the People's Doctor
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Risks of Common Medical Tests

Dr. Robert Mendelsohn

A decade or so ago, a person who went to see his doctor didn't need to worry a great deal about tests the doctor might ask him to take. He might be subjected to an occasional x-ray, blood test, or electrocardiogram, but that was about all. Today, things are different. The doctor's cornucopia of tests seems to be as bottomless as a magician's hat, and just as mysterious. People are learning that they sometimes have as much to fear from tests as they have from treatment or from a disease condition itself. And they are learning to ask hard questions about whether these tests, often invasive procedures into the body, really are worth having.

This issue of my Newsletter devotes itself to some of these tests--stress tests, CAT scans, electroencephalograms (EEG's), heart catheterizations, angiograms, myelograms, and laparoscopies. In "The Patient's Guide to Medical Tests," (Facts on File Publications, $7.95), Cathy Pinckney and Edward R. Pinckney, M.D., warn their readers:

"Every medical test carries some degree of risk that must always be weighed against the expected benefits. Your doctor is legally required to warn you about all possible risks before you undergo any test. Only then can you make an informed decision about whether the possible information to be derived from the test is worth the possible danger that might accompany the procedure. The doctrine of 'informed consent' protects you from being forced to make a decision without first being offered all relevant information in plain English....Never assume a medical test is relatively harmless until you feel you have had that test procedure explained to your satisfaction."

This Newsletter aims to set out some of those risks of medical tests in the plain English that the Pinckneys refer to.

Stress test fails test

The following information on stress tests appeared in the October 1980 issue of Consumer Reports. Take a deep breath and read carefully:

"In the past 10 years, the stress test has puffed and panted its way to prominence in the All-American checkup. Some doctors limit it to people who are about to begin an exercise program or to those who have chest pain despite a normal resting ECG [electrocardiogram]. But other doctors use it as a routine procedure in people without complaints. In the opinion of CU's [Consumer Union's] medical consultants, routine stress testing ($100 to $200) is an extravagant waste of money."

The stress test is similar to an ECG being taken while the patient performs on a treadmill or bicycle. The tester assumes that the stress of exercise will produce better information about possible heart abnormalities than will a resting ECG.

"Unfortunately," the article continues, "stress tests give many falsely abnormal results for people with a healthy heart. At the same time, they fail to detect heart disease in significant numbers of people who actually have it.

"Doctors have trouble making recommendations based on a stress-test result. One of our consultants summed it up this way: 'No matter how the stress test turns out, I really can't tell a patient whether or not it's O.K. to play tennis.'"

Safety of CAT scan debated

In the March 1980 issue of McCall's magazine, renowned surgeon William A. Nolen, M.D., wrote:

"The CAT scanner (computerized axial tomography), a machine that takes three-dimensional x-rays of any part of the body, once required almost 20 rads of exposure to get satisfactory pictures of the head. That was in the late 1960's, when the machine was first developed. Now, more than 10 years later, this figure has been reduced to about one rad, due to improvements in equipment and in technique. But is it safe to have even one rad of exposure to the head? Radiologists think so--but it may be 20 years before we know for sure."

I have very little confidence, based on previous experience, in the predictive powers of radiologists when it comes to the dangers of x-rays. But I have great respect for their marketing techniques. Look how they named that 20-rad zapper after one of our most beloved household pets! Indeed, the newest scanner is named the "P.E.T." scanner and a "Super PET" is already on the drawing boards. When it comes to x-rays, my advice is--CAT and PET lovers--beware!

Johnson & Johnson, manufacturer of Tylenol and the recently-recalled anti-arthritic, Zomax, is in trouble once again. According to the Chicago Sun-Times (April 5, 1983), Technicare Corp., its medical diagnostics subsidiary, says it is "correcting" defects found in 302 of its CAT scanners by the Food and Drug Administration. The FDA says that some of the sophisticated machines mistakenly scan twice, while others lack filters to curb radiation emissions.

Our adolescent son recently was found to have an abnormal electroencephalogram, with "spike discharges" that the doctor says indicate he may be prone to epileptic seizures. Since he has never had so much as a tremor, the doctor says there is nothing to worry about.

