

**CHIROPRACTIC
AND
IMMUNE
DEFICIENCIES**

Welcome To Great Health!

You are joining millions of others who have taken control of their health with chiropractic care. Chiropractic offers a natural, drug-free way to not only regain your health, but also to maintain it.

We're glad you are taking the time to learn more about the incredible science, art and philosophy chiropractic provides. We want you to benefit greatly from the next several pages, so let's explain the contents.

You will be examining literature from both the popular press as well as that of medical literature. While we don't expect you to be well versed in the medical terminology, we do believe that you deserve the information at your fingertips. The doctor will be happy to discuss any of the articles with you.

You may notice articles designed to inform you about the potential side effects of certain medication. There will also be medical literature that supports chiropractic as a possible means of helping your body to regain health. In addition, you will review survey material praising chiropractors for their efforts. Lastly, you will note a Family and Friend Health Profile. We suggest that you complete this form and return it to your chiropractor as soon as possible.

Remember, the more you know about your health, the healthier you will be. The sooner your doctor of chiropractic examines you the sooner you can be on the road to good health. The longer you wait for help the worst the condition becomes. Delays will only hurt you more and cost you more!

The Role of Chiropractic in Good Health

Although chiropractors work primarily upon the spine, their goal is to improve the health of your entire body.

A chiropractor is a specialist that works diligently to detect and correct vertebral subluxations. Vertebral subluxations occur when the spinal column has become "misaligned." This misalignment produces interference in your nervous system. Your nervous system is responsible for controlling every function of your body.

Henry Windsor M.D. noted in the Medical Times that he found a nearly 100% correlation between "minor curvatures" of the vertebrae and diseases of the internal organs. His findings were indeed profound.

A chiropractic adjustment is the means by which your D.C. (Doctor of Chiropractic) corrects vertebral subluxation. Regardless of age or physical condition, everyone needs a nervous system free of interference.

Please review the following pages and learn about the benefits of chiropractic care for you and your entire family...

The Effects Of Specific Upper Cervical Adjustments On The CD4 Counts Of HIV Positive Patients

Jeffrey L. Selano, Brett C. Hightower, Bruce Pflieger,
Karen Feeley Collins, John D. Grostic

THE EFFECTS OF SPECIFIC UPPER CERVICAL ADJUSTMENTS ON THE CD4 COUNTS OF HIV POSITIVE PATIENTS

Jeffrey L. Selano, D.C.
Brett C. Hightower, D.C.
Bruce Pflieger, Ph.D.
Karen Feeley Collins, D.C.
John D. Grostic, D.C.

ABSTRACT

The researchers of this project sought to demonstrate that upper cervical specific adjustments would have a profound effect on the physiology, serology and immunology of HIV positive individuals.

The effect of specific upper cervical adjustments on the immune system CD4 cell counts of HIV positive individuals was measured by CD4/mm³ in the blood. These tests were performed by the patients independent medical center where they were under medical supervision for the condition. The measured CD4 counts in the regular group were dramatically increased over the counts of the control group. A 48% increase in CD4 cells was demonstrated over the six month duration of the study for the adjusted group.

Key Indexing Terms: Chiropractic, atlas, subluxation, CD4 count, immunology, dentate ligament, HIV.



Research On Purpose

Christopher Kent, D.C., FCCI

Neuroimmunology and chiropractic

In the last few years, a growing number of scientists have become interested in the role of the nervous system in modulating immune system function. To doctors of chiropractic, the field of neuroimmunology is rich with clinical promise. This column will present a brief review, and discuss the clinical implications of this work. A growing number of investigators are

exploring the common denominators in disease processes, and the role of the nervous, immune, and endocrine systems in pathogenesis.

Physiologist L.M. Korr proposed that spinal "lesions" (analogous to the vertebral subluxation complex) are associated with exaggerated sympathetic activity. It is interesting that Korr, like D.D. Palmer,

employed the term "tone" in reference to ambient nervous system activity. According to Korr, "High sympathetic tone may alter organ and tissue responses to hormones, infectious agents, and blood components."^[1]

More recently, other authors have explored the relationship of sympathetic activity to immune system function in greater depth.

Murray et al examined the effect of sympathetic stimulation on the immune system. Sympathetic stimulation was induced in human volunteers by exhaustive exercise. They found that acute sympathetic stimulation leads to selective release of immunoregulatory cells into the circulation, with subsequent alterations in cellular immune function.

