Facts and ideas from anywhere

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OVER-THE-COUNTER ZOCOR

The 10-mg dose of simvastatin (Zocor) recently became available to the public in the United Kingdom (UK) without a prescription (1). The UK government hopes that the easy availability of a low-cost statin (expected to cost <$1 per day) will increase the drug's use and reduce cardiovascular mortality and morbidity in that nation. The UK is the first nation to approve an over-the-counter statin. I have been on an advisory board of Johnson & Johnson/Merck in the USA for >5 years; the board's purpose is to provide evidence to the Food and Drug Administration (FDA) that lovastatin (Mevacor) 20 mg should be available in the USA without a prescription. Hopefully, one or more statins will be approved for over-the-counter use in the USA before the end of 2004. It is estimated that 14 million Americans are presently taking a statin drug. If the National Cholesterol Education Adult Treatment Panel III guidelines were followed, at least 35 million Americans should be taking a statin drug. Based on the revised guidelines in July 2004, that number probably will reach 50 million, and if we really want to have a significant impact on our cardiovascular health, I think 100 million Americans should take a statin drug. If Mevacor is approved for over-the-counter use in the USA, it will be the first drug approved in this manner for chronic use, not for an acute condition.

STATINS IN CHILDREN

Familial hypercholesterolemia occurs in 1 of 500 Americans. Individuals with the heterozygous familial variety of hypercholesterolemia usually have total cholesterol levels of about 300 and low-density lipoprotein cholesterol levels >240 mg/dL. A study from Amsterdam (2) involved 214 children aged 8 to 18 years with familial hypercholesterolemia. Half were treated with pravastatin, 20 to 40 mg/day, and half with a placebo tablet. Two years of pravastatin therapy induced a significant regression of carotid arterial atherosclerosis in the children without adverse affects on growth, sexual maturation, hormone levels, or liver or muscle tissue. This study is good news because there has been a tendency to wait until after puberty to start these patients on statin therapy.

TEA DRINKING AND HYPERTENSION

Popular Chinese medicine has long believed that tea possesses hypotensive effects. Yi-Ching Yang and colleagues (3) from Taiwan examined the effect of tea drinking on the risk of hypertension development in 1507 subjects aged ≥20 years who did not have a history of hypertension 5 years earlier. Six hundred subjects (40%) were habitual tea drinkers, defined by tea consumption of ≥120 mL/day for at least 1 year. Compared with rates for nonhabitual tea drinkers, the risk of developing hypertension decreased by 46% in those who drank 120 to 600 mL/day and by 65% in those who drank >600 mL/day after adjusting for age, sex, socioeconomic status, family history of hypertension, body mass index, waist-hip ratio, physical activity, sodium intake, cigarette smoking, alcohol consumption, coffee drinking, and various dietary factors. Thus, habitual drinking of green or oolong tea significantly reduces the risk of developing hypertension.

THE A-B-C-D-E APPROACH TO REDUCING CARDIOVASCULAR RISK

The approach is summarized in the *Figure* (4).

A	B	C	D	E
Antiplatelet agents Aspirin Clopidogrel	Blood pressure control First-line therapy Angiotensin-converting enzyme inhibitors β-blockers Thiazide diuretics	Cholesterol management Statins Ezetimibe Fibrates Nicotinic acid	Diet and weight management ≥500 kcal/d caloric reduction	Exercise Aerobic Weight training
Anticoagulant therapy Warfarin	Second-line therapy Aldosterone antagonists Angiotensin receptor blockers Calcium channel blockers	Cigarette smoking cessation Counseling Medical therapy Bupropion Nicotine patch	Diabetes mellitus Prevention Impaired glucose tolerance Impaired fasting glucose	Ejection fraction Assessment Therapy Angiotensin-converting enzyme inhibitors
Angiotensin-converting enzyme inhibitors	β-blockers		Management Hemoglobin A_{1c} <7%	β-blockers Aldosterone inhibitors Spironolactone Eplerenone
Angiotensin receptor blockers				Digitalis Implantable cardioverter defibrillator

Figure. ABCs of cardiovascular disease risk management. Adapted with permission from reference 4.

