

Quest for Immortality & Vitality

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*"I don't want to achieve immortality through my work. I want to achieve it through not dying." ~
Woody Allen*

The timeline from the first flight to supersonic transport and the first rocket to a manned mission to the moon have been breathtakingly brief. The first theory that a chemical means of transmission of genetic information, to the identification of DNA, took a few years. The progress since then leading to new fields of genomics, epigenetics, gene sequencing, gene correction, and transfer has been nothing short of revolutionary. The life span of various rodents is remarkably varied, and even more varied are the lifespans of different animals. Some life forms have been identified that have lifespans measured in the thousands of years, others appear to be immortal. The Nobel Prize in Medicine was given to Dr. Sydney Brenner for his work on the genetics of the roundworm, which has parallels to the genomics of man. Modifying one single gene led to a near ten-fold increase in its lifespan, the human equivalent of reaching an age one thousand years. The single cell at fertilization, through replication and cell division, becomes over 37 trillion specialized cells in the adult. Each cell carries a duplicate of the DNA of its parent cells unless a mutation occurs. The power of exponential or logarithmic growth is often vastly underestimated. Human life expectancy has increased, predominantly through reductions in infant mortality.

Free radicals, oxidation, and inflammation and are the biological equivalent of rust and aging. Genes are not destiny; epigenetic influences from the environment modify genes as well as turning them on and off. Telomeres, the ends of the chromosomes that act as the equivalent of shoelace caplets, prevent the unraveling of DNA and cell death. The enzyme telomerase prevents the shortening of telomeres and enhances cell longevity. Cancer cells use telomerase to maintain cancer cell viability and propagation, making some cancer cell lines virtually immortal. Genetic mutations that trigger accelerated aging, such as progeria, are providing important insight into the mechanisms of aging that offers potential therapy to control the aging process. One of the control genes of aging found in the roundworm is also present in mouse and man. A metabolite of a microbe found in the soil of Easter Island influences this gene and leads to extended lifespan in the roundworm, and evidence of age reversal in mice. This compound is FDA approved for treating post organ transplant patients to prevent rejection, and human trials to assess its effect on aging are ongoing. Laboratory advances in roundworms and mice are providing important insights, but applications in humans require extensive study, even if the same genes are shared between species. The advent of new technology, such as CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) has brought gene transfer and correction of genetic mutations from the world of science fiction to present day reality.

On occasion, the result of a new scientific advance meets or exceeds the initial hype. Stem cells are one example where the advances have rapidly moved from the laboratory to clinical applications. Stem cell

therapy has moved from the laboratory to clinical applications relatively rapidly. The first stem cell transplant took place over fifty years ago with bone marrow transplants. The condition amenable to new approaches with stem cells is expanding rapidly. Organ regeneration and replacement, as well as cloning for organ retrieval, are no longer science fiction but on the horizon. Limb and organ regeneration from stem cells and gene transfers to correct mutations or provide new properties are within technological reach. The image of the glowing cat is an actual demonstration that the gene of the firefly can be transplanted into a completely different species, and function as it was designed to physiologically. The other images are fictional and humorous representations of what is theoretically possible if carried to the extreme. Advances in technology have made prosthetics that have similar or superior properties to the human original possible. Further advances will accelerate advances over the natural features, and even today the Olympics disallow blade runners who have a speed advantage over normal limbs. Many of the diseases that result in death today, such as myocardial infarction and heart failure, are theoretically curable with a mechanical prosthetic heart or one regenerated from stem cells.

Nanotechnology is rapidly advancing, and an entirely new field of technology and medicine will offer remarkable diagnostic and therapeutic advances. Hormones were the original focus of aging and vitality research and continued to have an important role to play. Testosterone and growth hormone supplements are not without risks, and the science of longevity and age management is rapidly advancing beyond hormone therapy. Lifestyle, diet, stress, inflammation, and a variety of factors have been identified by studying centenarians, those who have lived a century or more, in 'blue zone' communities around the world where they are found in sizeable number. Caloric restriction extends lifespan in mice and other organisms. Some humans are adapting this approach, with the results unknown as yet. Laboratory research has identified compounds that mimic the effect of caloric restriction, so it is possible that in the future you can literally have your cake and eat it too! Diet plays an important role in inflammation and its management. Many people believe inflammation should be referred to as inflamed-aging because of its profound effect on the aging process. Red wine and resveratrol have received a lot of publicity for anti-aging effects, but to date the results of resveratrol compounds have been disappointing. One of the lessons learned from the concept of systems biology is that individual components may require other factors to achieve results. So even though resveratrol by itself may not have proven benefits, perhaps when taken with other key components in the elixir of red wine, it is beneficial. The Mediterranean diet, as well as the red wine industry, suggests this is the correct path to take, in moderation of course.

Without a doubt, exercise appears to have the greatest anti-aging effects known to date. Perhaps one day the benefit will be available in pill form, but even then you should take the pill for a long walk each day before swallowing it! The diet we consume undoubtedly is another key to our health and longevity. It may have a direct influence by its components, or indirect via changes in epigenetics and the microbiome. Even when the diet appeared to play a direct role, such as fat content and cardiovascular risk, the truth was much more complicated. For example, phosphatidylcholine is a vital phospholipid substance found in every cell of the human body. As it was first identified in eggs it was given the name lecithin derived from the Greek word *lekithos* (λεκιθος, egg yolk). The Western diet is rich in lecithin, which the gut microbes use to create trimethylamine, which is then absorbed by the gut and converted by the liver to TMAO. Choline, betaine, and trimethylamine N-oxide (TMAO) are metabolites of lecithin and are associated with cardiovascular risk in humans. TMAO has been associated with accelerated atherosclerosis, enhanced platelet hyper-reactivity, and thrombosis risk. Vegetarian, vegan, and Mediterranean diets (dairy, eggs, legumes, vegetables, seafood) are associated with lower TMAO levels. Gut microbial suppression with antibiotics reduces plasma levels of TMAO. Who would have imagined that the food was influenced by the microbiome, and then metabolized by the liver, and then could affect the cardiovascular system?

