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Reading this article is almost guaranteed to make a contented cow discontented.

any mothers are asking, "Is soybean milk good for my baby?"

Until recently cow's milk has been the only major alternative to breast feeding. Now soy milk preparations are being increasingly used for infants who do not tolerate cow's milk. Fortified soy milk is accepted by pediatricians as an adequate substitute for infants who are allergic to cow's milk.1

Experiments have shown that babies on formulas using soy milk proteins progress normally in height and weight.2 In other experiments, infants suffering from malnutrition were given either soy milk or cow's milk; each group had a similar growth response.3

Good news for allergic children

Respiratory allergies represent approximately 33 per cent of the chronic health problems in American children.4 Johnstone and Dutton found less than half as many allergic

reactions in a group of children (ages: birth to 10 years) on soy milk as compared to a similar group on cow's milk.5

Still other problems solved

There is an increasing awareness of another problem associated with cow's milk known as lactose intolerance. Certain individuals are unable to properly digest milk sugar (lactose) because of an insufficient amount of the enzyme lactase in the digestive tract. Infants, children, and adults with this condition usually get cramping abdominal pain and diarrhea when they use cow's milk. Lactose intolerance is relatively low in the over-all U.S. population. but its prevalence is high among Orientals and black Americans, 6 Soy milk, which contains no lactose, helps solve the problem.

A delightful beverage for all

ages Since the taste of soy milk is not identical to that of cow's milk it

should not be thought of as "milk" but rather as a protein beverage of plant origin. It is a delightful and wholesome drink that can replace cow's milk-in formulas, at meals, and in favorite recipes.

Since land used to grow soybeans produces far more food, acre for acre, than the land required to produce cow's milk, the day may not be too far off when soy milk will be important to everyone!

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^{*} School of Health, Loma Linda University, Loma Linda, California, 1974





Nutrition during pregnancy, lactation

Because of the demands of the growing fetus within her womb and the changes taking place in her body in order to carry the pregnancy and ultimately to deliver the child, the nutritional needs of the mother are increased. She needs about 20 per cent more calories, 35 per cent more protein, and 20 to 35 per cent more vitamins and minerals, especially vitamin C, calcium, and phosphorus.

The recommended increases compared to the normal adult female daily requirements are shown in the table below (National Research Council, 1974):

Translating these figures into what goes on the dinner table will require the use of a Table of Food Composition.*

In general, it means the pregnant woman and the breast-feeding mother will use liberal amounts of fresh fruits and vegetables. She will need one and one-half guarts of milk per day. Additional cereals such as oatmeal, shredded wheat, and whole-grain breads are needed to provide the extra calories and B vitamins, Just to be on the safe side many obstetricians recommend a vitamin and mineral supplement.

Adapted from Benjamin T. Burton, Ph.D., Human Nutrition. New York, New York: McGraw-Hill Book Com-

Tables of Food Composition are included in the above book, or may be obtained free from the H. J. Heinz Company, Pittsburgh, Pennsylvania (Nutritional Data), or for about \$3.50 from the U.S. Department of Agri-culture, Composition of Food— Handbook 8, Superintendent of Documents, Washington, D.C.

Food element requirements

FOOD	NORMAL ADULT	REQUIREMENTS DURING	
ELEMENTS	FEMALE NEEDS	PREGNANCY,	LACTATION
Calories	2100 k. cal.	2400	2600
Protein	46 gm.	76	66
Vitamin A	4000 IU	5000	6000
Vitamin B1	1.1 mg.	1.4	1.4
Vitamin B2	1.4 mg.	1.7	1.9
Vitamin Ba	14 mg.	16	18
Vitamin Be	2.0 mg.	2.5	2.5
Vitamin B ₁₂	3.0 ug.	4.0	4.0
Folacin	400 ug.	800	600
Vitamin C	45 mg.	60	60
Vitamin D	400 IU	400	400
Vitamin E	12 IU	15	15
Calcium	800 mg.	1200	1200
Phosphorus	800 mg.	1200	1200
lodine	100 ug.	125	150
Iron	18 mg.	18	18
Magnesium	300 mg.	450	450
Zinc	15 mg.	20	25

Favorite Food Gifts By Evelyn Witter



When I have visitors, friends, or relatives who especially enjoy one of my cooking efforts, I make a note of it.

Then, come birthday or any special-day occasion, I box up attractively as many of the ingredients as is practical to box. And together with the recipe, give the favorite food-ingredients, recipe, and a friendly note reminding the recipient where, when, and how he had enjoyed this dish-to the person who had expressed pleasure in eating this particular item.

This culinary activity has brought tasteful delight to many friends and relatives, and it has given me much pleasure in giving what I am sure will please.

*Health highlights

Birth-control pills may affect developing fetus

A New York study has indicated an association between the use of contraceptive hormones during pregnancy and the birth of children who are missing all or parts of limbs. All of the affected children whose mothers had taken hormone tablets while carrying them were boys. This suggests that the female hormones in the birth-control pills may affect only the fetuses of one sex.

Fortunately, in the vast majority of pregnancies in which these drugs are used no abnormalities result. There are probably factors in addition to the "pill" itself that contribute to the lack of limb development.

Physicians should determine whether women are pregnant before prescribing hormone tablets for birth control. It is obvious that the situation does present a potential public health hazard.

D. T. Janerich, et al. Oral contraceptives and congenital limb-reduction defects. New England J. Med. 291: 697-700, Oct. 3, 1974.



Amniocentesis— Doctors find a way to study the unborn

Amniocentesis, the removal of fluid from the fluidfilled sac that surrounds the unborn child, is accomplished by the insertion of a needle through the abdominal wall into the womb.

There are several reasons

why this is becoming a more common procedure in obstetrical departments across the nation. It is not done unless there are urgent reasons, because there are obvious dangers. Some of these dangers include: spontaneous abortion of the fetus, bleeding, and infection.

One of the most common indications for the procedure is to determine the possibility of major congenital deformities of the child. Another is to determine the state of health of the fetus where Rh problems are a possibility.

R. H. Schwarz. Amniocentesis. Clinical Ob/Gyn. Harper and Row, June, 1975.

A useful reprint entitled "Will My Baby Be Normal" by Willard and Siegried Centerwall is available from the LIFE AND HEALTH office. This article discusses the value of amniocentesis in detecting abnormalities early in pregnancy. Send 15 cents to LIFE AND HEALTH, Washington, D.C. 20012.

Fire sense

Fire outdoors can be dangerous. Barbecuing, camping, and boating trigger thoughts of recreational fun that good weather and leisure time bring. But any one of these good times can become a fiery catastrophe. Take outdoor cooking. Flammable liquids (the use of which happens to be forbidden to the Boy Scouts) can be used safely as long as you remember that they can cause explosions, serious burns, and even death because the vapors explode near heat or flame.

For outdoor safety, flam-



mable liquids rank well behind other charcoal starters. Safest of all are chemicals in cake form or a charcoal igniter that is labeled by a nationally recognized testing laboratory such as Underwriters' Laboratories.

National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.

Breast selfexamination

The American Cancer Society has produced a pamphlet entitled "How to Examine Your Breasts." It describes the simple, threestep procedure that women can use to help protect their lives from breast cancer.

Statistics show that one out of 13 American women will develop this cancer during her lifetime. Yet a 1973 Gallup Study revealed that only 18 per cent of all women practiced this protective procedure during that year.

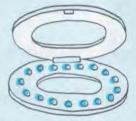
"How to Examine Your Breasts" offers women a practical way of detecting a possible breast cancer early, when it is most curable. Copies are available free from local units of the American Cancer Society.

Genetic link found in schizophrenia study

A research team from the University of Utah has completed a study which suggests that schizophrenia may be inherited. This cooperative

effort with Denmark's Institute of Human Genetics located 79 natural parents with recognized schizophrenia and found that children from these parents, when adopted into "normal" families had a higher rate of developing schizophrenia than the ordinary incidence of the disease. They located 30 children who had normal natural parents but who were reared by schizophrenic adoptive parents and found no significant psychological impairment.

Bulletin from University of Utah, 1975.



Birth-control pills continue to cause blood clots

A reduction in the amount of estrogen (female sex hormone) in birth-control pills has not lowered the risk of blood clots.

A Johns Hopkins University study found that women who use the oral contraceptives have five to six times the risk of blood clotting disorders as do those women who do not use the pill. This risk is similar to that shown several years ago when birthcontrol pills contained two to three times as much estrogen.

News Release. The Johns Hopkins Medical Institutions, June 25, 1974.

Sudden death in heart attack patients may be due to smoking

The increased incidence of sudden death in heart-attack patients who are heavy (Continued on next page)

smokers may be due to ventricular fibrillation, which is enhanced and/or induced by carbon monoxide in the red blood cells.

Using monkeys in a recent study, DeBias and associates found that when the carbon monoxide level in their blood was elevated to 9 per cent, the sensitivity of the heart to induction of fibrillation was significantly enhanced.

D. A. DeBias, et al. Effects of carbon monoxide inhalation on ventricular fibrillation. Archives of Environmental Health, Jan.-Feb., 1976, pp. 42-46.

Group therapy

Writing in the J.A.M.A., of December 15, 1975, Dr. Myron Weiner, a psychiatrist of Dallas, Texas, describes three basic types of group therapy. Guidance groups are essentially classes where the group leader or instructor helps the group members to deal with specific problems they have in common, such as alcoholism, smoking, obesity, or parenting delinquent or retarded children. Counseling groups are supportive groups in which the group leader encourages the group members to focus on attitudes they have that affect relationships with their



others. Such group settings enable the members to "see themselves as others see them" and encourage wholesome change. Evocative groups are the most stress-producing and consist of in-depth probing of subconscious forces and motivations that govern thoughts, behavior, and feelings. Such groups require a well-trained psychologist or psychiatrist who can moderate discussion to the benefit of the group members.