FAT LAND

It continues to amaze me that whenever the conversation focuses on weight, the first reaction of most people is "I need to exercise more." We all need to remember that we have to walk 35 miles to lose 1 pound, and that is without stopping for a McDonald's burger on the way. Even *National Geographic* is discussing the topic (5). In the August 2004 issue, they emphasized, as do most experts, that we are fat because we eat too much. Adult women today are eating 335 more calories per day than they did in 1971, and adult men have upped their daily intake by 168 calories per day. Adult Americans in 2000 each ate 1775 pounds of food, up from 1497 pounds in 1970. Yes, we are eating more vegetables, but almost a third of those vegetables are iceberg lettuce, french fries, and potato chips. Our grain intake also has increased, but that is mostly flour-based items such as pasta, tortillas, and hamburger buns, which have little more nutritional value than table sugar. Although we have reduced fat as a percentage of total calories, that percentage is down only because we're eating so much more of everything else and, indeed, the grams of fat calories consumed have actually increased. According to *National Geographic*, there are now as many overnourished as undernourished people around the world. As prosperity increases, caloric consumption increases. Then add technology—cars, washing machines, elevators—that reduce physical exertion and then add television and video games and then add the intensive marketing of candy and fast food, and we have an epidemic.

Greg Critser in his new book (6) has reemphasized that 6 of every 10 adults in the USA and 1 of every 4 children in the USA are now overweight. Since 1970, the proportion of American children who are overweight has doubled. Agribusiness in the USA now produces 3800 calories of food a day for every American, 500 calories more than it produced 30 years ago. We have transformed our overproduction of food into our overconsumption. In the last 2 decades, Americans have learned to eat on average an additional 200 calories per day. Some of the credit for this new environment belongs to an unheralded businessman named David Wallerstein, the man Critser says introduced "supersizing" to America. Wallerstein, today an executive with McDonald's, back in the 1960s worked for a chain of movie theaters where he labored to expand sales of soda and popcorn, the high-markup items that theaters depend on for their profitability. Wallerstein tried everything he could think of to boost sales—2-for-1 deals, matinee specials—but found he couldn't induce customers to buy more than 1 soda and 1 bag of popcorn. Why? Because going for seconds makes people feel like pigs. But Wallerstein discovered that people would spring for more popcorn and soda more frequently as long as it came in a single gigantic serving. Thus was born the Big Gulp and in time the Big Mac and jumbo fries. Supersizing is such an effective business strategy because of the cheapness of basic foodstuffs in the USA. Since the raw materials of soda, popcorn, french fries, and even hamburgers represent such a tiny fraction of their retail price (compared with labor, packaging, and advertising), expanding portion size becomes a way to multiply sales without adding much to costs *(Table)*.

Table. Portion sizes past and present*

Food or beverage	Date	Ounces	Calories
Burger King hamburgers	1954	2.8	202
	2004	4.3	310
McDonald's french fries	1955	2.4	210
	2004	7.0	610
Hershey's Milk Chocolate	1900	2.0	297
	2004	7.0	1000
Coca-Cola	1916	6.5	79
	2004	16.0	194
Movie popcorn	1950	3 cups	174
	2004	21 cups (buttered)	1700

*Data from reference 5.

OIL AND WORK

The oil riches in Saudi Arabia have allowed that country to import workers so that Saudis can take it easy. Norway, until the oil boom began about 3 decades ago, was mostly poor and isolated and survived on hard work and self-reliance. The sudden wealth of the last 3 decades has bought complications (7). The country's bedrock work ethic is caving in. Norwegians now stay home from work at the highest rate in Europe, outdoing even the former titleholder, Sweden. On an average day, about 25% of Norway's workers are absent from work because they have called in sick, are undergoing rehabilitation, or are on long-term disability. The rate is especially high among government employees, who account for half of the workforce. The average time people were absent from work in Norway in 2002, not including vacations, was 4.8 weeks. Sweden totaled 4.2 weeks, Italy came in at 1.8 weeks, and Portugal at 1.5 weeks. Add to that vacation time (5 weeks for most people), national holidays (11 per year), and weekends, and Norwegians take off nearly half the calendar year—about 170 days. That does not include time off for disability and rehabilitation. Long-term disability leave, up 20% since 1900, is growing at an even faster rate than sick leave. There are few penalties for chronic absenteeism. Most people on sick leave in Norway receive 100% of their pay for a year and 60% in the second year under a job rehabilitation program. Few employees get fired, but if they do, unemployment benefits are generous. The most common ills, other than colds and flu, are skeletal and muscle problems, including repetitive stress injuries.