These authors stated, "Growing evidence suggests that immune function is regulated in part by the sympathetic nervous system. Sympathetic nerve endings densely innervate lymphoid tissue such as the spleen, lymph nodes and thymus, and lymphoid cells have beta 2 adrenergic receptors."

In their experiments, there was a sharp rise in T suppressor/cytotoxic cells and natural killer cells following sympathetic stimulation. However, only modest rises were seen in T helper and B cells. The cells most affected, the T suppressor/cytotoxic cells and the natural killer cells, are those with the largest density of beta receptors.^[2]

Felten et al reported that the neurotransmitter norepinephrine is present in postganglionic sympathetic fibers which innervate lymphoid organs and act on the spleen. Furthermore, there are available receptors on cells in the white pulp and the localized neurotransmitter terminal which directly contact T lymphocytes in the peritubular lymphatic sheath. The authors propose that norepinephrine in lymphoid organs fulfills the criteria for neurotransmission, and plays a significant role in the modulation of immune responses.

They state, "Stressful conditions lead to altered measures of immune function, and altered susceptibility to a variety of diseases. Many stimuli, which primarily act on the central nervous system, can profoundly alter immune responses. The two routes available to the central nervous system for communication with peripheral organs are neuroendocrine channels and autonomic nerve channels."^[3]

In a more recent paper, Felten's team reviewed aspects of neural-immune signaling. "Noradrenergic and peptidergic nerve fibers abundantly innervate the parenchyma of both primary (bone marrow) and secondary (spleen, lymph nodes) lymphoid organs. Nerve fibers distribute within the parenchyma of these organs, as well as along smooth muscle compartments. Both noradrenaline and peptides such as substance P have been shown to fulfill the basic criteria for neurotransmission with lymphocytes, macrophages, and other immunocytes as targets. Denervation or pharmacological manipulation of these neurotransmitters can profoundly alter immunological reactivity at the individual cellular level, at the level of complex multicellular interactions (such as antibody response), and at the level of host responses to a disease-producing challenge."^[4]

The relationship between the nervous system and the immune system has attracted the attention of the popular press. An article in *The New York Times* stated, "Scientists have found the first evidence of an anatomical connection between the nervous system and the immune system. Nerve cell endings in the skin and white blood cells of the immune system are in intimate contact, and chemicals secreted by the nerves can shut down immune system cells nearby."^[5] *The New York Times* author was describing the findings of a paper written by Hossli et al.^[6]

Inflammatory disease is influenced by the nervous system. Udem noted that nerve stimulation can affect the growth and function of inflammatory cells.^[7]

Sternberg et al stated, "The central nervous system may coordinate both behavioral and immunologic adaptation during stressful situations. The pathophysiologic perturbation of this feedback loop, through various mechanisms, results in the development of inflammatory syndromes, such as rheumatoid arthritis, and behavioral syndromes, such as depression.

— See NEUROIMMUNOLOGY, page 31 —

Neuroimmunology

— from page 10

Thus, diseases characterized by both inflammatory and emotional disturbances may derive from common alteration in specific central nervous system pathways. [8] Fricchio and Stefano also reviewed what they termed the "neuroendocrine-neurimmune stress response system." [9]

Central nervous system influences on lymphocyte migration was addressed by Ottaway and Husband. These authors suggested that "Many of the alterations in immunity resulting from CNS activity may be explained in terms of changes in lymphocyte migration patterns in response to endocrine signals, neural signals via neurotransmitter release, or direct contacts between nerves and cells of the immune system." [10]

Weibe and Krekel observed that "Peptides, being presenting small-diameter nerve fibers, could exert an indirect immunoregulatory role by influencing vascular tone and/or permeability." [11]

A very interesting hypothesis proposed by Grossman et al is that cells can learn to associate responsiveness to antigens and other immunosensitive agents, with responsiveness to signals originating in the CNS delivered via neuroendocrine or autonomic nervous channels. They propose storage (memory) of stimuli in the immune system rather than in the brain. [12]

Just what does this mean to the chiropractor? Can spinal adjustments alter immune system activity?