The size of the group is important. Guidance groups may vary from 10 to 30, counseling groups shouldn't exceed 12 to 15; and evocative groups should not be larger than 5 to 9 persons.

Since group therapy is a current fad, a number of group techniques have developed. Transactional analysists have even established an international association with their own training standards. Gestalt therapists use a system of dramatic technics. The author emphasizes the importance of a competent group leader if positive benefits are to be gained. "Select an individual whom you respect."

M. F. Weiner. "Group therapy." J.A.M.A. 243:1181, Dec. 15, 1975.

Gonorrhea now most frequently reported disease in **United States**

Gonorrhea, the venereal disease that can cause sterility, crippling arthritis, sometimes blindness, has become the most frequently reported of the reportable diseases in the United States.

According to a report by the American Social Health Association, gonorrhea reached its highest level ever during 1974-874,161

ported cases-8 per cent over the number reported the previous year.

This means, says the association, that gonorrhea is affecting more Americans today than measles, whooping cough, encephalitis, and tuberculosis combined.

A major problem in the treatment of gonorrhea is that there is no reliable blood test for it as there is for syphilis.

And while gonorrhea can also be cured with penicillin or another type of antibiotic, in recent years some gonor-



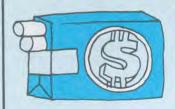
rhea strains have become more resistant.

To compound these problems, the incubation period for the disease is shortdays, rather than weeks.

This means a person may contract it one day and infect someone else before he or she realizes it has been contracted.

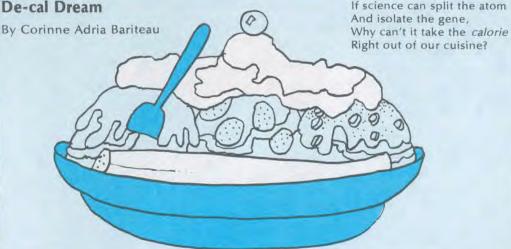
Health Insurance News, June 1975.

Did you know?



... if you saved the average cost of smoking a package of cigarettes a day for forty years and invested at 8 per cent interest compounded monthly, you'd have \$56,000.

De-cal Dream



What's new?

Poison first-aid kit

It is estimated that 80 per cent of accidental poisonings occur in the home. Prompt action is demanded to save the victim's life. A simple, inexpensive poison first-aid kit is available from: SL Enterprises, P.O. Box 340969, Coral Gables, Florida 33134.

Designed by a physician for the home, the first-aid kit contains two antidotes: (1) an emetic, syrup of Ipecac, to induce vomiting, and (2) activated charcoal to neutralize or absorb the poison. In



addition there is an antidote chart.

The first step in dealing with a case of poisoning is to identify, if possible, the cause. Look for an empty or partially empty container, cleaners, disinfectants, pill bottles, et cetera. While you're looking, phone for help-your doctor, local hospital, or poison-control center (of which there are about 600 in the United States).

Administration of water, milk, activated charcoal, or an emetic is best done on advice from your medical resource.

Prevention is better than cure, but prepare yourself in any case, especially if you have small children.

A smile a day

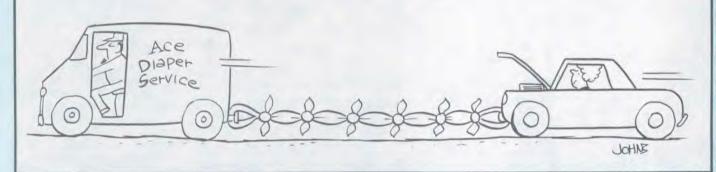


A motorist pulled into the garage and inquired, "How much will it cost to fix my car?"

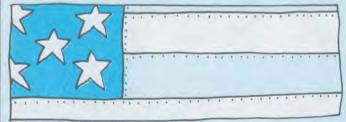
"What's the matter with it?" asked the mechanic.

"I have no idea," replied the man.

"In that case, it will be at least \$100."







"I pledge allegiance . . ."

Because the flag is about as old as our country, we may be tempted to assume that the pledge of allegiance to the flag is as old as the flag. Actually, the pledge was written in 1892 by Francis Bellamy to be used as part of the celebration of the 400th anniversary of the discovery of America. The pledge wasn't officially adopted by the U.S. Congress until 1945.

The original pledge has been modified several times, in 1923, 1924, and 1954. It started out as follows:

"I pledge allegiance to my flag and the Republic for which it stands-one nation indivisible-with liberty and justice for all."

The first semblance of the American flag was a banner flown by American merchant vessels, which consisted of 13 horizontal stripes (alternate red and white).

On June 14, 1777, the Continental Congress in Philadelphia adopted the following resolution, "Resolved: that the flag of the United States be thirteen stripes, alternate red and white; that the union be thirteen stars, white in a blue field, representing a new constellation."

The National Flag Day Bill recognizing June 14 as Flag Day was passed by the Eighty-first Congress in 1949 and commemorates the day in 1777 when the Continental Congress adopted the stars and stripes as the flag of the United States.

The flag most cherished by the American people is the huge 42-by-30-foot "Star Spangled Banner" that was flown from Fort McHenry in Baltimore harbor during the War of 1812 and immortalized by Francis Scott Key in the words of our national anthem.

BEFORE THE BABY ARRIVES

How to use that last month before baby arrives in the most profitable way.

By Linda G. Robiner



The month or two before your baby is born is a time to dream dreams, scrutinize lists of baby names—and to be sure all is in readiness for the new arrival.

You've had months to become accustomed to the idea of impending motherhood, and as many months to consider baby's sleeping area, but somehow you're still not quite finished. Remember that it's a lot easier to paint, curtain, and freshen up the room now than it will be later. You won't have time to run out and buy wallpaper after the baby is born. And while you're shopping, be sure to stock your shelves with extra-large diaper pins, baby lotion, oil, and powder.

It will be helpful to buy or borrow the baby's clothing and furniture ahead of time, or at least select them. You will need a fullsized crib eventually, but a bassinet will be satisfactory for three months. In fact, a friend of mine saved money by softly lining a drawer and using it for a couple months until she could borrow a relative's crib. She also outfitted an ordinary table to avoid the expense of a bathinette or dressing table. She made sure the table was high enough so that she didn't develop back pain from frequent bending. She bathed the baby in a large plastic tub on top of the table. Her husband stained a long wooden board and suspended it from the wall, to provide a place to keep the baby's

clothes. At any rate, a diaperchanging area of some sort is essential, and this is a good time to get it ready.

The layette The baby's layette should consist of at least eight undershirts, eight nightgowns, or (best of all) the wonderful one-piece stretch coveralls, and four pairs of waterproof pants. You will need about four contour crib sheets. A sturdy plastic contour sheet will protect the mattress. It's a good idea to buy a washable crib blanket or (even better) a zip up "sleeping coat," a great invention for babies who kick off their covers and mothers who worry. You can use your old worn-out, and therefore softest, towels and washcloths for baby; buying separate ones is unnecessary. You will probably receive sweaters and fancy outfits as gifts, so you needn't rush out to buy them.

In addition to shopping for the baby-to-be, you'll want to choose his pediatrician. I asked friends for recommendations. Then I talked to the doctor I thought I wanted to have, to discuss his philosophies on child care. This is often more important than the medical attention the baby will receive. All doctors will properly immunize your child and care for him if he develops an illness. But you will want to know whether the doctor believes in a very permissive form of child rearing if it conflicts with your attitudes and ideas. I asked my pediatrician his views on nursing, and he was most encouraging. He suggested having a baby scale, which I was able to borrow. If you plan not to nurse, you might ask the doctor what

formula he suggests and what kinds of bottles you should have on hand. The hospital called my pediatrician in to examine my baby right after his birth. Subsequently he checked the baby every month during the first year of life, closely observing his growth and development.

Help at home You will want to arrange for a practical nurse, house-keeper, or relative to help when you first come home from the hospital. You will be tired (labor isn't called labor without reason), and you should spend a good part of your first few days at home resting. So if it isn't possible for your husband to stay home, it behooves even the most independent do-it-herselfer to find someone to help at least for the first week.

And don't forget about diapers! If you plan to launder your own, buy forty or fifty of the prefold ones and a large diaper container with deodorant. Diaper liners are made of chemically treated paper and fit inside the diapers. They can be flushed away, making diaper rinsing less of a chore. Disposable diapers are great, if you can afford them. Even if you can't, it's wise to keep one box around for emergencies. Diaper service is a worthwhile luxury, at least for the first month or two when you are the most tired and the baby uses the most diapers. One thoughtful couple gave us a month of diaper service as a baby gift. No present was more appreciated. Hint to your friends. Order eighty or ninety diapers per week to begin with and then you can vary the order as you wish. Now is a good time to price the diaper services in your

community and inquire as to their arrangements. Do they pick up and deliver once or twice a week? The advantage of once-a-week delivery is that you are disturbed less often. It seemed the man always came just as I wanted to rest after putting the baby down for a nap. On the other hand, there are obvious advantages to sending out the used diapers more frequently.

Pack your suitcase Another worthwhile project during this last month before delivery is packing your suitcase for the hospital. If you do this early, you will save frazzled nerves should you have to leave suddenly. You have probably thought of cosmetics, deodorant, toothbrush, and toothpaste, "Thank you" note paper, birth announcements, address lists, stamps, and pen. Books, even for an avid reader like myself, are difficult to concentrate on. Magazines will be more entertaining at such a time. No one told me that nightgowns for the hospital should be short and not my best, so I'm passing along my experience. The heavy flow that occurs several days after childbirth ruined my prettiest nightgown. So save your elegant lace-trimmed gowns for the last couple days of your hospital stay and for wearing at home. You'll want an attractive washable bathrobe or two, and/or a bedjacket. Pack a couple of nursing bras if you plan to nurse your baby and some nightgowns or pajamas that open in the front. Somehow, when your suitcase is packed, you'll feel as if you're really ready to have your baby.