Paradoxically, when they are at work, Norwegians are highly productive; the economy was ranked by the World Economic Forum as the ninth most competitive in 2003, ahead of Japan and Britain. But getting Norwegians to work consistently is proving difficult. They are trying to change. A physician's approval now is necessary for absences of >8 weeks; sick employees must meet with employers to see if anything more can be done, or they risk losing their benefits. Bosses must offer workers flexible hours or find them other duties; someone with back trouble can sit at a desk rather than lug boxes. Just about everyone agrees that Norway's liberal welfare system plays a big role in the growing absenteeism.

DANGEROUS WORDS, DANGEROUS PHRASES

Bernard Lown is a great man! He invented the defibrillator, and it is my understanding that he made not a nickel from it. I

got to know him a bit during a trip to the Soviet Union in 1972. Dr. Lown was leading a delegation of Americans there to meet with a group of Soviet physicians and discuss the topic of sudden cardiac death. After spending nearly 2 weeks with this man, who was Sam Levine's first fellow in cardiology, I came away with great admiration for his professional abilities and for his charm in dealing with both the American and Russian delegations.

Dr. Lown and his colleagues have just written a piece entitled "Words that harm, words that heal," which appeared in a recent issue of the *Archives of Internal Medicine* (8). The piece focuses on words and phrases in cardiology, because that is the authors' subspecialty. Listed below are some of the frightening metaphors that I too have heard used by one or more cardiologists or cardiac surgeons:

"You have the type of lesion we call a widow maker."

"Your next heartbeat may be your last."

"You are living on borrowed time."

"You have 'dangerous anatomy.' Therefore, we must proceed with cardiac surgery."

"You have 'a time bomb' in your chest."

"Your heart vessels are blocked."

"Your life is hanging by a thread."

"You flunked an exercise tolerance test."

The authors also give examples of misunderstood jargon and technical language:

"abnormal electrocardiogram"

"silent changes on the electrocardiogram"

"sick sinus syndrome"

"congestive heart failure" (heart failure sounds pretty final and irreparable)

"a disease of the right circumflex artery"

"an ejection fraction of 50%" (an alternative might be "your heart is pumping well")

There are several reasons why physicians use words that might be harmful to patients: 1) medicine's inherent uncertainty; 2) time pressure and the desire to curtail patients' questions; 3) the desire to convey a sense of urgency, thus hoping to ensure compliance with lifesaving recommendations, and 4) being so close to the language of medicine and to the specific words of the subspecialty that they don't really hear the words that they use. Whatever the explanation for the persistence of harmful metaphors, their use is not innocuous, and it undermines the trust between physician and patient.

Thus, a search for language that heals. Healing language avoids words that intensify emotions or destroy hope or any prospect for rational self-determination. The best way to communicate is not through tenacious "medicobabble" but through language that adapts and responds to a patient's experiences. Healing language provides the stage for collaborative decision making between the physician and the patient, with each sharing his or her "own expertise to help the patient make the best possible decision." Language that heals simply explains what is happening rather than cloaking a diagnosis in a frightening term. The essential feature of language that heals is emphatic communication.

CLINICAL BREAST EXAMINATION VS MAMMOGRAPHY VS MAGNETIC RESONANCE IMAGING FOR DETECTING INVASIVE BREAST CANCER

Kriege and colleagues (9) from multiple medical centers in the Netherlands screened 1909 women, including 358 carriers of germline mutations, and detected 44 neoplasms. The sensitivity of clinical breast examination, mammography, and magnetic resonance imaging detecting the 44 invasive cancers was 18%, 33%, and 80%, respectively, and the specificity was 98%, 95%, and 90%, respectively. Thus, magnetic resonance imaging appears to be more sensitive than mammography in detecting tumors in women with an inherited susceptibility to breast cancer.

THE DOWN SYNDROME, ENDOSTATIN, AND BEVACIZUMAB

It has been known for years that patients with the Down syndrome are protected against cancer, noncongenital heart problems, and diabetic retinopathy (if diabetes mellitus occurs) (10). Patients with the Down syndrome have 3 copies of chromosome 21 (trisomy 21). In 2003, researchers discovered that the extra copy of chromosome 21 provides the body with an extra copy of collagen XVIII, from which endostatin is derived. Endostatin plays a key role in inhibiting angiogenesis, the growth of blood vessels. Uncontrolled growth of blood vessels is a characteristic of cancer, heart disease, and diabetic retinopathy—all diseases that the Down syndrome patients are protected against, apparently because of the powerful inhibiting effects of all that extra endostatin.