The human microbiome and its genes have a profound influence on human health. We are constantly exposed to new organisms, and the microbiome is always adapting. The use of probiotics, antibiotics, prebiotics, dietary supplements, nutraceuticals, prescription and over the counter drugs can affect the

microbiome in so many ways that the consequences cannot be predicted with certainty. What can be predicted is that they will be heavily marketed and promoted because there is a huge profit to be made, and safety and efficacy are secondary afterthoughts. Sometimes the wisdom of sages past cannot be improved upon, this is one of them. Some cancers, such as breast and colon, can be identified early when highly curable. Surveillance for those at higher risk is suggested. Further advances in genomics may identify populations at risk, and blood tests may replace the screening tests we use today. Colon cancer screening is suggested for those over fifty years of age, and for younger individuals who have a history or family history of colon cancer, colon polyps, inflammatory bowel disease, and specific genetic markers.

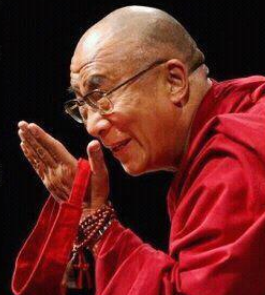
Colonoscopy has been the 'gold standard', but new options include capsule colonoscopy, a high-tech image transmitter that is swallowed and sends images for review. The latest FDA-approved test was a fecal (stool) DNA test for markers of colon cancer and polyps. Technology and approaches are changing, but getting screened may well be a lifesaver, as these cancers often do not exhibit signs or symptoms until they are no longer curable. Freezing the whole body, or just the head, for hopeful revitalization has a market and a rationale, but a whole host of obstacles make the technological feasibility of returning in the future uncertain. Personalized medicine, utilizing genomics and other technology, is the future of medicine. The 'one size fits all' approach to population-based medicine has been a disaster that the public is, for the most part, unaware of.

The cover of Time magazine prophesizing 2045 as the year man becomes immortal is based on the concept of singularity, downloading your consciousness and brain onto a computer cyborg equivalent. This will probably become an option, to have a virtual life and existence, with equally complex moral and social choices. The possibility of becoming an electronic mind reminds me of a cartoon image of a janitor unplugging a complex life support technology to plug in his floor polisher.

Tips for Living Younger Longer

- Exercise body & mind, flexibility, and balance
- Mediterranean pesco-vegetarian diet, antioxidants
- Preventive, personalized, precision health care
- Proactive stress reduction, enhance immunity
- Social activity with friends and family
- Meditation, practice of belief
- Reduce tobacco, alcohol, sitting is the new smoking
- Enjoy and experience all of your senses including purpose, empathy, gratitude, humor, and common sense

The Dalai Lama, when asked what surprised him most about humanity, answered "Man. Because he sacrifices his health in order to make money. Then he sacrifices money to recuperate his health. And then he is so anxious about the future that he does not enjoy the present; the result being that he does not live in the present or the future; he lives as if he is never going to die, and then dies having never really lived."



Patient Advocacy - A Step in the Right Direction

San Francisco Chronicle February 22, 2017

By Deepak Chopra MD, Lizabeth Weiss, BA, Nancy S. Cetel, MD, Danielle Weiss, MD, Joseph B. Weiss, MD

When the average American goes to the doctor, shows up at the ER, or enters the hospital, the risks and complexities of our healthcare system strike home vividly. Besides the expense of care and the intricate tests and procedures a patient faces, there is a widely under-reported risk of medical mistakes and “adverse events,” as they are called, which can range from minor to disastrous.

The new idea whose time has come is the patient advocate, someone who represents the patient’s best interest in any medical situation. An advocate might be a well-meaning relative who helps an older patient understand what’s going on, stepping in to do attendant tasks like picking up prescriptions and organizing medical bills. But more and more we see the need for an advocate who is professionally trained to buffer the mounting risks in a healthcare system where less and less time is spent between doctor and patient, raising the possibility of a wide range of bad outcomes.

What the patient is all too aware of is the doctor visit that goes by in the blink of an eye. A 2007 analysis of optimal primary-care visits found that they last *in toto* 16 minutes on average. From 1 to 5 minutes is spent per topic discussed. Although a visit to a primary-care physician or specialist has increased to 20 minutes, a shift in a doctor’s workload in recent years, some of it mandated by law, finds more time being allocated to computer and desk work, such as entering data in the Electronic Health Record (EHR).

The actual face-to-face time with a doctor or other health care provider actually comes down to 7 minutes on average. Therefore, a patient advocate clearly has a huge gap to fill. The advocate can begin by simply observing the visit or procedure to make sure that simple mistakes and errors in communication don’t occur. Many of these are unavoidable byproducts of nurses changing shifts, hospital doctors on rotation, etc.

But in an aging population, the advocate’s efforts become even more critical. An advocate can take time to take a detailed patient history, something often lacking in our rushed system. They can translate information into the patient’s first language as needed, calm nerves in the stressful and unfamiliar surroundings of a hospital or clinic, and thereby bring to the fore the questions and answers that need to be transmitted. In the stress of a medical event, it’s very common for patients, particularly the elderly, to be so flustered and anxious that they forget to ask important questions or give important information.

Not everything is potentially positive if patient advocates become a standard part of health care. If they have their own agenda because their employer is a hospital or insurance company, the patient’s best interests may not be uppermost. One anticipates antagonism between the advocate and the doctor, who isn’t used to third-party input and values his autonomy. And if the advocate isn’t calm, professional, and common-sensical, adding another anxious person in the examining room would be a detriment.