While you are packing, prepare a

Remember that it's a lot easier to paint, curtain, and freshen up the room now than it will be later. You won't have time to run out and buy wallpaper after the baby is born.

going-home suitcase for you and baby, and leave it at home for your husband to bring to the hospital later. My roommate didn't. The day before she left the hospital she began drawing diagrams for her husband about where her slip was and where he could find the baby's receiving blanket. Be sure to pack yourself a dress or a pair of slacks with a loose waistline. No one warned me that I'd be thick in the middle for a few weeks and my clothes wouldn't close. For baby, pack diapers and pins, rubber pants, a shirt, nightgown, receiving blanket, hat, and a warm blanket if the weather is cool.

Now comes the list for your husband, who thinks he's running the mile trying to spread the happy news, visit you, and still concentrate on his work. He needs a list with names and telephone numbers of the people who will never speak to either of you again if they are not personally called by the new father within forty-eight hours of the blessed event. He also needs the telephone number of the person you've arranged to help you on your arrival home. Your husband should also have the telephone number of the diaper service and the quantity of diapers you want delivered each week. If you have ordered furniture and baby clothes, give him the sales slips and telephone numbers, so he can make arrangements to have the infant's things delivered before the two of you come home.

Being organized will put your mind at rest. Besides, it gives you something exciting to do while you're waiting. The last month always seems to be longest!



Breast-feedingsafer, easier, better

I knew little about babies, but I did know I wanted to breast-feed. It was a deep-seated longing I'd had since high school."

Susan had left college to marry Karl, and at 22, after working so he could complete medical school, she gave birth to Kevin. "When I told Karl about my desire he laughed, stating that only half of today's women are able to nurse and I was not likely to be among that group, because of the small size of my breasts. Our physician assured me that today's bottle formula is just as good. I tried to breast-feed anyway, but it didn't work out. I saw Kevin only once in four hours during the day and not at all at night. Often he was too tired to suck for more than a minute or two when I did see him. My breasts got sore and swollen, and the doctor recommended a bottle. Before long I had almost no milk. Karl wasn't exactly sympathetic, although he never actually said, 'I told you so.' Finally I gave up and used a bottle."

Susan's story, with variations, is typical. Because she didn't know the facts about breast-feeding and because no one close to her supported her desire to nurse, she was unsuccessful. Breast-feeding is essentially a womanly art, one that used to be passed down from generation to generation. Bottle feeding is a relatively new development. As recently as 1920 a bulletin of the Iowa Extension Services warned that only very occasionally it may be necessary to feed the baby artificially. "Bottle feeding is a difficult matter and not without risk." 1 Fortunately, in the Western world, bottle feeding today is not the risk it was 50 years ago. Modern technology has made it



safe to feed a baby "artificially." This is a blessing for babies whose mothers cannot nurse them. But is bottle feeding best for mother and child? Should it be used routinely, or only under special circumstances?

Scientific evidence and old-fashioned common sense support the notion that breast-feeding is far superior to bottle feeding, both for the mother and for the child. Human milk is the optimum food for human infants, and the intimacy of nursing is designed to create the best possible relationship between mother and baby. Nevertheless, breast-feeding is being abandoned in favor of bottle feeding all over the world today. In certain areas of the United States the rate of that decline has been somewhat diminished, but

in most Third World countries the decline has accelerated rapidly. As a result, many babies are dying or developing permanent brain damage because their mothers do not have the knowledge, the money, or proper hygienic conditions to bottle-feed properly.

Perhaps you would like to breastfeed. Here is some practical help.

Preparing to breast-feed The knowledge that her own milk can give her baby the best possible start in life strengthens a woman's natural desire to breast-feed. It must also be reinforced by correct information about how to breast-feed and by support for her decision from those she feels close to. Her mother, her husband, a good friend, a physician or nurse, all can be very helpful, pro-

vided they actually know something about breast-feeding. Only rarely is it inadvisable or impossible for a woman to nurse.

The earlier in pregnancy you can get the support of others, particularly your husband, the better. Discuss the idea with your physician. Fortunately the climate is beginning to change, and many doctors and nurses are now encouraging and helping the mother who wants to breast-feed. If you plan to have your baby in a hospital, choose one that looks favorably on breast-feeding.

Many couples attend childbirtheducation classes where the subject of breast-feeding is discussed. The La Leche League conducts excellent group sessions for women who want to breast-feed.² (La leche is Spanish for "the milk.") Some obstetricians use breast-feeding counselors, women they have delivered who are available to help other mothers with breastfeeding.

How to go about it Once you are psychologically prepared, with your husband and others approving, along with a supportive medical group, what about the process itself?

The breast has about twenty lobes or sections converging at the nipple. These lobes of glandular tissue produce the milk. The size of your breast, small or large, has nothing to do with its milk-producing capacity. Small breasts merely have little fatty tissue around the glands, whereas large breasts have more.

Successful breast-feeding depends on the "let-down" reflex. It is this action that permits the milk to be ejected from the full breast. The reflex can be easily disturbed by an unkind remark or a casual joke, let alone disapproval or hostility. Confidence and relaxation are very important to the nursing mother.³

It helps to prepare the breasts during pregnancy, especially if you are fair-skinned, by gently rubbing the nipples and drawing them out for a few minutes each day. Toward the end of pregnancy you may notice a small amount of yellow fluid. This is colostrum, the pre-milk that is so good for your baby. A real flow of milk will not occur until the hormone regulators are triggered in the brain by the actual birth of the baby.

Just as good nutrition is vital for the pregnant woman, a good diet is also important for the nursing mother. You will need more calories than you would if you were bottle feeding, and you will need to drink plenty of fluids. Nutrients, arriving in the breast via the blood stream, are absorbed by the glandular cells, which in turn produce just the right mix of protein, carbohydrate, fat, minerals, and vitamins for your baby. 4

The first milk, colostrum, is especially valuable to the baby because it contains immunities against disease.

It is the sucking of your infant that stimulates the production of milk. The more the infant sucks, the more milk your body produces. Nature has designed a perfect balance between supply and demand. A mother can nurse twins and even triplets if she drinks enough fluids, eats enough nourishing food, and gets enough rest.

What about sore nipples? (If you are dark-skinned or have prepared your nipples for nursing, you probably won't have this problem.) To prevent sore nipples, nurse from each breast at each feeding, expose your nipples to sunlight or a sunlamp, and do not use drying substances such as soap or alcohol for cleansing. Your breasts secrete a natural cleansing agent. Use distilled water if you must, but nothing stronger. Consult your physician or Eiger and Olds, The Complete Book of Breastfeeding, 5 if you do develop sore nipples or a breast abcess. By taking action at once you can still continue to be a happy and successful breastfeeder.

Demand feeding best Demand feeding is practiced throughout nature and is also the best method for humans. That is why rooming in is so useful for breast-feeders. If your baby is kept in a nursery, try to arrange for it to be brought to you whenever hungry rather than every four hours. Otherwise, return home as soon as possible. With a little experience, mothers quickly learn to distinguish between the cry of hunger and the cry of fretfulness. Most infants will nurse for 7-8 minutes and then drop off into a contented sleep. It is difficult to overfeed breastfed babies even though they get hungry more frequently than most bottle-fed infants. They are more frequently hungry because breast milk is more easily and quickly digested.

Sometimes bottle-fed babies are urged to drink until the bottle is empty. This practice, combined with the higher fat and sugar content of many formulas, may account for some cases of childhood and adult obesity. An excess number of fat cells are developed early in life.

Breasts should be properly supported, particularly during pregnancy, but also during lactation. If this is done there is little danger of stretching the supportive connective tissues. Nursing may actually improve the shape of the breasts and will certainly help the mother regain her pre-pregnancy waistline sooner.

Benefits for the baby Breast milk is the optimum, most easily digested food for human infants. That is why breast-fed babies have far fewer stomach-aches, never get constipated, seldom have diarrhea, and always smell sweeter than bottle-fed infants. Breast milk also provides a high degree of temporary immunity for the newborn, until the child's own immunity system is better developed. Some cases of "sudden infant death syndrome" are probably warded off by this immunity.

Allergists generally agree that the breast-fed child is better off because he is not exposed too early to foreign proteins. Cow's milk is the most common cause of allergy in infants, particularly in babies whose families have a history of allergies. Asthma, eczema, and infant diarrhea are much less common in breast-fed babies.

Advantages to the mother who have tried both bottle and breast-feeding agree that the latter is more deeply satisfying, cheaper, and more convenient. No bottles, no nipples, nothing to buy, prepare, clean up, or store away. Nursing causes the uterus to contract, thus helping to restore the mother's figure to its pre-pregnancy state. If sucking is started right after birth, it helps prevent post-partum hemorrhage. Sucking produces a hormone, prolactin, that helps the mother to play her role. (Injected into male animals, it produces motherly behavior.)

What about the mother's social life? Generations ago women naturally took their babies to social gatherings. Today, despite strong taboos on nursing in public, thousands of women are learning to breast-feed Unlike unobtrusively. formula, breast milk is readily available at the right temperature any place, anytime. A breast-feeding mother can go anywhere and do almost anything. Of course, she cannot leave the baby totally in the charge of someone else, but then who wants to? One can get breaks from the baby, go out for an evening with the husband, or even go back to work and still breast-feed. And the husband won't have to get up nights to help with the feeding. The mother hardly has to wake up in order to nurse at night.

It is not wise for a mother to return to work for 6-8 weeks after the baby is born. By that time breastfeeding is firmly established, and it

is possible to substitute a bottle if mother and baby cannot get together for the noon feeding. Nursing can be continued for as long as mother and baby choose, even up to several years. Other foods of course may and should be added, beginning anytime from 3 to 6 months. Supplementary iron must be added in some form by 6 months.

