

# research highlights

## Chiropractic Care Found More Expensive than Medical Care for Treatment of Low-Back Pain

CHIROPRACTIC CARE IS MORE EXPENSIVE than medical care for treating low-back pain without producing significantly better results, according to the first randomized trial comparing treatment costs for a condition that is the second most frequently cited reason for seeking primary care services among U.S. adults.

A team headed by Dr. Gerald Kominski, professor of health services at the school and associate director of the UCLA Center for Health Policy Research, compared the outpatient costs over an 18-month period of four common low-back pain treatments received by 681 patients in a large group practice: medical care alone, medical care with physical therapy, chiropractic care alone, and chiropractic care with physical modalities. The results were published in the journal *Medical Care*.

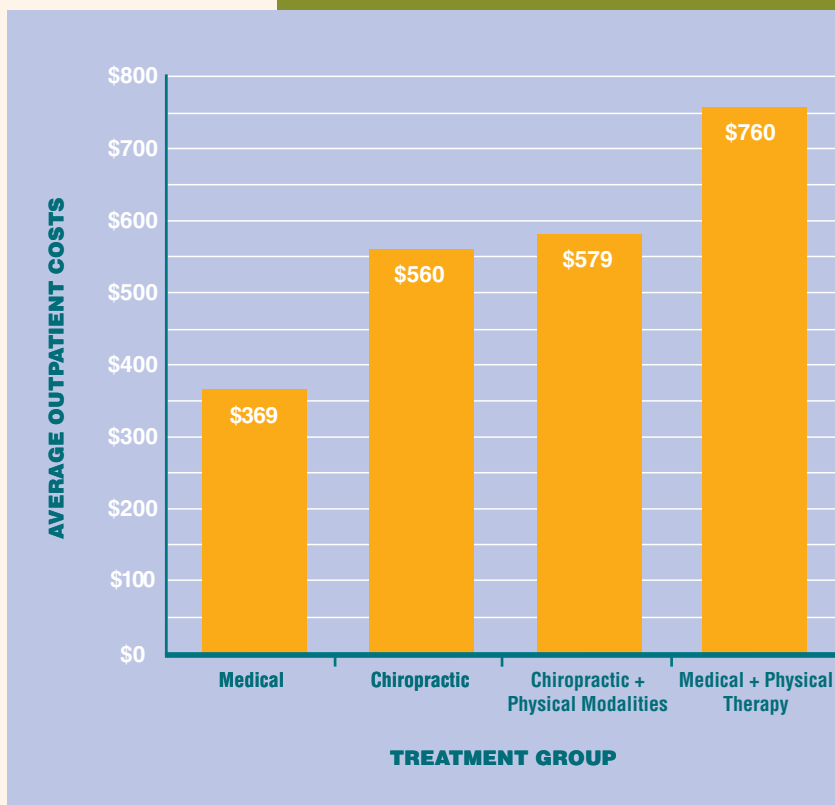
Kominski's team found that chiropractic care alone was 52 percent more expensive on average than medical care alone during the 18-month period. Medical care plus physical therapy was the most expensive of the four treatment groups – more than double the cost of medical care alone and more than 35 percent more expensive than chiropractic care alone – without producing better clinical outcomes.

Kominski points out that an important limitation of the study was its inability to include data on pharmaceutical costs. "We do know that medical providers are more likely to prescribe pain medication and muscle relaxants to their patients than chiropractors," he says. "Thus, our results are likely to have underestimated the costs of medical care." However, in conducting a separate analysis using the limited data available on the use of prescription drugs by study participants, Kominski's group found that chiropractic care was still more expensive, even when accounting for medication costs.

