude from my patients. I find that if I take a little time to explain to my patients how the body works and also to educate them on the limitations of antibiotics (antibiotics will not treat a virus), they are then very happy to use drugs appropriately and do not want to get an antibiotic prescription every time they visit my office.

Some physicians fear that a conservative approach to prescribing antibiotics might indicate they are not "up-to-date" on the latest medical knowledge. In today's litigious society, some doctors fear indictment and lawsuits and of not being backed up by the medical board if they do not succumb to their patients' wishes and prescribe antibiotics. **(Get new article reference from Medical Times)**

Diamant, M.; Diamant, B. "Abuse and Timing of Use of Antibiotics in Acute otitis Media," Arch. Otolaryngol. 100:226-232, 1974.

Another reason doctors continue to prescribe antibiotics is because there is so much controversy in the medical journals on this subject.

Conflicts in the medical literature

One of the greatest difficulties for physicians is the massive amount of conflicting information in the medical literature about ear infections and respiratory infections. In 1987, a study was published on the effectiveness of amoxicillin in the New England Journal of Medicine. The researchers at Chicago's Hospital in Pittsburgh conducted a four-year study and found that children who took amoxicillin for ear infections were twice as likely to be cured as those who took a placebo, or inactive substance.

However, one of the Pittsburgh researchers disagreed with the conclusion of the study, and published an article in the Journal of the American Medical Association (JAMA) in 1991 citing no appreciable differences between the antibiotic and the placebo.

Following these two conflicting reports, a family practitioner in Cleveland analyzed 27 different studies on the effectiveness of several antibiotics to treat middle ear infections in children. But his

findings, which were published in JAMA in 1993 showed mixed results. The study concluded that only one out of every nine children (11%) taking antibiotics for ear infections showed improvement. Of every six patients receiving antibiotics for fluid in the ears, only 17% improved.

Other studies show similar conflicts. One study found that there was no difference in treating an ear infection with (a) the chronic use of antibiotics, (b) using tubes or (c) just doing nothing. One group of researchers found that children taking amoxicillin were twice as likely to be cured as those who took placebo. Another researcher found that there was no difference between the antibiotic and the placebo. Finally it was concluded that only one out of every nine (11%) children treated with antibiotics actually showed improvement. And still another study indicated that 25 % of all tube insertions may be inappropriate and that for only 30% was the benefit of tube insertion worth the risk.

Middle Ear Infections in Children, Brooks, Adrienne, Science News

Even when the study results are clear, some doctors continue to recommend treating with antibiotics. Dr. S. Michael Marcy of the department of pediatrics at U. of Southern Ca, Los Angeles was quoted as saying, "Roughly one-half of patients will do fine with no treatment. Antibiotic efficacy is marginal-perhaps an extra 20% cured, compared with placebo. I'm not trying to say 'Don't treat.' But it doesn't make a whole lot of difference what you treat with, and the benefit that you generate is about one out of five children." "All drugs perform about the same, and placebo does almost as well as antibiotics. If you get about an 85% cure rate with placebo or drugs, the whole thing is about as good as chicken soup."

Dr. Marcy went on to say that treatment is still appropriate because there is no way to know whether the child is one of those who will not do well without it. He went on to say that in a competitive medical environment, "sometimes you just have to give them the drug of the moment."

I do not however agree with Dr. Marcy's last two statements. Even if there is a small number of children who might benefit from the use of antibiotics, that is not a good reason to give one to everyone.

Even if I did not have another treatment option (which I do), I would recommend a "wait and see" attitude. Let each child's own body try to heal the ear or respiratory infection on its own. Since 90% will do just that, the 10% who won't will reveal themselves soon enough. When they do, there will still be

plenty of time to give them an antibiotic if it is needed. Remember, the studies indicated there were no side effects to waiting. With my treatment there is no need to wait any way. The parents can begin the treatment immediately. My experience has shown me that a larger number than 90% will respond and recover using my technique. This will leave a still smaller group that *might* benefit from antibiotics. If this new treatment is not completely successful, again, there is still plenty of time to prescribe antibiotics. We need to give the body a chance to do what it does best--be well.