What about the mother's diet? In most instances she can eat anything she likes. For the first few weeks, at least, she may want to avoid such things as strong spices, or chocolate. She must have plenty of fluids, but milk is not essential. A balanced diet with adequate protein is very important, but you can satisfy this requirement in many different ways. Your physician may recommend vitamin and mineral supplements.

There is also evidence that breastfeeding helps the prevention of postpartum blues. And it is a fact that breast cancer is less common in women who have breast-fed their babies.6

Intimacy enhanced Breast-feeding enhances not only the intimacy between mother and child but often between husband and wife, although there may be an initial diminution of sexual interest. One mother expressed it this way:

There is something very earthy about nursing a child, and this really helped my relationship with my husband. All aspects of life become more pleasurable. A good breast-feeding experience makes one more open and womanly.

mothers experience

Breast milk, unlike formula, is readily available at the right temperature, any place, anytime.

breast-feeding as profoundly satisfying and pleasurable. One said:

Other people may breast-feed for economic or medical reasons. But I do it because I like it. I didn't really know what it was like until I had a successful experience. I knew there was something, but it was better than I dreamed.

Another commented:

Breast-feeding made a change in my attitude toward people. I am more capable of love since I have been a successful breast-feeding mother.

Let's face it, the best argument for breast-feeding is the pleasure of it. Nature makes things feel good that are necessary for survival.

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When we were pregnant

The worst thing that can happen to a prospective father is to lose his wife's attention suddenly when she discovers she is pregnant. There is no reason for women to feel that pregnancy is their exclusive domain. After all, parenthood, like marriage, is a partnership. Every prospective father is excited, hopeful, fearful, full of anticipation and dreams. He wants to be in on all the events.

That's what I told my wife when the doctor confirmed our hopes that we were to have a child. I was lucky. She saw it my way, and promised to let me be a participating member of our little corporation. The results were wonderful. I know her pregnancy was more fulfilling, happier, and easier.

The first thing I noticed at the beginning of our nine-month experience was that Evelyn began to have misgivings about her future appearance. She wondered whether her figure would ever be the same again. She had heard that her hair would lose its luster, her complexion its clearness. I told her she had never looked more radiantly beautiful than she did at that moment. My sincere compliment was appreciated, but it didn't quiet the misgivings. Off I went to the library and found a chapter in an authoritative book on the subject. I showed her conclusive proof that with proper care there needn't be any long-term alterations in her appearance. After that she didn't mind the change she was undergoing, because she realized it was only temporary.

The next hurdle we encountered was diet. We understood that she should gain only about twenty-two pounds during her pregnancy. Cooking all the "yummies" for me while turning away from them herself was making a martyr out of my spouse. I could have been the martyr and given up treats for the duration, but

By William Witter

martyrdom has no place in pregnancy. Therefore we sat down to custard and fruit desserts together. Studying her pregnancy diet helped me understand her cravings for special items—the traditional pickle and ice cream craving, for example. A person on a bland diet for any length of time is apt to desire such things. So I saw to it that they were supplied when necessary.

Then when Evelyn got too heavy to carry on the burden of housework alone we had our "behind and under days." My wife did the necessary lighter housework during the week and on weekends I moved large pieces of furniture and helped her clean behind and under them. I also did any ladder work indicated.

At this time some of the sports we had enjoyed together had to be forgotten in favor of caution. However, Evelyn and I added a new sport to our repertoire—walking. Generally we took a different route each evening. Sometimes we would drive to a new area and then walk a new square mile. We discovered that walking and talking is not only good exercise but is excellent for companionship as well.

When it came to shopping for certain baby things, I was of no value. I just couldn't picture myself in a baby department feeling diapers to see if they were absorbent enough while a group of wide-eyed clerks looked on. What I lacked in the baby department, however, I made up for in the nursery. What plans we made! I even bought a new jigsaw to cut out nursery characters to place around the wall. Preparing the nursery probably took up more time and dollars than were absolutely necessary, but the joy we received from planning and working together for the biggest event of our lives made it worth every loving moment.

When that ninth month arrived and Jimmy was born, he was "our boy" in every sense of the word.

A vital message to Christian families

By James Dobson, Ph.D.

It takes no great social analyst to recognize the vast threats and dangers being hurled against the American family. The traditional marital and parental plan, created and ordained by God, is being viciously attacked from divergent sources.

Advocates of the new morality and the *Playboy* philosophy join hands to recommend infidelity and sexual irresponsibility.

Representatives of the homosexual movement suggest a disastrous alternative to the "boy meets girl" theme.

Each year the drug culture produces countless numbers of broken young people who are physically and psychologically unprepared for the responsibilities of marriage.

The women's liberation movement is fomenting agitation between the sexes, creating competition and conflict within the home.

The unbridled consumption of alcohol is resulting in millions of shattered families, leaving them in personal and social ruin.

Behavioral scientists who should know better are recommending trial marriage, common-law marriage, communal marriage, and other "forward-thinking" possibilities.

In view of these forces of erosion, it should not be surprising that the divorce rate in America is now higher than in any other civilized nation in the world. The consequences The tragic consequences of such widespread family disintegration are almost immeasurable in our society. Our cities and suburbs are now filled with emotional casualties—the lonely, broken, disillusioned people who surround us.

Their ranks include the wife whose husband has found a younger plaything; the illegitimate child born to a

Behavioral scientists who should know better are recommending trial marriage, common-law marriage, communal marriage, and other "forward-thinking" possibilities.

bewildered 15-year-old girl; the mother who is inevitably drunk when her children come home from school; and the tormented infant who becomes a heroin addict while still in his mother's womb. Each of these tragedies is multiplied repeatedly in the lives of other family members who must share in their disaster.

Contrary to popular belief, Christian families are not immune to the threats I have described. When the value system of a culture begins to decay and splinter, as has ours, even the devout may be caught in its shattering disintegration.

Psalm 11:3 verifies this danger, stating: "If the foundations be destroyed, what can the righteous do?" The influence of distorted values can be seen within Christian circles: the children of devoted parents do occasionally become drug addicts; divorces do occur among professing Christians; and certainly some young people who have been raised in the church do suffer the consequences of sexual experimentation.

How can these difficulties occur in homes where Christian principles were ostensibly taught and respected? The answer to this question is critical to the family that wants to shield itself from the destructive influence of a godless society.

I received an important letter from my father a few years ago, offering some timely advice that is relevant to this discussion. I had been very busy in the weeks that preceded his letter, trying to accomplish everything that was demanded of me. I was working long hours and playing very little. My father was on a plane trip from Los Angeles to Hawaii, and he used that quiet opportunity to write a letter that was to have a sweeping influence on my life. It included the following meaningful paragraph:

"Danae [my daughter] is growing up in the wickedest section of a world much farther gone into moral decline than the world into which you were born. I have observed that the greatest delusion is to suppose that our children will be devout Christians simply because their parents have been, or that any of them will enter into the

Christian faith in any other way than through their parents' deep travail of prayer and faith. This prayer demands time, time that cannot be given if it is all signed and conscripted and laid on the altar of career ambition. Failure for you at this point would make mere success in your occupation a very pale and washed-out affair, indeed.

First, it is more difficult to teach proper values today than in years past because of the widespread rejection of Christian principles. In effect, there are many dissonant voices that feverishly contradict the teaching of Christian parents.

Second, it is possible for parents to love and serve God while systematically losing their children. You children to Christ. All other professional and social objectives become "pale and washed out" when compared to this God-given assignment.

The father who is never home and the mother who is socially "clubbing" herself to death cannot possibly be meeting their commitments to the tender, impressionable little children who are vulnerable to their teaching



The father who is never home and the mother who is socially "clubbing" herself to death cannot possibly be meeting their commitments to their children.

Four vital messages There are four vital messages in this statement that should be heeded in every Christian home.

can go to church three times a week, serve on its administrative council, attend the annual picnic each summer, and pay your tithe, yet fail to communicate the real meaning of Christianity to the next generation.

Third, there is no substitute for prayer throughout the formative years of a child's life. Not only must the youngster be introduced to his heavenly Father but the parents should privately appeal to Him for assistance in discharging their awesome responsibility. To approach the parental task in our own strength is incredibly naive.

Fourth, there is nothing in life that is more important than this responsibility of introducing our for such a few short years.

In the many Christian homes where mom and dad never establish these priorities, they will deserve a silent answer to tomorrow's whimper, "Where did we go wrong?"

Dr. James Dobson is a widely known psychologist on the West Coast. He is associate clinical professor of pedi-atrics at the University of Southern California School of Medicine, director of behavioral research and director of child development for the Children's Hospital of Los Angeles, and assistant director of the department of education at the American Institute of Family Relations in Los Angeles. No stranger to the art of parenthood, he lives with his wife and two active children in Arcadia, California.

Cometimes, over a sink of dirty dishes, or while filling the tub for another in the endless round of baths at our house, my thoughts wander; I imagine that I'm attending the Academy Awards. Trophies for best acting ability are not being presented however, for in my dreams the Master of Ceremonies announces proudly, "For best achievement in the field of pediatrics, the Oscar goes to-H. F. Meyer." And as the gray-haired little man comes humbly across the stage, the audience goes wild! We're on our feet, clapping and cheering thunderously, all of us, his former patients, to whom he gave so much of himself.

But there are no gold statues awarded for common sense in medicine, no Nobel prizes for humility and kindness. No trumpets will ever herald the quality of mercy so apparent in everything H.F. did. But we whose lives he touched, we remember—oh, how we remember!

Our family first became acquainted with Dr. Meyer when as a toddler I was stricken with pneumonia, and he was called in as a consultant. My favorite trick at the time was to sing a song I had learned from one of my mother's radio programs. When feeling better, I would sway on the bars of my crib, hospital nightie drooping, and croon for all I was worth. Enthralled with my performance, H.F. would drag entourages of medical personnel into my room at all hours

to witness this "production number." By the time I left the hospital we were fast friends, and there was nothing to do but engage him as our regular pediatrician. He never forgot my concerts. As late as my pre-teen checkups, he was still pleading, "Sing 'Sweet Mystery of Life' just once—for me?"

