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**SENATE HEALTH REFORM TESTIMONY**  
**INTEGRATIVE CARE: A PATHWAY TO A HEALTHIER NATION**  
**Senate Committee on Health, Education, Labor and Pensions**

Chairman: Senator Edward M. Kennedy  
Ranking Member: Senator Michael B. Enzi  
Senator Tom Harkin & Senator Barbara Mikulski  
United States Senate

Senate Dirksen Building  
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## EXECUTIVE SUMMARY

Our "health-care system" is primarily a disease-care system. Last year, \$2.1 trillion were spent in this country on medical care, or 16.5% of the gross national product, and 95 cents of every dollar were spent to treat disease *after* it had already occurred. Heart disease, diabetes, prostate/breast cancer, and obesity account for 75% of health care costs, and yet these are largely preventable and even reversible by an integrative medicine program of comprehensive lifestyle changes.

If we want to make affordable health care available to the 45 million Americans who do not have health insurance, then we need to address the fundamental causes of illness, and provide incentives for healthy ways of living rather than reimbursing only drugs and surgery.

Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices that we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke cigarettes, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. We also published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, which may affect breast cancer as well.

Our latest research shows that changing lifestyle changes our genes in only three months—turning on hundreds of genes that prevent disease and turning off genes and turning off oncogenes associated with breast cancer and prostate cancer as well as genes that cause heart disease, oxidative stress, and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this.

The choices are especially clear in cardiology. In 2006, 1.3 million coronary angioplasty procedures were performed at an average cost of \$48,399 each, more than \$60 billion; and 448,000 coronary bypass operations were performed at a cost of \$99,743 each, more than \$44 billion—i.e., more than \$100 billion for these two operations. Despite these costs, angioplasties and stents do not prolong life or even prevent heart attacks in stable patients (i.e., 95% of those who receive them). Coronary bypass surgery prolongs life in less than 2-3% of patients who receive it. Studies have shown that changing lifestyle could prevent at least 90% of all heart disease. Thus, the disease that accounts for more premature deaths and costs Americans more than any other illness is almost completely preventable, and even reversible, simply by changing lifestyle.

Finally, it's worth pointing out that what's good for your personal health is good for the planet's health; what's personally sustainable is globally sustainable. For example, eating a diet high in red meat increases the risk of heart disease and many forms of cancer. It also increases global warming: livestock cause more global warming than all forms of transportation combined due to methane production, which is 21 times more powerful a greenhouse gas than carbon dioxide.

As Senator Harkin said, “To date, prevention and public health have been the missing pieces in the national conversation about health care reform. It’s time to make them the centerpiece of that conversation. Not an asterisk. Not a footnote. But the centerpiece of health care reform.”

### Testimony of Dean Ornish, M.D.

Chairman Kennedy, Ranking Member Enzi, Senator Harkin, Senator Mikulski, distinguished colleagues—thank you very much for the privilege of being here today. My name is Dr. Dean Ornish, founder and president of the non-profit Preventive Medicine Research Institute and Clinical Professor of Medicine at the School of Medicine, University of California, San Francisco (UCSF). I appreciate the opportunity to appear today before this Committee.

I just came from speaking at the "Summit on Integrative Medicine and the Health of the Public" convened by the Institute of Medicine of the National Academy of Sciences and the Bravewell Collaborative. This represents a watershed event in recognizing the power of integrative medicine and the synergy of systems approaches in enhancing health and preventing illness.

The theme of my presentation is this: if we want to make affordable health care available to the 45 million Americans who do not have health insurance, then we need to address the fundamental causes of health and illness, and provide incentives for healthy ways of living rather than reimbursing only drugs and surgery. Otherwise, the Congressional Budget Office indicated last week that this number is likely to rise to 54 million in the next ten years, if not before.

President Barack Obama and Senator Harkin understand this. As Senator Harkin recently said, "We don't have a *health* care system in America; we have a *sick* care system. The problem is that this current system is all about patching things up after the fact. We spend untold hundreds of billions on pills, surgery, hospitalization, and disability. But we spend peanuts – about 3 percent of our health-care dollars – for prevention."

