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Transfusion Confusion


Dr. David G. Williams

I hope your new year is off to a good start. It seems almost unbelievable to me that *Alternatives* is over 20 years old. Time certainly flies from one year to the next. During this period we've seen a lot of significant changes in health care. On the flip side of the coin, however, it has become even more obvious that some conditions are still in the process of change—but moving at a snail's pace.

Just one example involves blood transfusions. In the 1980s I was writing about the benefits of bloodless surgery and the dangerous overuse of blood products and transfusions. More than twenty years later, excessive use of transfusion is still a major problem.

In the 1980s one of the primary concerns with transfusions was the spread of HIV, the virus that causes AIDS. This prompted new tests for HIV and, later, screening for hepatitis. The testing has dramatically reduced the risk of contracting these diseases from blood transfusions. In fact, the latest research indicates that the risk of being transfused with one of the above blood pathogens is far lower than the risk of receiving the wrong blood type. Still, there are problems associated with blood transfusions and blood products—and those problems are far from being resolved.

In a way the dangers of blood transfusion are comparable to many of the dangers of prescription and over-the-counter drug use. Very little research is conducted on their long-term effects—and it often takes years, if not decades, before some researcher inadvertently stumbles onto some clue that helps connect the dots that reveal the bigger, more complex puzzle.

For example, common painkillers such as acetaminophen and aspirin were used for decades before we became aware of their dangers. There's no way of knowing how many people have died prematurely from gastrointestinal bleeding, liver failure, and other complications due to this oversight. And I'm certain tens of thousands have suffered, and continue to suffer, from various ills without any indication their pain medication or other so-called "safe" medication is to blame.

Drop by Expensive Drop

The screening of blood for HIV and hepatitis came about only after an outcry from the public. Now that that particular problem has been addressed, the public falsely assumes that transfusions are once again safe. (Actually, most of us don't think about it at all, unless we happen to need one.) Much of the blood collected through donations is used on severe trauma patients. Still, a surprising number of transfusions still take place during what many would consider routine surgical procedures.

Most people aren't really aware of just how common blood transfusions are. The latest figures I could find were from 2001, which showed there were roughly 14 million units of blood transfused that year in the US alone. That works out to as much as $2 billion in added health care costs—and I'm sure that amount has increased considerably in the last five years.

In This Issue

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

It has also been *conservatively* estimated that 25 percent of all transfusions are unnecessary. Based on the current technology and just the small amount we've learned about transfusions, I have no doubt whatsoever that 25 percent is a very low estimate. Based on the old 2001 figures, almost every two seconds someone in the US is given a transfusion. One out of every 10 people admitted to a hospital is given blood.

Infection Connection

Currently there are close to 500,000 heart bypass surgeries done each year in this country. Over 66 percent of the men and 88 percent of the women having this procedure receive a transfusion. (Women have more transfusions because they typically have lower concentrations of hemoglobin—the iron-based oxygen-carrying component of blood—and so their bodies are less able to cope with any blood loss that may occur during surgery.)

For the longest time no one could figure out why women have a greater risk of dying following bypass surgery. Historically, 9 percent of women die within 100 days of their operation, compared to only 6 percent of men. Researchers trying to learn the cause of this difference presented several possible reasons. It was thought that women had more advanced cases of coronary artery disease when they finally came to see a doctor, which created an emergency situation rather than allowing time for an effective surgery. But the underlying factor in the large majority of these deaths, in men or women, was an infection following the surgery.

New research shows that the odds of having any kind of an infection is three times greater in any patient who receives a blood transfusion when compared to a similar patient who doesn't. And the more blood one receives, the higher the risk of infection.

A study at the University of Michigan evaluated 9,218 cases of bypass patients age 65 and older. In analyzing the data, researchers took into account the patient's blood transfusion status, their age, race, sex, co-existing diseases, and whether the operation was elective or an emergency surgery.

They then compared these statistics to the number of infections and deaths reported during the 100 days immediately following the surgery. *They discovered that individuals who received blood transfusions were five times more likely to die within 100 days of their operation compared to those who did not. (Am Heart J 06;252(6):1028–1034) (Arch Intern Med 06;166(4):437–443)*

Looking at the numbers, the connection between the greater number of transfusions given to women and their greater risk of infection and death begins to stick out like a sore thumb.