Meyer's most memorable quality was his steadfast common sense, tempered with a genuine interest in every patient he treated. In my mother's era, when child-rearing was rigid in its conformity to clocks and scheduling and placed little stock in mother-instinct, H.F. was a breed unto himself. After meting out the customary diet regulations and inoculations, he would settle back on his examining stool. "Now," he'd say in his slow deliberate drawl, "how's your son been behaving? Is he happy? Any problems? What's new in his life-and yours?"

Love the baby Mothers, used to choking back their own feelings and would melt ideas, under warmth of his interest and pour out their thoughts. Most often, he would regard their ideas with grave approval, complimenting them on their perceptiveness and wisdom. After a visit a mother would fairly float down the hall, clutching sheets of instructions, but remembering H.F.'s parting words: "Don't forget to love the baby!"

Having been a sickly child, I'd seen a great deal of Dr. Meyer over the years, and our relationship had solidified into an affectionate uncle-favorite niece closeness. Therefore, when I married and became pregnant, it was obvious that I couldn't raise a baby without him. During my last month I proudly showed H.F. my layette list. He studied it seriously, finally handing it back. "Is it all right?" I asked eagerly. "Do I have everything?"

"You forgot the rocking chair," he chided me gently.

After my son's birth, my relationship with Dr. Meyer subtly changed. I was no longer his "little girl" now, but a capable mother, and he treated me with the dignity my position deserved. Although society still felt fathers had no real part to play in their offspring's infancy, H.F. encouraged my husband to accompany me on the baby's monthly visits, and answered his numerous questions with respect.

H.F.'s professional care ran the gamut from the newest, most effective techniques of medicine, to his homespun, just-my-idea advice. Those of us who took his homey opinions to heart never found them wanting.

"Turn your infant on his back when you'd like him to fuss, and on his tummy when it's sleeptime. He'll soon be wakeful at your most convenient time!

the man who cured t

By Joan Wester Anderson

"Weight is the determining factor in a baby's diet, not age. A six-pound 'peanut' and a twelve-pound 'moose' can both be one month old, but their dietary needs are totally different. And never mind what the neighbors say!"

Never a sleepless night Owing to advice of this type, my husband and I were in the enviable position of being the only couple we knew who never spent a sleepless night with a wailing infant!

Keeping our toddler exclusively in hard-soled shoes until he was two, would enable the arch cartilage to develop into well-formed bone, eliminating the possibility of flat feet. Diaper rash? No problem; simply dip the wet, laundered diapers in a solution of boric acid crystals (29 cents on the druggist's back shelf!) and water; spin out the excess water. Thus coated, the diapers neutralize the urine's alkaline effects. How much easier on the baby—and our tight budget!

My second son's arrival, barely twelve months after the first, provided me with a deeper insight into the philosophy that made H.F. so remarkable.

"You'll be tempted to treat them as twins," he said without preamble, striding into my room on check-out day, "but don't do it. Cherish their differences. Make them know that they are unique individuals, each

e spirit



with something special and different to offer. Remember," he waved in leaving, "always contrast—never compare. Love each one just because he's him!"

He was gone. I lay back, eager to begin practicing his advice. "Who," my roommate whispered, awed eyes reaching mine, "was that?"

My husband and I had ample opportunity to take advantage of Dr. M's counsel, for we produced two more sons in quick succession. Aided by his encouragement ("What wonderful boys; each so unique." "What a fine mother you are!"), I strove to regard each son as an individual, and not merely one of a demanding pack. Dr. M spent a disproportionare amount of time with our "middle children," conducting serious discussions and exchanging opinions with them. He had been a "middle kid" himself, he told me, and remembered only too well the world of hand-me-downs and lessened attention.

The key to discipline Consistency was the key to discipline as far as H.F. was concerned. The act of following through on a request was far more important than the actual rule being enforced.

"Don't tell the kids to pick up their toys," he advised me, "if you won't have the strength to see that they do. Better to say nothing and tidy up yourself than to allow the children to ignore your orders." There was no such thing as a spoiled child, he maintained; only spoiled parents who didn't have the courage to see an unpleasant disciplinary task through from beginning to end. When my sons went through the temper-tantrum stage, his wisdom was invaluable.

"Tantrums are attention getters," he pointed out, "and if you spank, or put your son in his room, you give him the very recognition he craves." Instead, when a tantrum began, we were to quietly leave the room. If that was impossible, we were to go on with our work, ignoring that squalling bundle on the floor. When our sons found they had no audience for their scenes, they forgot about kicking and screaming in short order.

How sage the advice, how deliberate the training techniques, how warm the understanding which Dr. Meyer provided us. And then one Saturday of Memorial Day weekend, a crisp memo arrived from his office. Dr. Meyer was retiring from private practice today, it stated, turning his patients over to a younger physician.

"I can't believe it!" I said, tearfully waving the letter. "Why didn't he give us more notice? We could have had a party for him—we could have told him how we felt, what he's meant to us!"

"He wouldn't have wanted that,"
my husband remarked thoughtfully.
"He was a very special sort of man.
He knows what he's done, and it's
enough that he knows."

As the old saying goes, I never met a doctor I didn't like. But, oh, H.F., you were something special, and I miss you so! How you would have shared our rapture in our recently arrived daughter; how you would have enjoyed chatting with one of our "middle kids," now considering premed. Your telephone doesn't ring at 2:00 A.M. anymore; I don't watch you carry your black bag up our snowy front walk, coming in the dark panic of night to bring me care and assurance.

How many more of you are there, I wonder? How many more H.F.'s, laboring in their quiet vineyards until the price becomes too great, while we who exact that price never realize the good fruit we possessed until it is gone?

Do you know, Dr. Meyer, really know what you've left us? No encyclopedias will record your miraculous discoveries, no scholars acclaim your achievements. But we whose spirits leaped at your touch, we have felt your cures. The time taken to answer endless questions, the homespun advice that eased our burdens and streamlined our routines, the emphasis on life's positives, these were your rich legacy to us. The young, hesitant, first-time mother, the lonely father wanting to be a part of things, the sick child gripping your strong finger, we took the best gift of all-your gift of a joyful spirit.

You made us all better people just for having touched you.

And by the way, Doctor, wherever you are, I still have my rocking chair.

Joan Wester Anderson describes herself as "first and foremost" a wife, and mother of five children. She also finds time, however, to free-lance articles and to prepare a twice-monthly column for a local newspaper.

No trumpets will ever herald the quality of mercy so apparent in everything "H. F." did. But we whose lives he touched, we remember oh, how we remember!

From generation to generation

amma 'possum is pregnant only 12 days. On the other hand, mother elephant carries her unborn offspring nearly two years (645 days). Among mammals these are the extremes.

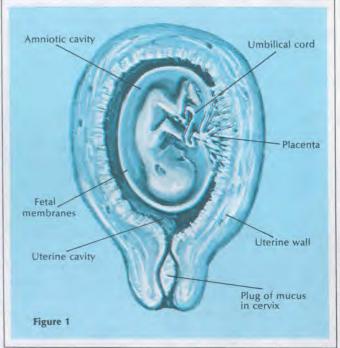
The magic number for human pregnancy is 267 daysfrom the moment of conception to birth. During this time the child increases in size from a single microscopic cell to a wriggling, gurgling seven-pound (more or less) baby.

An acquaintance of ours was able to identify the exact day of conception because of circumstances involving a move of the family from one city to another. When she became aware she was pregnant, she asked me how many days a pregnancy lasts. A brief search turned up the figure 267. She was able to circle August 5 on the calendar as D-day for the delivery of her child. Her pregnancy was normal. July came and went and she began wondering whether her baby would be born on the expected date. The morning of August 5 found her feeling no different than she had on the third or fourth. But about 3:00 P.M. her labor pains began and by 11:00 P.M. her baby girl was born-the "stork" had arrived precisely on time.

Not every mother has such a unique opportunity as this to calculate the exact duration of a pregnancy. The normal term is from 266 to 270 days with extremes of 250 to 285 days.

The most wonderful event In these times when the world is threatened with large-scale famine because of overpopulation, pregnancy is often an unwelcome event. We live in an age when the pill, the IUD (intrauterine device), and abortion are household words. Worldwide restraint as to the numbers of children being born is desperately needed, but to the healthy, happy young couple, pregnancy must always be the most natural, the most wonderful event of their lives. If this should ever cease to be, Planet Earth would soon become a habitation for crotchety old men and women awaiting the moment of death.

The orchestration of the symphony we call pregnancy in the body of a woman is a masterpiece of wisdom, imagination, and creative genius. Every system of her body eventually is affected by the new life in her womb (see Figure 1). Like a gentle adagio at its beginning, she is hardly aware of its existence. Then as the time of delivery approaches, like a mighty crescendo of tympani, trum-



LLUSTRATED BY TOM DUNBEBIN

pet, and strings, physiological events of great magnitude lead into the grand finale, which culminates in the birth of the child.

The new life begins when one of millions of sperm cells, produced by the reproductive organs of the father and deposited in the mother's genital tract during the act of sexual intercourse, reaches and fertilizes the single egg cell (ovum) produced monthly by the mother's ovary. (See "The Living Cell.")

In animals, the initiation of pregnancy is essentially a mechanical, instinctual process accompanied by an unknowing craving on the part of the female, commonly called "heat." A female dog or a cow, for example, is responsive to the male only once or twice a year during the time when one or more egg cells have broken out of the ovary and are descending through the oviducts to the uterus (womb).

