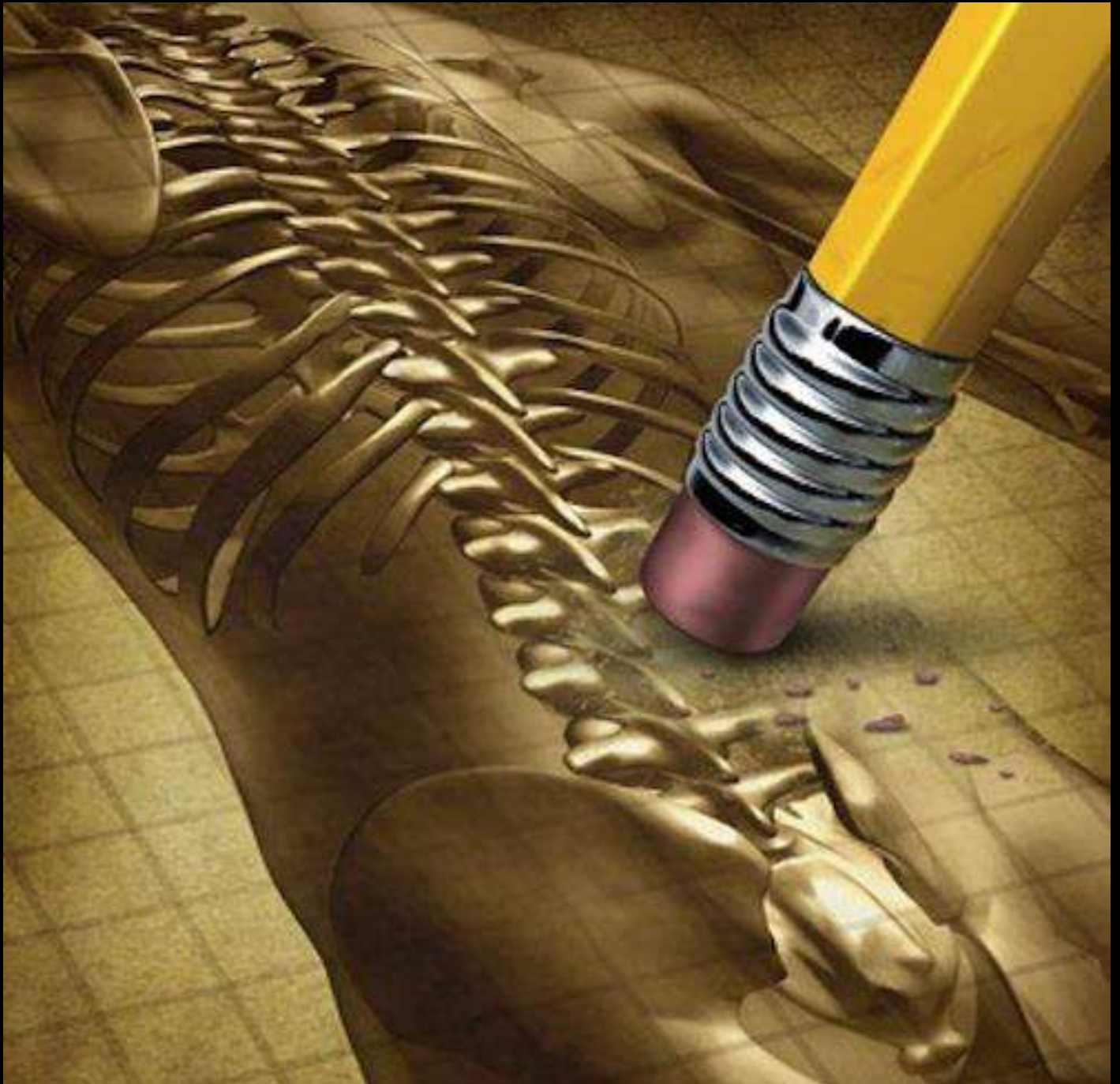


# OSTEOPOROSIS

PREVENTION THROUGH CHIROPRACTIC



By Keith Wassung

# THE OSTEOPOROSIS EPIDEMIC

Osteoporosis is a major public health threat for 28 million Americans, 80% of whom are women. Annual treatment costs for osteoporosis exceed \$15 billion. <sup>1</sup>



**One out of every two women and one in eight men over the age of 50 will have an osteoporosis-related fracture in their lifetime**

The impact of osteoporosis will become even more profound as the oldest of the baby boomers approach menopause, the stage of life when the bone loss that leads to osteoporosis begins to accelerate.