How does a physician make a decision when there are so many differences in opinion in their own medical literature? How can a patient trust that what the doctor is telling them is the best information available? In other countries, ear infections are rarely treated with antibiotics. Uncomfortable symptoms are treated with analgesics and the infections resolve on their *own* without complications. Why, in this country do we continue to feel the need to medically intervene, even when it may be making matters worse? The medical model is based on using drugs to treat symptoms as the primary treatment for everything. When the doctor follows that model because that is what she has been taught to do, even when it doesn't make sense, what's the patient to do? Sometimes I think medicine and those using it, forget to use common sense. Studies indicate that using an antibiotic will cause the infection to last longer and have more recurrences, and using the antibiotic will cause serious, life-threatening consequences in the future due to bacterial resistance. *Not* using the antibiotic will allow cure in 90% of the cases, with no increase in side-effects. Do you really need to be a "rocket scientist" to say that in these cases there should be—***No More Antibiotics!***

Although breaking the "antibiotic—ear infection cycle" can in itself be beneficial to the quality of your child's life, there is another more critically important reason why we should give our bodies an opportunity to fight off a bacterial infection. If we, as a society, continue to use antibiotics indiscriminately, in the not so distant future, we may not have any antibiotics left to help us fight off the new more virulent and deadly infections which claim more and more lives each year.

Antibiotic Resistant Bacteria—The New Killer

If antibiotics are such a wonder drug, why are infectious diseases now the third leading cause of in the United States? "Responding to a call from editors of the Journal of the American Medical

Association, 36 medical Journals in 21 countries devoted all or part of their publications—more than 200 articles—to the growing threat of drug-resistant bacteria and viruses.”

Some of the articles showed a connection between the overuse of antibiotics and the inability to treat certain diseases, such as bacterial pneumonia. Dr. Robert Daum, professor of pediatrics at Wyler Children’s Hospital was quoted as saying, “It is getting harder and harder to treat bacterial infections. The number of antibiotics is dwindling, and the bugs are becoming more and more resistant. We are going to be faced soon with infectious diseases that basically have no treatment options, like the pre-antibiotic era.”

Chicago Tribune: Melita Marie Garza and Sharman Stein

Yet the overuse of antibiotics continues to expand. Most of our meats are from animals that have been fed antibiotics prior to slaughter. We do not hesitate to give out antibiotics to our children for any little health problem, whether they need them or not or whether or not the antibiotic will even be effective. This over use and abuse of antibiotics has caused this serious consequence.

It is important for doctors to now include antibiotic resistance to their list of important adverse effects that influence their choice of drug-or their decision to use any drug. Every time a therapeutic drug is prescribed it sets in motion mechanisms that can potentially produce bacterial resistance. If the drug and the patient’s immune system together do not eradicate all of the organisms, the population of bacteria which survives will tend toward being resistant. Once an organism begins to lose sensitivity to a drug, continued use of it increases the growth of resistance. Each new use applies the same selective pressures-but to populations that are weighted more and more heavily in favor of resistant strains. As a rule, broad-spectrum drugs induce resistance more often than narrow-spectrum ones.... Try to stop empirical antibiotic therapy unless the history and physical examination point strongly to a bacterial infection that is unlikely to clear without antibiotic treatment....Always obtain appropriate cultures before starting therapy.

