SECTION

I

OSTEOPATHIC PHILOSOPHY AND HISTORY

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OSTEOPATHIC PHILOSOPHY

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KEY CONCEPTS

- Origin of osteopathic philosophy
- Classic osteopathic philosophy
- Historical development of osteopathic concepts
- Evolution of the osteopathic philosophy from A.T. Still to present
- Applications of osteopathic principles as guidelines to patient care

INTRODUCTION

The osteopathic philosophy, deceptively simple in its presentation, forms the basis for osteopathic medicine's distinctive approach to health care. The philosophy acts as a unifying set of ideas for the organization of scientific knowledge in relation to all phases of physical, mental,

emotional, and spiritual health, along with distinctive patient management principles. As such, its concepts form the foundation for practicing osteopathic medicine.

Viewpoints and attitudes arising from osteopathic principles give osteopathic practitioners an important template for clinical problem solving and patient education. In the 21st century, this viewpoint is particularly useful as practitioners from a wide variety of disciplines confront increasingly complex physical, psychosocial, and spiritual problems affecting individuals, families, and populations from a wide variety of cultures and back- grounds.

HOW IT ALL BEGAN

Andrew Taylor Still (1828–1917) was an American frontier doctor who was convinced that 19th century patient care was severely inadequate. This resulted in an intense desire on his part to improve surgery, obstetrics, and the general treatment of diseases, placing them on a more rational and scientific basis.

As his perspectives and clinical understanding evolved, Still created an innovative system of diagnosis and treatment with two major emphases. The first highlights treatment of physical and mental ailments (i.e., diseases) while emphasizing the normalization of body structures and functions. Its hallmark was a detailed knowledge of anatomy that became the basis for much of his diagnostic and clinical work, most notably palpatory diagnosis and manipulative treatment. The second emphasizes the importance of health and well being in its broadest sense, including mental, emotional, and spiritual health, and the avoidance of alcohol and drugs, and other negative health habits.

ORIGINS OF OSTEOPATHIC PHILOSOPHY

Historically, Still was not the first to call attention to inadequacies of the health care of his time. Hippocrates (c. 460– c. 377 B.C.E.), Galen (c. 130–c. 200), and Sydenham (1624–1689) are

others. Each, in his own way, criticized the inadequacies of existing medical practices, while focusing contemporary thinking on the patient's natural ability to heal.

In addition, Still was deeply influenced by a number of philosophers, scientists, and medical practitioners of his time. There is also evidence he was well versed in the religious philosophies and concepts of the Methodist, Spiritualist, and Universalist movements of the period (1).

Following the loss of three children to spinal meningitis in 1864, Still immersed himself in the study of the nature of health, illness, and disease (2). His goal was to discover definitive methods for curing and preventing all that ailed his patients. He implicitly believed there was "a God of truth," and that: "All His works, spiritual and material, are harmonious. His law of animal life is absolute. So wise a God had certainly placed the remedy within the material house in which the spirit of life dwells." Furthermore, he believed he could access these natural inherent remedies "… by adjusting the body in such a manner that the remedies may naturally associate themselves together, hear the cries, and relieve the afflicted" (2). In this quest, he combined contemporary philosophical concepts and principles with existing scientific theories. Always a pragmatist, Still accepted aspects of different philosophies, concepts, and practices that worked for him and his patients. He then integrated them with personal discoveries of his own from in-depth studies of anatomy, physics, chemistry, and biology (1). The result was the formulation of his new philosophy and its applications. He called it: "Osteopathy."

Still's moment of clarity came on June 22, 1874. He writes, "I was shot, not in the heart, but in the dome of reason" (2). "Like a burst of sunshine the whole truth dawned on my mind, that I was gradually approaching a science by study, research, and observation that would be a great benefit to the world" (2). He realized that all living things, especially humans, were created

by a perfect God. If humans were the embodiment of perfection, then they were fundamentally made to be healthy. There should be no defect in their structures and functions.

