

the People's Doctor

A MEDICAL NEWSLETTER FOR CONSUMERS
by Robert S. Mendelsohn, MD

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IN THIS ISSUE:

Ultrasound Dangers Revealed



Dr. Robert Mendelsohn

"Dr. Robert Mendelsohn has struck again." Thus read the first line of a special "News Advisory on Safety of Ultrasound" sent out to the members of the American College of Obstetrics and Gynecology (as reported in "The Fetal Advisory," a newsletter published by the American Academy of Husband-Coached Childbirth, Jay Hathaway, Director). The spokesperson for the College was referring to my appearance on Gary Collins' syndicated television program, "Hour Magazine," during which I attacked the safety of ultrasound. The news release claimed that I made "several unsubstantiated charges that have needlessly frightened a number of pregnant women." And worse yet, "We have some reports that women are cancelling their appointments for ultrasound examinations, quoting the dangers as described by Dr. Mendelsohn." Since more than 130 television stations carried my remarks, the College advises, "...if there is a Metromedia station in your area, select a knowledgeable Fellow to approach the station, and ask for a chance to set the record straight."

Reading this issue of my Newsletter will provide you with the fullest information extant on the subject of ultrasound. After ACOG members read this same Newsletter, they'll have to work a little harder to "set the record straight."

Q My friend is expecting her fourth child. She is a very healthy person who never has had a problem during her pregnancies. When she went to see her doctor, he told her that a woman who has a fourth child when she is in her thirties is considered a high-risk case, and he had her take an ultrasound test.

The doctor now says she may need another test--amniocentesis--before the baby is born. Since she is experiencing absolutely no abnormal symptoms, we are very concerned about her having this test. Can you tell us how ultrasound and amniocentesis work and whether they can cause problems to the health of the mother and/or fetus?--S.M.

A I presume that when your friend's doctor pegged her as "high risk" because of her senior citizen status (obstetrically speaking), he did not inform her equally about the known and potential risks of ultrasound.

On February 13, 1979, the FDA sent a letter to all physicians notifying them of the biological effects in test animals exposed to ultrasound at levels representative of ultrasound's current diagnostic use.

The FDA pointed out that because of "the recognized susceptibility of embryonic tissue to a variety of insults, those studies indicating that ultrasound can effect the development of laboratory animals exposed in utero are of particular concern." Some of these effects include delayed neuromotor reflex development, altered emotional behavior, fetal malformations, increased levels of certain enzymes in the central nervous system, and EEG (brain wave) changes.

The FDA Commissioner predicts it will take several years before the risks of diagnostic ultrasound can be established and quantified, because the studies "of adverse effects from ultrasound have been inadequate (and) there is no direct way at this time to establish the exposure limits that assure safety." The FDA Commissioner recommends that "manufacturers should not state in advertising or promotional literature that diagnostic ultrasound is unequivocally safe." And in view of a scientific report of increased movement of the human fetus during examination with ultrasound, the FDA Commissioner "believes an individual's exposure to ultrasound should be kept as low as practicable...." Finally, the Commissioner expresses his concern "about the rapidly growing use of this modality while definitive information on biological effects is lacking."

In regard to your question on amniocentesis (needle aspiration of amniotic fluid), Dr. Stewart Orkin of Harvard Medical School, one of the developers of this test, has found that amniocentesis itself causes abortions five per cent of the time. I previously have reported R. Alan Baker's findings (Obstetrics and Gynecology, February 1978) that the hazards of amniocentesis include pneumothorax (air in the baby's chest from multiple puncture wounds), gangrene of a fetal limb, hemorrhage, and sudden death.

Q I recently had an ultrasound test because I had cramping and heavy bleeding during the second month of my pregnancy, and a miscarriage was suspected. A healthy heartbeat and movements of the fetus were confirmed today by several minutes of ultrasound examination.

I know you believe ultrasound is harmful, but my doctor tells me that from everything he has read, there is no cause for alarm. I would like to have some facts--another ultrasound test is planned for me in the future.--S.Y.