“The occasion for almost 25 million office visits per year, ear infections are an every day diagnosis in primary care settings. It has become routine to prescribe antibiotics for possible bacterial pathogens

without first obtaining samples of infected fluid for culture. Antibiotics are undoubtedly overused for ear infections-some cases are viral, and some are bacterial episodes that will resolve without antibiotic therapy. The consequences of antibiotics have become clear. Originally penicillin was reliably effective against the pneumococcus bacteria, the most common cause of bacterial middle ear infections. Today, however, about 40% of pneumococcal strains in parts of the US are resistant to penicillin. In addition, strains of other important pathogens are becoming increasingly resistant to commonly used antibiotics. Stepping up to more potent drugs is likely to make the problem with resistance much worse.” Recent studies of outbreaks in day-care centers have shown that higher rates of infection with antibiotic resistant bacteria correlate with greater previous exposure to antibiotics. The more antibiotics a child has had, the more likely s/he is to have problems with antibiotic resistant bacteria.

I recently attended a pharmaceutical company lecture at which the speaker gave a very interesting talk about bacterial resistance. I was excited before attending because I thought the speaker would discuss how we as physicians needed to be more responsible in light of the current problem. I expected the speaker to tell us to stop prescribing so many antibiotics for so many problems which did not require antibiotic treatment for recovery. I thought he would impress upon us the importance of not using antibiotics unless they were absolutely necessary. Otherwise we will lose them completely.

But this did not happen. The speaker gave an interesting talk about the history of antibiotics and bacterial resistance and then proceeded to tell us which antibiotics not to use because they were no longer effective against the bacteria they once were. There were no warnings about the dangers of abusing and misusing antibiotics that brought us to the place we are at today, where we need to be concerned that in our life time there really may be **No More Antibiotics!** I left the meeting very disappointed. I have also been disappointed in medical reports which continue to acknowledge the serious problem of antibiotic-resistant bacteria as it relates to ear infections, yet fall short of acting responsibly with the information. For example one report states: “During the last 2 years, increases in penicillin-resistant pneumococci have been reported around the US.... Both the development of resistant strains and their rapid spread have likely been fostered and facilitated by selective pressure

resulting from extensive use of antimicrobial drugs, the most common target of which in children, undoubtedly is otitis media.” “Faced with the likelihood that antimicrobial treatment, particularly of otitis media has been and remains an important contributor to the development of pneumococcal drug resistance, I believe that we must curtail such treatment where we can do so without subjecting individual patients to undue risk.”

Unfortunately the author goes on to say that “Antibiotic treatment should not be withheld because of the risk of side-effects, such as mastoiditis and other complications. “Overall I believe that if the problem of recurrent ear infections is not seen as overwhelming, continued reliance on antimicrobial treatment of individual episodes is the best course to follow because this course appears to pose the fewest risks, and because acute otitis media recurrences tend to become less frequent and less severe as children grow older.” Jack Paradise, MD *Patient Care, May 15, 1997 Wise Antibiotic Use In the Age of Drug Resistance Mitchell Cohen, MD, John Rex, MD*

Even though this article recognizes that antibiotic use for ear infections is a major contributor to bacterial resistance, the author says to go ahead and use antibiotics indiscriminately any way. Even though the author recognizes that misuse and abuse of antibiotic treatment of ear infections may be a major contributor to the bacterial resistance problem that we are experiencing today, the author of that article seems to be saying, "Go ahead and keep prescribing antibiotics."

Yet in other countries such as the Netherlands, experts now advise prescribing only decongestants and analgesics at the beginning of the ear problem. They are not seeing any increase in side-effects from this approach. In the US, however, amoxicillin, is typically begun at the time of diagnosis. If this fails, physicians are not in agreement as to what to do next.

It continues to amaze me that the medical profession either chooses to ignore or doesn't even realize what is going on where antibiotics are concerned. I don't like to consider which option is true. When asked why doctors continued to say there is not a problem, one prominent physician (who will remain nameless) responded by saying, "They're either stupid or they're lying!" I don't know which it is, but we have certainly had nearly 50 years to learn our lesson, and no one seems to have learned it yet.

Ear Infections and Antibiotic Resistant Bacteria

So what part does drug resistance play in ear infections? Antibiotics have become the accepted and expected treatment for all ear infections. Some doctors think that antibiotics are harmless and might help an infection so they prescribe them frequently regardless of the problem.

