

# Changing Times, Changing Work, Changing You!

By Scott W. Donkin, D.C.

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**E**xplosive is perhaps the most appropriate term to describe the societal, economic and corporate changes that have occurred within the last decade. Accelerated change will certainly continue well into the next decade. Your desire to understand our changing times coupled with your ability to prepare your professional services to fit the needs of our changing society will determine your destiny.

Understanding change begins with an exercise in awareness. Take a moment now and visualize what you consider today's typical worker to be. Reality may surprise you. In 1954 the majority (62.5 percent) of the American workers were white males. Thirty years later, that percentage had dwindled to a minority of 49.3 percent. An average worker today is likely to be a baby-boomer with two children and a working spouse (if married), and women certainly represent the decade's most rapidly growing working group.

## **Profile of the American Worker**

Understanding where the new American worker works is also critical. America's occupational history can be summed up in three words: farmer, laborer, clerk. At the turn of the century, farmers comprised one-third of America's work force, but now they total less than three percent.

The farmers moved into the factories of the industrial age, but this scenario — where many of us feel we still are — has been changing. The labor shift from manufacturing goods to creating, processing and distributing information began toward the middle of this century. In 1950, 17 percent of Americans worked in information jobs, but in the 1980s this number had swelled to more than 65 percent.

Information occupations include programmers, teachers, clerks, secretaries, accountants, stockbrokers, managers, insurance people, bureaucrats, lawyers, bankers and technicians. In fact, "clerk" became the largest populated occupation as early as 1979. The professional has become the second largest occupational classification, the majority of whom are considered information workers. The creation, processing and distribution of information is the job of today's worker.

It is now quite clear the American work force has been and is continuing to move into an automated, sedentary work climate. High technology not only greatly facilitates production of existing goods and services, but it is also instrumental in the development of new goods and services. There is, however, an element that, if not carefully considered, limits the practical use and full economic benefit of this system: the human factor essential to task performance.

## **Stress Factors in the Workplace**

Sophisticated computers and software programs used in banks, hospitals,

insurance companies, travel agencies, utility companies and other businesses allow people to enter, manipulate and extract data faster and more effectively than ever before. Greater mental activity and concentration is required of the task performer, while physical demands and movement are reduced. The resultant sedentary nature of modern tasks, combined with long-term sitting postures, is antagonistic to natural biomechanics and biodynamics, which ultimately affect work performance and health.

Several important factors must be considered in tasks which involve long-term sitting. First, in conventional sitting the pelvis tends to rock backward, causing a reduction in the normally lordotic lumbar curve. Pressures at the lumbar intervertebral discs increase at this posture. Secondly, work-intensive task performance significantly restricts spinal movement. The intervertebral discs depend upon vertebral movement for nourishment and exchange of fluid. Facet articulations require vertebral movement to exchange and replenish synovial fluid. Lack of or reduced intervertebral disc and synovial fluid exchange, combined with increased disc pressures arising from a reduced lordotic lumbar curve, accelerates degenerative changes in these structures.

Soft tissues, such as ligaments and muscles involved in spinal support, posture and flexibility, undergo changes in long-term sitting postures and sedentary work. Ligamentous tissues possess both elastic and plastic qualities. The elastic quality allows a ligament to elongate when its two bony attachments move but still allows it to spring back to its resting tension when the load is removed. The plastic characteristic gives a ligament a putty-like component, which gives it substance and strength. Plastic stretch tends to allow the ligament to conform to the positions it is placed in most frequently.

Muscular tissue also reacts ad-

versely to long-term sitting postures, especially when the chair does not adequately support an individual while engaged in work-intensive activities. Paraspinal muscles that must contract for long period of time to hold the spine in upright sitting postures with little relief in the form of body movement maintain a higher metabolic rate. Energy expenditure is increased, as well as the proportion of by-products of muscle cell activity. More nutrients and oxygen are required but less is available due to the reduction in blood flow through contracted muscles. Waste products of these cells are not as effectively removed due to reduced blood flow through muscle tissue that remains in a relatively high state of contraction.