Since he believed that "the greatest study of man is man," he dissected numerous cadavers to test his hypothesis (2). He believed that if he could understand the construction (anatomy) of the human body, he would comprehend Nature's laws and unlock the keys to health. Still found no flaws in the concepts of the body's well-designed structure, proving to him that his hypothesis was correct.

A corollary to Still's revelation was that the physician does not cure diseases. In his view, it was the job of the physician to correct structural disturbances so the body works normally, just as a mechanic adjusts his machine. In *Research and Practice* he wrote, "The God of Nature is the fountain of skill and wisdom and the mechanical work done in all natural bodies is the result of absolute knowledge. Man cannot add anything to this perfect work nor improve the functioning of the normal body…. Man's power to cure is good as far as he has a knowledge of the right or normal position, and so far as he has the skill to adjust the bones, muscles and ligaments and give freedom to nerves, blood, secretions and excretions, and no farther. We credit God with wisdom and skill to perform perfect work on the house of life in which man lives. It is only justice that God should receive this credit and we are ready to adjust the parts and trust the results" (3).

While Still practiced the orthodox medicine of his day from 1853 to 1879, including the use of oral medications such as purgatives, diuretics, stimulants, sedatives, and analgesics, and externally applied salves and plasters, once he began using his new philosophical system he virtually ceased using drugs. This occurred after several years where he experimented with combinations of drugs and manipulative treatment. In addition, he compared his results with

those of patients who received no treatment at all (2). After several years' experience, he became convinced that his mechanical corrections consistently achieved the same or better results without using medications.

It was at that point that Still philosophically divorced himself from the orthodox practices of 19th century medicine (2). He writes, "Having been familiar myself for years with all their methods and having experimented with them I became disheartened and dropped them"(3). His unerring faith in the natural healing capabilities of the mechanically adjusted body formed the foundation for his new philosophy.

Unsure of what to call his new hands-on approach in the early years, Still at times referred to himself as a "magnetic healer" and "lightning bone-setter" (1,4). In the 1880s Still began publicly using the term "osteopathy" as the chosen name for his new profession (1,5). He writes: "Osteopathy is compounded of two words, osteon, meaning bone, (and) pathos, (or) pathine, to suffer. I reasoned that the bone, 'Osteon,' was the starting point from which I was to ascertain the cause of pathological conditions, and so I combined the 'Osteo' with the 'pathy' and had as a result, Osteopathy" (2).

As the name osteopathy implies, Still used the bony skeleton as his reference point for understanding clinical problems and their pathological processes. On the surface, he was most interested in anatomy. On the other hand, he taught that there is more to the skeleton than 206 bones attached together by ligaments and connective tissue. In his discourses, Still would describe the anatomy of the arterial supply to the femur, for example, trace it back to the heart and lungs, and relate it to all of the surrounding and interrelated nerves, soft tissues, and organs along the way. He would then demonstrate how the obstruction of arterial flow anywhere along

the pathway toward the femur would result in pathophysiologic changes in the bone, producing pain or dysfunction.

He writes of his treatment concepts: “Bones can be used as levers to relieve pressure on nerves, veins and arteries” (2). This can be understood in the context that vascular and neural structures pass between bones or through orifices (foramina) within a bone. These are places where they are most vulnerable to bony compression and disruption of their functions. In addition, fascia is a type of connective tissue that attaches to bones. Fascia also envelops all muscles, nerves, and vascular structures. When strained or twisted by overuse or trauma myofascial structures not only restrict bony mobility, but also compress neurovascular structures and disturb their functions. By using the bones as manual levers, bony or myofascial entrapments of nerves or vascular structures can be removed, thus restoring normal nervous and vascular functions.

The Philosophy Involves More Than Neuromusculoskeletal Diagnosis and Treatment

Osteopathy is not only a neuromusculoskeletal-oriented diagnostic and treatment system, it is also a comprehensive and scientifically based school of medicine that embraces a philosophy. In answer to the question, “What is osteopathy?” Still stated, “It is a scientific knowledge of anatomy and physiology in the hands of a person of intelligence and skill, who can apply that knowledge to the use of man when sick or wounded by strains, shocks, falls, or mechanical derangement or injury of any kind to the body” (6).