Last year, \$2.1 trillion were spent in this country on medical care, or 16.5% of the gross national product, and 95 cents of every dollar were spent to treat disease after it had already occurred. Heart disease, diabetes, prostate/breast cancer, and obesity account for 75% of these health care costs, and yet these are largely preventable and even reversible by changing diet and lifestyle.

Our research, and the work of others, have shown that our bodies have a remarkable capacity to begin healing, and much more quickly than we had once realized, if we address the lifestyle factors that often cause these chronic diseases. Medicine today focuses primarily on drugs and surgery, genes and germs, microbes and molecules, but we are so much more than that.

For the past 32 years, I have directed a series of research studies showing that changes in diet and lifestyle can make such a powerful difference in our health & well-being, and how quickly these changes may occur, and how dynamic these mechanisms can be.

Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices that we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke cigarettes, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. Four years ago, we published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, which may affect breast cancer as well.

In our randomized controlled trials, published in the *Journal of the American Medical Association*, *The Lancet*, and other major medical and scientific journals, we found that 99% of people with severe coronary heart disease were able to stop or reverse it by making comprehensive lifestyle changes, without drugs or surgery. There was some reversal of coronary atherosclerosis after one year and even more improvement after five years, and there were 2.5 times fewer cardiac events. Most of the patients with severe angina (chest pain) became pain-free within only a few weeks, and quality of life improved dramatically.

In June of last year, the *Proceedings of the National Academy of Sciences* published our newest study showing, for the first time, changing our lifestyle changes our genes. We found that improved nutrition, stress management techniques, walking, and psychosocial support changed the expression of over 500 genes in men with early-stage prostate cancer. We found that oncogenes associated with breast cancer and prostate cancer as well as genes that cause heart disease, oxidative stress, and inflammation were downregulated or “turned off” whereas protective genes were upregulated or “turned on.”

In September, we published a study in *The Lancet Oncology* showing that these integrative medicine changes increased telomerase, the enzyme that lengthens telomeres, which are the ends of our chromosomes that control how long we live. We found that telomerase, and thus telomere length, increased by almost 30% in only three months. Even drugs have not been shown to do this.

These findings are capturing the imaginations of many people. Often, people believe, “Oh, it’s all in my genes, there’s not much I can do.” Now, we understand how dynamic these mechanisms are, even on a genetic level. These findings are giving many people new hope and new choices.

Incentives are often perverse. For example, insurance companies pay more than \$30,000 to amputate a diabetic foot even though most amputations are preventable by scrupulous foot care which is usually not covered by insurance. A RAND study projected nearly \$81 billion in annual national health expenditure savings due to prevention and disease management programs.

These choices are especially clear in cardiology. In 2006, for example, according to the American Heart Association, 1.3 million coronary angioplasty procedures were performed at an average cost of \$48,399 each, or more than \$60 billion; and 448,000 coronary bypass operations were performed at a cost of \$99,743 each, or more than \$44 billion. In other words, Americans spent more than \$100 billion in 2006 for these two procedures alone.



Despite these costs, a randomized controlled trial published in April 2007 in *The New England Journal of Medicine* found that angioplasties and stents do not prolong life or even prevent heart attacks in stable patients (i.e., 95% of those who receive them). Coronary bypass surgery prolongs life in less than 2-3% of patients who receive it, those with the most severe disease.

In contrast, the INTERHEART study, published in September 2004 in *The Lancet*, followed 30,000 men and women on six continents and found that changing lifestyle could prevent at least 90% of all heart disease.

That bears repeating: The disease that accounts for more premature deaths and costs Americans more than any other illness is almost completely preventable simply by changing diet and lifestyle. The same lifestyle changes that can prevent or even reverse heart disease also help prevent or reverse many other chronic diseases as well. And the only side-effects are good ones.