A Perhaps your doctor simply hasn't read enough. For example, has he read the long article reviewing the criticisms of ultrasound which appeared in the April 23/30, 1982 Journal of the American Medical Association? Has he read the published evidence from researchers at the Albert Einstein School of Medicine? Has he read Dr. Alan Baker's article in the prestigious medical journal, Obstetrics & Gynecology, 1978, or Dr. Fred Ettner's concerns as expressed in "Safe Alternatives in Childbirth" (NAPSAC, Marble Hill, Missouri)? Or Dr. James Stockman III in the 1979 "Yearbook of Pediatrics"? Or the evidence from W. B. Jarzembski, Ph.D., Associate Professor of Biomedical Engineering and Computer Medicine, Texas Technical University, which shows that ultrasound may affect the growth of human cells? Has he read the experimental work of Drs. David W. Anderson and James T. Barrett of the University of Missouri which showed that ultrasound has an adverse effect on the immune system? Hasn't he read the FDA's warning to all physicians not to tell their patients that ultrasound is safe? Or, if he hasn't read these medical articles, what about the April 16, 1978 Washington Post article on ultrasound written by Judith Randall?

Q I currently am about three months pregnant. On my first visit to the doctor, I explained that my menstrual cycles are long (approximately 38 days), but he still figured my due date in terms of the conventional 28-day cycle.

The doctor now tells me that the size of the fetus is somewhat small (since he assumes the date of conception is about two weeks after my last period), and he wants me to have an ultrasound test after I'm four months pregnant. I assume I ovulated about 10 days late, since my cycle is 10 days longer. When I told him how far along I thought I was, he agreed that was the size the fetus was, but he still wanted me to have the ultrasound.

Here are my questions: How important is it to find the exact due date within a 10-day span? What, if any, risks are involved? Do doctors really know the long-term effects of bombarding a fetus with sound waves? Haven't the Japanese stopped using ultrasound routinely because of the risks associated with it? Can you shed any light on this subject? --K.W.

A I hope your doctor has been reading his medical journals, since the lead article in the April 23/30, 1982 Journal of the American Medical Association was headlined, "Question of risk still hovers over routine prenatal use of ultrasound." The article describes a recent study at the University of Manitoba, Winnipeg, in which the investigators found "a small but significant rise in the number of children (who had been exposed to diagnostic ultrasound) who were underweight at birth." Most of the panelists at the symposium quoted in this article "expressed concern about the possibility of delayed or subtle manifestations" of diagnostic ultrasound.

Ultrasound produces at least two biological effects--heat and a process called "cavitation" in which bubbles are created that expand and contract in response to sound waves. The first time I saw this cavitation process in action, a chiropractor turned on the therapeutic ultrasound machine in his office and placed a few drops of water on the part of the machine that was applied to the patient. I wish every reader of this Newsletter could have been with me to watch that water suddenly boil and bubble.

Speaking at that Winnipeg symposium, an investigator of the FDA's Bureau of Radiological Health said that ultrasound can produce shock waves in liquid (and I remind you that the infant inside the uterus is surrounded by liquid). In animal fetuses exposed to ultrasound, investigators from the University of Rochester School of Medicine reported that the cavitation process can produce damage in insect eggs and in plant and mammalian cells.

Doreen Liebeskind, M.D., assistant professor of radiology at Albert Einstein College of Medicine, suggested that long-term human studies of children exposed to ultrasound should look for behavioral changes, nerve reflex changes, I.Q. deficits, and shortening of attention spans. Although Dr. Liebeskind observed changes in cell appearance, motility, and DNA synthesis that were passed on in succeeding cell generations, neither she nor Arthur D. Blum, M.D., professor of pediatrics at Columbia University, felt they would be seeing cancer until a large number of exposed children had been followed for 15 to 20 years.

I hope your physician follows Dr. Liebeskind's recommendation that physicians should discuss the benefits and risks of ultrasound with their patients. The Winnipeg panelists recommended that physicians should not assume that diagnostic ultrasound is innocuous, even though obstetricians are under considerable pressure from manufacturers to buy and use the instruments. Furthermore, the American College of Obstetrics

and Gynecology has emphasized that physicians who operate ultrasound equipment must be properly trained.