Furthermore, osteopathy had a greater calling. In what could be considered a mission statement, Still wrote, “The object of Osteopathy is to improve upon the present systems of

surgery, midwifery, and treatment of general diseases" (2). And, "To find health should be the object of the doctor. Anyone can find disease" (6).

CLASSIC OSTEOPATHIC PHILOSOPHY OF HEALTH

Health Is a Natural State of Harmony

Still believed health to be the natural state of the human being (Table 1.1). In his own words:

> Osteopathy is based on the perfection of Nature's work. When all parts of the human body are in line we have health. When they are not the effect is disease. When the parts are readjusted disease gives place to health. The work of the osteopath is to adjust the body from the abnormal to the normal, then the abnormal conditions give place to the normal and health is the result of the normal condition (3).

Mechanics and Health

Still's concept of a healthy person is insightful. It places his belief of the importance of structural and mechanical integrity within the perspective of a comprehensive view of a human being within society:

> When complete, he is a self-acting, individualized, separate personage, endowed with the power to move, and mind to direct in locomotion, with a care for comfort and a thought for his continued existence in the preparation and consumption of food to keep him in size and form to suit the duties he may have to perform (6).

Still believed that life exists as a unification of vital forces and matter. Since the body is controlled by the mind to exhibit purposeful motion in attaining the needs and goals of the organism, he stated that, "Osteopathy … is the law of mind, matter and motion" (2). Once Still accepted that motion is an inherent quality of life itself, it was a small step to inquiring into what is moving and how it moves. Through his in-depth study of anatomy, he could see the interdependent relationships among different tissues and their component parts. He observed that

each part developed as the body was moving, growing, and developing from embryo to fetus to newborn and throughout life. Thus, each tissue, organ, and structure is designed for motion. “As motion is the first and only evidence of life, by this thought we are conducted to the machinery through which life works to accomplish these results” (7).

If “life is matter in motion”(6), then what is the effect on a body part that is not moving? Still reasoned that a lack of motion is not conducive to life or health. “[The osteopath’s] duties as a philosopher admonish him that life and matter can be united, and that that union cannot continue with any hindrance to free and absolute motion” (6). Further, he boldly states that the practice of osteopathy “covers all phases of disease and it is the law that keeps life in motion” (2).

Normal Nerve Activity and Flow of Body Fluids

A machine cannot run without proper lubrication, fuel, and mechanisms to remove the by-products of combustion. In teaching his students, Still identified each component of the body’s intricate mechanisms as he knew them. In the process, he discussed various forces that he reasoned create motion and maintain life. He explained how lubricating and nourishing fluids flow through the arteries, veins, lymphatics, and nerves. He also noted that they turn over by-products of metabolism through the venous and lymphatic systems. “The human body is a machine run by the unseen force called life, and that it may be run harmoniously it is necessary that there be liberty of blood, nerves and arteries from their generating point to their destination” (2).

Another component of Still’s machine concept was the power source. He identified the brain as the dynamo, the electric battery that keeps the body moving and working:

> The brain furnishes nerve-action and forces to suit each class of work to be done by that set of nerves which is to construct forms and to keep blood constantly in motion in the arteries and from all parts back to the heart through the veins that it may be purified, renewed, and re-enter circulation (6).

CLASSIC OSTEOPATHIC PHILOSOPHY OF DISEASE

Disease Is an Effect of an Underlying Cause or Causes

From the time of Hippocrates through the first half of the 20th century, diseases were identified primarily through simple and complex descriptions of symptoms and signs. Many afflictions were without clear etiology. In spite of our current greater levels of knowledge and understanding, this is still true in many cases.

Still taught that disease is the effect of an abnormal anatomic state with subsequent physiologic breakdown and decreased host adaptability. Germs were first discovered in the 17th century with the invention of the microscope, but the germ theory of disease was not accepted until Pasteur provided convincing scientific evidence in the mid-19th century. However, experienced clinicians like Still, as well as an emerging group of laboratory scientists, saw germs as opportunists to decreased host function, not as primary in themselves. They speculated that infections resulted from an interaction between the degree of virulence and quantity of the infecting agent and the level of host immunity.