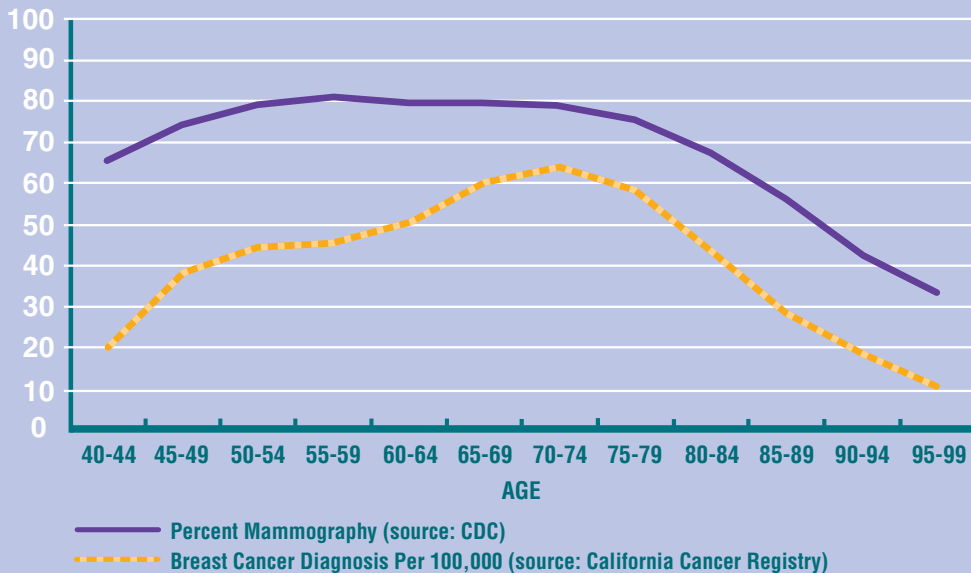
Studies have found that chiropractic patients tend to be more satisfied with their low-back pain care than medical patients – a phenomenon often attributed to chiropractors' greater involvement and better communication than medical doctors'. But the same intensity of care that could be responsible for higher satisfaction levels might also be contributing to the expense of chiropractic care. "The higher cost of chiropractic care is primarily driven by the fact that patients have more visits," says Kominski.

Low-back pain is believed to result in more disability among working-age adults than any other health condition. National estimates of the direct cost of care for the condition range from \$25 billion to \$33 billion annually. "For initial episodes of lower back pain not related to an injury," Kominski concludes, "medical treatment alone appears to be both an effective treatment and the least costly approach."

### Average Outpatient Costs Over 18-Month Period, Adjusted for Demographics and Health Status, Excluding Pharmaceuticals



### Number of Diagnosed Breast Cancer Cases Per 100,000 and Percent Mammography Use, by Age Group



## Does Breast Cancer Risk Decline Among Older Women?

MOST STUDIES SHOW THE RISK of being diagnosed with cancer to increase with age, but these analyses typically lump everyone older than 65 or 75 into one category. This can produce misleading results, notes Dr. Robert Kaplan, professor and chair of the Department of Health Services at the UCLA School of Public Health. “As people live longer, it doesn’t make sense to put all people over 65 in the same category because the age range in that category might go from 65 all the way up to 100,” Kaplan says.

Publishing in the *Journal of the American Geriatrics Society*, Kaplan and Dr. Sidney Saltzstein, a professor of pathology at UC San Diego, showed that when it comes to the incidence of breast cancer in California and U.S. populations, including separate age categories for those who are 85-89, 90-94, or 95-99 presents a different picture. “When separate age categories were created for the older groups, something very interesting happened,” Kaplan explains. “The number of new breast cancer cases systematically increased until about age 75. After that, the rate of new cases systematically decreased. In other words, the analyses show that once women age beyond about 75 years, the chance of being diagnosed with cancer declines.”

The challenge, Kaplan says, is in determining whether or not this represents a true decline in cancer. In reviewing pathology studies, Kaplan and Saltzstein found that the chance of having undiagnosed breast cancer systematically increased with age,

even among the most senior citizens. Using the California Cancer Registry, a source that includes every new case of breast cancer identified in the state, and the CDC’s Behavioral Risk Factor Surveillance System to identify the utilization of cancer screening tests, the researchers showed that the rate of diagnosis of breast cancer increases with age until about 75; thereafter, identification of new breast cancer systematically declines with age. Similarly, the use of mammography increases until about age 75 and systematically declines in a manner parallel to the rate of known new cancer cases.

Do these results suggest that older women should ask their doctors to order screening mammograms? Perhaps not, say Kaplan and Saltzstein, who believe their findings support a “disease reservoir hypothesis.” Explains Kaplan: “When disease is common, particularly among the oldest members of society, the more we look for it, the more likely it is to be found. Yet, much of detected disease may actually be ‘pseudodisease,’ a subcategory of subclinical disease that has little or no clinical importance.” This “pseudodisease” will go undetected unless there is surveillance or autopsy, Kaplan notes, concluding: “It is very likely that most of those undetected cases will never progress to the point that they threaten the life or the well being of women in their eighth or ninth decade of life.”

## Work-Relatedness of Suicides Often Misclassified

THOUSANDS OF SUICIDES IN THE UNITED STATES are either misclassified as work-related or wrongly classified as not being related to the workplace,

according to a study by the Southern California Injury Prevention Research Center, based in the School of Public Health. The findings, published in the *International Journal of Occupational and Environmental Health*, have important implications for suicide prevention efforts, since the success of such efforts depends on an understanding of risk factors.