Still, we feel that the benefits far outweigh the potential downside. The key is for advocates to be accepted as a positive extension of the existing system, not an opposition party. A concerted effort to standardize a curriculum and certification for advocates is now being developed. It needs all the support it can get. The creation of an educated, licensed workforce of professional advocates can and should be an integral part of improving the safety and efficacy of our national health care. With your eyes now opened, you’ll see how great the need is the next time you need to see the doctor.

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All of Us - Doctor and Patients - Need to Face Up to Healthcare Hazards

San Francisco Chronicle, February 15, 2017

By Deepak Chopra MD, Nancy S. Cetel, MD, Danielle Weiss, MD, Joseph B. Weiss, MD

Medical mistakes are a touchy subject in the medical community. Both sides of the healthcare system fear them - patients because of their general anxiety about going to the doctor, physicians because of the looming threat of malpractice. The situation needs to be faced squarely, with candor and above all, with reliable statistics. These have varied widely over the years. While the numbers of fatalities reported annually in US hospitals has had estimates from 44,000 to 440,000, even the lower estimate is a public health catastrophe.

We say this against the background of the vulnerable position even the best cared for patient faces. Entering the hospital represents a loss of freedom, exposure to anxiety-producing procedures, a sterile environment, and being handled, physically and emotionally, by strangers. Adding medical mistakes to the list must become unacceptable.

At present, however, preventable mistakes continue to persist and are often graver. Several publications over the past two dozen years, including our own, have highlighted the alarming frequency and consequences of adverse events during medical treatment. Among the most credibly researched and analyzed findings are the following:

- The US Department of Health & Human Services, Office of the Inspector General, reported that a review of in-patient records from 2008 confirmed 180,000 fatalities occurred in the Medicare population alone, because of medical errors.
- A 2013 evidence-based estimate, using a weighted average of 4 databases, suggested that the current range of annual deaths in US hospitals from adverse events was between 210,000 to over 400,000.
- Most recently, in 2015, journal authors from Johns Hopkins estimates the number as over 250,000 deaths per year, making hospital errors the third leading cause of US hospital deaths after heart disease and cancer.

Regarding the last citation, Dr. Martin Makary, Professor of Surgery and Health Policy at the Johns Hopkins School of Medicine, comments that medical care gone wrong is commonly due to “a communications breakdown, poorly coordinated care, or a misdiagnosis,” but these are rarely mentioned when a doctor fills out “primary cause of death” on a death report.

As a result, Makary notes, “these are issues that have lived in locker rooms, doctors’ lounges, and nurses’ stations...in the form of stories and not epidemiological errors.” A recent review of 4,000 medical journal articles showed that even the most accurate medical record review protocol identified adverse events in 2.9% to 18.0% of records, with preventable errors identified in 1% to 8.6% of records. Although alarming in its own right, this number is a significant underestimation of the true frequency of errors. In a telling report that interviewed nearly 1,000 patients in Massachusetts 6 to 12 months after discharge, patients recalled three times the number of adverse events reported in the medical record.

The many reasons why errors would be underreported is all too readily apparent. Avoidance of identification, liability, blame, guilt, financial penalty, malpractice action, job security, disciplinary action, hearings, reviews, etc. are just some of the powerful motivations to avoid reporting an error. Surveys of physicians confirm the obvious, that under-reporting is widespread. Yet without accurate statistics the full extent of the endemic problem, as well as the ability to monitor efforts to reduce errors, cannot be

accurately assessed. Human error is inevitable, but every effort must be made to minimize the risk and consequences.

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One Solution to America's Health Care Crisis

San Francisco Chronicle, January 11, 2016

By Deepak Chopra, MD, Rudolph E. Tanzi, PhD, Joseph B. Weiss, MD, Nancy Cetel Weiss, MD, and Danielle E. Weiss, MD

Complications in medical care occur at a staggering rate, resulting in over 440,000 accidental deaths from medical errors (the vast majority not considered malpractice, such as side effects from drugs) in U.S. hospitals each year. Self-governance by health systems and providers has not made significant inroads to reduce this catastrophic failure in patient safety. The inefficient and expensive medical malpractice lawsuit industry has neither reduced nor prevented the ever-growing numbers of medical injuries and death, nor provided compensation or justice to the vast majority of those injured.

The main beneficiaries of malpractice lawsuits are the attorneys, whose contingency fees can lead to multimillion-dollar windfalls, and insurance companies collecting high malpractice premiums. They profit at the expense of others and contribute to the continually escalating costs of medical care. The vast majority of medical injury and death does not result in a malpractice claim, and of those filed most fail at trial. In spite of this high failure rate, malpractice actions have worsened the situation by further encouraging excessive, expensive, and higher risk care under the rationale of defensive medicine.

Both our health and medical malpractice systems are severely dysfunctional and in critical need of corrective action. There is a better approach that can reduce medical errors and injury, enhance patient safety, and provide timely and fair compensation to those injured. A no-fault medico-legal compensation program should replace the present malpractice system with dedicated judges and expert panels to award compensation based on injury and need. Health care service providers should fund the program by the mandatory assessment of a fee that replaces malpractice insurance, based on a formula that incorporates practice type, volume, revenue, and quality assurance outcomes records.

Health care licenses should be issued based on results of the quality review, including input from reports of the error compensation program. Licenses of negligent and error-prone providers should be suspended or revoked on a national basis, with mandatory re-education and reassessment before being allowed to resume patient care. The billions of dollars consumed by the industry of medical malpractice lawsuits and insurance should be redirected to serve those injured, and to programs and services enhancing patient safety and welfare.