Completely Off Target

Unfortunately, most of the response to this study has focused on the importance of proper antibiotic use and infection control. Those are certainly important items when it comes to managing infection rates, but in this case they're almost completely beside the point.

What seems to be overlooked is the fact that these infections are not the typical ones that start at the site of the surgical incision, but rather infections that pop up at random places in the body. This indicates that the transfusions are placing an enormous burden on the body's immune system—an event which has far more serious consequences.

The real story is not about hospital cleanliness and proper antibiotic use. It's that blood transfusions frequently overwhelm the body's natural defenses, allowing even the most minor infections to spread unchecked to the point of killing the patient. Just in the case of bypass surgery, every year tens of thousands of our friends, family, and loved ones are dying as a result of these blood transfusions.

I want to be perfectly clear that under certain circumstances blood transfusions can be lifesavers, but they also introduce a long list of other components that your body's immune system must contend with. A person's blood is like their fingerprints. No two people are exactly the same—and therein lies the problem.

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Strangers at the Gate

Our blood contains dozens, if not hundreds, of various antigens—substances that trigger an immune response. They could be anything from allergens we inhale to poorly digested proteins from the foods we eat. There are also tumor antigens. These are molecules found on the surface of tumors. It is through the recognition of tumor antigens that our immune system is able to locate and hopefully destroy these abnormal clumps of cells.

In many individuals the blood also contains what are called autoantigens. These are actually normal cells that the immune system has mistakenly "tagged" as abnormal. For either genetic or environmental reasons the immune system has lost its ability to tolerate these cells. The result is that one's immune system begins to destroy normal tissue. This malfunction is the basis of the autoimmune diseases: rheumatoid arthritis, Addison's disease, lupus, MS, type 1 diabetes, Crohn's disease, Grave's disease, and dozens of others.

Blood also often contains environmental contaminants from such sources as cigarette smoke, pesticides, and cleaning agents.

Donor blood contains various pathogens as well, because at any one time your body is fighting some form of infection. For some people it could be simply from a cut on the finger, gum disease, a cold, a chronic sinus problem, et cetera. But in other people the pathogen might be more virulent. While modern screening tests might reduce the risk of contracting HIV or hepatitis (although one in twenty-five thousand or even one in five million always sounds good unless you happen to be the one), the chance of receiving some type of pathogen or other (viral, fungal, bacterial, et cetera) approaches 100 percent.

For example, hundreds of thousands of individuals are carriers of Lyme disease, and many of these people are undiagnosed. If you recall, Lyme disease is caused by a spirochete or spiral bacterium—one closely related to the bacteria that causes syphilis, and which can easily be spread by transfusions. Blood banks don't check for the Lyme spirochete. They currently feel it is adequate to screen for Lyme by simply asking the donor if they feel ill at the time of donation, checking their temperature, and doing a quick check for the tell-tale bull's-eye rash from tick bites. This is not adequate.

Lyme disease is complex, and symptoms can mimic dozens of different problems. It's common for the symptoms of the sufferer to vary tremendously from one day to the next. And oftentimes the rash never develops and the microbe instead travels directly to the joints or brain and begins to wreak havoc. If there's a concern about syphilis there should also be serious concern about and screening for Lyme disease. [*Editor's note: As we head toward spring and warmer weather, Lyme disease and other tick-borne diseases will become more of a concern. Visit the* Alternatives *Subscriber Center at* www.DrDavidWilliams.com *to read Dr. Williams' recommendations for dealing with Lyme.*]

Hitchin' a Ride

And Lyme disease obviously isn't the only problem. With world travel so prevalent these days, pathogens that are rare in this country can easily hitch a ride in a traveler's blood. This was probably the case with Chagas' disease, which has recently been added to the list of diseases screened for at the time of blood donation.