So, Medicare and other insurers and individuals pay billions for surgical procedures like angioplasty and bypass surgery that are usually dangerous, invasive, expensive and largely ineffective. Yet they pay very little -- if any money at all -- for integrative medicine approaches that have been proven to reverse and prevent most chronic diseases that account for at least 75% of health-care costs.

When I lecture, I often begin by showing a slide of doctors busily mopping up the floor around an overflowing sink, but no one is turning off the faucet. Similarly, Dr. Denis Burkitt (who discovered Burkitt's lymphoma) once described that paying for ambulances and a hospital at the base of a cliff is not as smart as building a fence at the top to keep cars from falling off.

It's important to treat not only the problem but also its underlying causes. Otherwise, the same problem often recurs (for example, bypass grafts or angioplastied arteries often clog up again), a new set of problems may occur (such as side-effects from medications), or there may be painful choices.

President Obama's health plan states, "This nation is facing a true epidemic of chronic disease. An increasing number of Americans are suffering and dying needlessly from diseases such as obesity, diabetes, heart disease, asthma and HIV/AIDS, all of which can be delayed in onset if not prevented entirely." Senator Ron Wyden has sponsored the Healthy Americans Act, which emphasizes prevention and has bipartisan support.

For example, most people can significantly lower their cholesterol levels and blood pressure by making comprehensive lifestyle changes that are free rather than by taking a lifetime of drugs that are costly.

In our research, we found that comprehensive lifestyle changes caused a 40% average reduction in harmful LDL-cholesterol levels in men and women during the course of a year without drugs. This randomized controlled trial was published in the *Journal of the*

*American Medical Association* in 1998. Last year, over \$20 billion were spent in this country on cholesterol-lowering drugs such as Lipitor, so the potential cost savings would be very significant if more people made comprehensive lifestyle changes in lieu of drugs. While cholesterol-lowering drugs have clear therapeutic benefits, patients should also be offered more intensive diet and lifestyle interventions that have been proven to lower LDL-cholesterol by approximately the same amount at a fraction of the costs and with similar therapeutic benefits.

Cost savings can be greatest and can be seen most quickly in those who are at highest risk or who have chronic diseases. For example, my colleagues and I at the non-profit Preventive Medicine Research Institute conducted a demonstration project in collaboration with eight hospitals to determine if comprehensive lifestyle changes could be a safe and effective alternative to bypass surgery or angioplasty in those who were eligible to receive it.

After one year, almost 80% of people were able to safely avoid heart surgery or angioplasty, and Mutual of Omaha calculated saving almost \$30,000 per patient in the first year. This study was published in the *American Journal of Cardiology*. In a second demonstration project with Highmark Blue Cross Blue Shield, these comprehensive lifestyle changes reduced total health care costs in those with coronary heart disease by 50% after only one year and by an additional 20-30% when compared to a matched control group.

In our third demonstration project of more than 2,000 patients enrolled our lifestyle intervention at 22 hospital sites, we showed dramatic improvements in angina in more than 83% of patients reporting angina symptoms, and most became completely pain-free. This study was also published in the *American Journal of Cardiology*. These reductions are even greater than those achieved by coronary bypass surgery or angioplasty/stents. Direct health care costs of angina alone cost over \$1 million per person over a lifetime. Clearly, if relatively simple lifestyle changes achieve similar or even greater reductions in angina pain than costly invasive surgical procedures, the potential savings are enormous.

An ounce of prevention really is worth a pound of cure.

The rapid growth of companies offering personalized genetic testing such as Navigenics, 23&Me, and deCODE Genetics, makes it possible to identify people who are at highest risk for chronic disease and to tailor prevention prescriptions to those who most need it. Finding out that you are at higher risk for illnesses such as heart disease or diabetes is a powerful motivator for making comprehensive lifestyle changes. Also, those at high risk are more likely to show cost savings from prevention.