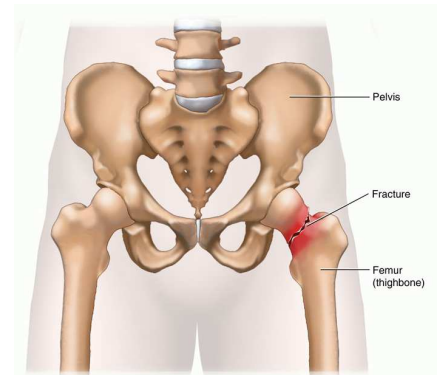
“At least 1.5 million women suffer fractures each year as a result of osteoporosis and, to make matters worse, the number is increasing. More than twice as many fractures occur now compared with 30 years ago and this cannot be explained by the aging of our population. Clearly, there is something wrong with our bone health, something the medical profession has not been able to do much about.” <sup>2</sup>

## Alan R. Garby, MD

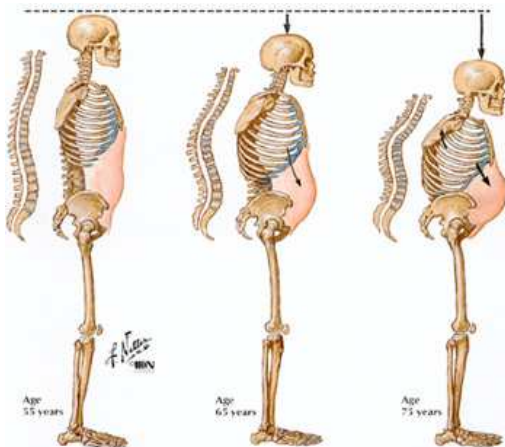
### Preventing and Reversing Osteoporosis

Osteoporosis is responsible for 1.5 million fractures annually, including 300,000 hip fractures, 700,000 vertebral fractures, 200,000 wrist fractures, and more than 300,000 fractures at other sites. <sup>3</sup>

**By the time they reach old age, one-third of all women and one-sixth of all men will have had a hip fracture. Even more disturbing, these hip fractures are fatal 12-20% of the time.** <sup>4</sup>



## NEW ENGLAND JOURNAL OF MEDICINE



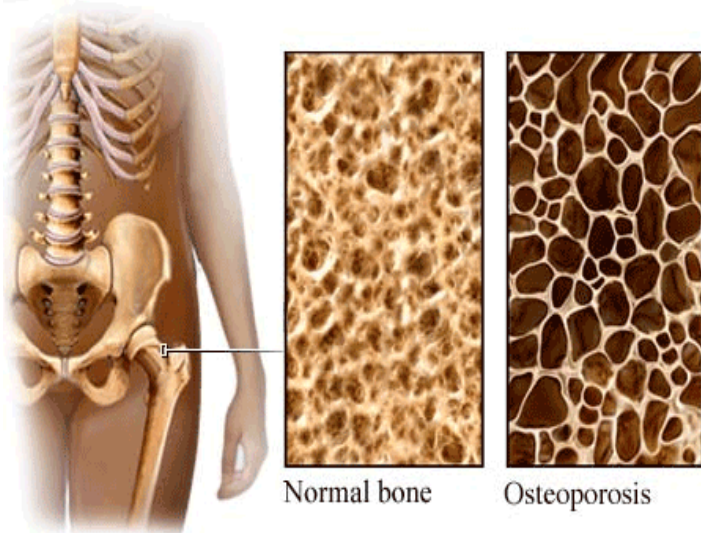
Osteoporosis is the cause of 90% of all fractures after the age of sixty-five. <sup>5</sup>

**The average American woman loses 1.5 inches of height each decade after menopause as a result of vertebral collapse.** <sup>6</sup>

HEALTHY BONES

# WHAT IS OSTEOPOROSIS

Osteoporosis is a condition that exists when the loss of bone over time has caused a dramatic weakening of the skeleton. Bones are more than just a framework over which the rest of the body is draped — they are living tissue, made from calcium, and are constantly changing.