If your doctor tries to reassure you by telling you that ultrasound is not x-ray, you might answer him that just because it isn't x-ray does not mean that this form of energy wave is safe. (Reprinted from Vol. 7, No. 3)

Q As trained ultrasonographers, we strongly object to the alarming headline in your syndicated column which read, "Ultrasound dangerous, studies show."

After reading the publications you referred to, we were unable to find any conclusive evidence to confirm your statement that "Ultrasound may lead to impaired learning ability and to cancer." On the contrary, the same articles say that "...the incidence of childhood neoplasia is far below normal" and that ultrasound "...reduces perinatal mortality by picking up abnormalities and growth problems early in pregnancy" which makes the benefits far outweigh the remote, unproven dangers.

It is unfair to the public for you to publish an opinion so misrepresentative of the facts. The writer to whom you responded clearly had a medical indication for an ultrasound examination, and you probably have succeeded in reducing her confidence in her obstetrician.

Perhaps one day, ultrasound will be labeled as "Dangerous and use with great caution," but until that time, we would appreciate more truthful journalism.--Four Staff Sonographers, Charity Hospital of Louisiana at New Orleans.

A Since the four of you who signed this letter are using ultrasound on pregnant women, I am not surprised that you--reading the same scientific references which are available to me--would pull out those quotes which argue for the safety of ultrasound. I, on the other hand, knowing that neither doctors nor their assistants are likely to tell patients the risks of ultrasound (now documented in both human and experimental studies), want to make sure that my readers receive those warnings. It is my purpose to develop a questioning attitude among my readers. In order to resolve this dilemma, I respectfully recommend that you trained ultrasonographers give each pregnant woman, before she takes an ultrasound test, the scientific articles themselves.

I am particularly disturbed by your willingness to use a new medical tool until "Perhaps one day ultrasound will be labeled as dangerous..." The same obstetricians who now are using ultrasound on many (in some hospitals, on a majority of) pregnant women several times during their pregnancies have forgotten too quickly the lesson they should have learned from DES. Allow me to spell out that lesson: Always consider a new procedure to be dangerous until it is proven safe. Please note how that rule contrasts with your willingness to use ultrasound until it is proven dangerous.

Similarly, radiologists who use ultrasound seem to have forgotten how they and their patients were burned (literally) by x-rays. One doctor who hasn't forgotten how dangerous that once-supposedly safe form of energy proved to be is J. Ernest Breed, M.D., past president of the Illinois State Medical Society who served for 20 years at Northwestern University Medical School.

Referring to a half century ago, Dr. Breed writes in Chicago Medicine, (February 21, 1983), "Little was known of the dangers of radiation,

and looking back, I recall many mistakes that people made. For example, often the radiologist, including myself, would not wear lead gloves, or the lead apron, when doing fluoroscopy. Fortunately, I suffered no ill effects."

You and every staff sonographer in the country must remember that you have an awesome responsibility for two lives every time you point the machine at a pregnant woman. In order that you may avoid feelings of guilt, anguish, and remorse "perhaps one day," make sure you provide each pregnant patient with both sides of the ultrasound story.

Q I became pregnant in April, 1981. In July, the doctors noticed that I was becoming very large for the number of weeks I was pregnant. Since there is a history of twins in both my husband's family and mine, the doctors suggested I have an ultrasound examination. They told me of no side effects, and they assured me it was perfectly safe.

In August, I had the ultrasound. Our suspicion of twins was confirmed. During the following few weeks, I felt less and less movement, until I felt no movement at all for three or four days. My belly grew so large that I looked nine months pregnant, although I was only four and-a-half months along.

I went to the doctor, and he scheduled me for ultrasound that very day. This sonogram confirmed that the twins still were moving and kicking, but my amniotic fluid was overproducing extremely. The doctors explained I was feeling no movement because of an overabundance of amniotic fluid, which had not been present at the first ultrasound scan. They did not prescribe any treatment, saying nothing could be done about the excessive amniotic fluid.

I was told to get as much rest as possible (at this time, I also had an eight-month-old baby), and they said they would continue the ultrasound at intervals. The second ultrasound was done in August, and within a week, I went into labor. The twins were born at 20 weeks and lived only about an hour.