Most importantly we need to proactively and aggressively address medical errors at the source, and correct the existing health care and malpractice system that contributes to the ongoing catastrophic status quo. The dysfunction is multifactorial and includes poor communication, incomplete data and records, and a system designed for population-based treatments that ignore the unique characteristics of each patient. The system needs to be redesigned to place patient safety and health outcomes as the singular priority, and to embrace the coming paradigm shift of personalized precision medicine.

The present health care system is also deficient in that it allows health care providers to be lax in incorporating new information into their practice of medicine. Recertification, educational programs, and examinations should be available, with participation actively encouraged by being inclusive in the health professional licensing fee. The individual health professional can select self-education or participation in formal course programming, but time-limited licensure to practice in any health care discipline should require ongoing demonstration of competence. The licensing examinations and demonstration of clinical competence should be under national standards, and removed from agencies such as specialty boards that may have a conflict of interest such as limiting practitioners under the guise of quality, but in actuality engaging in the restraint of trade.

While the above suggestions can make a meaningful reduction in medical errors, as well as provide reasonable and reliable compensation to those insured, a more holistic solution is dawning. We as a society need to recognize that a once in a lifetime historic paradigm shift in medicine is taking place, with more efficient and safer therapy on the horizon. As the knowledge base expands exponentially, our old population-based medicine with one-size fits all approach has been exposed as a weak approximation of optimal care. The number of adverse events, fatalities, and disabilities that have resulted from the focus on the treatment of the 'average' patient highlights how primitive the approach has proven to be. Even the present medical malpractice system has supported this dysfunction by the acceptance of a 'standard of care defense' that excuses harm because it is commonplace.

The vast majority of the extraordinary health care expenditures today are on the treatment and management of existing and chronic disease. The critical importance of public health and preventive medicine, with an emphasis on healthy lifestyle choices and disease avoidance, has been severely underfunded. The multiple descriptors of healing arts as complementary, integrative, and alternative are not mutually exclusive. They are now scientifically evaluated, with proper and efficient therapy consolidated under the umbrella of medicine. Acupuncture, meditation, exercise, diet, nutrition, rest, laughter, yoga, are being rediscovered by science and included in the armamentarium of contemporary modern medicine.

The new era of a safer and more efficient form of the healing arts and sciences is due to the dramatic advances in the life sciences, the result of a remarkable confluence of technology, knowledge, and insight. The ability to sequence genes and completion of the Human Genome Project has opened an ever-expanding horizon into the understanding and treatment of disease. The recognition of the profound role of epigenetic factors, the environmental influences that alter gene behavior and function, further amplifies these breakthroughs. The extraordinary importance of the microbiome, the trillions of organisms that reside within and on our bodies, in human health and disease is at the forefront of scientific exploration. Stem cells, regenerative medicine, biotechnology with organ replacement, gene transfers to replace defective genes, personalized precision medicine with prescriptions tailored to the individual, and a cornucopia of advances are opening vistas to a safer and more effective approach to maintaining health, prevention, and curing disease.

Personalized precision medicine will integrate the latest breakthroughs in technology and the life sciences with the rediscovered and newly appreciated wisdom of other healing arts and science. A recently published book *Super Genes: Unlock the Astonishing Power of Your DNA for Optimum Health and Wellbeing* (Harmony Books 2015) by Drs. Deepak Chopra and Rudolph Tanzi, provides a clear look at the groundbreaking advances in the life sciences. The book provides a holistic approach that integrates the rapidly advancing states of knowledge in a broad range of disciplines that are interdependent for optimal health, into a readable and proactive guide for the general public.

While the advances and enhanced safety will become integrated into the standard of medical care over the coming years, the patient and health care provider must remain vigilant partners in avoiding and reducing medical errors. The health of the public and the individual is dependent on a knowledgeable population of health care consumers, as well as health care professionals. Those without sufficient experience to make informed decisions about their care in today's complicated health care system should have access to the guidance and advice of medical advocates.

The empathy and compassion of a caring health care provider have been negatively impacted by ever-increasing stress leading to epidemic rates of 'burnout'. The loss of health care providers to this disabling malady aggravates the already critical shortage of health care providers. The degree to which stress and fatigue contribute to the extremely high error rate in health care requires further investigation into the

implementation of effective strategies for its management. The prevention of the loss of empathy and burnout would not only provide benefits in health care but in other relevant fields and aspects of society such as education, justice, business, etc.

As Dr. Francis Peabody so eloquently stated over one hundred years ago “the secret in the care of the patient is in caring for the patient.” All of society needs to care, health care providers, lawyers, insurance companies, health systems, and pharmaceutical companies included. Patient care and safety must become a non-negotiable priority. Human health and welfare are too important to allow any self-serving interests to detract from this moral and societal obligation.

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A Hidden Solution to America's Health-Care Crisis

Huffington Post June 25, 2016

By Deepak Chopra, MD, FACP, Dan Blumenthal, MD, MPH, FACP, David Brenner, MD, FACP, Nancy S. Cetel, MD, Linda L. Hill, MD, MPH, FACP, Bess Marcus, PhD, Paul J. Mills, PhD, Sheila Patel, MD, Larry Smarr, PhD, and Joseph B. Weiss, MD FACP

American health care is caught in a vise, which has created a dire situation. The squeeze comes from the positive gains in life expectancy on one side and unsustainable medical costs on the other. Meanwhile, headlines are being grabbed by crises as serious as the outbreak of Ebola, vaccine-preventable diseases such as measles, and an obesity epidemic. Hence, our call for a dose of preventive medicine.

Our health care costs are almost 150% as much per capita as the next most expensive health care system, Norway. And what do we get for this lavish outpouring of an estimated three trillion dollars a year? In rankings by the Commonwealth Fund of 11 western countries, the US ranked last in quality and health outcomes. And over the past fifteen years, preventable hospital deaths in the US due to medical errors in treatment quadrupled from an estimated 110,000 to 440,000.