Still also realized that there were multifactorial components to disease processes (8,9). He believed that disease was a combination of influences arising from decreased host adaptability and adverse environmental conditions. He recognized that symptoms often were a manifestation of nerves irritated by pathophysiologic processes commonly created by an accumulation of fluids (congestion and inflammation). This diminished the patient's ability to adapt to the environment

(2). Additionally, Still was keenly aware of the deleterious effects of environmentally induced trauma, or abrupt changes in the atmosphere, causing physical or emotional "shock" or inertia, and therefore obstructing normal metabolic processes, body fluids, and nerve activity (3).

Mechanical Impediments to Flow of Body Fluids and Nerve Activity

Still's study of pathology found that in all forms of disease there is mechanical interruption of normal circulation of body fluids and nerve force to and from cells, tissues, and organs (3). "Sickness is an effect caused by the stoppage of some supply of fluid or quality of life" (2). He understood that it is the combination of free circulation of wholesome blood and motor, nutrient, and sensory nerve activity that creates tissues and organs, and facilitates their growth, maintenance, and repair. Through cadaver dissection studies he reasoned that strains, twists, or distortions in fascia, ligaments, or muscle fibers surrounding the small capillaries and nerve bundles could very well be the cause of ischemia and congestion by mechanical obstruction, interruption, or impediment to normal flow of vital fluids.

Still understood that the flow of body fluids was under the control of the nerves that innervated the blood vessel walls, adjusting the diameter of the vessels and thus controlling the amount and rate of blood flow to the tissues and organs. "While the vascular and nervous systems are dependent upon each other, it must be remembered that the bloodstream is under the control of the nervous system, not only indirectly through the heart, but directly through the vasoconstrictor and vasodilator nerve fibers, which regulate the caliber and rhythm of the blood vessels" (9). Still writes: "All diseases are mere effects, the cause being a partial or complete failure of the nerves to properly conduct the fluids of life" (2). Although he emphasized that "the rule of the artery is absolute, universal, and it must be unobstructed, or disease will result"(2), he also pointed out the importance of unimpeded flow of lymphatics: "[W]e must keep the

lymphatics normal all the time or see confused Nature in the form of disease. We strike at the source of life and death when we go to the lymphatics" (6). However, even if the blood and lymph are flowing normally, Still pointed out that, "the cerebro spinal fluid is the highest known element that is contained in the human body, and unless the brain furnishes this fluid in abundance a disabled condition of the body will remain. He who is able to reason will see that this great river of life must be tapped and the withering field irrigated at once, or the harvest of health be forever lost" (7).

Holistic Aspects–-Environmental, Social, Mental, and Behavioral Etiologies

For the most part, Still described the origins of disease and illness as a result of "anatomic disturbances followed by physiologic discord." However, at the same time, he acknowledged the potential detrimental influences of heredity, lifestyle, environmental conditions, contagious diseases, inactivity and other personal behavior choices, and psychological and social stress on health (6,8,9).

Still also recognized that substance abuse (e.g., alcohol and opium) as well as poor sanitation, personal hygiene and dietary indiscretion, lack of exercise or fitness all contributed to illness and disease. He lectured passionately against the social forces that promulgated these deleterious behaviors and social situations, including slavery and economic inequities. Indeed, he talked from personal experience as he and his family members suffered from these challenging social circumstances during the pioneer days of the 19th century Midwest.

CLASSIC OSTEOPATHIC PHILOSOPHY AND PATIENT CARE

The Body Provides Its Own Drug Store

Like many others, Still observed that some people are more susceptible to epidemic diseases than others. It was also recognized that host resistance to disease is more apparent in certain

individuals (10); so-called natural immunity, that is either inherited or acquired (11,12). Still believed that promoting free flow of arterial blood to an infected area would enable "Nature's own germicide" to eradicate the infectious agent (3). Still's philosophy places complete trust in the innate self-healing ability of the body. Removing all hindrances to health wasn't enough however, as it was incumbent upon the physician to ensure that the body's natural chemicals were able to work effectively in alleviating any pathophysiologic processes (2).