In early 2004, the FDA approved the first drug specifically designed as an angiogenesis inhibitor, bevacizumab for colorectal cancer. The FDA is expected to approve at least 3 more angiogenesis-inhibiting cancer drugs soon. With research on angiogenesis in cancer flourishing, investigators hope to find treatments for other diseases that depend on angiogenesis. Indeed, >60 antiangiogenesis drugs are now in clinical trials, many of them for diseases other than cancer. In addition, many proangiogenesis drugs for treating heart and vascular disease are also being studied in various trials.

HEALTH CARE FOR PRISONERS IN THE USA

Prisoners are the only individuals in the USA with a legal right to nonemergency health care! In 2003, the number in US prisons or jails topped 2 million (702 inmates per 100,000 residents), and of that number, 121,000 inmates (9%) were ≥50 years (11). A 50-year-old inmate, however, may have a physiologic age that is 10 to 15 years older according to correctional health experts because inmates generally age faster due to such factors as abuse of illicit drugs, alcoholism, and limited lifetime access to preventive care and health services. Inmates >55 years tend to have an average of 3 chronic conditions, and 20% of them also apparently have a mental illness. With tightening budgets, correctional health care professionals are having a progressively more difficult time providing quality health care to the aging inmates.

ALCOHOLICS ANONYMOUS AND BILL WILSON

When Bill Wilson was a boy, his father was an alcoholic who left his family (12). Bill's critical and emotionally distant mother also left him and his sister, and he was raised by his grandparents.

Bill Wilson (1895–1971) also became an alcoholic. Nevertheless, his famous remark "and I'm an alcoholic" led to his cofounding of Alcoholics Anonymous (AA) in 1935 with proctologist Robert Smith. Wilson's "drunk log" was told and retold countless times: officially in the *Big Book of AA* and at innumerable meetings that he attended as the organization's cofounder. In 1939 he wrote *Alcoholic Anonymous*, which became an enduring best seller, earning remarkable royalties. (The millionth copy was presented to President Richard Nixon in 1973 in celebration of the achievements of AA.) In 1953, his second book, *Twelve Steps and Twelve Traditions*, also was a huge success, and it was the model for many other self-help groups. Wilson supported a program of companionship without moralistic preachments and a programmatic agenda for reform. During his active drinking years, he became engaged with and influenced by the Washingtonian and Oxford group movements, which ultimately failed—probably because of their domineering, charismatic leaders who were involved in social and political influence peddling. In shaping AA, Wilson insisted on the anonymity of its members, on having no opinion on "outside matters," and on having an organizational structure that was democratic, decentralized, and leaderless.

The story of AA and Bill Wilson is retold by Susan Cheever, daughter of novelist John Cheever and also a reformed alcoholic, in her recent book (12). Wilson's phrase "and I'm an alcoholic" captures the central discovery that Bill Wilson stumbled on as he found the path to freedom from his own addiction to alcohol. It was by talking to other drunks about his own drinking that Wilson made his first steps towards sustained sobriety. Wilson, whom Aldous Huxley called "the greatest social architect of the 20th century," originally a small-town Vermonter, turned down an honorary doctoral degree from Yale since receiving such an accolade would have risked linking AA with a personality rather than with a fellowship of drunks. Wilson left a great legacy.

THE LAST WAR IN WHICH MORE SOLDIERS DIED FROM DISEASES THAN FROM CLASHES WITH THE ENEMY

Vincent Cirillo has written a small book about a small war that had a big impact on military medicine (13). The seldom-remembered Spanish-American War was America's first overseas effort at empire building and the last conflict in which more soldiers died from diseases than from clashes with the enemy. For every soldier killed in combat, 7 others died from typhoid fever, malaria, dysentery, or yellow fever. Most died without leaving their stateside encampments.

The "splendid little war" was poorly planned. Two hundred thousand volunteers overwhelmed the 28,000 peacetime regulars who were charged with training, housing, and equipping them. The army was poorly led and poorly equipped. Soldiers found themselves wearing wool uniforms in tropical Cuba and firing obsolete weapons whose smoky discharges obscured their view but nicely marked their positions for Spanish sharpshooters. The better-armed and better-entrenched enemy produced large numbers of American casualties, which then threatened to overwhelm the 9 surgeons who operated on 786 men over 2 days. Most of the medical supplies and ambulances were still buried in the holds of offshore steamers, and food, bedding, and tents were in short supply. Fortunately, the shooting lasted only 2 weeks.