In man it is a more complex physical and psychological process, which has its beginning in adolescence with the first bashful awareness of sexual feelings by girls and boys. The reproductive organs mature and the secondary sexual characteristics develop. In boys, in response to increased production of the male hormone, bones and muscles become more rugged, facial hair growth is accelerated, and the voice deepens. Characteristic changes in girls occur as a result of increasing secretion of estrogenic hormones. Various body contours are accentuated by the deposition of fat especially in hips and breasts, and the ductal and glandular systems of the breasts mature. The internal female organs begin their periodic monthly activity, accompanied by menstrual bleeding.

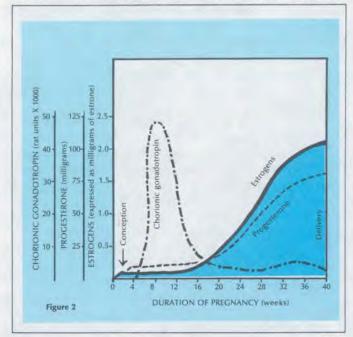
Psychologically, concurrent with the development of the physical characteristics, deep-seated emotion-packed sexual desires emerge, which may become a strong, impelling force if persistently dwelt upon.

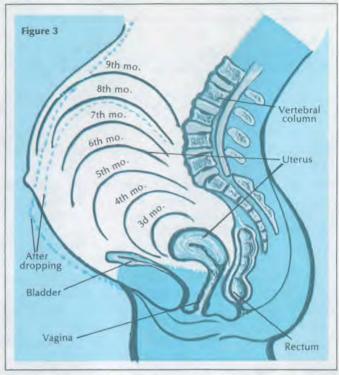
In spite of the appeals made to these profound emotional drives on every hand by advertising, and by pornographic books and movies, the average person has an inherent moral sense and sees the need for balancing this instinctual urge with other aspects of his or her life. Sex is a normal and intensely pleasurable aspect of human life designed by the Creator to be the stimulus for propagating the species. It is like a powerful charge of electricity that can destroy, or it can bring great happiness if properly channeled.

"Love is a many splendored thing" Marital love is much more than "boy meets girl." Sex is, of course, a major motivating influence, but unless combined with a deep respect and an appreciation of inward as well as outward beauty, it soon becomes empty and meaningless. Similarity of interests and temperament tends to stabilize the relationship. Furthermore, successful marriage is firmly based on the foundation of individuality and personal responsibility, and its deepest wellsprings are found in the love and trust relationship between a man and woman and their Creator.

Cast in this frame, sexual intercourse becomes a climax of tender, loving feelings for one's wife or husband. A baby born into this kind of environment is truly fortunate, and has the very best opportunity for normal psychological, social, physical, and spiritual development.

When the fertilized ovum settles into its "nesting place" in the womb (uterus), the woman has become pregnant.





At this point, she and the implanted life within her (which is now only as large as the period at the end of this sentence) will begin to undergo profound and rapid changes.

The pregnancy can't be maintained without the background support of two hormones, estrogen and progesterone, produced by the ovary from which the egg cell was expelled. These hormones act upon the developing embryonic tissues and the uterus, stimulating some functions and inhibiting others, so that the crucial first few weeks are passed safely. After about three months, the disk-shaped pad of tissue (the placenta) inside the uterus supplements the ovarian production of hormones and eventually becomes the primary source of estrogen and progesterone. Toward the end of the pregnancy, the supply of these substances may be up to fifty times the amount produced during the ordinary menstrual cycle (see Figure 2).

Once the wife misses her usual monthly menstrual period, she suspects she might be pregnant. If she proceeds to develop fullness and tenderness of the breasts and morning nausea there is little doubt of it. But an absolutely positive diagnosis cannot be made until the fourth or fifth month when the fetal heartbeat can be detected with a stethoscope or fetal movements are felt.

The rabbit and mouse laboratory tests of pregnancy have been largely replaced by frog tests, which, in turn, are being replaced by immunoassay tests. These tests depend on the presence of a placental hormone in the pregnant woman's urine or blood known as chorionic gonadotropin, whose purpose is to stimulate the ovary to maintain production of

estrogen and progesterone (see Figure 2). Since this hormone reaches peak levels at about the eighth week of pregnancy, one can expect to have a good positive test four to six weeks after the missed period.

The most obvious change to take place as pregnancy proceeds is fullness of the abdomen. Eventually the "fact" can be hidden no longer and maternity clothes take the place of usual attire. Figure 3 depicts the progression of the enlarging pregnant uterus.

Within the womb, the embryo (first two months) becomes the fetus (next seven months). At birth, the baby becomes a neonate (newly born) for one month.

Few biological matters have received more attention than human embryology, fetology, and neonatology. Perhaps this is one reason why infant mortality has declined so sharply in the past few decades. Today it is the exception if a mother, entering the hospital in labor, returns home some days later without a normal newborn child.

At three weeks, a heart During the first two crucial months of pregnancy, the tiny organs are taking shape. At three weeks, the rudimentary heart is already beating. At four weeks, eyes, ears, and mouth are recognizable. Arms and legs with tiny fingers and toes appear, and a little stomach and liver and kidneys begin to function. As you notice in Figure 1, the embryo is surrounded by a sac that is filled with fluid (amniotic fluid, which is completely renewed about every three hours). Attached to his abdomen is the umbilical cord, the baby's "life line," which is anchored at its other end to the spongy placenta, where oxygen and nutrients from the mother's blood pass across a membrane into the baby's blood.

By the end of the second month (eighth week) the em-

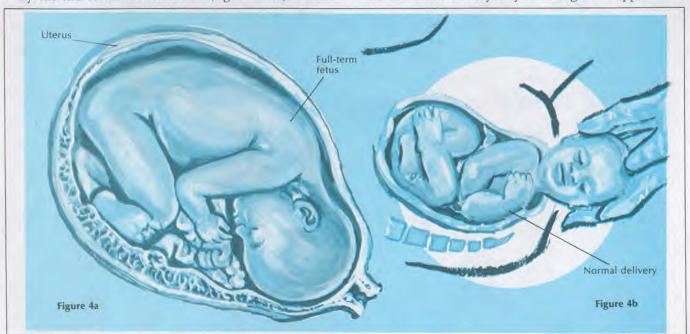
bryo, now a fetus, appears quite human-various stages of development are already complete (see Figure 1). This means that almost before the mother is aware she is pregnant, the most dangerous stages (where external factors like drugs such as thalidomide or infectious diseases such as rubella can have their damaging effect) are already past. During the last seven months the fetus continues growing, further refinement of the organs takes place, and important changes in position occur. By the time labor begins the baby should be head down, ready to exit (see Figures 4a, 4b). If his direction is otherwise, it is often possible to maneuver him into the right position.

Many changes take place in the mother's body during pregnancy, but the major ones involve her reproductive organs. Her uterus increases in weight from one ounce to two and one-half pounds, a fortyfold increase. Its muscular

Almost before the mother is aware she is pregnant, the most dangerous stages are already past.

wall thickens and becomes well supplied with arteries and veins, placing increasing demands upon the heart. Blood volume also increases by about 25 per cent (from five and one-half to seven quarts). The liver and kidneys must adjust to handle the added functional load placed upon them. The bones and soft tissues of the pelvis become more pliable toward the end of pregnancy to accommodate the passage of the baby (see Figure 4b).

No one knows exactly why labor begins. It appears that



oxytocin secreted by the pituitary gland triggers the event, and then things begin happening very rapidly. There is a precipitous drop in estrogen and progesterone production. The muscles of the uterus alternately begin to contract and relax, the pelvic tissues loosen and stretch under the pressure of the baby's head, and usually within about eight to ten hours the child is born.

THE LIVING CELL

By Irving Jones, M.D.

The moment of conception

hen does a human life begin? Does it begin when the male sperm cell unites with the female egg cell, or when the baby takes its first breath? Or does it begin sometime in between? These questions are in the province of philosophy, theology, ethics, and law.

From the standpoint of biology, human life began at the moment of creation and has been passed along generation by generation, from one individual to the next. Each person is a unique blend of inherited characteristics from past generations, modified during their lifetimes by such environmental influences as are capable of altering the genetic make-up of the male and female gametes (sperm cells/egg

The gametes are "half" cells-that is, they contain only

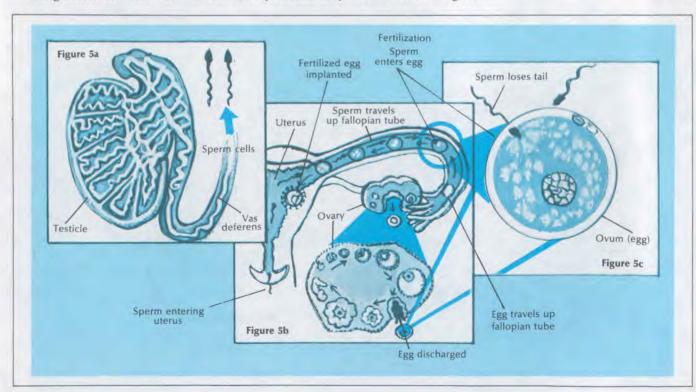
half the genetic material (chromosomes) found in the nucleus of an ordinary human cell. Chromosomes are paired structures, and a set of 22 pairs (44 chromosomes) of them plus 2 sex (XX or XY) chromosomes contains all the genetic material needed to produce a new life. The female can contribute only an X (female) sex chromosome, whereas the male can contribute either an X (female) or a Y (male) sex chromosome.

Male gametes are produced in the testicles of the father (see Figure 5a). Female gametes are made in the ovaries of the mother (see Figure 5b).

During the childbearing period of a woman's life, about 400 egg cells come to maturity, erupt from the ovaries, and are transported to the uterus. The vast majority of these do not result in a pregnancy. The whole process, including the preparation of the womb, is experienced over and over again. Someone has described menstruation as "the bloody tears of a disappointed uterus." With conception, pregnancy, and the birth of the child comes complete fulfillment of the purpose of the reproductive organs.