Muscles fatigue quickly under these conditions, and the body instinctively attempts to ease this excessive isotonic muscle activity. Greater responsibility for bearing the stresses of sitting shifts to the spine, as an individual assumes the slumping posture. Lumbar and thoracic intervertebral disc pressures increase in this distorted spinal configuration. Over time, ligamentous tissues attached in these vertebral regions react in a manner described above.

There are two major mechanisms of neuromusculoskeletal injury. First and most commonly recognized is high-force, short-time injuries. Lifting a heavy object improperly, slips and falls or involvement in an automobile collision are examples of soft tissue strain and sprain with skeletal and neurological components. A high force affects the body over a short time span.

Less commonly understood but of equal consideration and importance is neuromusculoskeletal insult created by low forces over a long time or many repetitions. This is the usual mechanism of injury occurring in sedentary work. Even though abnormal forces affecting sedentary workers are less than forces incurred during heavy manual labor, time and repetition

have cumulative effects which equal or exceed neuromuscular insult of high-force, short-time injuries. The low-force, long-term/repetitious biomechanical insult is the mechanism of injury to today's sedentary workers.

Transformational times such as we are currently experiencing require all corporations and professions wishing to survive and prosper to carefully consider what they do and how they can do it to fit future needs. The chiropractic profession is no exception.

#### Recognizing the "Law of the Situation"

Perhaps the best way to explore this issue is to use the "law of the situation," a term credited to Mary Parker Follet, the United States' first management consultant, in 1904. One of her clients was a window-shade company. As she persuaded its owners to accept the fact that they were really in the light control industry, their opportunities and resultant stake in the future expanded tremendously. They discovered what business they were really in.

Failure to use the "law of the situation" could result in corporate or professional demise. The classic example of unrecognized obsolescence involves the history of the railroads. Once considered as one of the largest and best managed industries in the country, this industry became locked in the love and legend of railroading and failed to understand that it was really in the transportation business.

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## CHIROPRACTIC INDUSTRY

Cars, trucks and airplanes snatched the lion's share of transportation of goods and people. If the railroad companies had been alert, they could have been instrumental in researching and developing the new transportation system and expanded their vision of the future. Instead, they became corporate casualties, if you consider what they could have been. Incidentally, the fax, the satellite and the computer modem are becoming the transporters of today's hottest commodity, information.

Xerox Corporation, once synonymous with copy machines, decided at the turn of this decade that it was really in the automated office business and has not only survived but prospered as the result of developing a clear vision of the future needs of its customers.

This leads us to the critical issue of

chiropractic and the law of the situation. What business are you and I really in? The standardized definition of the science of chiropractic adopted by the Association of College Presidents is: "Chiropractic is the science which concerns itself with the relationship between structure, primarily the spine, and function, primarily the nervous system, of the human body as that relationship may affect the restoration and preservation of health." The term subluxation is not explicitly mentioned, but it certainly permeates this definition. Simultaneously, we are charged with the responsibility to preserve health as it relates to the human neuromusculoskeletal system. When applied to the needs of our new "information" society, education becomes a key element in the chiropractic vision.

The reality of this connection became quite clear five years ago. One of my patients suffered a severe neck and back injury as a result of an automobile accident. I had been treating her for quite some time for the effects of this injury. She had experienced relief from many of her original complaints, but she still suffered severe headaches at times. Our treatment would alleviate the headaches, but they would continue to recur.

A pattern began to emerge. She would have fewer symptoms during weekends and holidays. We finally discovered that, during the course of her work duties, she had to frequently

look through the lower lens of her bifocal eyeglasses in order to inspect information which appeared on a video display terminal. The viewing screen was positioned too high for her, and she had to repeatedly tilt her head backward to see the screen, thus aggravating her injured neck and contributing to her recurring headaches. Appropriate work station changes enabled chiropractic treatment to stabilize her condition, and she was subsequently released without permanent impairment as a result of her injury.

