

## Health, Productivity, Absenteeism, Injury Prevention

In 2003, an important study was published in the journal /Spine/, titled (1):

\*Chronic Spinal Pain:

A Randomized Clinical Trial Comparing Medication, Acupuncture, and Spinal Manipulation\*

In this study, researchers from the National Unit for Multidisciplinary Studies of Spinal Pain at the University of Queensland, Australia, randomly assigned 115 chronic spine pain subjects into three treatment options:

\* Medication: the prescription nonsteroidal anti-inflammatory drugs Celebrex or Vioxx, daily for 9 weeks.

\* Needle Acupuncture: two visits per week to a certified needle acupuncturist for nine weeks.

\* Spinal Manipulation: two visits per week to a licensed chiropractor for nine weeks.

Subject progress and clinical status was assessed using standard measure outcomes:

\* The Oswestry Back Pain Disability Index (Oswestry)

\* The Neck Disability Index (NDI)

\* The Short-Form-36 Health Survey questionnaire (SF-36)

\* Visual analog scales (VAS) of pain intensity

	<b>Drugs (Celebrex or Vioxx)</b>	<b>Acupuncture</b>	<b>Chiropractic Adjustments</b>
<b>Years Of Chronic Spinal Pain</b>	<b>6.4</b>	<b>4.5</b>	<b>8.3</b>
<b>% Asymptomatic within 9 weeks</b>	<b>5%</b>	<b>9.4%</b>	<b>27.3%</b>
<b>% That suffered an adverse event</b>	<b>6.1%</b>	<b>0%</b>	<b>0%</b>
<b>% Improvement In General Health Status</b>	<b>18%</b>	<b>15%</b>	<b>47%</b>

At the end of the assessment period (nine weeks of intervention), the authors concluded that in patients with chronic spinal pain, chiropractic spinal manipulation results in greater short-term improvement than acupuncture or medication in patients with chronic spinal pain, chiropractic spinal manipulation results in greater short-term improvement than acupuncture or medication.

As noted, the initial treatment intervention for this group of subjects was 9 weeks. Importantly, a 12-month long-term follow-up was subsequently published on this patient population (2). The authors concluded:

The overall results of this extended follow-up efficacy study appears to favor the application of manipulation which successfully achieves long-term benefits in chronic spinal pain syndrome patients.\*

Patients who have chronic mechanical spinal pain syndromes and received spinal manipulation gained significant broad-based beneficial short-term and long-term outcomes.

In patients with chronic spinal pain syndromes, spinal manipulation, may be the only treatment modality of the assessed regimens that provides broad and significant long-term benefit.

These studies are clearly a spinal musculoskeletal pain randomized clinical trial, and as such these patients were assessed at the beginning and the end of the trial period with pain scales, and neck and back functional disability assessment tools. Yet, a less publicized aspect of these studies is that the subjects were also assessed for systemic wellness using the Rand-36 (SF-36), which showed, importantly, chiropractic spinal manipulation also resulted in significant and lasting improvements on overall health.

Realizing that chiropractic spinal manipulation can have significant influence on systemic wellness has important implications for the workplace environment in terms of the potential to improve productivity and reduce absenteeism.

In 2011, physician Manuel Cifuentes, MD, and colleagues published a study in the *Journal of Occupational and Environmental Medicine* titled (3):

*\*Health Maintenance Care in Work-Related Low Back Pain and Its Association With Disability Recurrence\**

These authors note that low back pain is one of the costliest work-related injuries in the United States in terms of disability and treatment costs, and that an additional, important component of the human and economic costs is the recurrence of low back pain. They note that there has been little success in preventing recurrent low back pain.