Chagas' disease is caused by a parasite native to Latin America. Estimates are that somewhere between 12 and 15 million people there are chronically infected by the disease. It can eventually lead to symptoms such as fever, fatigue, body aches, and headaches, as well as enlargement of the spleen, liver, and heart, altered heart rate, and heart failure—and even serious intestinal complications. There's no telling how many individuals suffer from the problem in this country, since most doctors here are unfamiliar with the problem and wouldn't recognize Chagas' disease if they saw it. There are probably dozens of other such pathogens spreading through transfusions, and officials here seem to take an ostrich-like attitude concerning any new ones.

Immune Assault

These infectious pathogens, antigens, allergens, and pollutants are transferred in donor blood to the new host. The result is an immediate assault on your immune system—one which probably couldn't come at a worse time. How well you fare from the assault depends directly on the strength of your immune system.

The donor's immune system may have been able to keep a cancer in check. Yours may not. The donor may have built up an immunity to certain diseases. You may not have. The donor may not have the genetic variation that lets a certain pesticide compound destroy nerve cells. Your body, however, might harbor that particular gene form.

In at least 1 out of every 100 transfusions the immune system's response is immediately apparent in the form of fevers, chills, and skin eruptions. The Michigan study above confirms that immune systems are unable to handle this increased burden in 9 percent of the women and 6 percent of the men who receive transfusions during bypass surgery. The result is often death.

Quality Weight Loss

Question: What's the best way to lose weight, aerobic exercise or dieting?

—Bill T.
Frederick, MD

Answer: You can lose weight either way. To be honest, however, exercising requires a greater time commitment than dieting but it does have additional benefits.

If you're physically active and in your 20s or 30s, then calorie restriction might work just fine for losing weight. If you're around 50 or older, you need to take a few other things into consideration.

As we get older and become less active, we need to be particularly vigilant about maintaining our muscle mass and our aerobic capacity. A loss of muscle mass and strength makes our joints less stable and lessens our ability to get around. As a result we begin to have difficulty walking on inclines, up steps, and over rough surfaces, and have a greater tendency to fall.

Aging without adequate exercise also takes a toll on our aerobic capacity, which involves our ability to circulate oxygen to cells throughout the body.

Dieting alone can destroy both muscle mass and aerobic capacity. Without exercise there are no demands being placed on the cardiovascular system or the muscles. In fact, research has shown that part of the weight loss actually comes from the breakdown of the tissues responsible for delivering oxygen and producing muscular force.

A recent study at the Washington University School of Medicine in St. Louis compared the effects of caloric restriction weight loss to that of exercise-induced weight loss over a 12-month period in healthy men and women 50 to 60 years of age.

The first group reduced their caloric intake between 16 and 20 percent. The other group exercised with the goal of burning 16 to 20 percent of their consumed calories. Each group lost roughly the same amount of weight. However, those who lost weight through caloric restriction also had significant loss of muscle volume, strength, and aerobic capacity. On the other hand, those who exercised had a dramatic increase in aerobic capacity along with increased muscle mass, strength and physical work capacity. *(J Appl Physiol 06;Nov 9 (Epub))*

The key to healthy exercising is to make sure you combine aerobic workouts with some form of weight-bearing exercise as well. Walking, swimming, tennis, cycling, or the use of a treadmill or exercise bike are all great forms of aerobic exercise—but they won't do much for muscle strength. The only way to retain muscle strength (and strong bones) is through the use of weights.

The Diet Side

I guess it's obvious that I favor exercise over restricting calories. That's not to say that you can eat mass quantities of junk food and garbage just because you're exercising more. In fact, many people who start an exercise program to help lose excess weight never achieve that goal because their appetite increases and they just eat more. These are often the ones who finish their workout with a Gatorade or some high-calorie "power bar."

Keep in mind that it takes at least 15 to 20 minutes of aerobic exercise before your body begins to actually burn fat as fuel. Before that your body utilizes any available carbohydrates. That's why you don't want to consume any carbohydrates immediately before you exercise. It will only prolong the time before your body dips into its fat reserves.

(If you exercise with weights on the same day as doing aerobic exercises, do the weights first. This will help burn through the carbohydrates while you're building muscle, and once you start your aerobics you'll be immediately burning fat.)