I am writing you because both my husband and I believe the ultrasound had something to do with the imbalance of amniotic fluid. Perhaps my report may keep this from happening to someone else.

I now am five months pregnant again, and everything seems to be progressing normally. Three times during this pregnancy, I have been asked to have ultrasound, but I have refused each time.--Mrs. L.A.

A Since ultrasound does indeed produce changes in fluid by a process named "cavitation," you may be justified in your suspicion that ultrasound played a part in disturbing the amniotic fluid surrounding your twins. However, since diagnostic ultrasound is such a new procedure, not enough research has been completed to either prove or disprove the point you raise.

I hope you will send a copy of the letter you sent me to the Food and Drug Administration, the government agency responsible for protecting you and others from premature use of unproven medical procedures. I also hope you will immediately obtain all the records (hospital, doctors' office, autopsy if there was one) of your unfortunate twins, keeping those records in a safe place for the next few decades.

In view of the concern that ultrasound, which affects the DNA synthesis in experimental studies, may lead to cancer in later years

(as well as to I.Q. deficits and learning disability), I have been recommending to all mothers whose infants have been exposed to ultrasound that they get the medical records and save them. (Many of the six million women who were given DES between 1940 and 1970 today wish that they had had such foresight.)

While there are many doctors who do not tell patients the darker side of the ultrasound story contained in the medical journals, I recently have learned that there are doctors who don't seem to know about the findings of ultrasound researchers. Following a recent national television appearance on the subject, I received many letters from physicians who requested my Newsletter on ultrasound. I even received telephone calls from the FDA and the AMA.

You and every other mother for whom ultrasound is prescribed have a right--indeed a responsibility--to ask the doctor what he has read on the subject of ultrasound. Better yet, ask him to share his readings with you before you expose your baby to those sound waves.

Q In 1980, I had a sonogram taken to determine if I was carrying a normal baby. Since I had had a stillbirth the previous year, I was thrilled, relieved and grateful for the ultrasound procedure which assured me my little boy was just fine. Now, three years later, you are going around the country telling people ultrasound will be the DES of the 1980's. I cannot imagine anyone making such inflammatory remarks on national TV unless he is very sure of his information. After hearing you speak on this subject, I cried in fear. Then, upon your suggestion, I called my doctor to request that a record of the sonogram be sent to me. I feel I should relay your message to all my friends and my family, but I need more facts. Do you have any reading lists or fact sheets so that I can read further on this subject?

I should close with a thank-you for your exposition, but if what you say is based solely on supposition and guesses (which is what the doctors I've contacted have suggested), I hope you can live with the fact that you have subjected millions of parents to a new guilt trip and to years of worry.--S.G.

A The last paragraph of your letter indicates you are following in the tradition of the ancient Greeks who, upon hearing bad news, killed the messenger. The question you and all other mothers who have been exposed to ultrasound during pregnancy must face is "Which news is bad?" Many doctors believe that diagnostic ultrasound is an effective and safe procedure. Others, myself included, believe it is dangerous. Some patients will opt to listen only to the rosy side of the story. This ostrich-like posture, of course, precludes anxiety, since everyone knows that ignorance is bliss.

Ten or 20 years ago, patients did not have access to both sides of the story about medical procedures and treatments. The Physicians' Desk Reference could be found only in doctors' offices, and medical reporting was limited to unquestioning acceptance of "medical breakthroughs." Newsletters and columns such as mine did not exist in the 1960's; in those days and before, the patient was truly a defenseless victim.

But times have changed. Today, reference books on the dangers of drugs, medical tests, and surgical procedures can be found in practically

every public library. Journalists finally are beginning to ask the tough questions of doctors, in the same way as they've always asked tough questions of politicians. Every year, books critical of establishment medicine, often written by doctors themselves, offer the public a look at the confusion that exists within the profession.

There is no reason for any literate patient of the 1980's to be a helpless victim. Therefore, any patient who suffers damage at the hands of a physician now shares in the responsibility. Should the doctor feel guilty? Not if he has been honest with his patient. Should the patient feel guilty? Not if she has done her homework, asked plenty of questions, and deliberated carefully on her decision.

