One Giant Leap

by John Southerst

Highly ergonomic, adjustable furniture leads to a healthier, more productive workforce that will soon pay for their investment. Now, this is a statement of scientific fact.

In a large and independent two-year field study to be published in the December issue of the respected medical journal *Spine*, scientists at several of North America's prestigious research institutions report that desk-bound employees given a highly adjustable chair and ergonomic training experienced significantly less body pain throughout the day.

John Southerst is a Toronto-area writer who believes the everyday stories of business hold a fascinating cultural record. He started his career as a teacher in West Africa and a reporter in India. He now writes for major business publications and acts as a consultant and wordsmith to manufacturing, financial services and high-tech clients. His other passions are his family, his vegetable garden, cooking (eating it) and squash (playing it).

But there's more. The productivity of workers using the adjustable chair improved to the tune of nearly 18%. In the workplace where the study took place—the collection department of a state revenue agency—the cost of chairs and training was recovered in a mere three to ten days, depending on the way benefits are calculated.




And the chair that achieved these astounding results?

It was the Steelcase Leap® chair.

"This study will be the gold standard by which ergonomic furniture studies will be judged in the future," says Dr. Ben Amick, principal investigator on the study and associate professor at the University of Texas Health Science Center at Houston. "Its impact on employers, employees, the medical community and standard-setting in America is unimaginable. Senior ergonomists in the field are extremely excited about the findings, the quality of the study, and the nature of the collaboration between industry and the academic community."

No study of this size and rigor had previously made the connection between ergonomic chairs and training with health and productivity improvements. Led by Dr. Amick, Dr. Kelly DeRango, a research fellow at the W.E. Upjohn Institute for Employment Research, and project manager Ted Rooney, a partner in Health and Work Outcomes, a health research and consulting company in Brunswick, Me., the researchers tracked 210 employees. To qualify, each volunteer participant had to spend a minimum of four hours a day at a computer and six hours a day sitting in an office chair. One group received a Leap chair and ergonomic training, another received training only and the third group was a control group.

The study, funded in part by Steelcase Inc., gathered both productivity and health data. The revenue agency provided the researchers tax collection figures for each employee for 11 months prior to the beginning of the study and for a year afterward.

The health data came from the volunteers themselves. Each participant completed health diaries three times a day—morning, noon and end-of-day—for a week during five separate survey months: two months before the "intervention" of handing out chairs and holding training sessions, then again one month before, two months after, seven months after and 12 months after. They also answered questions about bodily pain and how much it interfered with normal work.

The group with the Leap chair and training didn't experience the aches and pains that other workers reported. Nor did pain grow much throughout the day, as it did for others. And they responded with real productivity gains of 17.8%—a result Dr. Amick describes as powerful and important.

"Perhaps most surprising was that the difference between the Leap-with-training group and the other two groups gets larger over time," he says. "You would expect the differences to get smaller over time if you were just making people happy by giving them a nicer chair."

A second phase of the study involving approximately 200 more workers at a large insurance company is nearing completion. Dr. Amick says health data so far corresponds with the results of the first phase, providingan early indication that the study is repeatable. Productivity measures are not yet available.

Study volunteers were everyday workers in an everyday office. No participant had filed recent compensation claims, nor showed an abnormal level of pain and discomfort. "To me, that's what makes these results pretty eye-opening," says Kelly DeRango, the study's economic analyst. "It shows that this is not an issue businesses should ignore. There's a lot of low-hanging fruit out there. Minor aches and pains are hampering people's ability to do their jobs. They're not going to the doctor and they're not losing time from their jobs. There's just a leakage of productivity—a silent leak. This study shows you can take middle-aged folks with normal pain levels and raise their productivity."

Interestingly, the group that received ergonomic training, but no Leap chair, did not show significant pain improvement or productivity gains. Michelle Robertson, the study's office ergonomics specialist and a

scientist at the Liberty Mutual Research Institute for Safety, says the finding does not undercut the value of ergonomic training. “I think it shows that the best training cannot overcome poor furniture,” she says.

“What we have shown is that a well-engineered chair based on solid human factors coupled with office ergonomics training together have a very strong positive influence on worker health and productivity.”

None of the institutions conducting the study endorse specific products. Steelcase provided the chairs and funding to support ergonomic research in the workplace and to test its belief in the Leap chair as a wise investment in the workforce for any organization.

“We were convinced the Leap technology was superior to what was on the market and would have an impact on productivity,” says Ken Tameling, Steelcase’s group leader for seating products. “This study shows just how superior that technology is. Could any other chair get these kinds of results? The Leap chair has unique features that you can’t find in other chairs on the market.”

Study researchers acknowledge that Steelcase had plenty at stake in supporting the project, given the cost of gathering a lot of information over long periods of time and the necessity for researchers to publish whether the results are favorable or not.

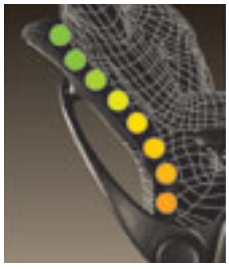
“Steelcase is the first big furniture manufacturer to put its money where its mouth is and commission a scientific research project of this kind,” says Ted Rooney of Health and Work Outcomes. “But now it’s very exciting to at last have firm evidence that ergonomic seating can bring a long-term return, not only in terms of employee health but in productivity and dollars.”

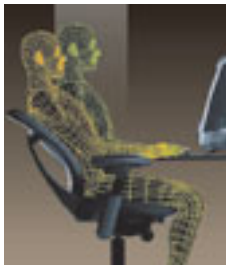
one giant leap for backs

The development of the Leap® chair, introduced in 1999, in itself is a story of scientific perseverance and triumph.

As with all great discoveries, this one begins with a perplexing problem: the rising incidence of back problems, particularly among the 75% of workers in desk jobs. So Steelcase researchers and a team of 27 scientists from four universities—Vermont, Michigan State, Cornell and Kansas State—conducted numerous workplace studies, even going so far as to attach light-emitting diodes to workers' spines and using time-lapse photography to examine how backs act while seated over long periods.

After four years of research and testing—and 47 patents later—the Steelcase design team came up with the Leap chair, including its Live Back™ technology and Natural Glide System™.





Because of these innovations, Leap does everything a spine does. It changes shape to mimic the way the spine moves, closing the gap behind your lower back as you recline. As you do so, Leap's seat glides forward, so you stay within your range of vision and reach. And the seat-edge angle control lowers only the front portion of the seat to keep pressure off the thighs and increase pelvic support. Separate upper and lower back controls let you adjust the "push-back" from the upper-back rest while independently changing the lower-back support.

There's more, of course. Adjustable seat depth. Arms that pivot, telescope and adjust up and down. All guided by three ergonomic principles: support natural postures, provide stability and allow freedom of movement.

Can't wait to take a Leap? Chances are, you'll be sitting in one sooner rather than later. Johnson Controls®, the global market leader in automotive interiors and systems, and B/E Aerospace Inc., the world's leading manufacturer of aircraft cabin interiors, have both licensed Leap technology for their products.

Experience is confirming what science predicted: Wherever people sit for long periods of time, Leap is a site for sore backs.