**Chapter One**

**Too Much to Hope For**

It is strange indeed that the more Americans seem to learn about how to build good health, the less healthy they become. It is equally strange that a nation having a tremendous respect for research should seem to have so little interest in applying research findings. The vast majority of Americans can afford to eat almost any diet they choose, yet they choose to consume about 60 percent of their calories in highly refined and questionably preserved and fortified foods.

We might shrug a collective shoulder: to each his own. Certainly an adult—assuming an average degree of health to start with, some information, and a little money—has the right to produce health or illness in himself as he wishes. But does an adult also have the right to produce ill-health in children?

Too many American children, it seems to me, are being sold short; and too many American parents are settling for poorly nourished children when they could have the joy and satisfaction of well-nourished, fit, and happy children.

For example, we hear a great deal these days about the compulsively hyperactive child: wiggly, squirmy, fidgety, noisy, sobbing, yelling, fighting, throwing temper tantrums; distractible and distracting human tornadoes, unable to concentrate, their attention span nil. As many as two million school children in the U.S., from all socioeconomic backgrounds, are estimated to be taking prescription drugs to make learning possible and classrooms manageable. Of course they are “harmless” drugs: amphetamines and dextroamphetamines. Since when have amphetamines stopped being addictive? Any drugs carry with them the risk of liver damage and the possible destruction of some vital nutrients.

Teaching the young to grab a drug when things go wrong may be making them candidates for later drug abuses. When drugs become harmless, they will no longer be sold on prescription.

A New York teacher in a slum area and the head of a private school in southern California give me identical reports. Many children come to school without breakfast, and their blood sugar (necessary for brain function) may be abnormally low. They get far too many sweet bakery rolls, candy bars, potato chips, and soft drinks. Often they have too little sleep, suffer far too many respiratory infections and allergies. Their mothers are often living on tranquilizers due to nervous disorders and/or suffering from any one of many other ailments. “The second-generation malnutrition.” one teacher told me. Not the third or fourth?

Since nutritional research first began, hyperactivity has been produced in animals on diets lacking any one of many nutrients necessary for the normal functioning of the nervous system. If these hyperactive children were recognized as possible victims of malnutrition and given, instead of drugs, an adequate diet excluding the foods to which they are allergic yet providing essential nutrients, the majority might soon be as relaxed as sacks of cotton, their minds far more alert, their energies restored to normal. I have seen it happen many, many times. To maintain normal blood sugar, some children have more frequent meals rich in protein and free from all refined foods.

Hyperactivity is only one example of dozens one might choose. Congenital abnormalities were once rare; now your friends’ children have them. Scientists have learned much about nutrients necessary for brain development; school authorities say IQ’s are decreasing. A shocking number of children suffer from anemia; 60 percent of those who have been bottle-fed are said to have allergies; and miracle drugs perform financial miracles for the pharmaceutical firms producing them, because of many infections in the young. Arthritis (Still’s disease), strokes, and even heart attacks now afflict children. Most of these illnesses probably can be prevented when the nutrition is consistently adequate.

We boast about being healthy without having much of a leg to stand on. In 1975, the U.S. Department of Health, Education and Welfare published research concluding that more than 945,000 pregnant women were suffering from malnutrition serious enough to endanger their babies. One can scarcely be proud that toxemia still kills thousands of babies each year and often their mothers as well; or that our infant death rape is higher than that of other medically advanced nations. There are sixteen countries having lower infant mortality than we, who now rank seventeenth. The number of infant deaths in our country has almost tripled since 1950, increasing from 6 to 17 per 100,000 births.

In America, the harm already done by faulty nutrition is far greater than is generally recognized. In part, it causes many of our social problems, and it induces an unbelievable amount of individual misery. Every year more junk foods appear on the market and more refined foods are eaten; thus diets become progressively worse. We can therefore expect far more illnesses to occur in the future if these trends are not reversed.

Even the babies are not exempt. Many babies are now fed prepared formulas of skim milk to which have been added vegetable oil and coconut butter, a highly saturated fat. (This is true of most of the common formulas: SMA, Enfamil, Similac, etc.) Skim milk and coconut butter are cheap; such formulas make money for the manufacturers, take little time for pediatricians to recommend, and are easy for mothers to give, but they can scarcely be expected to build optimum health in babies.