Increasing the amount of protein in your diet will also help you burn more fat reserves. Consuming extra protein (and eating smaller, more frequent meals) tells your body there's no crisis; food is plentiful and there's no need to store additional fat.

And the rule about not eating anything after six in the evening is something you need to adhere to also. Being active after you eat helps burn more calories. Eating closer to bedtime doesn't allow for enough activity to keep the metabolic fires burning.

It shouldn't come as any surprise that for hundreds of thousands of other people, transfusion was the triggering factor for all sorts of problems ranging from allergies and diabetes to autoimmune diseases and cancer.

Adding Insult to Injury

Cancer therapy is another area where blood transfusions are commonly used. Both chemotherapy and radiation produce anemia (a reduction in the number of red blood cells). These therapies disrupt the cell division that occurs in the growth of new cells. While the disruption may destroy rapidly growing cancer cells, it also destroys red blood cells—which normally last 120 days before being replaced naturally.

Blood transfusions are the routine solution to anemia induced by treatment. And if you read the medical texts you would assume transfusions were a safe way to treat this side effect. The texts do warn that you'll

need to have your temperature, pulse, and blood pressure checked regularly following the transfusion just to make sure you don't have any allergic reaction. They also warn of some of the common side effects, such as headache, slight fever, or maybe a skin rash—all of which can be relieved with acetaminophen. And according to the experts you don't have to worry about infections, because all blood is screened before use and carefully matched for blood type.

The research paints a somewhat different picture.

In one Netherlands study involving colon cancer patients, it was found that the 5-year survival rate among those who were transfused was 48 percent—compared to 74 percent of the nontransfused patients. *(Cancer 87;59(4):836–843)*

At the University of Southern California researchers reviewed the records and 5-year follow-up reports of 100 patients with head and neck cancers. The recurrence rate for cancer of the larynx was 14 percent for those who didn't receive transfusions and 65 percent for those who did. For cancers of the oral cavity, pharynx, and nose or sinus, the recurrence rate was 31 percent without transfusions and 71 percent with transfusions. *(Ann Otol Rhinol Laryngol 89;98(3):171–173)*

In a recent European study it was found that transfusions following thoracic cancer surgery for lung cancer also had a significant impact. Thirty-day mortality (death) increased significantly from 2.4 percent in those without transfusion, to 10.9 percent in those who received 2 units of blood or less, to 21.9 percent in those who were given more than 2 units of blood. Even after taking into account the patient's prior condition, transfusion was the strongest predictor of 30-day mortality, respiratory failure, and infectious complications. In the 367 lung cancer patients the 5-year survival rate was 27.8 percent in the transfused group compared to 39.4 percent in the nontransfused group. *(Eur Respir J 06;Nov 1[Epub])*

Like this last study, most of the research indicates that the more units of blood one receives, the greater the risk of infections and premature death. A recent study on transfusions and colorectal cancer also found this to be true. *(Dis Colon Rectum 06;49(8):1116–1130)*

The average adult has about 10 to 12 pints of blood in the body, and the average transfusion is about 3 pints (a unit is actually 450 mL, just under a pint at 15.2 ounces). Although the need will obviously vary from patient to patient and procedure to procedure, both bypass surgery and cancer surgery normally require between 2 and 6 units. Patients involved in severe accidents can require as many as 100 units.

Transfusions are not just problems in cancer patients either. The risk of serious infections and other problems seems to occur whenever transfusions are used.

It was found that in individuals undergoing hip replacement surgery, a blood transfusion resulted in a 35 percent greater risk of serious bacterial infection and a 52 percent greater risk of developing pneumonia. *(Transfusion 99;39(7):694–700)*

Similar problems were also found in patients who underwent back surgery. *(Transfusion 92;32(6):517–524)*

A transfusion is actually more like a transplant with an unknown history. You really don't know what you're getting. Sure, blood banks can screen for certain pathogens, but only for a small handful of them. It's like the city chlorinating the water supply and declaring it safe to drink. The purification might knock out some of the major pathogens (the few they check for) but what about the thousands of chemical pesticides, herbicides, environmental toxins, fungi, and other items they don't check for, don't have tests for, or don't even know to test for? Blood is the same. There are thousands of possible components.