Use of Medications

> I was born and raised to respect and confide in the remedial power of drugs, but after many years of practice in close conformity to the dictations of the very best medical authors and in consultation with representatives of the various schools, I failed to get from drugs the results hoped for and I was face to face with the evidence that medication was not only untrustworthy but was dangerous (3).

Initially, Still conceived of osteopathy as "a system of healing that reaches both internal and external diseases by manual operation and without drugs" (2). Although he stated, "Osteopathy is a drugless science," he clarified this statement by explaining that he believed that drugs "should not be used as remedial agents," since the medications of his era only addressed symptoms or abnormal bodily responses to an unknown cause. In osteopathy, there is no place for injurious medications, whose risks outweigh their benefits, especially if safer and equally effective alternatives exist.

Specifically, Still was against the irrational use of drugs that (a) showed no benefit, (b) had proven to be harmful, and (c) had no proven relationship to the cause of disease processes. He accepted anesthetics, poison antidotes, and a few others that had proven beneficial. "Osteopathy has no use for drugs as remedies, but a great use for chemistry when dealing with poisons and antidotes" (13). Still supports his reasons by listing the life-threatening risks of using

drugs commonly employed in the late 19th century, namely, calomel, digitalis, aloe, morphine, chloral hydrate, veratrine, pulsatilla, and sedatives (2). Still persuasively argued that a detailed physical examination, with focus on the neuromusculoskeletal system, followed by a well-designed, manipulative treatment, often removes impediments to motion and function. Where he differed from others was his view that manipulative treatment should always be used before deciding that the body has failed in its own efforts.

Vaccinations

Jenner introduced the smallpox vaccine in the 17th century, with considerable success. Still acknowledged this by stating, "I believe the philosophy of fighting one infection with another infectious substance that could hold the body immune by long and continuous possession is good and was good" (6). Without disrespect to Jenner, he describes shortcomings of Jenner's methods, pointing out that there were many patients on whom the vaccine did not work or who became disabled or fatally ill. He states his belief that there is a less harmful method of vaccination and requests that Jenner's methods be improved.

His rejection of drugs and vaccinations showed up in the initial mission statement for the American School of Osteopathy (ASO) (3). However, in 1910, even while Still was president, the school changed its stance and accepted vaccinations and serums as part of osteopathic practices.

First and foremost, Still clearly believed that the osteopathic physician should strive to help the patient's body release its own medicine for a particular problem. He writes:

> The brain of man was God's drug store, and had in it all liquids, drugs, lubricating oils, opiates, acids, and antacids, and every quality of drugs that the wisdom of God thought necessary for human happiness and health (13).

The Mechanical Approach to Treating the Cause of Disease

Still reasoned that the cause of most diseases was mechanical, therefore, treatment must follow the laws of mechanics. As a consequence, he used manipulative approaches designed to release bony and soft tissue barriers to nervous and circulatory functions in order to improve chances for healing (Fig. 1.1). He claimed that mobilization of these structures improved the outcomes of his patients (3). However, manipulation procedures were not only applied to relieve musculoskeletal strains and injuries, but to treat internal organ diseases as well. For example, he found characteristic paraspinal muscle rigidity and other abnormal myofascial tensions in patients with infectious diseases. He noted improvement in the health of these patients as well when the musculoskeletal and myofascial impediments to normal physiologic processes were alleviated. In a majority of cases the patient's condition was seemingly cured, leading him to believe that the mechanical aspects of dysfunction or disease were vitally important (3). Still thus proposed, that in all diseases, mobilization of all the spinal joints not in their proper positional and functional relationships was necessary to ensure proper nerve activity and blood and lymph flow throughout the body. This included everything from the occiput to the coccyx, and indicated adjustment of the pelvis, clavicles, scapulae, costal cage, and diaphragm.