Some physicians have been known to prescribe antibiotics without reasonable cause, sometimes even over the phone at the request of unexamined patients. This is why many children, like Cari, have been on multiple rounds of antibiotics. When one antibiotic doesn't work, another broader spectrum, more potent antibiotic is tried.

This is how antibiotic resistant bacteria are cultivated. While most bacteria causing the ear infection will be killed by the antibiotic, a few bacteria will survive and give birth to many more bacteria which also cannot be killed by that drug. Each time a more potent drug is used, a few stronger bacteria survive. It has taken us a little over 50 years to develop some very serious bacteria in this manner.

This trend continues to get worse. Originally, penicillin was reliably effective in treating pneumococcus, the most common cause of bacterial middle ear infections. In 1997, *Patient Care Magazine* reported about 40 percent of pneumococcal strains in parts of the United States are resistant to penicillin. In addition, strains of other common bacteria are becoming increasingly resistant to commonly used antibiotics.

I have read several more articles about physicians continuing to abuse and misuse of antibiotics. All of these stories come with the warning that if this continues we will have **No More Antibiotics**. I decided that if the doctors were not willing to listen I would take this information to the patients. Maybe then it will make a difference. I want to have antibiotics available if anyone in my family or any of my patients need antibiotics to stay alive. I would like to see other physicians think the same way. The information is certainly available. This is not a new concept. The pharmaceutical companies and the people in medicine have known this was occurring for the past 50 years.

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We still may be able to stop this deadly trend if we see this as a warning sign. There was encouraging news reported from Finland recently in the *New England Journal of Medicine*. The amount of the bacteria, streptococcal A, which is already resistant to a certain antibiotic, actually decreased

significantly from 16.5% in 1992 to 8.6% in 1996 with the corresponding reduction in the use of the antibiotic, erythromycin. (The New England Journal of Medicine 1997;337:441-446.)

It appears from this study that if we stop using these antibiotics so recklessly, we may still be able to reverse this trend of antibiotic resistant bacteria and head off the direction in which we are headed toward **No More Antibiotics**. In addition, less use of antibiotics may well give our immune system the opportunity it needs to grow stronger.

If the prescribing of antibiotics continues at its current rate, there will soon come a time when antibiotics will become useless due to the development of these resistant bacteria. In the not so distant future, we may be forced to treat bacterial infections the way we did before penicillin was discovered.

It all started with the introduction of antibiotics in the 1940's, an event that ushered in the era of the "medicalization" of health. With the discovery of this wonder drug, antibiotics, we lost our perspective of what our body can do for itself. Doctors and patients turned over more and more control of their health to medicine and the use of drugs. While I believe that antibiotics are one of the most important discoveries in medicine, I also believe that they have been misused and abused continuously since their discovery. I believe their use should be reserved for life threatening illness or illnesses which have very severe side effects. With our focus on disease-care and drug therapy, we have ignored our body's own innate abilities to heal itself. The goal for health care should be to support the body's immune system so that our body can develop the strength and the antibodies it needs to fight off infections on its own. There are many tools and techniques a parent can use to help support a child's immune system to fight off an ear or respiratory infection. These will be discussed and illustrated in later chapters.

When we don't give our bodies a chance to "learn" how to fight off different strains of bacteria, we become dependent on antibiotics to do the job for us. Meanwhile, the many different strains of bacteria in our environment are "learning" how to fight off our antibiotics. The bacteria are getting stronger while our immune systems are not. When there are no antibiotics left that can help fight off these virulent strains of bacteria, it will be up to our own immune systems to do the job for us.

For this reason, I believe antibiotic use should be reserved for only the most serious infections. Ear

infections rarely fall into this category. Since studies show that nearly 90% of all ear infections will heal on their own without any help at all, I feel we should not be using up our valuable antibiotic resources on a disease that will heal itself 90% of the time. Antibiotics can always be used on the 10% that does not heal on their own. But we should wait and give our own immune systems a chance to do what it does so well—fight off the infection itself.