Prevention is also cost effective in healthier people, although the cost savings per person are not as high. For example, three years ago, Steve Burd (CEO of Safeway) realized that health care costs for his employees were exceeding Safeway's net income--clearly, not sustainable. We discussed redesigning the corporate health plan for his employees in ways that emphasized prevention and wellness, provided incentives for healthful behaviors, and paid 100% of the costs of preventive care.



Overall health care costs decreased by 15% in the first year and have remained flat since then. Many other worksite wellness programs have shown cost savings as well as a happier and more productive workforce. This approach is bringing together Democrats and Republicans, labor and management.

In each of these studies, significant savings occurred in the first year—medically effective *and* cost effective. Why? Because there is a growing body of scientific evidence showing how much more dynamic our bodies are than had previously been believed.

Many patients say that there is no point in giving up something that they enjoy unless they get something back that's even better—not years later, but weeks later. Then, the choices become clearer and, for many patients, worth making. They often experience that something beneficial and meaningful is quickly happening.

The benefit of feeling better quickly is a powerful motivator and reframes therapeutic goals from prevention or risk factor modification to improvement in the quality of life. Concepts such as “risk factor modification” and “prevention” are often considered boring and they may not initiate or sustain the levels of motivation needed to make and main comprehensive lifestyle changes.

In our experience, it is not enough to focus only on patient behaviors such as diet and exercise; we often need to work at a deeper level. Depression, loneliness, and lack of social support are also epidemic in our culture. These affect not only quality of life but also survival. Several studies has shown that people who are lonely, depressed, and isolated are many times more likely to get sick and die prematurely than those who are not. In part, this is mediated by the fact that they are more likely to engage in self-destructive behaviors when they feel this way, but also via mechanisms that are not well-understood. For example, many people smoke or overeat when they are stressed, lonely, or depressed.

What is sustainable is joy, pleasure, and freedom, not deprivation and austerity. When you eat a healthier diet, quit smoking, exercise, meditate, and have more love in your life, then your brain receives more blood and oxygen, so you think more clearly, have more energy, need less sleep. The latest studies have shown that your brain may grow so many new neurons that it may get measurably bigger in only a few months—this was thought to be impossible on a few years ago. Your face gets more blood flow, so your skin glows more and wrinkles less. Your heart gets more blood flow, so you have more stamina and can even begin to reverse heart disease. Your sexual organs receive more blood flow, so you may become more potent—the same way that drugs like Viagra work. For many people, these are choices worth making—not just to live longer, but also to live better.

In other words, the debate on prevention often misses the point: the mortality rate is still 100%, one per person. So, it's not just how *long* we live but also how *well* we live. Making comprehensive lifestyle changes significantly improves the quality of life very quickly, which is what makes these changes sustainable and meaningful.

Finally, it's worth pointing out that what's good for your personal health is good for the planet's health; what's personally sustainable is globally sustainable. For example, eating a diet high in red meat increases the risk of heart disease and many forms of cancer. It also increases global warming: livestock cause more global warming than all forms of transportation combined due to methane production, which is 21 times more powerful a greenhouse gas than carbon dioxide. This causes acid rain, damaging the external environment, as well as causing your blood to be more acidic, which damages our internal environment and promotes inflammation and chronic diseases. Livestock cause rain forest deforestation due to clear cutting for grazing land at a time when the rain forest survival is at a tipping point. This also creates water shortages at a time when water is increasingly scarce.

Sometimes, our problems seem overwhelming. Many people find that knowing that the personal choices we make in our lives each day have such a powerful effect on our external environment as well as our internal environment make it more meaningful and thus more motivating to make more healthful choices.

In summary, integrative medicine approaches bring together liberals and conservatives, Democrats and Republicans, because they are both medically effective and, important in our current economic climate, cost effective. These approaches emphasize both personal responsibility and the opportunity to make affordable, quality health care available to those who most need it. They can be an important part of health reform.

As Senator Harkin said in our recent *Newsweek* interview, "To date, prevention and public health have been the missing pieces in the national conversation about health care reform. It's time to make them the centerpiece of that conversation. Not an asterisk. Not a footnote. But the *centerpiece* of health care reform."