At present, the most effective way to reduce health care costs is by reducing the rate of illness. We have a mechanism in place to do this — preventive medicine. Prevention and health education don't drain the national treasury but provide a strong return on the dollar. For every person who understands how to avoid heart disease, hypertension, and obesity, learns about effective contraception, or who gets health education on the dangers of tobacco and alcohol, the medical system benefits economically, not to mention the gains by humanity.

In 1900, the top three leading causes of death were influenza, tuberculosis and gastrointestinal infections. Thanks to preventive medicine and public health programs, including sanitation and vaccines, the rates of these diseases have plummeted over the last 100 years. Now, however, chronic diseases such as heart disease, cancer and non-infectious lung disease are the leading causes of death in the United States. One-half of adult Americans have at least one chronic disease, and the majority of these are preventable or lessened by the adoption of healthy lifestyles: physical activity, good nutrition and healthy weight, and the avoidance of tobacco. The adoption of these lifestyle factors alone is associated with a 93 percent reduced risk of diabetes, 81 percent reduced risk of heart attack, 50 percent reduced risk of stroke and 36 percent reduced risk of cancer. The acquisition of a positive lifestyle isn't as simple as 'Just Say No', as we have learned the hard way, but requires a concerted prevention and public health approach, incorporated into individual health care, community interventions, and the built environment.

Yet the funding for preventive medicine and public health is minuscule compared to the overall health care budget. Preventive Medicine has been a specialty for over 60 years (American Board of Preventive Medicine), but comprises only 0.8% of the physician workforce. There is an inadequate focus on prevention in medical school curriculum. Physician training in preventive medicine as a specialty is currently in a fiscal crisis due to the lack of training dollars. Medical Centers are reluctant to divert their graduate medical education Medicare training dollars from acute care to prevention, and the federal government's Health Resources Service Administration funds only a fraction of preventive medicine training programs. Despite the gains in access to health care achieved with the Affordable Care Act, including an emphasis on quality of care and improved outcomes, prevention training funds have not followed.

We all need to accept and build a future where prevention becomes a dominant force. Waiting to get sick before going to the doctor makes no economic sense. We need a proactive and prepared health care system to work with health-literate, motivated individuals to attain the widespread adoption of evidence-

based preventive measures. Nutrition, physical activity and stress reduction should be the backbone of a truly integrative, prevention-focused health care system. Without it, health care costs will continue to climb, while, paradoxically, the health of the nation suffers. We need to focus our efforts on the implementation of the vast amount of prevention science already well described. To do this, health care dollars will need to be directed to prevention and public health training programs. Senator Tom Udall and Representative Gene Green are leading this effort in the U.S. Congress. The rewards are potentially enormous.

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Bring Prevention Back from the Brink

San Francisco Chronicle March 5, 2018

By Deepak Chopra, MD, Robert Carr, MD, MPH, Linda Hill, MD, MPH, Nancy Cetel, MD, Joseph Weiss, MD

A crucial fact about American medicine goes largely ignored, even by doctors. Dollar for dollar, more people will gain years of healthy lifespan from prevention than from drugs or surgery. We don't tend to think that prevention costs money. Once you learn that cigarettes cause lung cancer, you can decide not to smoke. The choice is free if you were a non-smoker to begin with. If you get up off the couch and start a brisk walking program to help prevent heart disease, that choice also doesn't cost a penny.

What isn't free, however, is getting information out there. Poor and less educated Americans are known to have a higher prevalence of major lifestyle disorders like heart disease, obesity, hypertension, and type 2 diabetes. The reverse is also true: better lifestyle choices are made by the affluent and well educated.

You can't prevent what you don't know about. That makes it essential that we keep funding the most dollar-wise education for physicians so that young residents can go on to spearhead prevention programs. America cannot continue to rely on a reactionary stance of simply treating health issues. It must refocus its efforts and investments in prevention. The surgery to treat a lung cancer patient is highly unlikely to succeed and will be very expensive. Informing a middle-school classroom about the risks of smoking potentially saves lives at a fraction of the cost.

It's alarming, in the face of these facts, that the President's proposed budget for the fiscal years 2018 and 2019 calls for eliminating funds to Preventive Medicine residencies. Residencies (training programs after medical school) provide the knowledge base, skills, and experience to be experts at preventive medicine and public health. Compared to overall healthcare dollars, these programs cost pennies. It's unreasonable, inefficient, and against the public interest to cut these residencies.

Prevention is neither glamorous nor lucrative, but its importance is greater than ever. While the 20th century saw the average lifespan increase by 30 years (thanks to vaccinations, controlling infectious diseases, declines in heart disease, motor-vehicle safety, and reductions in smoking), life expectancy has now declined in this country for two consecutive years. Medical costs continue to rise, and serious new threats arise like the opioid epidemic, the Zika virus, and the decreased effectiveness of standard antibiotics.

Health care spending is out of control, which worries everyone. There is no medical argument against prevention as the best way to dramatically reduce the nation's medical bill. Who will avoid the ill effects of obesity? The person who doesn't gain weight to begin with. How do you increase the number of these people? Good habits go viral in a society, and so do bad habits. Teach the good habit of sensible eating on a wide basis, and you can start a lifestyle movement that will be set for coming generations.

America faces a serious problem over income inequality. The richest are getting richer while average income barely increases or stagnates for decades. When a Rolls-Royce passes you on the road, it's easy to see who's prosperous. Information inequality, however, is invisible, and far more crucial. The world's most expensive car won't add years of healthspan, which is a better measure than simple lifespan. Living longer when you're sick or disabled is not as valuable as a longer healthy life.