Comprehensive Treatment

While heavily committed to the use of palpatory diagnosis and manipulative treatment, Dr. Still continued many other aspects of patient care. He practiced surgery and midwifery (obstetrics), although little is documented about specific activities.

His patient education strategies highlighted moderation. He included advice for removing noxious or toxic substances from the diet and environment and behavioral adjustments such as

adding exercises and stopping smoking. He also admonished his patients for abusing alcohol, opium, and heroin.

Mental illness and stress-related problems were also important to Still (2,3). He wrote about the role the physician can take in providing emotional support and encouragement to patients with end-stage medical problems. He described the importance of giving hope to patients and, at the same time, providing them with a realistic approach to managing their clinical condition (3).

Individualized Treatment

Each person is treated as a unique individual, not as a disease entity. Still taught that the history and physical evaluation of each person would turn up unhealthy self-care behaviors or circumstances and parts of the body not moving normally; the combination interfering with the body's natural ability to heal itself. The treatment would need to be tailored specifically for each patient's particular needs.

HISTORICAL DEVELOPMENT OF OSTEOPATHIC CONCEPTS

Exactly how much influence previous or contemporary philosophies and practices had on Still is purely speculative, since he never discussed specific attachments for any particular philosopher or scientist. The writings of contemporary philosophers of science and biology, like Herbert Spencer (1820–1903) and Alfred Russel Wallace (1823–1913), resonated with those of Still (1). They promoted the theories of evolution and the interdependence of the environment and the organism in all biologic processes, including the origins of disease. They also promoted the concepts of the interdependence of structure and function, the importance of differentiating cause and effect, and emphasized the unity of the organism and interrelatedness of its parts. Throughout his life, however, Still maintained that his discoveries and thoughts were based on

personal observation, experimentation, applications of factual knowledge, and the power of reasoning. After nearly 50 years of developing his concepts, he stated:

> I have explored by reading and inquiry much that has been written on kindred subjects, hoping to get something on this great law written by the ancient philosophers, but I come back as empty as I started (2).

A number of scholars and educators have attempted to trace both the historical development and evolution of thoughts and practices that may have influenced Still's thinking (10–12, 14–18). In general, the authors compare Still's ideas with well-known discourses passed on principally through Western cultural ideas. In 1901, Littlejohn wrote, "Osteopathy did not invent a new anatomy or physiology or construct a new pathology. It has built upon the foundation of sciences already deeply seated in the philosophy of truth, chemistry, anatomy and physiology, a new etiology of diseases, gathering together, adding to and reinforcing natural methods of treating disease that have been accumulating since the art of healing began" (10). However, C.M.T. Hulett emphatically stated that "Osteopathy is a new system of thought, a new philosophy of life" (19). Whereas Littlejohn (14) finds the foundation of osteopathy in Greek and Roman medicine, G.D. Hulett (12) and Downing (15) trace the origins of various osteopathic concepts to the philosophy and practice of medicine found in other ancient writings, such as those of the Ptolemies, Brahmins, Chinese, and Hebrews. All agree on the further development of medicine throughout Europe as a precursor to American osteopathic medical practice. Northup compares osteopathy to the concepts of Hippocrates and the Cnidian schools (18). Korr contrasts the contributions of Asclepian and Hygeian roots (17). Whereas G.D. Hulett (12) and Korr (17) describe osteopathy as part of an *evolution* of the philosophy of medicine, Lane (11) and Northup (18) consider it a *reformation* of medical theory and practice.

Still's use of spinal manipulation had many precedents. Schiötz and Cyriax (20) and Lomax (21), among many, document the use of manual treatments for millennia. Hippocrates discussed "subluxations" or minor displacements of vertebra in his treatise "On the Articulations" and the manual adjustments used to correct them (22). In the 18th and 19th centuries many American and European practitioners acknowledged that there are relationships among displaced or "subluxed" vertebrae, and "irritated" spinal nerves in relation to both musculoskeletal and visceral disorders (23).