“Suicide is the most common mechanism of violent death in the United States, but epidemiological studies have been difficult to undertake because of uncertainty on the circumstances surrounding the event,” says Dr. Jess Kraus, professor of epidemiology and director of the center. “Suicides occurring at a work location have been defined as ‘work-related’ by California and other states’ coroners, yet the basis or motivation underlying these events remains obscure.”

To determine the extent to which the work-relatedness of suicides is misclassified, Kraus and colleagues examined all California suicide cases between 1994 and 1998 that coroners had classified as work-related, along with a matching sample of cases not found to be related to work. Kraus found that the coroners’ reports tended to categorize fatal outcomes depending on where they occurred, without regard to the underlying motivation of the act. His study concluded that approximately one in nine suicides – over 11 percent – were misclassified as work-related. In addition, nearly one in four suicides – 23 percent – were misclassified as not being work-related.

Kraus believes these misclassifications have the potential to impede efforts, often workplace-based, to reduce suicide risk – for instance, by focusing on the work environment for individuals who might be distressed from a domestic dispute, and vice versa. “These findings point to misappropriation of the work-relatedness of suicide and, hence, an inaccurate understanding of underlying risk factors and their intervention potential,” he explains. “This misclassification affects our ability to study the problem epidemiologically so that we can identify effective interventions. We know the workplace can be a very effective setting for intervening with people who are at risk for suicide. Employers and employees should take these findings into account when implementing work-based programs for counseling, or other risk-reduction measures.”

## Children’s Increased Exposure to Electromagnetic Fields Raises Concerns

TECHNOLOGICAL DEVELOPMENTS are bringing both social and economic benefits to large sections of society, but the health consequences of these developments can be difficult to predict and manage. Even if the effects are small, a widespread exposure can have large public health consequences. When risks are complex, an established cause-effect relationship is absent, or the scientific findings are not robustly quantifiable, there is a need for timely preventive action, particularly for children, a research team headed by Dr. Leeka Kheifets, professor of epidemiology at the UCLA School of Public Health, has concluded.

Based on the findings of an expert workshop held by the World Health Organization in Istanbul, Turkey, in June 2004, Kheifets and colleagues assessed the potential susceptibility of children to electromagnetic fields (EMFs). Their conclusions were published in the journal *Pediatrics*.

“Exposure to electric and magnetic fields has been growing steadily as countries increase their capacity to generate and distribute electricity and take advantage of the many new technologies such as telecommunications to improve lifestyle and work efficiency,” Kheifets states. “With the rapid advances in EMF technologies and communications, children are increasingly exposed to electromagnetic fields.”

Epidemiologic evidence of an association between childhood leukemia and exposure to extremely low frequency (ELF) magnetic fields has led the International Agency for Research on Cancer to classify ELF magnetic fields as



Kheifets and colleagues recommend that studies on health consequences associated with mobile phone use by children be given a high priority.

a possible human carcinogen, Kheifets notes. In addition, concerns have been raised about children’s vulnerability to radiofrequency fields for several reasons: the potentially greater susceptibility of their developing nervous systems, the fact that their brain tissue is more conductive and radiofrequency penetration greater relative to their head size, and their longer lifetime exposure than adults. These issues are of particular concern since some of the exposures are close to guideline limits, Kheifets notes. Given the paucity of data regarding the long-term health effects of mobile phone use, particularly for children, Kheifets and colleagues recommend that studies on the health consequences from exposure to the radiofrequency fields associated with mobile phone use by children be given a high priority.

In the meantime, Kheifets and her co-authors recommend that when giving advice to their patients, physicians weigh the strength of scientific evidence of an adverse health outcome, if any, against the benefits of the technology and the feasibility of reducing exposure. “Some options include reducing exposure by minimizing the use or by increasing the distance to certain electrical appliances such as computers or hairdryers,” Kheifets explains. “People living near overhead power lines should be advised that proximity is just an indicator of exposure and that homes far away from power lines can have similar or higher fields because of the type of wiring. Children’s radiofrequency exposure can be reduced by restricting the use of cell phones, or by using ‘hands-free’ devices to keep mobile phones away from the head and body.”



Calcium and vitamin D are believed to be primarily responsible for the beneficial effect of dairy consumption on body weight and insulin sensitivity.