What is going on in our son's brain that is causing these abnormal tracings? How can the layman learn about abnormal EEGs? Should we tell him at some age that his EEG was abnormal, or should we just count our blessings and not worry about his possibly having seizures?--Mrs. O.L.

EEG's have high error rate

Your letter is more important for what it omits than for what it includes. The key question is, why did your son have an EEG in the first place, since you indicate that he has no symptoms?

Let me give you a short course in what laymen (as well as doctors) should know about EEGs. First, and most important, this crude electrical measuring device has a high rate of error. Twenty percent of patients

with real seizures never have an abnormal EEG. Conversely, 20 percent of the general population with no history of seizures has an abnormal EEG. (What would you think if your gas gauge had the same frequency of error --if one-fifth of the time it told you that your car had gas in the tank when it had none, while another fifth of the time it told you your tank was empty when it was full?) As for the second bit of information, the EEG only rarely yields a diagnosis or helps in management.

Unless there is a whole lot more here than you have told me, you definitely should not tell your son about these electrical wiggles on a sheet of paper. By all means, count your blessings, and don't include this EEG among them.

A 60-year-old friend of mine recently had a routine physical exam. Prior to the exam, she had had no symptoms or complaints other than tiring somewhat easily. After the physical, she was told she needed a heart catheterization to render an accurate assessment of a possible coronary artery problem.

In the meantime, she has been given Isordil (which has given her pretty bad headaches) in hopes that she can avoid the heart catheterization. She is fearful of having this test because of the possible risks of the procedure.

My question is, how safe is heart catheterization?--Mrs. J.M.

Risks of heart catheterization

I suggest you are asking the wrong question when you want to know how safe a cardiac catheterization is. Based on your friend's experience, the two of you should be asking, "How safe is a routine physical exam?"

Cardiac catheterization may result in death. Since the incidence of this complication is "well below one percent," doctors refer to death from catheterization as a small risk. I will let you and your friend decide whether the "small" risk is worth taking.

Other complications of this procedure include pain, tenderness, and bruising at the site of insertion. About two percent of patients are afflicted by burning, tingling, and a sensation of pressure. Allergic reactions to catheterization include eye swelling, itching, hives, breathing difficulty, fever, and chills. Cardiac catheterization, a procedure used because the doctor fears his patient might have a heart attack, can itself bring on a heart attack because the catheterization may change the heartbeat and the heart rhythm.

Even after the catheter is removed, there can be trouble. A clot may form at the site of catheter insertion, leading to pain and coldness in that extremity.

By the way, since Isordil is used to decrease the frequency and severity of anginal attacks, why is it being prescribed for your friend, who you report has no such symptoms?

Our son was born with an atrial septal defect for which he took medication until he was three years old. That's when he had a catheterization and open heart surgery. A year has passed, and his cardiologist says it's time for a second catheterization to determine whether the surgery was successful.

When we told a friend our son would be having another catheterization, she said, "Oh, don't put him through that torture again! It's so

painful." But when we questioned the cardiologist about the necessity for the procedure, he explained that the follow-up catheterization was the only way to discover if the surgeon's repair was successful. In our son's case, his heartbeat still is irregular, probably because of the extra vein from his left shoulder to his heart which the doctor discovered during the initial catheterization. He is normally in good health.

What is your viewpoint on repeat catheterizations? We also are concerned about the radiation which enters our child's body during this procedure.--Mr. and Mrs. R.Y.

Repeat heart catheterization

Although I understand that the rigorous demands of science are best served by quantitatively comparing the before and after state, I always have lifted an eyebrow at repeat catheterizations, whether for congenital defects, as in your son's case, or for adult conditions such as the coronary bypass.

In "A Patient's Guide to Medical Testing," Marion Laffey Fox, R.N., and Truman G. Schnabel, M.D. (The Charles Press, 1979), write that it is impossible to list all possible complications of cardiac catheterization. "In rare instances, a heart attack is precipitated by the procedure. The usual reason for this is the altered heartbeat and heart rhythm which, when not corrected, can be fatal. Occasionally, the catheter tip injures the wall of the heart, reducing its ability to pump. Thus, a stroke may result. If a clot lodges in blood vessels of the arms and legs, pain and coldness in these extremities may result.