The average life expectancy in the U.S. is now 79.3 years, but there is no reliable statistic on how many of those years are healthy. What is known, however, is that the onset of major disorders of old age is either the same as in the recent past or getting worse. As more people live longer, they need to get sick at a later age, and that's not happening.

Yet the concept of healthspan is just now catching on in the general public, a prime example of why information is critical.

The future of preventive medicine in this country will be threatened if lawmakers don't take action. You must contact your members of Congress today and ask them to join two champions of prevention in Congress, Representative Gene Green and Senator Tom Udall—they are leading the fight for funding residencies in preventive medicine.

American healthcare costs are nearly three times developed countries, but our life expectancy is shorter than 30 other nations. We all need to build a future where a culture of prevention becomes a dominant force. The Center for Disease Control (CDC) acknowledges this; the science is there; the economic benefits are clear. What's needed now is to get Congress to do the right thing.

Deepak Chopra MD, FACP, founder of The Chopra Foundation and co-founder of The Chopra Center for Wellbeing, is a world-renowned pioneer in integrative medicine and personal transformation, and is Board Certified in Internal Medicine, Endocrinology and Metabolism. He is a Fellow of the American College of Physicians and a member of the American Association of Clinical Endocrinologists. Chopra is the author of more than 80 books translated into over 43 languages, including numerous New York Times bestsellers. His latest books are *The Healing Self* co-authored with Rudy Tanzi, Ph.D. and *Quantum Healing (Revised and Updated): Exploring the Frontiers of Mind/Body Medicine*. www.deepakchopra.com

Dr. Robert Carr is President of the American College of Preventive Medicine, retired Corporate Medical Director with GSK, and runs a family foundation focused on population health. Dr. Carr is also Associate Professor at Georgetown University's newly established Executive Master's program in Health Systems Administration. Dr. Carr received his Doctor of Medicine from the University of Miami School of Medicine and his Masters of Public Health and Preventive Medicine Residency from The John Hopkins Bloomberg School of Hygiene & Public Health. Dr. Carr chairs the Occupational Residency Advisory Committee at the University of Pennsylvania, is on the Health Advisory Board at Johns Hopkins Bloomberg School of Public Health and the Dean's Advisory Board at the Drexel School of Public Health.

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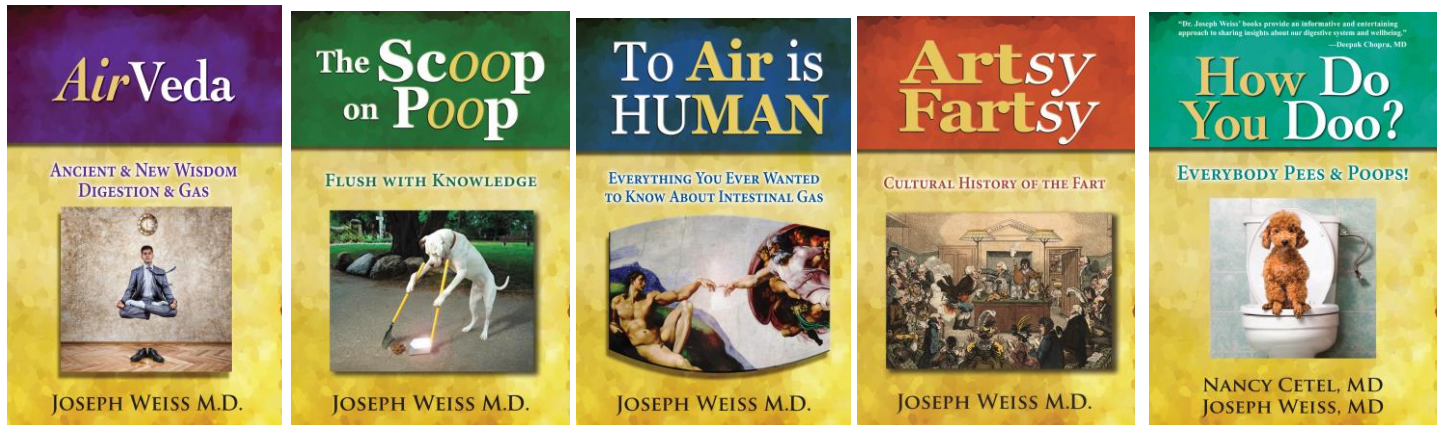
He is the author of more than a dozen books on health (www.smartaskbooks.com) and has had numerous papers published in prestigious national and international medical journals, as well as in the lay press. Dr. Weiss is also an accomplished humorist and professional speaker having given over three thousand presentations nationally and internationally. He has presented at international conferences and conventions, universities, medical schools, hospitals and medical centers, Fortune 500 companies, YPO/WPO, Bohemian Grove, Esalen Institute, Renaissance Weekend, Aspen Brain Forum, IDEA World Convention, international destination spas & resorts (Golden Door, Canyon Ranch, Rancho La Puerta), etc.

The programs offered are continuously updated with cutting edge information. Well-spoken, enlightening, and entertaining the programs are also visually engaging. Frequently requested programs include To 'Air' is Human (intestinal gas), The Quest for Immortality (longevity & vitality), The Scoop on Poop (gut microbiome & scatology), Digest on Digestion (digestive health & nutrition), Medical WisDumb (marketing hype to health advances), Laughter (& Chocolate) is the Best Medicine (humor in health & wellness), Food for Thought (brain-gut-microbiome axis) and others. For further information, contact Dr. Weiss at speakingofhealth@gmail.com or weisscme@ucsd.edu.

These colorful, informative, and entertaining volumes are available at www.smartaskbooks.com, Amazon.com, BarnesandNoble.com, and major booksellers.