In this connection, the news media reported an eight-year study conducted by Drs. Morton L. Pearce and Seymour Dayton, cardiologists from the University of California Medical School at Los Angeles. Under their guidance, approximately half of 846 volunteers at a veterans’ hospital had eaten the same amount of solid fats and vegetable oils as are presumably typical of an American diet. The other half had been given substantially more vegetable oils, as sources of polyunsaturated fats.5 Fewer of the persons eating vegetable oils had died from heart attacks, but in this vegetable- oil group the number of deaths from cancer had increased.

Cancer is already a leading cause of death among small children. Is it possible that cancer will increase in the babies now being given these oil-containing formulas? I am afraid it will, though it may be years before one can know. Furthermore, thousands of animal experiments have shown that giving highly saturated fats, such as coconut fat, increases the deaths from heart disease.

I discussed these commercial skim-milk formulas with a nutritionally trained friend. “An assembly line for the production of cancer and heart disease,” she remarked. I have never been fond of the slang expression “You’d better believe it!” but it did seem apropos at that moment.

So far, medical schools have not considered nutrition sufficiently important to add to their already overcrowded curricula.e'7 Dr. Paul Gyorgy, a professor emeritus of the Department of Pediatrics at the University of Pennsylvania School of Medicine, has pointed out that while medical students receive a little training in nutrition in courses in physiology, biochemistry, and clinical medicine, it is actually so sketchy and uncoordinated that they have a weak grasp of the subject and its scientific basis. He states that nutrition should be taught to all physicians regardless of their specialty and that present-day knowledge of nutrition “has not permeated the population nor its medical guild.”

Many physicians agree that medical schools should teach courses in nutrition, and they have mercilessly criticized the nutrition already taught as being inadequate, disorganized, haphazard, outdated, scattered, and woefully weak. Some time ago, the Council on Food and Nutrition of the American Medical Association reported “an urgent and immediate need for improvement,” but such improvement has not yet been made.

Dr. D, M. Hegsted of the Harvard School of Public Health emphasizes that if physicians were adequately trained in nutrition, “many disease states” might be prevented or certainly more readily corrected. This problem concerns “practically the entire population of the United States.” Because of this lack of training, the vast amount of knowledge concerning how to build health goes unused. Dr. Hegsted also points out that since giving nutrition instruction to patients is tremendously time-consuming, this work should be shared with specialists trained in clinical nutrition and physicians should not be expected to do all of it.

For many, many years I have worked with physicians, have respected, admired, and loved them, and found them persons of great integrity and dedication. 1 may disagree heartily with many of their dietary recommendations, but if I had their training instead of my own, I would probably believe as they do. On one occasion I watched an obstetrician deliver a baby who died. With amazing efficiency and seeming calm, he did everything that needed to be done. When the delivery room had emptied, he sat down and cried as if his heart would break.

Many groups of physicians—most of whom are on the teaching staffs of medical schools—have conducted research in various aspects of nutrition. Their findings, published largely in medical journals, are among the source materials for this book.

To gather the material for this book alone, 1 have spent approximately two years, eight hours a day, in a medical library; and I have taken 1,282 pages of closely written notes which, to make them usable, have had to be indexed and cross-indexed. It is unfair to expect a busy physician to have this vast store of information at his fingertips. Physicians are already overworked, and there are more then eight hundred medical journals for them to read if time permits. Most doctors find it impossible to keep abreast of the advances in virology, drug research, surgical techniques, and dozens of related subjects they are expected to know.

Although many physicians may disagree with some of my conclusions, readers are urged to follow their doctor's advice. My ideas should in no way take the place of consultation with your physician, though you may wish to discuss my suggestions with him. I emphasize again that many physicians may disagree with my conclusions. It is not the purpose of this book to even suggest that the reader should not follow his doctor’s advice or that my ideas should take the place of a visit to a physician for a consultation. If you live within driving distance of a nutrition-oriented physician, consider yourself fortunate. If not, it is still imperative that you follow the advice of the professional who knows your individual situation. You might want to consider buying your physician a copy of Dr. Roger J. Williams’s Physician’s Handbook of Nutritional Science as an investment in your own well-being.