The Self-Help Solution

As I said before, blood transfusions save lives every single day. It's the routine, unnecessary transfusions that need to be curtailed, and the technology and tools to do so are being grossly underutilized.

Currently there is no practical substitute or product that has been developed to replace the need for blood. As I mentioned almost 20 years ago, there are some very viable alternatives to transfusions unless you're involved in a horrific accident that involves enormous tissue damage and blood loss. In those cases any danger from transfusions would probably be the least of your worries.

In many cases, however—hip replacement, bypass procedures, and the like—you have time to donate and bank your own blood prior to the surgery (a process called *autologous transfusion*). In the University of Michigan study I mentioned earlier, individuals who didn't receive transfusions, and *those who banked their own blood before surgery*, had the lowest risk of infections and, subsequently, a lower risk of dying during the 100-day recovery period. The results are pretty much the same in a number of other studies I've seen. Your surgeon or the surgical facility will have information about local autologous transfusion services.

As I also mentioned 20 years ago, it's well worth doing a little detective work now to see what facilities in your

(*Transfusion continued on page 159*)

NEWS TO USE FROM AROUND THE WORLD

Easing the Dentist Visit

SHEFFIELD, ENGLAND—Visiting a dentist is one of the most common fears in our society, right up there with public speaking. Personally, I'm no great fan of the dental chair, but I recognize that it's necessary at times and I do what I need to do. For some people, however, their aversion is so great that they react physically to the experience.

One of the more severe patient reactions is gagging whenever a dental instrument is placed in the patient's mouth. The problem is especially pronounced during a procedure called alginate impression, used to make molds of teeth.

A group of dentists in England has now discovered that acupuncture can reduce the severity of the gag reflex, at least enough to allow the completion of procedures. *(Br Dent J 06;201(11):721–725)*

Dental acupuncturists tried the acupuncture on 37 patients, all of whom had been unable to accept the alginate impression. After the acupuncture, 30 of the patients had their gag reflex reduced enough that they could go through the entire impression process.

Making a Simple Point

If you're one of those people who shy away from any kind of needle, then you can try acupressure instead. This is simply the application of firm, steady pressure with a finger on the same point used in acupuncture. The point used in the above procedure is known as CV-24, located in the center of the groove under the lower lip. Press in and slightly down, so you're pushing against the jawbone instead of against your teeth. Keep pressing throughout the duration of the dental procedure.

Another point that shows some promise in the relief of gagging is the P-6 point located on the inner side of the wrist, between the two bones of the forearm. This is the same point that is used to treat nausea and motion sickness. The Sea-Band wristbands sold for preventing motion sickness are simply an elasticized band with a small bead attached to the inside. The wearer positions the bead so it's pressing on the P-6 point.

In an earlier pilot study of acupuncture for gagging, the acupuncture procedure added less than 5 minutes to the patient's stay in the dentist's office, and the total additional cost was under a dollar. A procedure that's this easy, quick, effective, and cheap should catch on quickly. *(Br Dent J 01;190(11):611–613)*

If gagging is a problem for you at the dentist, and your dentist isn't comfortable using acupuncture, you can easily perform the acupressure on yourself. Just be prepared for some funny looks from the office staff. I wish I had known about this technique a couple of years ago when I had several impressions made. It would have been a godsend.

It seemed like every time the dental assistant applied pressure to fit the impression, just enough of the gel would squeeze out to touch my throat area and trigger the gag reflex. The worst part was trying to keep from gagging for a couple of minutes until the impression material hardened. It was very uncomfortable thinking my air was being cut off. I can only imagine how uncomfortable it could be for a child or someone who has a fear of dentists.

A Lunch of Tea and Chips

TOKUSHIMA, JAPAN—Researchers at the University of Tokushima have found that simply drinking a glass of tea with a meal increases the amount of fat excreted into feces and reduces the absorption of cholesterol through the digestive tract. *(Eur J Clin Nutr 06;60(11):1330–1336)*

The 12 subjects were divided into two groups. The first group received about 24 ounces of oolong tea with each of three meals a day, then 19 grams of fat twice a day—about half an hour after lunch and dinner. The second group received a placebo drink instead of the tea, but still ate the fat. Each group continued on this regimen for ten days, then after a seven-day washout period the two groups were reversed.