**Our bones are at work — all day every day — for our entire lives. They perform tasks that are critical to the functioning of the rest of the body, such as the manufacture of blood and the storage of nutrients, and the bones themselves are constantly being taken apart and rebuilt in a process called remodeling**

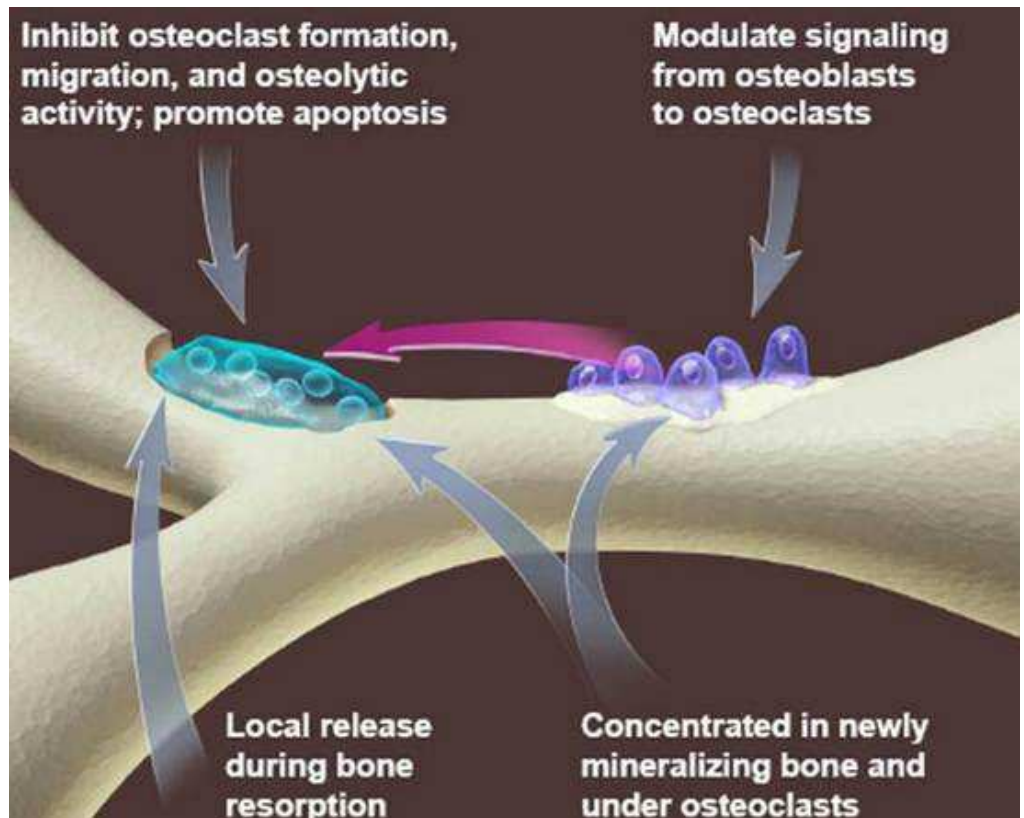
Remodeling is when old bone is broken down and replaced with new bone. It is kind of a preventive-maintenance program that is vital for the day-to-day strength of our skeletons. The entire bone remodeling process is under the control of the central nervous system

**Bone serves as a “warehouse” or storage site for both calcium and other minerals.**

When insufficient levels of these minerals exist in the bloodstream, the body takes action by withdrawing minerals from the warehouse.

**If for any reason the body is using these minerals without replacing them, the result is a steady decrease in bone density.**

This is called bone loss and results in reduction of bone mass.



Researchers have determined that when bone density falls below a certain point, the bones become extremely prone to fracture. This point of impending injury is called the fracture threshold. If the bone density falls below the fracture threshold, the condition is called osteoporosis.

# WHAT ARE THE CAUSES OF OSTEOPOROSIS

There are several factors that contribute to osteoporosis and the majority of osteoporotic cases are caused by multiple factors. There are essentially three areas that contribute to osteoporosis: abnormal biomechanical or structural stress, chemical stress, and neurological stress.

## ABNORMAL BIOMECHANICAL / STRUCTURAL STRESS

Every change in the function of a bone is followed by certain definite changes in internal architecture and external conformation in accordance with mathematical laws.

### WOLFF'S LAW

Wolff's Law simply means that bones will change their shape and structure in response to how much or how little mechanical stress is applied.

Mechanical stress is shown to be transduced into electrical energy which in turn is the signal for remodeling or reshaping of the bone to meet the demands of the stress.