Brennan et al found that when a thoracic "manipulation" was applied, the response of polymorphonuclear neutrophils isolated from blood collected 15 minutes after the manipulation was significantly higher than blood collected 15 minutes before and 30 and 45 minutes after manipulation. A slight, but significant rise in substance P was also observed. [13]

What are the clinical implications of the nervous system—immune system link? A small controlled study of HIV positive patients was conducted by Selano et al. The effects of specific upper cervical adjustments on the immune system CD4 cell counts of HIV positive individuals was studied. Half the patients received atlas adjustments based upon Grostic upper cervical analysis. The other half received a placebo in the form of an inactive adjusting instrument applied to the mastoid bone. Over the six month period of the study, the control group experienced a 7.96% decrease in CD4 cell counts, while the adjusted group experienced a 48% increase in CD4 cell counts over the same period. [14]

Contemporary research is beginning to shed light on the neurobiological mechanisms which may explain the outstanding clinical results chiropractors have experienced when managing patients with infectious diseases. The popular press has been filled with stories describing the emergence of antibiotic resistant pathogens, and the futility of the long term strategy of developing new, stronger antibiotics. [15,16]

As author Geoffrey Cowley observed, "Drug resistant microbes don't threaten us all equally. A healthy immune system easily repels most bacterial invaders, regard-

less of their susceptibility to drugs. [17]

Maintaining a healthy immune system depends upon maintaining a healthy nervous system. Are you ready to accept the challenge and the opportunity?

References

1. Kerr IM: "Andrew Taylor Still memorial lecture: research and practice — a century later." *J Am Osteopath Assoc* 1974 73:362.
2. Marry DR, Irwin M, Remdon CA, et al: "Sympathetic and immune interactions during dynamic exercise. Mediation via a beta 2-adrenergic-dependent mechanism." *Circulation* 1992 86(1):203.
3. Felten DL, Felten SY, Bellinger DL, et al: "Noradrenergic sympathetic neural interactions with the immune system: structure and function." *Immunol Rev* 1987 100:225.
4. Felten DL, Felten SY, Bellinger DL, Madden KS: "Fundamental aspects of neural-immune signaling." *Psychosom Psychosom* 1993 60(1):46.
5. Kalatz G: "Nerve cells tied to immune system." *The New York Times* May 13, 1993.
6. Housi J, Murphy GF, Egan CL, et al:

"Regulation of Langerhans cell function by nerves containing calcitonin gene-related peptide." *Nature* 1993 363(6425):159.

7. Underhill BJ: "Neural-immunologic interactions in asthma." *Hum Pract (Off Ed)* 1994 28(2):59.

8. Sternberg EM, Chromos GP, Wilder RL, Gold PW: "The stress response and the regulation of inflammatory disease." *Ann Intern Med* 1992 117(10):854.

9. Fricchio GL, Stefano GB: "The stress response and autoimmunoregulation." *Adv Neuroimmunol* 1994 4(1):13.

10. Ottaway CA, Husband AJ: "Central nervous system influences on lymphocyte migration." *Brain Behav Immun* 1992 6(2):97.

11. Weibe E, Krekel J: "The neuroimmune connection in human tonsils." *Brain Behav Immun* 1991 5(1):41.

12. Grossman Z, Hebermann RB, Livnat S: "Neural modulation of immunity: conditioning phenomena and the adaptability of lymphoid cells." *Int J Neurosci* 1992 64(1-4):275.

13. Brennan PC, Triano JJ, McGee M, et al: "Enhanced neutrophil respiratory burst as a biological marker for manipulation force: duration of the effect and association with sub-

stance P and tumor necrosis factor." *JMPT* 1992 15(2):83.

14. Selano JL, Hightower BC, Pfeiffer B, et al: "The effects of specific upper cervical adjustments on the CD4 counts of HIV positive patients." *Chiropractic Research Journal* 1994 3(1):32.

15. "The end of antibiotics." *Newsweek*. March 28, 1994.

16. "Revenge of the killer microbes." *Time*. September 12, 1994.

17. Cowley G: "Too much of a good thing." *Newsweek*, March 28, 1994.

(Dr. Christopher Kent, a 1973 graduate of Palmer College of Chiropractic, was named chiropractic researcher of the year in 1991 by the ICA and in 1994 by the W.C.A. Dr. Kent is director of research for EMG Consultants, Inc., and co-founder of Paradigm Partners, Inc. With Dr. Patrick Gentempo, Jr., Dr. Kent produces a monthly audio tape journal, "On Purpose," covering current events in science, philosophy, and politics of vital interest to the practicing chiropractor. For subscription information call 1-800-892-6463.) □

Study links nerve system with immunity system

A research study published in the May 13, 1993 issue of the British science journal, *Nature*, has provided important clues to the possible link between the nerve and immunity systems.