"It is also possible (rarely) for the catheter tip to dislodge a clot within the heart or to loosen a small piece of tissue from the wall of an artery. A clot or a small fragment of an artery wall circulating in the blood is carried into successively smaller arteries until it becomes stuck. It may then block the flow of blood to the organs and tissues."

In the light of the above information, you have some important questions to ask your child's doctor:

1) How will your repeat catheterization influence my son's further treatment?

2) If he remains in normal good health, are you thinking of reoperating on him, exclusively on the basis of the repeat catheterization findings?

And 3), to ask the surgeon: What is your own record, statistically speaking, as far as complications are concerned?

Your final statement might be, "Can you show me any hard data (please give me something to read) which proves that patients who reject repeat catheterizations fare any worse than those who comply with their doctor's request?"

Since the most important questions often are asked by the patient near the end of the interview, you might interject as the doctor rises from his desk to usher you out: "Oh, by the way, doctor, exactly how much x-ray exposure will my son get from a repeat catheterization?"

Interpreting angiograms

According to the December 24, 1979 issue of Medical World News, the principal diagnostic tool for determining whether a person is likely to have a heart attack is unreliable to an extent which was never realized before. The report quotes two studies which show that angiography, a way of x-raying the vessels of the heart, often either underestimates or overestimates artery blockage. Thus, some patients have had unnecessary bypass surgery, while others didn't have surgery which they may have needed.

In one of the studies, Dr. Harvey G. Kemp, Jr., chief of cardiology at St. Luke's Medical Center in New York City, had doctors at three medical centers look at the same x-ray. Dr. Kemp found the centers disagreed

on the interpretation of the film 39 percent of the time. And even when the same film was again processed through the same centers, the experts differed with 32 percent of their own original readings.

In the other study, performed by the National Heart, Lung and Blood Institute in Bethesda, Maryland, and at George Washington University Medical Center in Washington, D.C., three independent experts examined coronary films of 28 patients who had died within 40 days after receiving the x-ray. These experts underestimated the degree of narrowing of the major coronary artery for 13 of the 28 patients, and they overestimated it for 10 of the 28 patients. Of 12 arteries narrowed to a dangerous degree, all were under- or overestimated by at least two of the three experts.

Dr. Arthur Selzer, chief of the cardiopulmonary laboratory at Presbyterian Hospital, San Francisco, says patients "without question" have gone to surgery on the basis of misinterpreted x-rays. But when asked whether these latest findings will slow the rate of bypass surgery, Dr. Selzer responded, "Not likely. There's too much money and pressure involved. It's become a self-perpetuating industry."

It has been recommended that a member of our family have an angiogram to determine the circulation in the legs. We have not been informed about any possible dangers that might result from a test of this type, and we have several questions which we'd like answered:

1) What kind of dye is put into the thigh?
2) Where does the dye go after an angiogram is taken?
3) Is this test done with nuclear or radioactive materials?
4) What happens if the dye doesn't go into the vein and goes into the tissue instead?
5) Would it be possible to have clots of dye in the body?

Thank you for responding. We have confidence in your opinion.—H.M.

Effects of dyes used in angiography

While the dye used for angiograms is not nuclear or radioactive, I wish you would ask the surgeon for the name of the dye he uses so that you could look up its dangers in such books as the Physicians' Desk Reference. In general, such dyes may produce pain at the site of the injection, a feeling of body warmth, facial flushing, nausea and vomiting. More severe reactions due to sensitivity to the dye itself may appear hours later; these include hives, itching, dermatitis, dry mouth, chills, sweating, and difficulty in breathing. If the reaction is severe enough, it may lead to shock, cardiac arrest, and death. Other possible complications of this kind of procedure include kidney damage, inflammation at the site of the injection, clotting of the artery, and hemorrhage.

You may wish to ask the surgeon how frequently these complications occur, so that he and you can determine whether, in this specific case, the benefits of angiography are worth the risk.

I would like to call to your attention a frequently-overlooked benefit of the Physicians' Desk Reference, i.e., a section in the back of the book which provides information on dyes and other substances used for diagnostic procedures. Thus, you can look up the adverse reactions to substances used for determination of acids in the stomach (Peptavlon), for liver function tests (BSP), for tuberculin skin tests (Tine test), for gallbladder disease (cholografin), and for many other test substances.