Blood samples were taken from each patient four times during the trial, and stool samples were taken on the last three days of each trial period. Those drinking the tea excreted about twice as much fat as those on the placebo, and about 50 percent more cholesterol.

Much of the fat you eat passes through the stomach pretty much unchanged. Once it gets to the intestines, some of it is slowly absorbed through the intestinal wall. (This is just one of the many ways in which constipation is bad for you. The longer intestinal matter takes to pass through your gut, the more fat that will be absorbed from it.) The researchers didn't speculate on tea's mechanism of action, but I'd bet it has something to do with changing the rate of fat absorption in the digestive tract.

The Final Details

Oolong tea is created using the same oxidation process that turns green tea into black, but the process isn't allowed to go on as long. The resulting drink has some of the characteristics of both green and black teas—moderately high levels of polyphenol antioxidants, but a more robust taste. The researchers in this study said their tea was "polyphenol-enriched," but they didn't say how the enrichment was carried out.

NEWS TO USE *(CONTINUED)*

One thing to note is that the fat came from eating potato chips. For those of you who can't eat just one, the amount of fat the subjects were given came from just four ounces of chips per day. Typical chips are more than one-third fat, and chips of all kinds are a major source of fat calories—in this country and abroad.

The British Heart Foundation has one of the most eye-grabbing billboard campaigns to help highlight the dangers of the over-consumption of chips (or "crisps" as they call them in that country). Billboards show a child drinking from a bottle of cooking oil. According to their studies, crisps are found in 69 percent of the 5.5 billion lunch boxes packed for children each year. Kids in that country are ingesting almost 5 quarts of cooking oil a year strictly from their pack-a-day chip habit. I'm sure a similar study would reveal pretty much the same thing in this country.

(Transfusion continued from page 157)

area do "bloodless" surgery. (I'm not talking about some doctor in the Philippines who pokes his hand in your stomach and removes your appendix without making an incision.) Bloodless surgery refers to utilizing the latest technology to minimize blood loss. And any lost blood can be suctioned, cleaned, and recycled. The technology has been available for nearly 30 years, and has progressed significantly since I first wrote on the subject.

Lasers and cryotherapy can be used to instantly stop bleeding during surgery. Drops of blood instead of dozens of vials can be used in lab tests. Microsurgical techniques can be used to minimize tissue damage. Hyperbaric oxygen chambers can be utilized along with drugs like erythropoietin, vitamins, iron, and hormones to build up hemoglobin levels and eliminate the need for transfusions. The technology and knowledge are there, but as with other aspects of patient care change can be slow.

It is estimated that there are roughly 75,000 doctors now trained and utilizing bloodless surgery here in the US. In part, we can thank the Jehovah's Witnesses for this development, because their religion doesn't allow them to use blood or blood products. Training takes place at a number of locations around the country, and many hospitals are now equipped to perform such surgeries. Someday it will become standard along with microsurgical procedures. The sooner this happens the better it will be for everyone. Patient outcomes will be improved, and there will be an enormous savings—in dollars and lives. For now, you should check your local area for centers that offer bloodless surgery.

One of the quickest way to find a local physician or facility that offers bloodless surgery is to "Google" or do a Web search with "bloodless surgery, [your town], [your state]." Many community hospitals are now beginning to offer these services. You might also check the Web site *www.noblood.com* or call 888-7-NOBLOOD (888-766-2566) for additional information or a referral in your area. (Remember, if you don't have access to a computer or you're not computer-savvy, your local librarian should be more than happy to do these searches for you.)

As surgeries such as bypass, hip replacement, and others become more routine, it's important to understand how you can significantly improve the outcome. The same holds true for cancer treatment. (In some of the examples above the mortality or death rate increased dramatically when blood transfusions were used. Keep this in mind. In lung cancer patients less than three patients per every hundred died at 30 days when no transfusions were given, yet 22 patients in every hundred died during that same period when they were given transfusions.)