Dr. Richard D. Granstein of the Massachusetts General Hospital in Boston, and Dr. George F. Murphy of the University of Pennsylvania in Philadelphia, were the principal researchers. They studied the Langerhans cells of the immune system, along the epidermis and found that nerves extend into the epidermis with filament-like nerve endings. These endings are encircled by Langerhans cells.

The calcitonin gene-related peptide (CGRP) secreted by the nerve cells and used as the normal nerve pathway can coat some Langerhans cells. When this happens, the researchers found, the Langerhans cells' immune functions are impeded.

Dr. Granstein noted that, at any one time, up to 10% of the Langerhans cells in the epidermis were coated with CGRP. He added that it is not yet known why or when nerve cells emit CGRP.

The report has spurred new interest in the mind-body connection and the effect of stress on physical condition. "People have reported for a long time that diseases are worse or better depending on their psychological state, but I never

believed it," Granstein said.

In a report published by the *New York Times* the same day, University of Michigan dermatologist Brian Nickoloff, M.D., noted, "There is no question that some diseases, even very common ones like psoriasis, are exacerbated by stress: financial losses, a death in the family. (The new finding could) give you an anatomical and ultimately a molecular basis for this phenomenon."

The chiropractic community was particularly interested in the Granstein-Murphy report, which might shed light on the link between the immune system and spinal adjustments which normalize nerve system function. Speculation about the role of chiropractic in the treatment of immune-related diseases has been hampered by a lack of scientific evidence to substantiate such a connection.

The researchers stated that their next project would be to see how their findings might apply to the treatment or understanding of skin cancer. "We have to ask whether nerve cell endings operate properly or improperly in those people who are genetically susceptible to skin cancer," he stated.

Chiropractic researchers, no doubt, will tackle the question of whether the correction of vertebral subluxation can help ensure the proper functioning of those nerve cell endings. □

NERVE CELLS TIED TO IMMUNE SYSTEM

Discovery Could Help Explain Reports Linking Diseases Like Psoriasis to Stress

By GINA KOLATA

Scientists have found the first evidence of an anatomical connection between the nervous system and the immune system.

Nerve cell endings in the skin and white blood cells of the immune system are in intimate contact, and that chemicals secreted by the nerves can shut down immune system cells nearby.

Dermatologists said that the finding, by Dr. Richard D. Granstein of the Massachusetts General Hospital in Boston and Dr. George F. Murphy of the University of Pennsylvania in Philadelphia, could help explain anecdotal reports that diseases like psoriasis are exacerbated by stress. They say it might also help explain the mechanism of skin cancer. "This may be the connection between the nervous system and the immune system that we've all been looking for," said Dr. Craig Elmets, a dermatologist and cancer specialist at Case Western Reserve University.

Flaming Called Extraordinary

"I think it's just extraordinary," said Dr. Paul R. Bergstressor, the chairman of the department of dermatology at the University of Texas Southwestern Medical School in Dallas.

The finding is published today in *Nature*, a British science journal.

Dr. Granstein, Dr. Murphy and their colleagues found the connection between the nervous system and the immune system by looking at a group of sentinel white blood cells of the immune system, known as Langerhans cells. These white blood cells form a network in the epidermis, the skin's delicate outer layer, which is about the thickness of a sheet of plastic wrap. Whenever a foreign substance touches the skin, the Langerhans cells take it up and deliver it to other white blood cells, setting off an attack by the immune system.

The researchers found the nerves extend into the epidermis with filament-like nerve endings, which are encircled by the Langerhans cells. The nerve cells secrete a chemical known as calcitonin gene-related peptide, or CGRP, which is normally used to transmit messages between nerves. But some Langerhans cells may become coated with CGRP and, as a result, the investigators report, the Langerhans cells are less able to do

Dr. Granstein said that as many as 10 percent of the Langerhans cells in the epidermis were coated with CGRP at any one time. The Langerhans cells become coated when a nerve cell fires, depositing the chemical on the cells that about it.

Possible Link to Stress

But Dr. Granstein added, it is unclear when or why nerve cells release CGRP. One possibility is that it may be released in response to stress. Nor do researchers know how this newly discovered connection between nerve cells and immune cells is related to diseases.

For years, researchers have theorized that there is a mind-body connect in which the nervous system alters the immune system's functions. But lacking solid evidence, some scientists remained skeptical.

"People have reported for a long time that diseases are worse or better depending on their psychological state, but I never believed it," Dr. Granstein said. "They say their eczema gets worse under stress or their psoriasis gets worse under stress." But he said it was hard to define what was meant by stress. "Everybody's under stress," he said.