To study the phenomenon of recurrent low back pain, these authors followed 894 low-back injured workers for a year. The authors specifically compared the rates of recurrent low back disability in injured workers who were categorized into three treatment groups:

- \* Medical physician care
- \* Physical Therapy
- \* Chiropractic

The authors concluded:

*\*Chiropractic patients had less expensive medical services and shorter initial periods of disability than cases treated by other providers.*

After controlling for demographics and severity indicators, the likelihood of recurrent disability due to low back pain for recipients of services during the health maintenance care period by all other provider groups was consistently worse when compared with recipients of health maintenance care by chiropractors.

Our results, which seem to suggest a benefit of chiropractic treatment to reduce disability recurrence, imply that if the benefit is truly coming from the chiropractic treatment, there is a mechanism through which care provided by chiropractors improves the outcome.

Our findings seem to support the use of chiropractor services, as chiropractor services generally cost less than services from other providers.

Hidden within the data of this study was evidence that receiving chiropractic care conferred other benefits to these injured workers. Specifically, it was noted that chiropractic patients had fewer surgeries, used fewer opioids, and had lower costs for medical care than the other provider groups. These hidden benefits from chiropractic care certainly have positive influences on workplace performance by these workers.

In 2013, Benjamin Keeney from Dartmouth Medical School, and colleagues from the University of Washington School of Public Health, University of Washington School of Medicine, and Ohio State University College of Public Health, published a study in the journal *Spine*, titled (4):

*\*Early Predictors of Lumbar Spine Surgery after Occupational Back Injury: Results from a Prospective Study of*

## Workers in Washington State\*

This was a prospective population-based cohort study whose objective was to identify early predictors of lumbar spine surgery within 3 years after occupational back injury. The study assessed 1,885 subjects. The authors note:

Back pain is the most costly and prevalent occupational health condition among the U.S. working population.

Reducing unnecessary spine surgeries is important for improving patient safety and outcomes and reducing surgery complications and health care costs.

Patient functional disability status was measured using the Roland Morris Disability Questionnaire. Despite basic equivalency of disability scores, the authors noted that the best predictor for *not* having a back surgery during the three-year study period was having a chiropractor as the first health care provider, noting:

There was a very strong association between surgery and first provider seen for the injury, even after adjustment for other important variables. It is possible that these findings indicate that who you see is what you get.

42.7% of workers who first saw a surgeon had surgery, in contrast to only 1.5% of those who saw a chiropractor.

In Washington State worker compensation, injured workers may choose their medical provider. Even after controlling for injury severity and other measures, workers with an initial visit for the injury to a surgeon had almost nine times the odds of receiving lumbar spine surgery compared to those seeing primary care providers, whereas workers whose first visit was to a chiropractor had significantly lower odds of surgery. [by 78%]\*

Approximately 43% of workers who saw a surgeon had surgery within 3 years, in contrast to only 1.5% of those who saw a chiropractor.

Once again, this study shows tremendous benefits from chiropractic care for injured workers, detailing incredible reductions of back surgery rates and its associated costs related to the surgery, rehabilitation, and lost productivity.

Anheuser-Busch is the world leading brewing company. One of their wholesalers, Brewers Distributing, is located in Peoria, IL. Many of their employees spend most of their time moving around heavy cases and kegs of beer. Having noticed a large number of workers compensation cases due to lifting-related injuries, the company decided to introduce

several workplace wellness programs to prevent these injuries from occurring in the first place. One of these programs involved weekly, *on-site* chiropractic visits, free of charge to any employee. The chief financial officer at Brewers Distributing believes that *on-site* chiropractic has given his employees the greatest benefit.

The cost to the employee for this *on-site* chiropractic care is free (the doctor is paid by Brewers Distributing). If an employee needed help outside of that weekly window of time, they can visit the doctor in his office.

The strategy at Brewers Distributing is that by treating minor musculoskeletal problems their employees developed, they were preventing such problems from developing into a serious injury that would need to be covered by workers compensation. The view is that it is a win-win situation, a strategy that benefits the employee, reducing costs, which benefits the employer.