I expect the ultrasound enthusiasts to give assurance about this relatively new procedure. Similarly, I expect ultrasound critics to sound the alarm. And I expect that patients like you will go through a period of confusion and emotional upheaval, then embarking on the kind of commonsense, rational investigation you have initiated. You called your own doctor. You asked for a record of the tracing. You decided to discuss the issue with your family and friends. And you wrote to me for more facts. The experience you will gain from investigating both sides of the ultrasound controversy should prove quite valuable in facing up to each new "breakthrough" in the ever-increasing technology of medicine.

*Information
leaked on
ultrasound
risks*

There are some very suspicious hints that children exposed in the womb to sonograms (diagnostic ultrasound) appear to be developing leukemia and other cancers in higher numbers than unexposed children. That frightening piece of information, which comes from Alice Stewart, a British epidemiologist who heads the Oxford Survey of Childhood Cancers, appeared in the New York Times (August 2, 1983) in an article entitled "'Safe' Form of Radiation Arouses New Worry."

This article plus two documents were mailed to me in a hand-addressed envelope with a return label from the U.S. Department of Health, Education, and Welfare, Public Health Service, Food & Drug Administration, Bureau of Radiological Health, Rockville, Maryland. This anonymous sender now joins the many other unnamed "moles" who, during the past seven years have passed on to me inside information--often secret--from the files of drug companies, medical schools, hospitals, baby food manufacturers, animal vivisection laboratories, and local, state, and federal government agencies. The determined action of these informants to bring these truths to public attention continually renews my confidence in the ethics and integrity--indeed nobility--of the average American.

For the past five years, I have been reporting to you on the ever-increasing evidence of ultrasound damage, and now, thanks to this informant, I am able to further share with you information about the hundreds of studies which have been reported by the World Health Organization (WHO) and the U.S. Department of Health and Human Services. In one of the two publications passed on to me entitled "Environmental Health Criteria 22: Ultrasound," the collective views of an international group of experts is reported. (This 1982 publication is published under the joint sponsorship of the United Nations Environment Programme, the World Health Organization, and the International Radiation Protection Association and may be obtained from WHO Publications Center, 49 Sheridan Avenue, Albany, New York 12210.)

A number of experimental studies cited in the above publication show reduced fetal weight and reduced fetal organ weight in animals exposed to ultrasound. One study on human beings suggests that lower birthweight may result from exposure to diagnostic ultrasound. Other studies suggest that ultrasound may induce "immunologic responses" in laboratory animals. Ultrasound effects may be enhanced if this technique is used in combination with x-rays and drugs; increased chromosome aberrations (deviation from the norm) in body cells have been observed after combined exposure to ultrasound and x-rays. Ultrasound also may have a synergistic (additive) action with such agents as heat, viruses, and medication. The liver of animals exposed to ultrasound showed impaired ability to clear foreign substances (colloidal carbon) from their blood.

Ultrasound also affects the blood platelets which are vital to blood clotting. This could have serious consequences for the patient, leading to "the blockage of circulation in small capillaries and subsequent complications of embolism [traveling blood clots] and infarction [tissue death, as in heart attacks], especially in patients who exhibit clinical conditions which might predispose them to thrombosis [blood clots], e.g., during pregnancy or after surgery."

The other publication that came to me, the 134-page Health and Human Services booklet entitled, "An Overview of Ultrasound: Theory, Measurement, Medical Applications, and Biological Effects," (July, 1982) contains hundreds of citations of published studies. Its preface identifies the target audience as including the manufacturers of ultrasound instrumentation, health professionals, and scientists. But even though this book is full of statistics and formulas, the information--particularly on the cancer-producing potential of ultrasound--is of interest to each and every one of you.