Amazingly, the mortality rate of combat-wounded personnel was the lowest in military history. Ninety-five percent of the wounded recovered. This was due in part to the first-time use of battlefield aid kits to stop hemorrhaging and to cover wounds with antiseptic dressings. Shipboard radiographic machines located bullets and prevented traditional probing. Those wounded in combat had a much better chance of surviving than did those with an infectious disease.

The bacilli devastated the soldiers in their stateside camps. The bacilli in question were *Salmonella typhi*. Typhoid fever was the major killer of US soldiers during the Spanish-American War! It was endemic in the national encampments, accounting for 87% of the total deaths from disease during the war. Although the Widal test had been invented 2 years earlier, medical officers regularly misdiagnosed typhoid as malaria, sometimes on purpose.

Camp sanitation was a disaster. The 60,000 men herded into Camp Thomas, Georgia, for example, produced 9.4 tons of feces and 21,000 gallons of urine per day. Their 10,000 to 15,000 horses and mules added 220 to 330 tons of manure per day, and that manure yielded some 500 to 800 million flies. Although Surgeon General George Sternberg (of the Reed-Sternberg Hodgkin's disease fame) had issued a circular outlining personal hygiene practices and procedures for camp sanitation and the disinfection of hospital waste, line officers apparently ignored the circular. Most believed the filthy grounds and fecal odor were a normal part of army life.

Out of this conflict came significant reforms and research, including a nurse corps, a medical reserve corps, antityphoid vaccination, a new sanitation curriculum for officers, stockpiled medical supplies, and groundbreaking research on the epidemiology of typhoid fever and yellow fever.

SHORT OF WATER

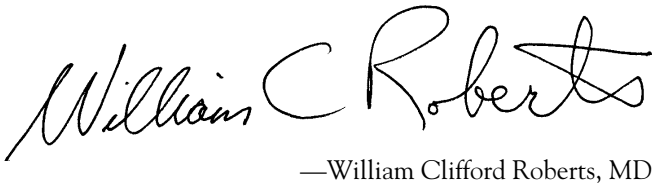
A drought has been parching much of the western USA for 5 years. It appears that politicians, scientists, business leaders, city planners, and environmentalists are increasingly realizing that the world of eternally blue skies and meager mountain snowpacks may not be a passing phenomenon but a return of a harsh climatic norm. According to Johnson and Murphy (14) writing in *The New York Times*, continuing research into drought cycles over the last 800 years suggests that the relatively wet weather across most western states during the 20th century was a fluke. Scientists who study tree rings and ocean temperatures now suggest that the development of the modern urbanized West may have been based on a colossal miscalculation.

Presently, Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, the states that depend on the Colorado River, are preparing for the possibility of water shortages for the first time since the Hoover Dam was built in the 1930s to control the river's flow. The paltry snowfall during March 2004 in the Rocky Mountains decreased runoff projects for the Colorado River this year to 55% of average. Snowmelt is the lifeblood of the river, which provides municipal water from Denver to Los Angeles and irrigates millions of acres of farmland. The period since 1999 is now officially the driest in the 98 years of recorded history of the Colorado River according to the US Geological Survey.

Lake Powell, part of the Glen Canyon National Recreation Area, has lost nearly 60% of its water and now is about the size it was 30 years ago when it was still filling up. If the water levels continue to fall, Lake Powell will be unable to generate electricity as early as 2007, and it would be reduced more or less to the old riverbed channel of the Colorado River not long after that. Even now, the lake's managers say, it would take a decade of historically normal rainfall to refill it. Insufficient water for the Glen Canyon Dam turbines would be only the beginning. At that point, much of the lake bottom would be exposed, creating a vast environment for noxious weeds. The next step would be what is called "dead pool," where decades' worth of agricultural chemicals at the lake bottom would be mixing more actively with the reactivated river. Then, what would happen to the Grand Canyon, just south of the dam?

No one knows for certain what the weather will do. It could change tomorrow. Many past western droughts have ended suddenly, with a bang of precipitation. From about 900 to 1300, periodic droughts in the West were the norm. Only a few times during that period, according to tree-growth measurements, was precipitation anywhere near the relatively high levels of the 20th century. The uncertainty has local, state, and federal officials along the 1450-mile Colorado River scurrying to secure water allotments while also preparing for the worst.

It looks as if it might be a contest whether water or oil first becomes in short supply.



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