Figure 5b shows the sequence of changes that takes place in the ovary, including the eruption of the egg cell and its transport to the uterus through the Fallopian tubes. Fertilization occurs in the outer one third of the tube, as shown in the diagram.

Figure 5c portrays the sperm cell penetrating the egg cell. This is the moment of conception. This is the moment that life is passed along from father and mother to their son or daughter.





What to do about newborn crying

By Joan Wester Anderson

ne of the most difficult periods of adjustment for both new mother and baby is likely to be the first few months after birth, when newborn crying is at its peak. Most infants spend a certain amount of time each day red-faced and squalling, and their apparent distress adds another strain to an already tired and usually somewhat disorganized mother. But newborn crying can be minimized, and if understood and dealt with in a positive way, need not spoil the closeness and mutual enjoyment both mother and baby deserve.

Is crying necessary? Yes! No other newborn activity will enable your baby to develop his muscles and lungs better than an occasional bout of fussing. During these periods, arms and legs are in constant motion, lungs rapidly expand and deflate, and even tiny facial muscles receive a peppy workout! Crying increases a baby's appetite, sets the stage for more restful slumber, improves heart tone, and provides him, at this stage of development, with the vigorous physical exercise every human needs for continued good health. By acknowledging that

Joan Wester Anderson describes herself as "first and foremost" a wife, and mother of five children. She also finds time, however, to free-lance articles and to prepare a twice-monthly column for a local newspaper.

crying is necessary and beneficial

to a newborn, you can adjust to these episodes with more understanding and good humor.

How often does a baby cry?

This answer will vary considerably with the built-in temperament of your child. A drowsy and easygoing infant, for instance, may sleep practically round the clock, fussing only before (and occasionally after) his meals. However, pediatricians point out that these babies often wake with a bang at four to six weeks of age, and begin to catch up on the exercise they've missed!

More often, your baby may need one or perhaps two short periods each day to satisfy his requirements. If he appears to be crying much more than this, you should notify your pediatrician. Infants who fret during a considerable part of every twenty-four hours may be signaling discomfort from colic, or a physical problem that needs checking.

Basically, however, you should expect your infant to fuss at least when he is hungry, and probably some other time during the day as well.

Can crying be minimized?

In some cases. For instance, you might try feeding your baby. If it has been two and a half to four hours since his last meal, and if he consumes his usual amount, you have obviously made the right decision. However, unless a baby is extremely small or extremely hungry, not all his fussing can or should be satisfied with food.

Instead, learn to look for other reasons for crying.

Is your infant wer or soiled? Some babies protest this situation. Is he developing a diaper rash? Soothing lotion will help here. Did you burp him properly after the last feeding? Many babies can bring up a final burp that may be causing gas pain, but some will benefit by having their backs patted to help the bubble along.

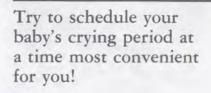
Has he been overstimulated? Often excessive handling, too many bright lights, or a constant babble of voices may exhaust an infant to the point where he finds it difficult to fall asleep. Try to keep visitors to a minimum during your first weeks home from the



hospital, and be sure your baby is handled gently. Ordinary household noises usually cause him no difficulty, but if he has been exposed to an inordinate amount of stimulation and sound, you may want to wrap him in a blanket and rock him in a quiet room for a while.

In spite of your efforts, your baby may choose a time each day when he fusses for no apparent reason. Recognize this as his daily crying jag, and you will be better able to adjust to it.

How do I do that? Try to schedule it at the time most convenient for you! You and your husband need not be the victims of an up-all-night newborn if your baby is given an opportunity to work off that steam during the day! You may want to keep him wakeful during part of the morning or afternoon. Eventually, if he is awake, he will begin to fuss. Many mothers accomplish this gentle training by putting the baby on his tummy when they wish him to sleep, and on his back when they are encouraging wakefulness. During the time he is awake you will want to hold and play with him, perhaps take him for a ride in his carriage, or change his surroundings. You may also schedule a bath at this time, or run errands with him in tow. You will notice that he slips in and out of slumber during



this period (most newborns cannot stay awake for a continuous three- or four-hour stretch), but will remain alert for longer and longer periods as the pattern takes hold.

Many mothers schedule wakefulness between the afternoon and dinner feedings, realizing that errands, other children, dinner preparation, and father's homecoming will keep them distracted during some of the crying! Another advantage—a baby tired from afternoon fussing will usually sleep straight through the night, waking only for feedings.

Although your baby must do his share of fretting, he will need help from you in keeping it under control. Don't hover over him anxiously during his crying jag-but don't abandon him, either. Try for a middle-of-the-road approach; once every fifteen minutes or so, go in and pick him up. Talk to him quietly, reassuring him that you are nearby. Even though he may continue to fuss while in your arms, your relaxed attitude will help him feel secure. Later, he will be able to lie awake contentedly, knowing you are within range of his voice.

Working through infant crying in the early months is a necessary part of becoming a capable mother. But by keeping your sense of humor, resting whenever you can, and hiring an occasional baby-sitter you can sail through this temporary period with a minimum of nervous strain.



The Reign of Love By Gertrude Loewen

When love reigns in the home, parents start their children off on life's road as well-adjusted, friendly persons.

Donnie lives most of his waking moments in the mini-world of his mother's arms. "You're a living doll," she exclaims, kissing his soft, round cheeks. "You're daddy's and mommy's big boy." Responding to her talk, his eyes brighten, his lips wiggle round and round in circles, and his toes spread into tiny fans. He squirms as if he wants more hugs and kisses and loving words.

A baby can't grow without love. If left to lie alone in his crib without handling or fondling, his natural emotions fail to develop. From the moment of his birth, as well as before, he needs warm, accepting, undemanding love—much more than he can ever repay. More important to him than his food and drink, love alone can nourish the vital forces of his inner being.



He needs a pair of arms to hold him, a lap to sit on, lips to kiss, and a hand or two to lose his own in. Daily and hourly he needs to see love lived around him—like smiling and laughing, talking and singing, rocking and cuddling.

Long before he understands words, he learns how people feel about him and his world from the way they treat him. He knows when loving arms lift him tenderly, he feels the tenseness of those who handle him roughly. He knows when mother's in a hurry and when she's relaxed. And when he feels he's really wanted and safe in his new world, he'll return the love he receives. The young heart is quick to respond to the touch of kindness.

Love reaches down to a child's rich inner world and with the delicacy of a sunbeam tinting a flower, it nourishes an outgoing nature that blossoms with surprises. Each cuddle sends waves of delicious stirrings through his being that expand his tiny soul to its finest dimension. It makes him feel admired, valued, and needed.

Since the baby's strongest feelings center around his hungers, his mother should breast-feed him if at all possible. After his first week, when she comes to pick him up, he waves his hands like little windmills till he contacts his food supply. Then, wiggling his lips into position, he sucks till he fills his tummy and falls asleep.

His adoring look of trusting innocence while he nurses pays her in full for his board and keep and occasional sleepless nights. Studying her face, he gathers ideas he'll always connect with the happy feeling of a full tummy.

His eyes watch her every move as if trying to read the secrets of her inmost soul. He absorbs her personality and character. Sure of her love, he dares to mimic her and reflects on his face the look he sees on hers.

Between the age of three and nine months a baby forms his personality. During his first year he lays the framework for his future social relations. And how he relates to his family during his first 5 or 6 years sets his lifelong pattern of how he'll feel, think, and act.

No work is grander than a mother's. Her calm, self-possessed manner has very much to do in molding the personality of her child. If she handles her disposition well in the nursery, letting love rule her every mood, she teaches lessons of lasting value. She acquaints her offspring with the sterling and lovable traits so greatly needed in today's world.

By satisfying his emotional needs before his first birthday, parents give him the most precious gift in the world—the courage to be himself. Because he's well loved, he knows that he's lovable and can offer love to others as well as receive it. Only when he feels good inside can he break away from familiar acquaintances and make new friends.

When love reigns in the home, parents start their children off on life's road as well-adjusted, friendly persons. Never ceasing to smile at each other and at him, they inspire him to fully develop his powers for making the world around him a better place in which to live.

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MIDWIFE TWENTIETH CENTURY STYLE

By Marian Behan Hammer

Janice entered the hospital last week, pregnant and about to deliver her second child. In the labor room she met the attentive, friendly 33-year-old nurse-midwife who would deliver her. Dressed neatly in a white hospital gown, the twentieth century midwife bears little resemblance to the sixteenth century midwives who presided over the unsanitary delivery rooms of that day. Nor is she akin to the "granny" midwives of yesterday's rural South.

On the contrary, the modern nurse-midwife is a registered nurse who has had six to twenty-four months of intensive additional training in the theory and clinical practice of obstetrics. Brenda Knowles, nurse-midwife at Community Hospital, Springfield, Ohio, puts it this way: "I consider myself in another profession, one that is relatively new in the medical field."

In this country, nurse-midwives don't work alone. Rather they are part of a team that includes obstetricians. Usually the doctor sees the patient early in pregnancy and if his examination determines that her delivery will be a normal one, her care can be handled by a nurse-midwife.

"The obstetrician sees the patient early to evaluate the pregnancy," says Dr. John E. Burnett, director of the Maternal Health Service in Springfield. "He's available to check the patient if any problems arise, and at the time of delivery there is always an obstetrician immediately available should he be needed."

Community Hospital is but one of many across the country that have nurse-midwives as part of their obstetrical team.

Dr. Sorosh Roshan, a young woman obstetriciangynecologist in residency at Lincoln Hospital in the Bronx, says she believes nurse-midwives handle normal deliveries better than doctors. "Because they are women, I believe they understand women better," she says. "A busy obstetrician might induce labor or use a forceps just to save time. But if the patient has a trained midwife, this won't happen."