Had I not seen her working conditions and made corrections, I probably would have formulated a permanent impairment rating which would have been in error as it related to the automobile accident. It was a chilling thought to me, so I decided to determine if this was an isolated incident. I discovered by observing sedentary workers in banks, insurance companies, travel agencies and other firms that the potential for outright injury or aggravation of current neuromusculoskeletal conditions is more the rule than the exception.

An essential element of our treatment to restore and preserve human health emerges in turning your biodynamically sophisticated, prevention-oriented professional eyes to your patient's (and potential patient's) workplace. It becomes a natural extension of our philosophy and in-office treatment, and with additional training in ergonomics we have the opportunity to become important assets to employers, also. I believe that chiropractic industrial and office consulting transcends interprofessional philosophical bias. In fact, if we hold true to our beliefs of correcting and preventing the cases of disease and human suffering, then we are compelled to enter America's workplaces just as we have successfully entered the field of sports injuries.

### Today's Industrial Challenge

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are employed in sedentary occupations and that number is growing. Ninety percent of the 16 million new jobs created by 1995 will be in service and information occupations.

How many of these new information workers are you currently treating or want to serve? Your professional staff and close colleagues are your most valuable assets. Arrange staff meetings or lunches with colleagues and pose the following questions:

- What business are we really in?
- How does my/our mission fit our community's needs?
- Does a patient's work affect his/her health?
- Does a person's work affect his/her response to chiropractic treatment?
- What can I/we do to prepare our services to fit the needs of the

people we currently serve or those whom we wish to serve?

People need chiropractic care now more than ever, and it is our responsibility to serve their needs.

We must deliver our services in the form of hands-on chiropractic treatment as well as entering the work, recreational and home life to educate them in the causes and prevention of their conditions.

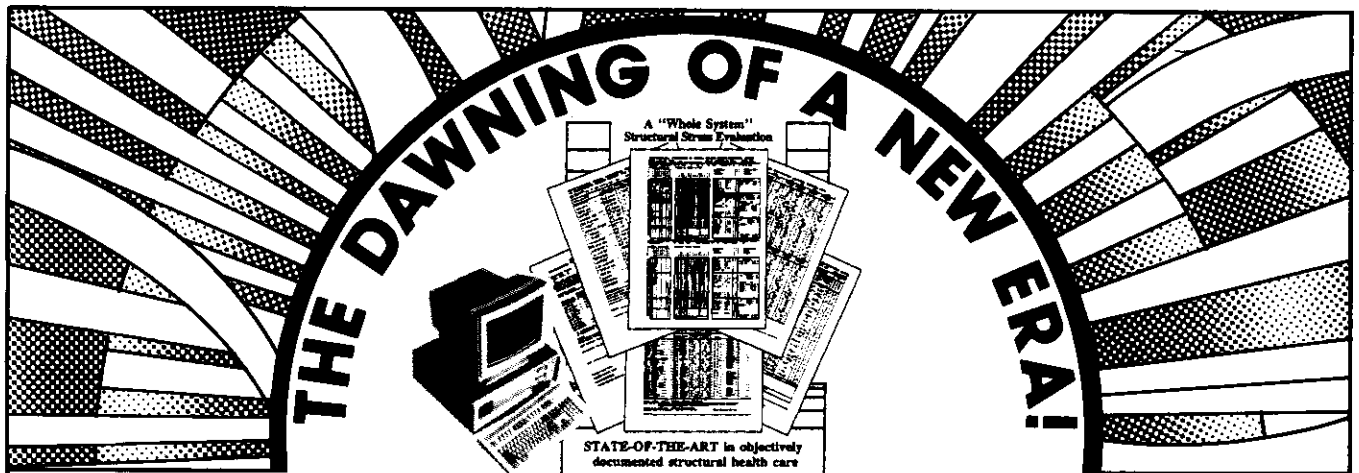
We must be concerned with the "restoration and preservation of health."

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