Although we're talking about a matter of life and death, most doctors avoid discussing topics such as bloodless surgery—particularly if they are not trained in this area. If your doctor isn't knowledgeable on the subject, I urge you to find one who is.

View From the Other Side

After reading all this, you may wonder about the wisdom of donating blood. Don't think for a moment that I'm against the practice. There are legitimate reasons for blood transfusion, and blood banks are constantly facing a shortage of donors. At one time blood centers made up the difference by buying blood from sources in Europe, but in 2004 concerns over mad cow disease led the FDA to ban the importation of blood. Since that time blood banks have had to scramble to find more donors, and to get those donors to give more often. Additional fears would only contribute to the problem.

When you donate blood they take a unit, and you can donate once every eight weeks. Your body will replace the plasma (the fluid portion) in a couple days, but it takes the two months for your body to replenish the blood cells contained in a pint. If you bank your own blood before surgery, be sure to allow enough time between your last blood draw and the date of your surgery.

The Cheapest Prescriptions Around

Sometimes I feel like a broken record, particularly when it comes to warning about the dangers of our drinking water supplies. Long-time readers of *Alternatives* are aware that I've always recommended you drink distilled water (unless you're totally certain of the purity of your water). That recommendation hasn't changed over the years. In fact, each year the water contamination problem only seems to get worse. The number of pesticides, herbicides, toxic chemicals, and other pollutants grows every year, and eventually they seem to end up in our water supply.

There's another type of contaminant that most people would have never dreamed could become a problem. It's prescription drugs. As this country's use of prescriptions escalates at an unprecedented rate, more and more of these compounds are finding their way into our waterways and drinking water.

Some of the latest findings come from the US Geological Survey, where they recently developed a way to test for antidepressants in river water and the brains of fish. Tests were performed downstream of several sewage-treatment plants in Colorado. It's probably no surprise that the drugs fluoxetine (sold as Prozac) and sertraline (sold as Zoloft) were quite common. *(News Release US Department of Interior, Nov.6, 2006)*

It would be easy to joke about this and say at least now the fish, frogs, and other aquatic life don't have to worry about depression, but it's really a more serious situation that's not receiving much attention. This study focused on antidepressants, but other studies have documented widespread contamination from other drugs such as hormones, acetaminophen, antibiotics, birth control pills, and medications used to treat high blood pressure and epileptic seizures. This is a situation most people aren't concerned about, but personally I don't want any of these drugs in my drinking water. That's why I use either distilled water or water from an uncontaminated deep spring.

The Consequence of Ignorance

On a related note, researchers took blood samples from 1,532 randomly selected men aged 45 to 79 and compared their testosterone levels to men of the same age group back in 1988. (The earlier data were from the massive Massachusetts Male Aging Study, which previously evaluated endocrine function in aging men.)

It's well-known that a man's testosterone level normally falls as he gets older, but the decline was found to be much speedier than expected. The average levels dropped by 1 percent a year. *In other words, a 65-year-old man in 2002 had a 15 percent lower testosterone level than a 65-year-old man in 1987.*

The researchers were at a loss to explain the dramatic decline being seen in testosterone levels across the entire male population. There was some thought that the increase in obesity (higher fat levels lower testosterone levels) and the decrease in smoking (smoking raises testosterone levels) might be contributing factors, but no one is sure at this point. *(J Clin Endocrinol Metab 06;Oct 24 and Dec 5 (Epub))*

I strongly suspect that an increase in our exposure to birth control drugs, as well as to pesticides and other compounds (soy-based foods, plastics, chemicals, et cetera) that mimic estrogen activity, is contributing to the problem.

And I'm sure this is just the tip of the iceberg. These days everyone seems to be concerned about the disposal of hazardous waste and the effect it has on our environment. It doesn't seem like anyone, however, is paying much attention to the widespread problem of drug contamination. The effects of this problem are real and very evident. We've been ignoring the problem for decades and, slowly but surely, our complacency is mutating entire species, including humans…unbelievable.

Take care,

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

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