Dr. Brian Nickoloff, a dermatologist at the University of Michigan, said hints that some skin diseases were exacerbated by psychological factors had been so persistent that he found them hard to dismiss. "There is no question that some diseases, even very common ones like psoriasis, are exacerbated by stress: financial losses, a death in the family," Dr. Nickoloff said. The new finding, he added, could "give you an anatomical and ultimately a molecular basis for this phenomenon."

Dr. Bergstressor agreed. Psoriasis is particularly intriguing, he said, in light of the new discovery, because Langerhans cells are thought to play a role in causing the scaly, itchy, flaking skin that characterizes the condition.

Task for Researchers

A second disease that should now be examined in light of the new findings is skin cancer, Dr. Bergstressor said. He said he and others had found evidence that Langerhans cells might be critically important in recognizing skin cells that have been transformed into tumor cells as well as in helping the immune system get rid of them.

So far, he said, the findings apply to basal cell carcinomas and squamous cell carcinomas, the skin cancers that are less deadly than malignant melanomas. But, he added, "no one has asked the question" about whether Langerhans cells play a role in melanomas.

With the new finding, Dr. Bergstressor said, "we have to ask whether nerve cell endings operate properly or improperly in those people who are genetically susceptible to skin cancer."

Nervous system link to immunity is found

Scientists have found the first evidence of an anatomical connection between the nervous system and the immune system. Nerve cell endings in the skin and white blood cells of the immune system are in intimate contact, and chemicals secreted by the nerves can shut down immune system cells nearby. Dermatologists said that the finding, by Dr. Richard D. Granstein of the Massachusetts General Hospital in Boston and Dr. George F. Murphy of the University of Pennsylvania in Philadelphia, could help explain anecdotal reports that diseases like psoriasis are exacerbated by stress. They say it might also help explain the mechanism of skin cancer. "This may be the connection between the nervous system and the immune system that we've all been looking for," said Dr. Craig Elmets, a dermatologist and cancer specialist at Case Western Reserve University. The finding was published recently in *Nature*, a British science journal.

The nervous system's control over the immune system

Subluxations caused neurological stress which can impair immune system response, and can be a factor in aging.

Tilley, R.M. Practical aspects of the treatment of chronic systemic infections. *J.A.O.A.*, 1946, May, 391-395. (Improper body mechanics can predispose to systemic infection, and spinal manipulation can help induce autonomic balance and increase white blood cell count.)

Gordienko, A.M., et al. Control of immunogenesis by the nervous system. *U.S. Dept. of Commerce*, 1958, Publication TT60-51069. (The nervous system controls the immune system response.)

Stem, E., et al. Neuroendocrine factors in experimental carcinogenesis. *Ann. N.Y. Acad. Sci.*, 1969, 164, 494-507. (The nervous system is related to stress, cancer, and death.)

Bjorksten, J. The crosslinkage theory of aging clinical implications. *Camp. Ther.*, 1976, 2, 65-74. (Stress affecting the nervous system can be a cause in aging.)

Subluxations and mental health

Certain studies have revealed chiropractic manipulation as effective in the treatment of mental disorders.

Sachar, E.J. Hormonal changes in stress and mental illness. *Hosp. Pract.*, 1975, 10, 49-55. (Neuro-hormones are implicated in mental disease.)

Mentzer, H.Y. Skeletal muscle abnormalities in patients with affective disorders. *J. Psychiatric Res.*, 1973, 19 43-57. (A correlation between neuromyopathies and psychological disorders is discussed.)

Quigley, W.H. Physiological psychology of chiropractic in mental disorders. *Mental Health and Chiropractic: A Multidisciplinary Approach*, Schwartz, H.W. (ed.). Chap. 10, Sessions Pub., N.Y., 1973 (Out of 72 cases studied, 70% of schizophrenics and 33% of brain syndrome patients were successfully treated by chiropractic manipulation.)

BOOSTING YOUR IMMUNITY THROUGH CHIROPRACTIC

In 1975, Ronald Pero, Ph.D., chief of cancer prevention research at New York's Preventive Medicine Institute and professor of medicine in Environmental Health at New York University, began developing scientifically valid ways to estimate individual susceptibility to various chronic diseases. Pero and his colleagues found strong evidence that susceptibility to cancer could be gauged by the activities of various enzymes involved in metabolic and genetic changes due to exposure to carcinogenic or "mutagenic" chemicals. An individual's immune system responsiveness, or "immune competence," also was directly linked to certain DNA-repairing enzymes, which provided an objective way to assess disease susceptibility. Lack of those enzymes, Pero said, "definitely limits not only your lifespan, but also your ability to resist serious disease consequences."