"Dr. Joseph Weiss' books provide an informative and entertaining approach to sharing insights about our digestive system and wellbeing." Deepak Chopra, MD

*"Joseph Weiss, M.D. has a gift for books that are uniquely informative and entertaining. Jack Canfield
Coauthor of the Chicken Soup for the Soul® series*



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AirVeda: Ancient & New Wisdom, Digestion & Gas covers the remarkable advances in the understanding of digestive health and wellness from Ayurveda to genomics and the gut-brain-microbiome-diet axis. The knowledge gained opens new avenues to optimal health and wellness. www.amazon.com/AirVeda-Ancient-New-Wisdom-Digestion/dp/1943760128

To 'Air' is Human, Everything You Ever Wanted to Know About Intestinal Gas covers everything you ever wanted to know about the burp, belch, bloat, fart and everything digestive but were either too afraid or too embarrassed to ask. This volume is overflowing with practical information, fascinating facts, surprising trivia, and tasteful humorous insight about this universal phenomenon. amazon.com/Air-Human-Everything-Wanted-Intestinal/dp/1943760020

Artsy Fartsy, Cultural History of the Fart is a fascinating and colorful review of the fart through human culture and history. A cough, sneeze, hiccup, stomach rumble, burp, belch, and other bodily sounds simply cannot compete with the notoriety of the fart. Whether encountered live and in person or through the medium of literature, television, film, art, or music it may leave a powerful and lingering memory. www.amazon.com/Artsy-Fartsy-Cultural-History-Fart/dp/1943760039

How Do You Doo? Everybody Pees & Poops! A delightfully informative, entertaining, and colorfully illustrated volume with valuable practical insights on toilet training. Tasteful color photographs and illustrations of animals answering the call of nature allows the child to understand that everybody does it! Additional informative relevant content to entertain the adult while the child is 'on the potty' is included. www.amazon.com/How-Do-You-Doo-Everybody/dp/1943760063

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Life is a Gas!



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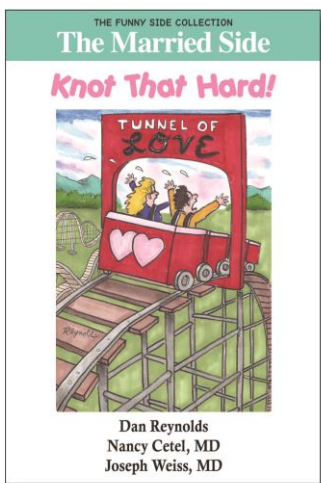
Windbreaks!



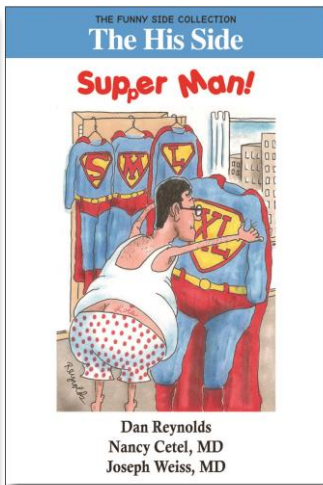
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The Fart Side series is an enjoyable and informative collection of tasteful hilarious cartoons, fascinating factoids, and obscure trivia that will entertain and enlighten. Combining the award-winning talents of both a master cartoonist, and a physician professor, the volumes are proof that **'Laughter is the best medicine!'** The compact Pocket Rocket Edition! is 5" x 7", 96 pages, with 62 images and full color cartoons. The Expanded and Full Blast Edition! is 6" x 9", 122 pages, with 70 images and full color cartoons.