Such information is also examined in great depth by some British radiologists in a magnificent book, "Complications in Diagnostic Radiology," edited by G. Ansell (J. B. Lippincott). Many readers have asked questions about the risks of dyes injected intravenously for kidney

x-rays, dyes injected into the bronchial tubes for lung x-rays, and dyes injected into the spinal canal (myelograms). This book, written by doctors for doctors (priced at $56.50) gives those answers, as well as providing data on the complications of angiography, including problems with clotting, breakage, and buckling of the catheter, accidental introduction of air, electrical hazards, perforation of the heart, disturbances in rhythm, and neurological complications.

"Complications in Diagnostic Radiology" deals with the documented complications of diagnostic ultrasound in obstetrics, including an increased incidence of fetal deformities in mice and chick embryos and an increase in chromosome aberrations in human blood cultures.

Suggest to your local librarian that this book belongs on the shelves of your public library. If your family member does decide to have an angiogram, he might want to ask the x-ray specialist to let him take a peek at his copy of "Complications of Diagnostic Radiology" while he is sitting in the waiting room.

No more myelograms

It seems to be a basic rule of modern medicine that one never discovers all the bad things about a medical treatment until a new one comes along to take its place. Take, for example, the case of slipped discs. Dr. Timothy B. Scarff, a neurosurgeon at Chicago's Loyola University Medical Center, recently reported on a new procedure he has developed which could help "an estimated 56,000 Americans each year avoid unsuccessful surgery for slipped discs."

Scarff points out that back problems frequently are misdiagnosed as slipped discs and that 20 percent of patients who receive a myelogram (an x-ray of the spinal canal requiring the injection of a dye) will incorrectly appear to have a slipped disc. On the other hand, the myelogram will fail to discover this disorder in many patients who have the problem. Scarff also informs us that these myelograms and other procedures now used in the diagnosis of slipped discs are painful and risky.

If your doctor recommends a myelogram, ask him if he is familiar with Dr. Scarff's new diagnostic technique which involves the use of electricity. But make sure that your doctor closely questions Dr. Scarff in order to determine whether his new technique is any better or safer than the one Scarff criticizes. So far, Scarff himself reports his test has been found to be 93 percent accurate. That means, of course, an error rate of seven percent.

Because I am infertile, my doctor has recommended a laparoscopy. I'll be put under general anesthesia and will stay in the hospital for an entire day. Both my regular doctor and the surgeon say the risks are slight, but I'm wondering what you might say.--V.R.

Risks of laparoscopy

Any surgical procedure, especially one performed under general anesthesia in an operating room, the way laparoscopy is, carries with it some degree of risk. The specific risks of laparoscopy, which is an examination of the inside of the abdomen with an instrument called a laparoscope, include possible perforation or other injury to one of the abdominal or pelvic organs during insertion of the instrument. Blood vessels in the abdominal cavity may be damaged by subsequent bleeding, infection can be introduced, and a chronic infection may be activated as a result of the tests. Carbon dioxide, injected to create an air space within the abdomen, may escape

into the tissue or into the chest cavity and cause a lung to collapse.

Additional information on the risks of laparoscopy can be found in "A Patient's Guide to Medical Testing," by Marion Laffey Fox, R.N., and Truman G. Schnabel, M.D. (The Charles Press, 1979).

Effectiveness of Pap test is questioned

The fur continues to fly in the wake of the American Cancer Society's February, 1980 recommendation that annual Pap tests no longer are necessary for most women between the ages of 20 and 65. At that time, the Society said that a Pap smear once every three years was often enough to determine cervical cancer. But by August of 1980, the American College of Obstetrics and Gynecology had pronounced that all women should continue having Pap tests annually, and a National Institute of Health panel had said the tests should be performed "regularly every one to three years."

So what's a woman to do? Does she listen to the Cancer Society and have a Pap smear every three years? Does she listen to her gynecologist and have the test annually? Or does she listen to the National Institute of Health and run in "regularly every one to three years?"