*credits

Pero was also fascinated by various hormones' synergistic relationship with other cancer-inducing agents to promote the disease. For example, thyroid hormones affect the early phases of radiation- and chemically-induced cancers. If the thyroid produces too much of either thyroxine or thyroid-stimulating hormone, cancer risk greatly increases. And since the nervous system regulates hormonal balances, it too can influence susceptibility to cancer. Along these lines, various kinds of spinal cord injury are accompanied by a high risk of developing cancer, particularly lymphomas and lymphatic leukemias. This connection led Pero to consider chiropractic as a potential alternative for reducing the risk of immune breakdown and disease.

In 1986 Pero collaborated with Joseph Flesia, D.C., chairman of the board of directors for the Chiropractic Basic Science Research Foundation, Inc. With a hefty grant from CBSRF, they began a research project at the University of Lund in Lund, Sweden. Using Pero's tests to gauge resistance to hazardous environmental chemicals, they hypothesized that people with cancer would have a suppressed immune response to such a toxic burden, while healthy people and people receiving chiropractic care should have a relatively enhanced response.

Measuring 107 individuals who had received long-term chiropractic care, Pero's team turned up some surprising findings. All chiropractic patients were "genetically normal"—that is, they had no obvious genetic reasons for increased resistance or susceptibility to disease. Any difference, therefore, had to be accounted for by environmental or therapeutic factors. The chiropractic patients also had 200 percent greater immune-competence than people who had not received chiropractic, and 400 percent greater immune-competence than people with cancer or other serious diseases. Surprisingly, despite a wide range of ages in this study, the immune-competence did not show any decline with age—it was uniform for the entire group.

Pero concluded that "chiropractic may optimize whatever genetic abilities you have" so that you can fully resist serious disease. "I'm very excited to see that without chemical intervention...this particular group of patients under chiropractic care did show a very improved response," he told CBSRF. "These changes occur from chiropractic treatment."

One shortcoming of this study, however, was its failure to distinguish the effects of dietary practice, which were also part of the treatment. When questioned on this point, Pero conceded that this would have to be answered in the next phase of the study. But he was unaware of any research showing that such differences could be accounted for by nutritional changes alone. Pero, who has published over 160 papers in peer review journals, firmly believes that chiropractic care was the critical factor in this study. —M.N.M.

DID YOU KNOW?

"EVERY FUNCTION OF THE HUMAN
BODY IS UNDER CONTROL OF THE
NERVOUS SYSTEM."

- Grays Anatomy, 29th edition, p.4

New Survey Rates Chiropractors

Exactly how effective is chiropractic care when measured against traditional medical treatment? According to *Prevention*, which claims to be America's leading health magazine, "... clearly, chiropractors are doing something right."

Prevention has been widely criticized in the past for ignoring or trivializing alternative methods of health care, and for promoting the "pill

for every ill" approach to medical problems. The October 1989 issue of the magazine contains the results of an exclusive survey on chiropractic care. *Prevention* commissioned the survey in an attempt to determine if people who go to chiropractors find the relief they are looking for. Based on the answers from people who had seen a chiropractor at least once, the survey proved to be an impressive show of support for the profession: three out of four people polled said that chiropractors were successful in correcting their health problems. On the whole, chiropractic patients realized greater relief from pain, were happy with the number of visits required and found chiropractors friendlier and more supportive than medical doctors.

Although some patients were aware that chiropractic care was effective in correcting the causes of migraine headaches, neck pains, whiplash injuries, scoliosis, allergies and chronic fatigue, most still sought help for back problems. The *Prevention* survey was another step in documenting the positive results that can be achieved through chiropractic care. According to the magazine:

- seventy-six percent said they would go back to a chiropractor, the majority of which would do so "without a second thought";
- nearly sixty percent of those who noticed a difference felt they received more lifestyle counseling, more advice on exercising and more nutritional information from their chiropractor than from a medical doctor;
- three times more respondents said their chiropractors are friendlier and more concerned about their patients than medical doctors;
- three-quarters of respondents selected their chiropractor based on recommendations from friends, relatives or neighbors, while fourteen percent let their fingers do the walking through the telephone yellow pages or made their selections based on advertisements. Only five percent were referred by a medical doctor. ■