## Biographical Sketch

**Dean Ornish, M.D.**, is the founder and president of the non-profit Preventive Medicine Research Institute in Sausalito, California, where he holds the Safeway Chair. He is Clinical Professor of Medicine at the University of California, San Francisco. Dr. Ornish received his medical training in internal medicine from the Baylor College of Medicine, Harvard Medical School, and the Massachusetts General Hospital. He received a B.A. in Humanities *summa cum laude* from the University of Texas in Austin, where he gave the baccalaureate address.

For over 30 years, Dr. Ornish has directed clinical research demonstrating, for the first time, that comprehensive lifestyle changes may begin to reverse even severe coronary heart disease, without drugs or surgery. Recently, Medicare agreed to provide coverage for this program, the first time that Medicare has covered a program of comprehensive lifestyle changes. He recently directed the first randomized controlled trial demonstrating that comprehensive lifestyle changes may stop or reverse the progression of prostate cancer. His current research showed that comprehensive lifestyle changes affect gene expression, “turning on” disease-preventing genes and “turning off” genes that promote cancer and heart disease, as well as lengthening telomeres, the ends of chromosomes that control how long we live.

He is the author of six best-selling books, including *New York Times*’ bestsellers *Dr. Dean Ornish’s Program for Reversing Heart Disease*, *Eat More, Weigh Less, Love & Survival*, and his most recent book, *The Spectrum*. He writes a monthly column for *Newsweek* magazine.

The research that he and his colleagues conducted has been published in the *Journal of the American Medical Association*, *The Lancet*, *Proceedings of the National Academy of Sciences*, *Circulation*, *The New England Journal of Medicine*, the *American Journal of Cardiology*, and elsewhere. A one-hour documentary of their work was broadcast on *NOVA*, the PBS science series, and was featured on Bill Moyers’ PBS series, *Healing & The Mind*. Their work has been featured in all major media, including cover stories in *Newsweek*, *Time*, and *U.S. News & World Report*.

Dr. Ornish is a member of the boards of directors of the U.S. United Nations High Commission on Refugees and the San Francisco Food Bank and the advisory board of The Quincy Jones “Project Q” at the Harvard School of Public Health. He was appointed to the White House Commission on Complementary and Alternative Medicine Policy and elected to the California Academy of Medicine. He is Chair of the PepsiCo Blue Ribbon Advisory Board and the Safeway Advisory Council on Health and Nutrition and consults with the CEO of Mars to make more healthful foods and to provide health education to their customers in this country and worldwide. He also chairs the Google Health Advisory Council.

He has received several awards, including the 1994 Outstanding Young Alumnus Award from the University of Texas, Austin, the University of California, Berkeley, “National Public Health Hero” award, the Jan J. Kellermann Memorial Award for distinguished contribution in the field of cardiovascular disease prevention from the International Academy of Cardiology, a Presidential Citation from the American Psychological Association, the Beckmann Medal from the German Society for Prevention and Rehabilitation of Cardiovascular Diseases, the “Pioneer in Integrative Medicine” award from California Pacific Medical Center, the “Excellence in Integrative Medicine” award from the Heal Breast Cancer Foundation, the Golden Plate Award from the American Academy of Achievement, a U.S. Army Surgeon General Medal, and the Bravewell Collaborative Pioneer of Integrative Medicine award. Dr. Ornish was a physician consultant to President Clinton (1993-2000) and to several bipartisan members of the U.S. Congress and consulted with the chefs at The White House, Camp David, and Air Force One to cook more healthfully. He is listed in *Who’s Who in Healthcare and Medicine*, *Who’s Who in America*, and *Who’s Who in the World*.

Dr. Ornish was recognized as “one of the most interesting people of 1996” by *People* magazine, selected as one of the “*TIME* 100” in integrative medicine, and chosen by *LIFE* magazine as “one of the fifty most influential members of his generation.”