The author of the article, Annie Locke, notes (5):

While some business owners and administrators might dismiss such a program as too expensive, it has actually saved Brewers a significant amount of money. In the two years since it was implemented, the number of employee sick days has declined by 22 percent, while the accident rate has been cut in half. Consequently, the company workers compensation costs have experienced a dramatic reduction, with premiums declining by more than 25 percent.

With that in mind, Brewers has encouraged others to adopt similar programs. At a recent industry conference, the company on-site chiropractic program was recognized as a "best practice" among the hundreds of attendees. Katie Waddington, human resources manager, presented information about the program at the conference. "A lot of

people at first think, Oh my goodness, that costs to have a chiropractor in your facility! But when you really look at the numbersâ€” it makes sense. We have the return on investment and the statistics to prove it.

Once again, improving workers access to chiropractic care significantly reduced employee sick days, decreased employee accident-injury rate, dramatically reducing company worker compensation costs as well as worker compensation insurance premium costs.

Several other studies have documented the benefits of providing workplace on-site chiropractic care. These include the 2012 study published in the *Journal of Occupational and Environmental Medicine*, titled (6):

#### **\*Value of Chiropractic Services at an On-Site Health Center\***

These authors note that the mission of *on-site* chiropractic is to enhance patients health, promote patient satisfaction, increase worker productivity, and decrease worker absenteeism.

Patients with headache, neck pain, and low back pain who were treated with *on-site* chiropractic showed significant improvements in both pain and functional status. In addition, *on-site* chiropractic reduced musculoskeletal injury insurance claims, resulted in fewer lost workdays and lower workers compensation payment. These authors made these following points:

Chiropractic care offered at an on-site health center could reduce the economic and clinical burden of musculoskeletal conditions.

These results suggest that chiropractic services offered at on-site health centers may promote lower utilization of certain health care services, while improving musculoskeletal function.

Significant reductions in all functional assessment measures were observed, suggesting that the cohort experienced substantial improved functional status for all the three musculoskeletal conditions. Further evidence of the on-site chiropractic care effectiveness is the change in patient-reported functional status after treatment. These findings confirm that on-site chiropractic care successfully improved patients daily functioning.

\*Treatment with on-site chiropractic services was associated with lower utilization of certain health care services, as well as improved functional outcomes.

The results of this study support the value of chiropractic services offered at on-site health centers.

There authors discuss the evidence that chiropractic care is less invasive and more conservative than alternative treatments. Patients with chiropractic coverage seemed to be avoiding more surgeries, hospitalizations, and radiographic imaging procedures.

The improved functional status found in this analysis indicates potential for reduced indirect costs, including absenteeism and productivity losses, with on-site chiropractic services.

This study highlights the potential benefits for all (employees, employers, costs benefits) concerned by offering on-site chiropractic services for employees.

Another study pertaining to on-site chiropractic care, published in 2014, was also published in the *Journal of Occupational and Environmental Medicine*, titled (7):

#### **\*Impact of Chiropractic Services at an On-Site Health Center\***

The objective of this study was to compare the influence of employer-sponsored, on-site chiropractic care against community-obtained care on health care utilization. It was a retrospective claims analysis study, using 876 on-site and 759 off-site participants.

The authors make these background points:

- \* Musculoskeletal conditions are the primary cause of physical disability in the United States.
- \* About 50% of US adults have back pain, arthritis, osteoporosis, or bodily injury in excess of 3 months duration annually.
- \* Seventeen percent of US workers have absenteeism as a result of musculoskeletal conditions yearly.
- \* Neck pain inhibits about 14% of workers from successfully completing their jobs.
- \* In 2006, the average direct cost of treatment for musculoskeletal conditions was \$576 billion, and indirect costs added an additional \$373 billion, primarily in wage losses; a total cost of \$949 billion.

These authors found that on-site chiropractic care resulted in significant improvements in headache, neck pain, and low back pain, yet while lowering utilization and healthcare cost.