## Calcium, Dairy Products May Lower Risk of Metabolic Syndrome in Middle-Aged, Older Women

FOR MIDDLE-AGED AND OLDER WOMEN, high intakes of calcium and dairy products appear to lower the risk of the metabolic syndrome – the combination of disorders, including impaired glucose tolerance, hypertension, and high cholesterol, that often affect people in clusters – according to the findings of a group headed by Dr. Simin Liu, professor of epidemiology and director of the Program on Genomics and Nutrition at the UCLA School of Public Health. Though its cause remains a mystery, the metabolic syndrome is considered important for identifying individuals at especially high risk for type 2 diabetes and coronary heart disease.

Liu and colleagues examined the relationships between dietary calcium, vitamin D intake, and the prevalence of metabolic syndrome using plasma samples collected in a large cohort of approximately 10,000 middle-aged and older U.S. women participating in the Women’s Health Study. Their results were published in the journal *Diabetes Care*.

Although the underlying mechanisms are unclear, Liu notes that calcium and vitamin D, two major components of dairy products, are believed to be primarily responsible for the beneficial effect of dairy consumption on body weight and insulin sensitivity. Previous studies have shown that dietary calcium intake may have favorable effects on body weight, hypertension, and coronary heart disease. In animal studies, vitamin D improves insulin sensitivity and insulin secretion.

Liu and colleagues found that women in the highest 20 percent of calcium intake levels – mainly from greater consumption of dairy foods – were 36 per-

cent less likely to have metabolic syndrome than women in the lowest intake group. While dietary intakes of vitamin D were not significantly associated with metabolic syndrome prevalence, low plasma levels of vitamin D remain a significant predictor of increased risk of metabolic syndrome, Liu notes.

“Although animal studies have indicated that both vitamin D and calcium may play critical roles in maintaining glucose regulation, direct evidence in humans is very limited,” says Liu. “Our study represents a first attempt to examine the joint effects of dietary calcium and vitamin D in relation to metabolic syndrome in a large cohort of humans. Serum-based epidemiological studies, including clinical trials that examine the genetic pathways related to vitamin D and calcium metabolism along with their interactions with dietary factors, are needed to understand these effects with greater certainty.”

## California’s System of Job-Based Health Insurance Continues to Decline

JOB-BASED HEALTH INSURANCE COVERAGE – the backbone of California’s system of health insurance – is declining, according to a report produced by the UCLA Center for Health Policy Research, housed in the School of Public Health and affiliated with the School of Public Affairs. The report also concludes that while job-based family coverage plummets, children’s coverage is being protected by public insurance programs, such as Medi-Cal and Healthy Families.

“We are seeing a shift to government programs, like Medi-Cal and Healthy Families, as employers fail to provide affordable health insurance for working families,” says Dr. E. Richard Brown, director of the UCLA Center for Health Policy Research, professor in the School of Public Health and the study’s lead author. “The data show that California’s health insurance system is increasingly unstable and unable to provide for the basic medical needs of millions of residents.”

While a majority of Californians are still insured through their jobs or those of relatives, those numbers are declining, specifically among dependents. Pushed by a 79 percent increase in the cost of job-based family coverage for the average worker, enrollment of dependents dropped four percentage points for children and two percentage points for adults from 2001 to 2003.

For children, these losses were balanced by a five percentage-point increase in enrollment in Medi-Cal and Healthy Families, leading to an actual increase in children’s insurance overall. Many adults shifted to privately purchased health plans, and many of those bought high-deductible health plans, potentially risking bankruptcy and/or significant financial losses due to high medical bills. Approximately 50 percent of all personal bankruptcies in the United States are due to medical debt, according to Harvard researchers.

The shrinking of job-based health insurance is one of many trends identified in “The State of Health Insurance in California: Findings from the 2003 California Health Interview Survey.” The study found that more than 6.6 million Californians under age 65 – more than one in five nonelderly residents – went without insurance for at least part of 2003, and more than 3.7 million lacked health coverage for the entire year. Those without health insurance were much less likely to have seen a doctor, gotten vital preventive screenings for cancer, or taken medication for high blood pressure.

### Employer-Based Health Insurance Coverage During Last 12 Months, Ages 0-64, Calif., 2001 and 2003

Insurance Status	Percent in 2003	Change from 2001 <sup>1</sup>
% of Adults Ages 18-64 with Own Job-Based Coverage	40.0%	+0.6*
% of Adults Ages 18-64 with Job-Based Coverage Through Spouse	14.5%	-2.2
% of Children Ages 0-17 with Job-Based Coverage Through Parent	52.1%	-3.9

Note: Numbers are rates and will not add to 100%.

\* = not a statistically significant change

<sup>1</sup>Change in percentage points, not in the percent of the total estimate. Change is from reweighted 2001 California Health Interview Survey.

Source: 2001 and 2003 California Health Interview Surveys