Research often concerns itself with only one nutrient or one variable. In contrast, nutrition begins with the foods we eat and proceeds to the end result, the living body and its functions. There are about 50 nutrients that humans either cannot make for themselves or at times cannot make in sufficient amounts to satisfy current requirements. Eight of the amino acids are required from the food we eat (in the form of protein), and at times several other amino acids are needed or at least beneficial. Vitamins (small organic chemicals) required by humans number at least 15, with 5 other compounds having potential but doubtful vitamin status. Sixteen minerals give substantial evidence of being essential to human nutrition; at least half a dozen other minerals are being investigated for a position in our metabolic machinery. Also, water, oxygen, and “fuel” (calories) fulfill the definition of “nutrient.” The possibility of adding nutrients yet undiscovered will be open for some years to come. When an individual’s cells and tissues receive fully adequate amounts of these known (and unknown) nutrients, he will then be well nourished.

Space does not permit here to include details on each nutrient required to build health. Such information is to be found in Let’s Eat Right to Keep Fit, which should be read first to make terms used in this book familiar and less difficult for the reader.

The more an individual learns about nutrition and its personal benefits, the better health he will probably obtain. Nutrition for a pregnant woman is similar to nutrition for any person under stress; nutrition for children must be superior because of the demands of growth; therefore, much of the information in this book actually applies to everyone. I was delighted to find a twelve-year-old girl reading an earlier edition of Let’s Have Healthy Children; she will remember that nutrition should be made adequate long before she herself has a child. One bachelor told me he had almost memorized that book and he had persuaded many people to become interested in nutrition. A stock breeder can tell you that the health of a sire is equally as important as that of a dam.

The hereditary potentials of children rarely achieve their full expression. The controlling factor is often the nutrition of their parents, which may ultimately affect the genes and chromosomes of their offspring. Damaging deficiencies may exist in either parent before conception. Such damage may be irreversible and last the lifetime of a child, yet not be obvious at birth.

For this reason, I wish that prospective parents might read this book in its entirety long before conception. Malnutrition prior to conception can bring lifelong tragedy, and information given in later chapters reinforces the need to apply the knowledge gained from earlier ones.

Perhaps it is too much to hope for, but I also wish that many persons of both sexes would become sufficiently interested in nutrition or concerned about children to read this book or at least scan its pages, even though it is written primarily for the expectant mother, and father too. Any person aware of the need for improvement can help bring about that improvement; and anyone convinced that optimally healthy children can be produced can help bring about that superiority.

When mothers are fed as expertly as present knowledge permits, the troubles associated with some human pregnancies largely disappear. Even your grandchildren are likely to benefit from your knowledge and practice of good nutritional habits.

The know-how is available to raise superb children of great strength and beauty. Children not yet born and not yet conceived will be the citizens and leaders of tomorrow. Our nation must stand or fall on the quality of these citizens and of these leaders.

**Chapter Two**

**A Good Diet Brings Rich Rewards**

You’re going to have a baby. What joys are in store for you! A thousand thrills will be yours which perhaps no one else can share: Yours is the thrill of holding your baby for the first lime; of stroking his head; and of experiencing the viselike grasp of his tiny hands around your fingers. To others he may seem unattractive, and even to you momentarily, but he becomes more beautiful each minute.

You will watch him purse his lips, mouth open in birdlike fashion, as he gropes for his first meal. You will enjoy the hundreds of vague noises he makes: the squeaky sounds of satisfaction after he has been fed, almost like the creaking of a new leather saddle; the tiny rusty-hinge noises; the little pig-like grunts; and the cooings of contentment. The first beginnings of a smile will probably be yours to enjoy alone. Holding your baby to your breast and letting him nurse his fill will probably be the ultimate satisfaction of your motherhood.

There are thrills of motherhood which you will have aside from your baby. You will enjoy your own confidence, knowing that you are going to be a good mother to this child. You will enjoy the vigor of your own strong body, driving you to fulfill the baby’s needs. You will experience the fun of playing baby games all over again. You will enjoy rocking your baby, singing him lullabies, and talking to him in language he probably understands far better than we realize. You will thank God that what was once called spoiling a baby is now known to give him a feeling of security which can last his entire lifetime.