In June 2017, an article was published in the journal /Complementary Therapies in Medicine/, titled (8):

\*Alternative Medicine, Worker Health, and Absenteeism in the United States\*

The author of this study is Kate Rybczynski, from the Department of Economics, University of Waterloo, Canada. This paper reviews the literature on healthcare utilization and workplace absenteeism by exploring whether Complementary and Alternative Medicine (CAM) treatment is associated with fewer workdays missed due to illness. She notes that the high costs of illness-related workplace absenteeism may be reduced through the utilization of alternative healthcare providers.

Five different alternative healthcare practices were considered:

- \* Active mind-body (e.g. yoga, meditation)
- \* Naturopathy
- \* Massage therapy
- \* Chiropractic
- \* Acupuncture

Of the 8,820 subjects in this study, the author found that in the prior 12 months:

- \* 0.5% visited a naturopath
- \* 1.8% used acupuncture
- \* 10% visited a chiropractor
- \* 11.5% visited a massage therapist

As noted, chiropractic was the second most utilized alternative provider, second only to massage, and only by 1.5%.

The author notes that the major chronic conditions contributing to workplace absenteeism are:

- \* Lower back pain
- \* Diabetes
- \* Arthritis
- \* Allergies
- \* Asthma
- \* Menstrual pain
- \* Migraines
- \* Cancer

- \* Obesity
- \* Several mental conditions (bipolar disorder, anxiety, depression)

Importantly, the author found that in the prior three months, approximately 25% of the study subjects suffered from lower back pain. This is a healthcare problem that is classically successfully managed by chiropractors. In addition, chiropractors have proven effective in managing arthritis and migraine headaches.

The author notes that in 2012, health related absenteeism costs an estimated \$153 billion annually in the United States. Most of this absenteeism is attributed to chronic health conditions. Chronic conditions comprise the largest share of healthcare spending: 75% of spending is devoted to chronic conditions, adding about \$3600 per person per year to employer healthcare costs.

Noting that chronic health conditions are the major contributors to workplace absenteeism, the author notes that alternative healthcare providers often successfully manage these same chronic conditions. Therefore, the author assessed whether complimentary healthcare approaches could help reduce health illness-related absenteeism.

The author makes the following points:

Massage therapy, chiropractor and acupuncture all have positive treatment effects.

Active mind-body practices, massage, chiropractic and acupuncture treatments are all significantly associated with improved health.

Estimates suggest that some complementary and alternative medicine modalities correlate with lower absenteeism, and many correlate with improved health.

Those who cannot afford conventional treatment might turn to complementary and alternative medicine, which often has lower overall costs despite higher frequency of visits.

The author also notes that a growing body of literature shows the importance of shifting healthcare toward preventive care, which is an important strength of complementary and alternative medicine.

In summary, this study of 8,820 subjects, those who utilized alternative healthcare providers, including chiropractic, showed the following health benefits:

- \* Reduced work absenteeism
- \* Fewer other health care costs
- \* Improved health
- \* Preventive health care services

Specifically, the study showed that chiropractic was significantly associated with improved health.

The primary chronic health problem in this study subjects was chronic low back pain, occurring in about 25% of the participants.

\*SUMMARY\*

In total, these studies indicate that chiropractic offers employers, and employees these benefits:

- \* Significantly reduced employee sick days
- \* Reduced work absenteeism
- \* Fewer other health care costs
- \* Improved health
- \* Preventive health care services
- \* Significantly reduced back surgery rates and its associated costs related to the surgery, rehabilitation, and lost productivity
- \* Decreased employee accident-injury rate

- \* Dramatic reduction of company worker compensate claims
- \* Dramatic reduction of company worker compensate costs
- \* Increased worker function
- \* Improved worker productivity

Increasingly, both employers and employees are noting and taking advantage of the benefits of chiropractic healthcare.

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