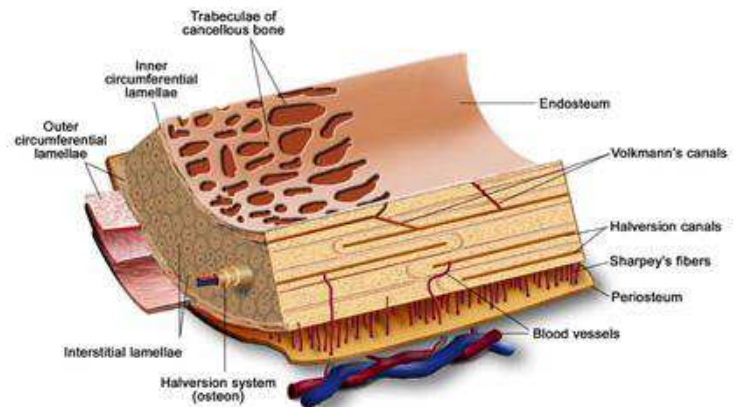
“Daily weight-bearing activity is essential to the health of the skeleton. Mechanical weight-bearing stress is the most important external factor affecting bone development and remodeling.”<sup>7</sup>

## CLINICAL SYMPOSIA

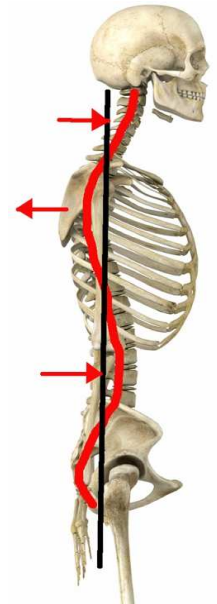


An interesting example of this process occurs in astronauts. Exposure to the microgravity environment of space causes astronauts to lose calcium from bones. This loss occurs because the absence of Earth's gravity disrupts the process of bone maintenance in its major function of supporting body weight.

Space biomedical researchers have found that exposure to the microgravity environment of space causes men and women of all ages to lose up to 1% of their bone mass per month due to disuse atrophy, a condition similar to osteoporosis



The human spine protects the nervous system and supports weight like a pillar. When viewed from the back, the spine is straight; when viewed from the side, it has a series of 60 degree curves, which are the strongest and most stable structures as observed in nature and engineering.



The optimal spinal structure provides resistance to gravity and other external stress. Any loss of this ideal structure results in loss of resistance to gravity, resulting in spinal degeneration and conditions such as osteoporosis.

## CHEMICAL STRESS

**CORTICOSTEROIDS:** Millions of people take corticosteroids for conditions such as asthma, arthritis, shoulder and back pain, lupus, and inflammatory diseases. Research clearly shows that their use is a contributing factor to osteoporosis.

### MD's UNDERESTIMATE THE RISKS OF OSTEOPOROSIS

One of the most dangerous side effects of corticosteroids is osteoporosis, yet a survey of the American College of Rheumatology shows that many physicians don't realize it. The drugs are prescribed for people with diseases like lupus or arthritis, but the side effects can sometimes be worse than the disease. Although males and pre-menopausal women are generally considered to be at low risk for developing osteoporosis, long-term steroid use greatly increases their risk over time.<sup>8</sup>

AMERICAN COLLEGE OF RHEUMATOLOGY



**ALCOHOL:** Alcohol interferes with the normal process of bone absorption of calcium and vitamin D and diminishes the body's ability to build and maintain bone mass.

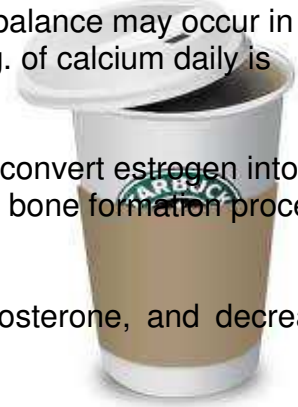
"The risk of spinal osteoporosis with vertebral fractures is significantly greater among people who drink alcoholic beverages than among those who do not."<sup>9</sup>

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**CAFFEINE:** Beverages such as coffee, tea and certain colas increase the loss of calcium in the urine. With less calcium in the body for use in bone formation, a negative calcium balance may occur in the blood — resulting in a decrease in bone density mass. An additional 100 mg. of calcium daily is required to compensate for every 3 cups of coffee consumed.<sup>10</sup>

**CIGARETTES:** In women: Cigarette smoke affects the liver by causing it to convert estrogen into a compound that is different from the normal estrogen used by the body in the bone formation process.<sup>11</sup>

In men: Cigarette smoking reduces the level of the male hormone, testosterone, and decreased testosterone is associated with accelerated loss of bone mass.<sup>12</sup>



## NERVOUS SYSTEM STRESS

The nervous system is the master control system of the body, controlling and coordinating every single bodily function.