If your nutrition has been adequate throughout pregnancy and your general health is good, what can we expect of this new baby of yours? We can, of course, expect him to be perfectly formed and free from physical defects. We can expect him to lift his head momentarily as if looking around to see what he thinks of this world he has entered. We can expect his eyes to open wide and be adequately coordinated. You need not be surprised if his tiny legs, held in the right position, will brace themselves, even giving a miniature times. If you put the baby on his face in a crib or bassinet he may even “crawl” to the head of his bed. The skin scalp will he beautifully clean and attractive. His sucking reflexes will be amazingly strong, and he will have no trouble in taking the nipple. If his needs are fulfilled as they should be, you will probably be surprised how seldom he cries.

Such is the picture of a well-nourished mother who brought into the world a well-nourished baby. Unfortunately the picture is often different indeed. The exhausted and undernourished mother can almost hate this ugly thing which has caused her such pain. She may he irritated by his cry and suffer pain from his nursing, her nipples perhaps crack and bleeding. Her confidence is crowded out by fears and worries. She may be afraid to pick up her baby or to wash his scalp thoroughly. Every spitting up of milk or change c texture in the stools may indicate to her possible illness am make her fly in fear to phone her doctor. Tension replaces relaxation, and she probably looks forward to night feeding with dread.

Her infant, born undernourished, cannot compare with the healthy one. His head wobbles. His eyes are not coordinated. His eyelids may rarely open at first. His head may be covered with unsightly “cradle cap.” He is not able to brace his feet. to “crawl” in the crib, or to lift his head easily. His sucking reflexes may be so weak that he cannot nurse strongly enough to stimulate normal milk flow. In fact, he may even refuse to take the breast. He probably cries irritably much of the time.

He not only may be in poor general physical condition, but also may have been born with one or more congenital defects.

It now appears that every woman, by her choice of foods before and during pregnancy, largely determines the type of baby she will produce. Although hundreds of studies, both with pregnant women and with experimental animals, help to justify such a statement, particularly outstanding is research done years ago by two groups. One study was made by doc tors from the School of Public Health at Harvard University, working at the prenatal clinics of the Boston Lying-in Hospital; and the other by physicians from the Department of Obstetrics and Pediatrics of the University of Toronto Medical School. In each case, detailed information was gathered concerning (he food eaten by the women when they first reported at the prenatal clinics, usually during their fourth month of pregnancy, and continuously afterward until their babies were born.

In the Harvard study, 216 women were classed into five groups according to their diets: excellent, good, fair, poor, and very poor. The Toronto doctors divided their expectant mothers, 400 in all, into three groups according to the diets they had followed: poor, good, and poor supplemented to good. In this study, money was available to help some of the women who could not afford nutritious food. Of the expectant mothers coming to the clinic, alternate patients whose diets were poor were put into a group which would receive supplements. An egg, an orange, and 1 quart of milk were delivered daily to each patient of the latter group; 1 pound of cheese, a few cans of tomatoes, and a package of wheat germ were delivered each week. The women were supplied with capsules of natural vitamin D to be taken daily. A social worker called at the homes to see that other members of the family were not eating the food provided. The women were asked to have at least half of their breads and cereal of whole grains, and to use only iodized salt.

Babies are healthier when the mothers’ diets have been good. In both the Toronto and Harvard studies, the infants were examined by pediatricians who were unaware of the quality of the food eaten by the mothers. When the prenatal diets were correlated with the condition of the infants, the Harvard group found that 87 percent of the mothers whose diets had been adequate gave birth to infants in good or excellent condition. Another 10 percent of the babies had only minor ailments, such as mild inflammation of the eyes or small umbilical hernias. Only one infant of the entire group had a defect; he had a congenital heart abnormality.