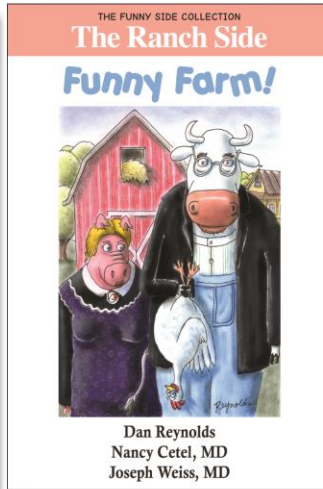
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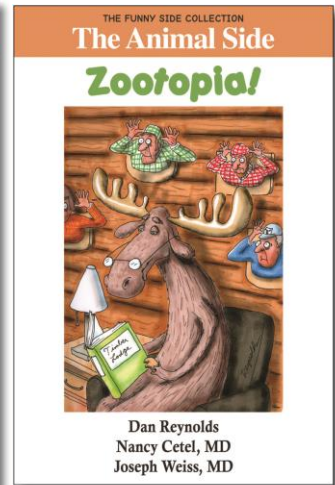
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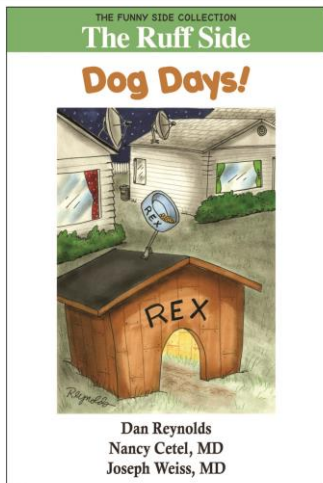
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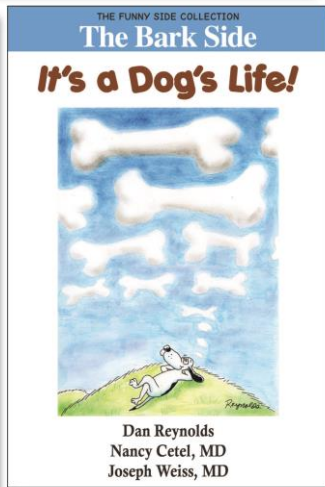
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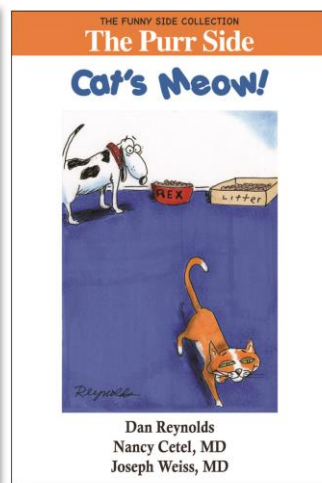
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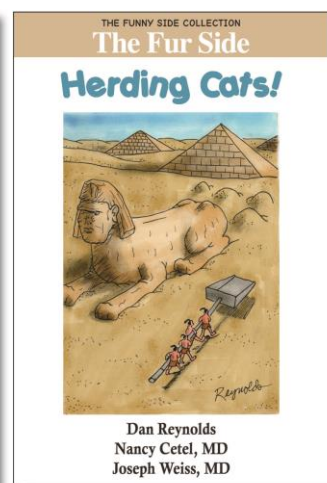
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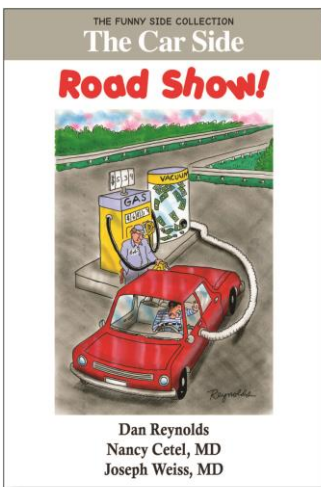
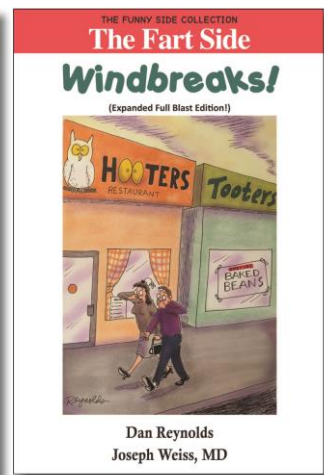
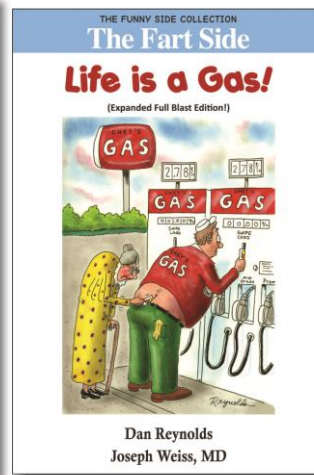
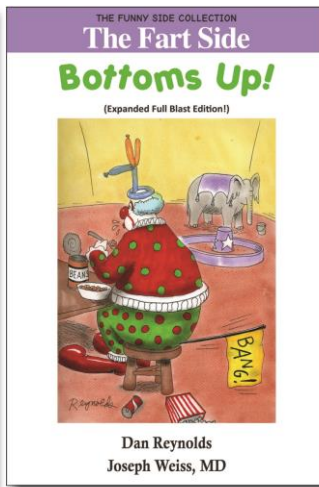
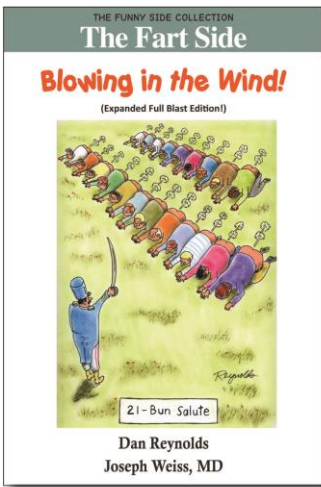
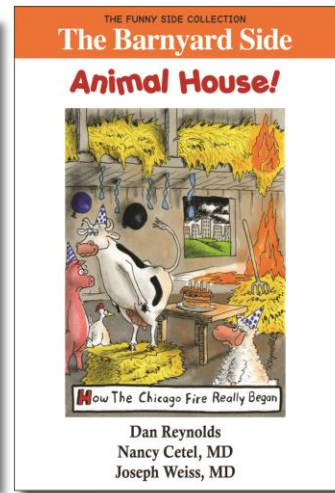
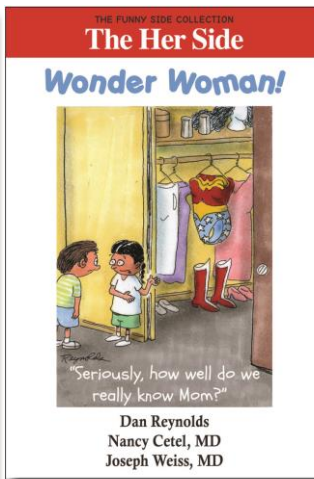
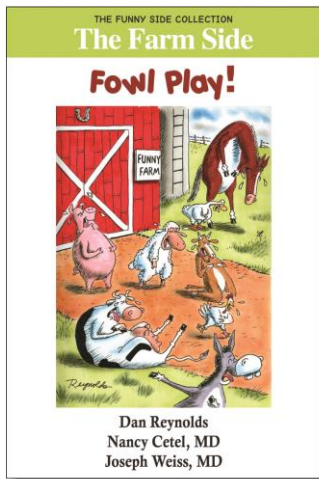
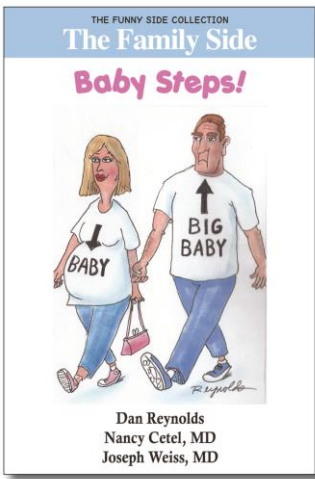
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