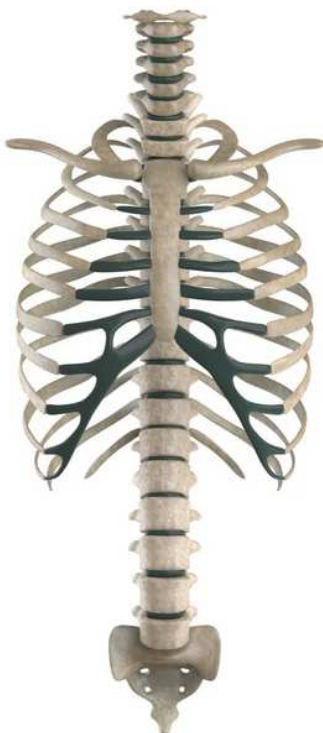
**An intact nervous system will lead to optimum functioning of the human body.**<sup>13</sup>

DORLAND'S MEDICAL TEXT

The nervous system controls the endocrine glands, which secrete hormones into the bloodstream to regulate body chemistry, including the process of bone remodeling.

**“The key to stopping osteoporosis lies in balanced body chemistry and a delicate balance of minerals in order to maintain a calcium homeostasis in the blood.”<sup>14</sup>**

DR. NANCY APPLETON



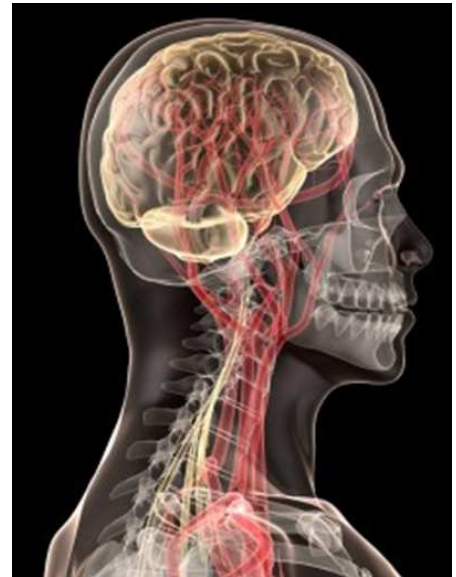
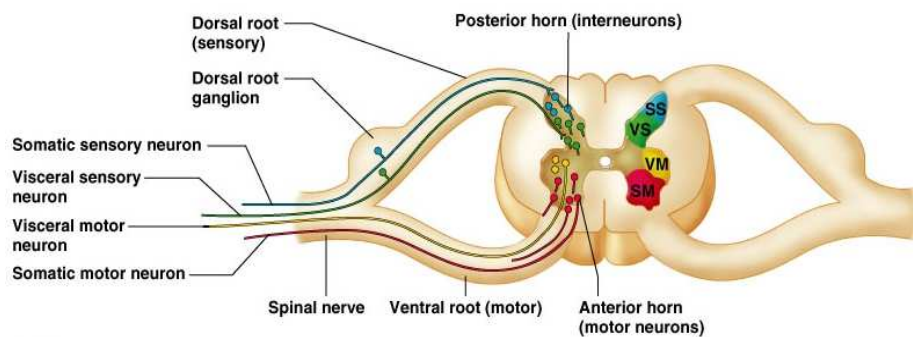
**Interference with bone remodeling — that is, the imbalance between bone formation and bone reabsorption — underlies nearly every disease that influences the skeleton. Most such disorders are caused by imbalances in hormones or other chemicals in the blood.**<sup>15</sup>

HUMAN ANATOMY AND PHYSIOLOGY

### WHAT CAN CAUSE IMPROPER GLAND ACTIVITY?

Genetic, chemical, and nutritional factors can all play a part in glandular dysfunction, but a well-documented, yet often overlooked, cause is spinal stress which can cause interference to the nervous system.

The nervous system is vulnerable to interference at its protecting, structure — the spinal column. The spinal vertebrae are, susceptible to certain stresses and forces which can jar them from their proper position. These minor misalignments of the spine are called “vertebral subluxations.”



The presence of vertebral subluxations can often be detected by examination of a person’s posture. There is ample research which shows the relationship between poor posture and numerous health conditions such as osteoporosis.