In contrast, when the mothers’ diets had been particularly inadequate, 95 percent of the infants were found to be in poor or extremely poor physical condition. The group in extremely poor condition included infants who were stillborn; infants who died a few hours or days after birth (one died of bronchitis and another of bronchopneumonia when three days old); mentally retarded babies; and infants with cleft palates, congenital heart defects, and congenital cataract. The group in poor condition included babies with such abnormalities as tumors, clubbed feet, crossed eyes and other eye abnormalities, and several infants suffering from thrush and severe skin infections. Some of these infants were born prematurely. Of all the infants of the women whose diets had been poor, only one was judged to be in excellent health and another in good condition.

The findings of the Toronto doctors were similar. When the mothers’ diet was poor, more than 3 percent of the babies were born dead, whereas no stillbirths occurred among women whose diets had been good. Four times as many babies were born prematurely to women whose diets had been poor as to the women whose diets were adequate.

**Labor is easier when the prenatal diet has been good.** The Toronto doctors found that women whose diets had been poor had difficult labor, whereas fewer women who had eaten more adequately had difficulty (24 percent compared with 3 percent). Yet the women on the poorer diet gave birth to twice as many premature infants, who were naturally smaller than full-term babies. More of the poorly fed women suffered hemorrhages during labor, and three times as many contracted infections of the uterus. Twice as many suffered from breast infections, and three times as many had breast abscesses.

The Harvard group also found that, in spite of the fact that the babies were much smaller, labor was more difficult and the complications far more severe when women had eaten a poor diet during pregnancy. The actual hours of labor for women having their first babies was the same in both groups, but for women who had had one or more children, the hours of labor were found to have decreased almost by half when the diets had been good. The women having more adequate diets suffered fewer hemorrhages, and their uterine contractions were stronger. The poorly fed women convalesced more slowly, and three times as many suffered from such major complications as severe hemorrhages; infections of the uterus and urinary tract; phlebitis; high blood pressure; and inflammations, infections, and abscesses of the breast as did the better-fed women.

**Pregnancy is more normal when the diet is good.** The Toronto group found that almost six times as many women on an inadequate diet had poor health during pregnancy, compared with the health of women staying on a good diet. Almost twice as many of the poor-diet group suffered from severe anemia, eight times as many were threatened with miscarriage, and twice as many suffered from toxemia. None of the group having the better food had miscarriages, whereas 6 percent of the inadequate-diet group miscarried.

The Harvard study revealed that when the women stayed on an adequate diet, only about a third suffered some nausea and staining, or threatened miscarriage. Of the women on poor diets, 58 percent developed severe complications. Almost half of these women suffered from toxemia, whereas none of those on good diets developed toxemia.

An expectant mother can appear to be healthy, yet her baby may be abnormal. A striking fact was brought out by the Harvard study: many of the inadequately fed women appeared to be in good health during their pregnancy but gave birth to infants who were in extremely poor physical condition.

This observation has also been confirmed in animal studies. Inadequate intake of vitamin A, riboflavin (), folic acid, and pantothenic acid has been shown to result in unhealthy litters of animals whose mothers, like the aforementioned women, also appeared in good health during pregnancy.

In fact, 42 percent of these women progressed satisfactorily during pregnancy; yet only 5 percent of all the babies in this group were in good condition. It was generally believed that if the mother was progressing satisfactorily her baby would be healthy. The Harvard doctors point out: “It may be entirely possible that a woman may run an apparently satisfactory clinical course, but if she is consuming an inadequate diet, the fetus will suffer.”

Mothers whose diets are good during pregnancy have a better chance to nurse their babies. The Toronto group found that when a mother’s diet had been good during pregnancy, she not only produced more milk but could also nurse her baby much longer than could a woman whose diet had been inadequate. By the time the babies were six weeks old, three times as many women from the poor-diet group were bottle-feeding their infants. When supplementary foods were no longer delivered to the homes, the diets of the mothers became so inadequate that only a few of them could continue nursing their babies.

Although the Harvard group does not report the effect of the diets upon breast-feedings, much other research indicates that a mother’s ability to nurse her infant successfully may be determined by her diet before the baby is born.