The concern that ultrasound can lead to cancer and congenital defects emanates from experimental studies on the capacity of ultrasound to produce cellular damage. The mechanisms by which ultrasound damage is produced include heat, which can lead to tissue destruction; radiation force, which can lead to disturbance in blood flow, and cavitation (the production of bubbles in tissue, for example in the amniotic fluid), which can lead to functional changes in biologic cells. (The key changes caused by ultrasound include DNA degradation, cell lysis, cellular inactivation, modification of cellular ultrastructure, alterations of the plasma membrane, increases in frequency of sister chromatid exchanges, fragmentation of nucleoli, acoustic streaming of cytoplasm, damage to mitochondria, disturbance of the mitotic spindle, and increased frequency of giant cells.)

On the basis of the above abnormal cellular responses to ultrasound, one might predict a variety of forms of damage. Sure enough, experimental studies already have shown defective embryos--including abnormalities of eye pigmentation and head and thorax development, abnormal heart development, reduction in litter size, increase in skeletal abnormalities, delay in maturation of the nervous system, disturbance of bone marrow growth, changes in contractibility of muscle, and suppression of radioiodine uptake.

Animal studies also show influences on the emotional behavior after birth, leading to the conclusion that this post-natal data, if confirmed, "presents a serious challenge to the assumption that fetal exposure to ultrasound is innocuous." The Health and Human Services publication concludes that "Latent periods easily could be as long as 20 years in the case of cancer development, or the effect may not be seen for another generation....Because the human fetus is sensitive to other forms of radiation, there is considerable concern that it may also be sensitive

to ultrasound...Until now, the fetus has been the focus of our concern; however, exposure of the mother could pose an equally or more significant risk...There is some evidence that if exposure is within the period of organogenesis [organ formation], congenital malformations may result from exposure to ultrasound in laboratory animals."

An important admission is contained in the following statement: "Further, it must be realized that animal studies may not have explored all possible adverse effects, and it is quite possible that animal studies will not reveal some potential problems in humans."

Those readers with long memories will recall that this was exactly what happened with the Thalidomide disaster, in which the animal studies gave no hint of the catastrophic skeletal deformities produced two decades ago by that morning sickness drug. Animals don't necessarily have the same reaction to drugs and therapies that people have. Within the animal kingdom itself, even different species react differently, thus highlighting one of the serious criticisms of animal experimentation.

After reading this account of the chamber of horrors of ultrasound, you might respond by challenging me with the benefits of ultrasound. But not so fast: The HHS report concludes, "It is not clear at this time whether ultrasound fetal monitoring is beneficial to the mother or fetus in terms of pregnancy outcome....If there is no generally acknowledged benefit to the monitoring, there is no reason to expose patients to increased costs and possible risk....The question of benefit has not yet been resolved...and the potential for delayed effects has been virtually ignored."

You might respond that some studies do not agree with these pessimistic findings. If so, you will be greatly interested in the critique in this publication of the optimistic studies. Regarding those studies which concluded that there was no evidence of ultrasound damage, the Health and Human Services authors point out: "Since there was no unexposed population in this study, such a conclusion was unfounded." In two other studies which reached similar conclusions, there again were no control populations.

You next might predict that even though insufficient studies have been carried out until now, definitive studies will be available in the future. Not so. In the final paragraph of the report, the publication concludes that long-term follow-up studies will be more difficult because "Control populations of unexposed neonates [newborn babies] are rapidly disappearing as the use of ultrasound diagnosis increases." In other words, so many women and their unborn babies are being exposed to so much ultrasound that it will not be easy to find pregnant women who are not being exposed to ultrasound in order that the two groups (exposed and unexposed) can be compared. Thus, ultrasound represents the latest in a series of medical technologies applied to mass populations without any scientific proof of benefit and with considerable evidence of risk.

The chance of a fetus being exposed to ultrasound today is greater than 50 per cent. Many obstetricians are using ultrasound on practically all their pregnant patients, often several times during the pregnancy. A number of women have written me reporting that their obstetricians give them ultrasound at each monthly prenatal visit.

Since obstetricians are not going to discipline each other for overusing ultrasound, I am recommending the following precautions for every pregnant woman whose doctor tells her, "You need an ultrasound in order to check the gestational age...the position of the baby...whether you are carrying twins...to get a more complete 'picture' of the preg-

nancy...whether the placenta is in the right place...whether the baby's head is too big for the birth canal, etc."