## POSTURE AND HEALTH

“The beginning of the disease process starts with postural distortion”

**DR. HANS SEYLE, Nobel Laureate**

“Up to 90% of the energy output of the brain is used in relating the physical body to its gravitational field.”

**DR. ROGER SPERRY**

**Posture affects and moderates every physiological function from breathing to hormonal production.**

**Abnormal posture is evident in patients with chronic and stress-related illnesses.**

**Homeostasis and nervous system function are ultimately connected with posture.**

**Despite the considerable evidence that posture affects physiology and function, the significant influence of posture on health is not addressed by most physicians. <sup>16</sup>**

AMERICAN JOURNAL OF PAIN MANAGEMENT

# CHIROPRACTIC

The science of Chiropractic is founded on the premise that an optimum spine and a proper nerve supply are essential in controlling and regulating bodily function.

Chiropractic care is an excellent approach to preventing osteoporosis and other health conditions. Chiropractors are experts in spinal structure and body mechanics. Chiropractic adjustments are aimed at maintaining sound structure of the body by correcting spinal and postural distortions and preventing functional and structural health problems.



Doctors of Chiropractic detect and correct vertebral subluxations by physically adjusting the spine. This restores the nervous system to an optimum level of function, which maximizes the body's inherent healing ability.

“Chiropractic focuses on the anatomy of the spinal cord and the nerves that branch out from it. Even minor deviations of the spine caused by poor posture can impair the working of a nerve and the body part it supplies.” <sup>17</sup>

**MIRIAM STODDARD, MD**

Chiropractic adjustments restore and maintain the proper structure of the spine. When the spinal column is brought into balance, normal function is restored, and structural degeneration is prevented

Osteoporosis is often called the “silent disease” because the weakening of the bones often occurs for years before any kind of symptoms may appear. Chiropractic is an excellent method of prevention and routine spinal exams are essential to a person's neurological and skeletal health.



“Osteoporosis can be more effectively prevented than treated. And when one considers the enormous cost and morbidity of osteoporosis-related complications, prevention is the only cost-effective approach.” <sup>18</sup>

**FREDERICK KAPLAN, MD**



# CONCLUSION

Chiropractic care is an excellent approach to preventing osteoporosis and other health conditions. Chiropractors are experts in spinal structure and body mechanics. Chiropractic adjustments are aimed at maintaining sound structure of the body by correcting spinal and postural distortions and preventing functional and structural health problems.

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# THE EDUCATION AND TRAINING OF A DOCTOR OF CHIROPRACTIC

Educational requirements for doctors of chiropractic are among the most stringent of any of the health care professions. The typical applicant at a chiropractic college has already acquired nearly four years of pre-medical undergraduate college education, including courses in biology, inorganic and organic chemistry, physics, psychology and related lab work. Once accepted into an accredited chiropractic college, the requirements become even more demanding — four to five academic years of professional study are the standard. Because of the hands-on nature of chiropractic, and the intricate adjusting techniques, a significant portion of time is spent in clinical training.

Doctors of chiropractic — who are licensed to practice in all 50 states, the District of Columbia, and in many nations around the world — undergo a rigorous education in the healing sciences, similar to that of medical doctors. In some areas, such as anatomy, physiology, rehabilitation, nutrition and public health, they receive more intensive education than their MD counterparts.

Like other primary health care doctors, chiropractic students spend a significant portion of their curriculum studying clinical subjects related to evaluating and caring for patients. Typically, as part of their professional training, they must complete a minimum of a one-year clinical-based program dealing with actual patient care. In total, the curriculum includes a minimum of 4,200 hours of classroom, laboratory and clinical experience. The course of study is approved by an accrediting agency which is fully recognized by the U.S. Department of Education. This has been the case for more than three decades.

Records from insurance and court cases have constantly shown that chiropractic is the safest portal of entry health care available to the public today. Although no healthcare procedures are 100% safe, chiropractic stands on its record of safety and effectiveness unmatched in healthcare.

The chiropractic adjustment is a safe, efficient procedure which is performed nearly one million times every working day in the United States.

There is a singular lack of actuarial data that would justify concluding that chiropractic care is in any way harmful or dangerous. Chiropractic care is non-invasive, therefore, the body's response to chiropractic care is far more predictable than its reactions to drug treatments or surgical procedures. Of the nearly one million adjustments given every day in this country, complications are exceedingly rare.

## COMPLIMENTS OF



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