When the prenatal diets had been good, the babies stayed healthier. The Toronto group found that by the time the babies were six months old, five times as many whose mothers had been on an inadequate prenatal diet had suffered from frequent colds as had infants whose mothers’ diets had been good before their birth. Three times as many infants from the poor-diet group had suffered from bronchitis, four times as many had had pneumonia, almost three times as many were anemic, and six times as many had failed to grow normally; and far more had suffered from severe diarrhea and middle- ear infection. None of the infants whose mothers had stayed on the good diet had rickets, whereas a number of the poor-diet infants not only had severe rickets but also had convulsions (tetany) caused by poor absorption of calcium. Three of the infants whose mothers' diets had been faulty died before they were six months old, though there were no deaths in the other group.

The Harvard physicians also found that there were more infections among the babies whose mothers' diets had been poor. This increased incidence of infections occurred particularly during the second half of the first year of life.

Similar studies made in different parts of the world also show that the better the nutrition, the easier is the delivery and the healthier arc both the mother and child. Often the obstetricians have not seen the expectant mothers until the fourth month of pregnancy, yet even belated dietary improvement has helped infants to have a better start in life.

Recent findings contradict old beliefs and emphasize concepts which few obstetricians can yet accept. For example, physicians have believed that when a nutrient was limited, the unborn infant had priority and the mother’s body was sacrificed if necessary. It is now known that the mother’s health and life are protected at the expense of her unborn infant; and that if she controls her weight too rigidly during pregnancy, she stands a far greater chance of having her baby stillborn or born prematurely, of the baby’s dying soon after birth, of being dull, physically defective, mentally retarded, and/or afflicted with cerebral palsy. The growth of the human brain reaches its peak during the last months of pregnancy; if the mother’s diet is too restricted, the optimum number of brain cells may not be produced; therefore higher intelligence is associated with a greater gain in weight during pregnancy than was formerly considered acceptable. Contrary to general belief, difficult births are caused by poor nutrition and have little relation to the size of the baby.

Advantages omitted by research. An extremely important factor omitted by the scientists is the effect of good nutrition upon the mother’s emotions and upon her home life. A young woman whose prenatal diet had been excellent recently phoned me soon after her delivery.

\*‘I feel wonderful,” she exclaimed. “My delivery was a breeze, but it kills me to have to stay in the hospital another day. I’m dying to get home and take care of my baby.”

Though I saw a great deal of this happy mother, her fine young husband, and their beautiful infant, never once did I hear of worries or complaints of fatigue, nor did 1 see signs of tension or irritability to mar the graciousness of their home.

In contrast was another young mother, whose income was more than adequate but whose diet was atrocious. She was ill during much of her pregnancy and far from well afterward. She worried constantly, was depressed and easily angered, and frequently sobbed without knowing why. Her infant had colic for weeks and, although kept under barbiturates, cried piteously much of the time. The young husband, worried sick and exhausted from lack of sleep, dropped in to see me and blew his top. Having that baby was a frightful mistake. He hated the squalling thing. It had ruined Dorothy’s health. Their married life had gone to pieces. She cared nothing for him now, only for the baby.

Tension and irritability, depression and uncontrollable weeping have all been produced in volunteers who have followed inadequate diets, particularly diets deficient in almost any one of the many B vitamins. An infant born in poor physical condition, or the lack of harmony in the home, can be the result of an inadequate diet.

An adequate prenatal diet is very important. Many fine obstetricians are fully aware of its value and make every effort to keep their patients on adequate diets. Unfortunately, other obstetricians have little interest in nutrition and believe that a “well-balanced diet”—whatever that means—supplies everything the expectant mother needs. Such doctors sometimes recommend inadequate diets which may actually produce illnesses in the mother and abnormalities in her infant.

There are thousands of conscientious women who are eager to do everything in their power to insure that the child they carry will be healthy and intelligent. There are other women who eat as they please regardless of the effect upon themselves or their infants, although they may be able to afford the best food available. If they are ill during their pregnancies or their infants are defective in one way or another, such, they believe, are the accidents of nature.

The Harvard group, in summarizing its report, made this statement: ‘There can be no doubt from these findings that if the mother’s diet during pregnancy is poor to very poor, she will in all probability have a poor infant from the standpoint of physical condition. If the mother has a good or excellent diet, she will probably have an infant in good or excellent condition.”

You, as an intelligent expectant mother, can produce the type of infant who will make you proud and happy that your diet was excellent during your pregnancy.