Ask your doctor to tell you the risks of ultrasound. Ask him if he has read the publications of the World Health Organization and the U.S. Government. Ask is he is familiar with Dr. Alice Stewart's statistics which link ultrasound to leukemia. Ask how he answers the statement by the U.S. Department of Health and Human Services that no evidence exists showing that ultrasound is beneficial to the mother or fetus in terms of pregnancy outcome.

Since the Department of Health and Human Services also reports that "Most manufacturers do not currently provide information on exposure levels with their equipment...", ask your doctor if his particular machine carries this information. Request that he supply you with the name of the machine's manufacturer and the identification number.

If your doctor cannot give you satisfactory answers to these questions, perhaps you should seek consultation from an older doctor who successfully practiced obstetrics before the ultrasound era. You might even want to discuss the subject with a midwife.

And what do you ask if your child already has been exposed to ultrasound in the womb? While no medical treatment is known that can reverse ultrasound damage, the least you can do is obtain your records from your hospital and your doctor's office so that if, God forbid, your child becomes an ultrasound statistic, you may be able to bring legal action to recoup some of the costs of his subsequent medical care, rehabilitation, or special education.

Ultrasound is the latest example of an unproven technology being sold to the public as being "perfectly safe." It falls in the same class as painting radium dials on watches, fluoroscoping children's feet in shoe stores, routine mammography, routine chest x-rays, radiation therapy for tonsils, exposing army personnel to atomic bomb tests --in each case, the medical profession failed to take the necessary steps to protect people against a malignant technology whose risks were already well understood.

But doctors never seem to learn from history. Rather than using the cumulative experience of previous generations, doctors approach each new technology with an incredible air of wide-eyed innocence. Because of doctors' simplistic notion that history does not count (or even exist) and that newer is always better, they seduce millions into using technologies that will lead to major disability.

The prediction I made almost 10 years ago--that the dangers of ultrasound will multiply as its use is increased--has become reality. Maybe doctors can't learn from history, but you certainly can.

"MalePractice: How Doctors Manipulate Women," Dr. Mendelsohn's latest book, is now available in paperback from Contemporary Books (\$6.95).

"Confessions of a Medical Heretic" is available from WarnerBooks (\$3.25).

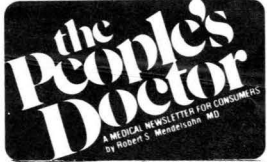
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the gift that keeps on giving
all year.



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IN THIS ISSUE:

Fluoridation...Microwave Ovens...
A Test-tube Baby...A Special Baby



Dr. Robert Mendelsohn

I always knew that the issue of fluoridation of water supplies aroused intense emotions on both sides. But I was nevertheless surprised at the outraged and violent reactions in response to what I considered a relatively innocuous piece which recently appeared in my syndicated column.

Within days after that fluoridation article was published, my column was cancelled in two large cities. One of those newspapers, the *Houston Post*, carried quite a few letters to the editor after my disappearance from the pages of that paper. I have decided to bring to your attention my original column, some of the responses from my Houston readers, and a final column I sent to the editor of the *Houston Post* which was never printed.

This explosion has caused me to examine even more closely the latest scientific literature on the fluoridation issue and has led to a further change in my position. After my graduation from medical school, I, like all good doctors, believed in fluoridation. Later, I began to mildly question its safety, and now I am convinced the issue deserves the sharpest re-examination. The evidence accumulated during the past two to three years which attacks both the safety and efficacy of fluoridation is, in my opinion, sufficient to place the fluoridation proponents in a defensive position. I have included significant new references criticizing fluoridation in this issue of my Newsletter.

Many of you may think fluoridation is a subject which has been long resolved. So I invite you to come and delve with me into an area in which the controversy has only just begun.

Q On my baby's two-month checkup, the pediatrician prescribed fluoride drops. He said fluoride would keep my baby from suffering from rampant tooth decay, something I've suffered from all my life. I bought the fluoride drops but decided not to use them until I knew more about the effects of fluoride on the body.

In her book "Let's Have Healthy Children," Adelle Davis states that "an excess of fluoride intake can cause lifelong mottling of teeth." What do you think?—Mrs. E.S.