There is a trend in obstetrics toward a more mother and family-oriented approach. The purpose of the nurse-midwife in this movement is to free the doctor from normal deliveries, thereby allowing him time to take care of more complicated cases, such as breech or forceps births. As it is now, the obstetrician-gynecologist is so overworked he doesn't have time to give his normal patients the care and attention they often need.

For the patient, the chief value of a nurse-midwife is the quality of care she gives. She is there, soothing, helping, encouraging, ready to deliver the baby when the patient is ready. Unfortunately, many doctors have been known to put in an appearance only after a delivery has been held back, or in time to cut the umbilical cord.

While in labor, women particularly value having someone there with them. They appreciate the opportunity to ask questions and receive honest, intelligent answers. Rather than regarding the hours of labor merely as an inconvenience prior to the more significant business of getting the baby out, nurse-midwives use this time to comfort and encourage the patient.

At Booth Maternity Center in Philadelphia, a 30-year-old mother of four confessed with a smile, "We even talked about a matter I couldn't bring myself to discuss with my doctor—a sex problem my husband and I have been having since the birth of our last child."

Parients also appreciate the fact that nurse-midwives are generally more liberal than doctors about letting a patient decide for herself whether she wants a member of the family with her during labor; whether she prefers to have the baby in a sitting or lying down position; with or without her legs in the stirrups; with or without the shave of the pubic area and the dreaded enema; and with or without the episiotomy (the surgical cutting of the perineum). Often the baby's father is welcomed as an important member of the team throughout the entire period of labor and birth.

Will the trend toward midwifery continue in this country? Most probably. Although some doctors view nurse-midwives as a threat, many others highly regard their work. The American College of Obstetricians and Gynecologists has issued a statement enthusiastically endorsing their services.

At present there are more than sixteen institutions offering basic education in nurse-midwifery, internship programs, or refresher programs. Among these are programs



at Columbia University, Johns Hopkins University, Yale University, St. Louis University, and the University of Illinois. Currently these programs are offered on a post R.N. and Master's degree level.

Colorado is the only State that still bans nurse-midwives from practicing. Restrictive laws in California, Massachusetts, and Missouri are now in the process of being revised. With increased public acceptance has come acceptance by major insurance companies like Blue Cross/ Blue Shield, which include the Maternal Health Service program in their obstetrical coverage.

"Ninety-five per cent of the patients referred from my practice to the Maternal Health Service team have been completely satisfied and happy," says Dr. Burnett. "We feel that we're giving our patients a new and better form of support and understanding than it's ever been possible for a doctor to give alone. . . . We feel our patients have double coverage."

Garden-fresh finger foods By Nancy L. Besse



A t age 1 our healthy, energetic twin girls relish nearly all of our fresh garden vegetables. They can polish off a seven-inch cubed zucchini between them at lunch and be ready at suppertime for a substantial meal of cauliflower and whole-wheat bread.

Carli and Heather were nine

months old when the first of our asparagus pierced the soil. The first batch looked so delicious I placed a small piece on each of their trays. It disappeared immediately with eager clamors for more until my entire serving of the green delicacy was gone. Their delighted smiles as they are the tender stems

indicated their readiness for more finger foods.

The lettuce that came after the asparagus proved a bit too crunchy and hard to digest. Radishes and onions were too strong, and our edible-pod snow peas slightly too tough. I offer the girls each new vegetable that ripens, then watch their reactions carefully. I do not serve unsatisfactory ones again and again, although I do offer them more than once. Sometimes young children's tastes will change.

I never force or cajole either baby to "eat your vegetables!" I simply place each baby's new vegetable, cooked until very tender, on her highchair tray with the rest of her meal, without comment. I respect the girls' right to enjoy or reject foods on their own.

Shelled peas were a delight! Each baby's eyes lit up when I rolled the little spheres onto their high-chair trays. Each pea was carefully pinched between tiny thumbs and forefingers and jerkily put into their mouths. The babies were quite proud to be eating the peas themselves, and I felt the practice of grasping the tiny balls was good for developing finger coordination and heightening awareness of color, shape, and texture.

Tender Swiss chard and young beet greens I found were best chopped and spoon fed. A whole cooked leaf got whipped around rather wildly, instead of eaten!

Because the color and sweet flavor of new beets were so appealing to the girls, I willingly put up with purplish-red hands and faces. At ten months, when the beets were fully ready, the babies had started finding their mouths more accurately. An alternative to excessive wiping up is to give the baby a *single* piece of finger food at a time.

I cook vegetables for Carli and Heather longer than for my husband and me. They prefer them soft so their gums and few teeth can chew them easily. A light melting margarine and faint sprinkling of salt is the only seasoning necessary.

Baby carrot thinnings, about

three inches long, were ready after the beets and equaled them for eye appeal. Heather especially loves the color orange, and will eat tender cooked carrots in preference to almost anything else.

Carli loves cauliflower so much she sneaks it from her sister's tray. I cut it into small flowerettes before cooking. They always nibble the flower end first. Garden cauliflower has almost none of the strong flavor of store cauliflower, so this is a good way to introduce it to the children.

Now our zucchini are producing prolifically, and both babies enjoy it. At a year of age, they want it served to them "hot" so they can practice their first word. If I tell them it's hot, they touch it very gingerly until it cools.

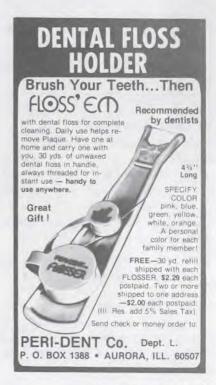
Rutabagas and turnips are not too strong for Heather's and Carli's taste at present. Green beans were too hard to chew at first, until I cooked them twenty minutes. Juicy red tomatoes were too tart at the beginning, but they are learning to like them. Carli savors the smallest ears of our Golden Bantam corn. Every person has different preferences for food, babies included!

I'm looking forward to muskmelon and winter squash time. As I freeze and can nature's bounty I feel confident that throughout the winter our whole family will be enjoying the harvest.

Preparing vegetable finger foods for twin babies takes a little extra time, but the time saved as they eat their own meals while I work in the kitchen rather than spoon-feeding them makes up for it. Finger foods do find their way onto the floor and on the highchairs, but the bright eyes, smooth skin, soft hair, and sweet dispositions of my two little daughters are ample reward for my labor.

This mother says babies thrive on tasty garden vegetables.

Nancy L. Besse is a full-time mother, part-time free-lance writer with a B.A. in journalism and a minor in wildlife management from the University of Alaska. She also has an elementary teacher's certificate. She and her husband, John, moved from Alaska to a 160-acre farm in Minnesota, seeking a longer growing season. Their goal is to make their entire living growing fruits and vegetables.



Should a child be FORCED TO EAT foods he (or she) doesn't like? My husband insists our 11-year-old daughter eat her cooked cereal every morning.

Find out why she doesn't like it. A Sometimes oatmeal, for example, has a gummy texture or is very flat-tasting if not enough salt is used in cooking. Children often have preferences in their choice of foods, which will change from time to time. If she is getting a balanced diet otherwise, it would seem unreasonable and unwise to force her to eat cooked cereal. At this age, children are usually hungrier because they are entering the teen-age In-between-meal growth spurt. snacking on foods that are unwholesome and eating at bedtime may cause less of an appetite for good food at mealtime.

My doctor has prescribed ESTROGEN pills for me to relieve hot flashes, moodiness, and insomnia I've been experiencing lately during the CHANGE OF LIFE. I read in a news magazine recently that estrogen might cause cancer. Do you have any information about this?

A Research reports have shown a relationship between uterine cancer and the use of female hormones. More research is presently under way and a special panel of experts appointed by the Food and Drug Administration is studying the problem.

Meanwhile, the risks must be balanced with the advantages and if symptoms are disabling, at least lowdose, short-term estrogen therapy would seem to be indicated.

Many of my friends are taking BIRTH CONTROL PILLS to prevent pregnancy. What are the dangers?

Oral contraceptive pills are used by approximately 10 million women of childbearing age in the United States. The most commonly used estrogen-type pill suppresses the release of egg cells from the ovary.

Individuals with several specific conditions should not use the pill. These conditions include: active liver disease, elevated blood fats, cancer of the breast or uterus, pregnancy, high blood pressure, migraine headaches, depression, epilepsy, or a history of blood clots in the leg veins.

Most women experience few or no side effects, the more common ones being nausea, headaches, breast discomfort, and moodiness.

In general, the pill is *safe*, from the standpoint of effectiveness in preventing pregnancy and from the standpoint of dangerous side effects.

Q A friend of mine had a difficult delivery. She said her doctor had to use FORCEPS. Can these instruments harm the baby?

A Forceps, invented about 300 years ago, are metal curved paddlelike instruments that are inserted into the birth canal on either side of the baby's head during the second stage of labor and locked into place. Their purpose is to provide the obstetrician with a means of gently assisting the mother with the delivery of the baby. Forceps are needed when the second stage of labor has become prolonged or when there is fetal distress and the baby must be delivered quickly. Special forceps are used for babies born feet first. They are essential tools of the obstetrician.

Another instrument also in use is the *vacuum extractor*, which is like a small suction cup applied to the baby's scalp. The head can be gently drawn outward as the uterus contracts. Such instruments have enabled obstetricians to save many lives that otherwise would have been lost.

Q I have read in the newspaper recently about AFLATOXINS. Is it true that these substances, found in certain foods, may cause cancer?

Aflatoxins are a group of extremely toxic substances produced by Aspergillus flavus, a mold that grows on food crops stored in hot, humid places. Ducks and turkeys that suffered rapidly fatal liver destruction were found to have been fed moldy peanut meal. Aflatoxins have been found capable of inducing liver cancer in rats, and in the hot, humid sections of Africa where molds contaminate many foods, liver cancer is common in human beings.

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