Perhaps the best way to answer the above question is to understand what the Pap test is all about--it is a smear that is taken to detect abnormal cells in the cervix. Recent studies have confirmed the link between cervical cancer and the number of men with whom a woman has sexual intercourse, and doctors have known for decades that cervical cancer hardly ever occurs among nuns. Ten years ago, Drs. C. L. Sharp and Harry Keen pointed out in "Presymptomatic Detection and Early Diagnosis" (Wilkinson), "Several studies have shown declining death rates from cancer of the cervix, but since these were evident even before cytologic detection (Pap test) was commonly in use, there is as yet no conclusive evidence that this type of detection method has played a definite part in reducing mortality....In none of the areas where cervical cytology has been in use for a considerable period has there been a significant fall in the death rate for the condition."

In 1980, those 10-year-old conclusions were reaffirmed by Dr. Anne-Marie Foltz of New York University and Jennifer L. Kelsey, Ph.D., an epidemiologist at Yale University School of Medicine. These two researchers also pointed out that there is a 20 to 30 percent incidence of false negatives in the performance of the Pap test, and they also say the test became standard recommended policy without ever having been subjected to controlled trials to determine its efficacy.

In light of the above evidence and of the American Cancer Society's recommendations, it seems to me that the burden of proof now rests with the individual gynecologist. In order to justify an annual Pap smear, he must be able to explain to his patient just why she is at risk from cervical cancer. And he must be able to refute the claim of David M. Eddy, M.D., of Stanford University who states that a Pap test every three years would have 99 percent of the effectiveness of the annual test.

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Another View

by Marian Tompson
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The more enlightened we become about health and healing, the greater our risk of conflict with doctors who have served us well in the past. Indeed, no matter how good the relationship is, it takes a brave soul to admit to his physician that he would like to incorporate another approach —such as chiropractic, iridology or even diet--into the solution of a health problem.

This was the situation which faced Debbi and Wayne when their three-year-old daughter, Kelly, developed some puzzling symptoms. First, there were a few episodes of dizziness which Kelly described as "twirling." This symptom subsided quickly when her father or mother would hold her. But one day when Kelly was at a wading pool, the dizziness became more acute. Although her father was instantly at her side, Kelly became hysterical and for about five minutes her eyes "tracked" wildly. Her parents decided it was time for a complete physical examination, and that night they made the 90-minute drive to see a pediatrician whom they liked.

On the initial examination, Dr. M. could find nothing, but he felt the symptoms warranted further study with an EEG. The worried parents agreed. But a procedure that was supposed to be simple turned into a nightmare. Kelly had to be given four times the usual amount of the drug needed to put a small child to sleep. It left her in a "rotten mood," unable to cope with anything for the rest of the day. The test results were normal.

The doctor next suggested a CAT scan, thinking a life-threatening tumor might be present. A neurologist whom he had consulted had warned that the fact that Kelly's eyes were tracking was a sign of serious problems. But taking a CAT scan would involve more drugs and trauma, with no guarantee of providing useful information. After much serious deliberation, Kelly's parents decided to go another route.

They took Kelly to see Tony, a man recommended by a sister-in-law. Tony has practiced as a physician in Eastern Europe, but he now worked as a physical therapist. In examining Kelly, he used some chiropractic techniques and, as a diagnostic tool, he included a thorough examination of the iris of the eyes. Tony was quite certain that Kelly had no tumor. In his opinion, she might have had a mild unrecognized case of meningitis when she was very young, but she now had nothing seriously wrong and would outgrow her symptoms.

"I don't know if it was Tony's calming personality, his deep faith in God, or the soothing effect he had on me when I talked to him," Debbi explained. "But I intuitively felt that his diagnosis was right, and we decided to go along with it."

"Wayne and I realized there were no guarantees, no matter which path we chose. Yet, as the people closest to Kelly and the ones who had to live with the results, the decision was ultimately up to us. So we had to disengage ourselves from our doctor's persuasive arguments and our own fears in order to come to a decision. The choice was not easy, but we had to trust our own feelings. And luckily it worked out. Within a year, Kelly's episodes had stopped, and they have not returned for two years."

But the twist to this story lies in the reaction of their pediatrician. "It was with fear and trepidation that I told him of our decision," Debbi recalls. "I felt like a traitor rejecting his advice because we had gone to him first, and we did respect him and understood where he was coming from. He listened to me politely and he stuck to his guns, BUT HE WAS VERY NICE."

And in that last phrase, I find hope!