A During my medical school years, I was taught that fluoridation was good. Since in those days I believed my professors knew what they were talking about, I didn't bother to look at the other side of the question any more than I looked at chiropractic, naprapathy, unorthodox cancer therapy, or a number of other areas whose proponents were all characterized by my respected teachers as "nuts, quacks, faddists and extremists."

The original letter

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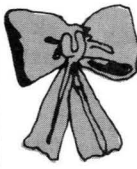
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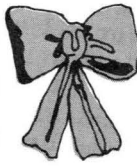
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Another View

by Marian Tompson
Executive Director,
Alternative Birth Crisis Coalition



"Have there been any follow-up studies to determine if there is increased hearing loss in children who have had ultrasound scans before birth?" Jody asked me. "I can't help but suspect that high-frequency sound has some kind of damaging effect." And Alice chimed in, "I've been thinking about that too. The baby jumps around so during a scan, I'm wondering if it could be experiencing pain. How do we know what the baby is feeling?"

Whenever the conversation gets around to childbirth, the subject of ultrasound comes up. Parents obviously are worried and are asking questions. But most of the time, as with Jody and Alice's questions, there aren't any answers.

Last year, Jay Hathaway, Executive Director of the American Academy of Husband-Coached Childbirth and the producer of a number of excellent childbirth films, was invited to film the birth of a set of twins. The multiple pregnancy had been confirmed with two ultrasound scans. During labor, the mother wore an external monitor for one baby and had an internal monitor attached to the second. The monitor readings, while similar, were not identical, and the physician and obstetrical nurses had identified the position of the babies by palpating the mother's abdomen. So it was a shock to everyone concerned when that mother delivered one baby weighing eight pounds! Since that time, Hathaway has learned of several other misdiagnoses of supposedly multiple births. Even more common, he says, are missed diagnoses of actual twins.

But Hathaway is concerned about the possibility of much more serious risks to mother and baby. In an article written for the Alternative Birth Crisis Coalition News, he explains, "If ultrasound has a risk to genetic material, then the beam of these invasive gadgets cannot be limited to the baby, some of it certainly 'irradiates' the mother's ovaries. If there exists any risk of cancer, the mother may be the victim. If any DNA alteration or chromosome irregularities are caused by the radiation, then the ova may be altered in the mother (and/or the baby) and the effects could show up in a later pregnancy. Just as in female babies, the mother herself has only so many ova, and if they are damaged or altered, she cannot make any new ones."

Hathaway objects to the phrase, "high-frequency sound," because he thinks that makes ultrasound sound trivial. "Would anyone call nuclear radiation 'ultra-light?' Ultrasound is not 'sound' (i.e., vibration in the audible range). Sound ends at about 20 Kilohertz (thousand cycles per second). This new radiation is between two and four MEGA-hertz (million cycles per second).

"It is often stated that ultrasound exposure is of short duration," Hathaway continues. "Radiologists use pulsed ultrasound while obstetricians often use continuous wave for many hours at a time. There are three types of ultrasound: ultrasound scanning devices, doptones, and external fetal monitors. Only the scan is pulsed and usually short term. Both the doptone, which many doctors use in their offices, and the external fetal monitor are continuous ultrasound devices.

"This brings up the question of research and whether the control groups are controlled for all ultrasound or only are comparing the scanned vs. the unscanned population. If it is shown that total ultrasound exposure is a critical factor, then the fetal monitor might prove to be the most dangerous. The total exposure there often is 10 hours or more. If the gestational age of the baby is critical (as it was in Thalidomide) then the doptone might prove to be the worst [exposure]. If there is a sensitive organ in the baby, then the scan may be the most dangerous, as all parts of the baby are sure to be exposed."

"I certainly hope that ultrasound is safe for human beings," Hathaway concludes, "but the history of obstetrics teaches us to be cautious. In the words of Senator Kennedy at a hearing of the Senate Health Subcommittee which was investigating ultrasound and fetal monitoring (April 1978), 'The time to find out is before millions of children are exposed. Otherwise, we are playing an unjustifiable game of Russian roulette with the health of our children.'"