EVOLUTION OF OSTEOPATHIC PHILOSOPHY

In his unique way, Still integrated many of these concepts into his new system and molded it into a distinctive medical school curriculum that continues to evolve to this day. Still was adamant that he did not expect his students and colleagues to take what he advocated as dogma. He taught, "You must reason. I say reason, or you will finally fail in all enterprises. Form your own opinions, select all facts you can obtain. Compare, decide, then act. Use no man's opinion; accept his works only" (6). He urged his students to study, test, and improve upon his ideas.

An example of this evolution is a shift from Still's early, and virtually exclusive, emphasis on anatomy to a more inclusive stress on primary physiologic functions that strengthen his concepts. Initially, J. Martin Littlejohn (14), and later, Burns (24), Cole (25), Denslow (26), and Korr (27,28) promoted integrative neurophysiologic and neuroendocrine concepts.

Whereas Littlejohn interpreted Still's concepts in light of 19th century physiologic theories, Burns, Cole, Denslow, and Korr pioneered distinctive osteopathic approaches to physiologic investigations, making significant scientific contributions. Korr was particularly influential in interpreting osteopathic concepts in light of the rapidly developing science of

physiology in the 20th century. He has been referred to as “the second great osteopathic philosopher” (29).

Irvin Korr, Ph.D., received his physiology degree from Princeton University. Most of his teaching and research career was spent at the Kirksville College of Osteopathic Medicine in Missouri, with later appointments at both Michigan State University College of Osteopathic Medicine and The Texas College of Osteopathic Medicine (University of North Texas). A multitalented individual, Korr was an accomplished violinist, sometimes playing chamber music with Albert Einstein, who was in residence at the time of his postgraduate training. He published extensively with several colleagues, including J.S. Denslow, A.D. Krems, Martin J. Goldstein, Price E. Thomas, Harry M. Wright, and Gustavo S.L. Appeltauer. In 1947, Korr’s initial publication, with Denslow and Krems, focused on facilitation of neural impulses in motoneuron pools. Original research papers followed this on dermal autonomic activity, electrical skin resistance, and trophic function of nerves (28). As Korr gained insight into Still’s concepts, he lectured widely and published a number of important treatises tying osteopathic concepts together with proven physiologic models that emphasized the important roles played by the neuromusculoskeletal system. Whereas Still emphasized a focus on bones as the starting place from which he was to discern the cause of pathology, Korr expanded this concept to include the integrative activity of the spinal cord and its relationships with the musculoskeletal and the sympathetic nervous systems (28). Similar to Still, however, Korr often referred to the neuromusculoskeletal system as the “Primary Machinery of Life.” (See Korr’s “An Explication of Osteopathic Principles” later in this chapter).

The Definition of Osteopathy

Osteopathic philosophy has been defined various ways over the years. To get a better sense of the evolution of the osteopathic philosophy since its inception, it is instructive to follow how it has been defined over time. In his autobiography, Still gave a "technical" definition as follows:

> Osteopathy is that science which consists of … knowledge of the structure and functions of the human mechanism … by which nature under the scientific treatment peculiar to osteopathic practice … in harmonious accord with its own mechanical principles, … may recover from displacements, disorganizations, derangements, and consequent disease and regain its normal equilibrium of form and function in health and strength. (2)

Besides Still, several other American osteopathic scholars wrote treatises on osteopathic philosophy and principles (11,12, 15,16,25,30–36). Each author had his or her own definition and explanation of osteopathic philosophy. There have been several attempts over the past century to obtain consensus, or agreement, on a unifying definition and clearly stated tenets or principles that govern the practice of osteopathic medicine.

According to Littlejohn, the first consensus definition of osteopathy, among multiple faculty members, representing several osteopathic medical schools, was published in 1900 (10). In 1922, another consensus statement was developed and published by the A.T. Still Research Institute as a revised edition of a popular classic textbook by G.D. Hulett (12). By this time in medical thought, it was widely accepted that cellular level activity was a strong determinant of health or disease states. In an attempt to update osteopathic philosophy in light of emerging concepts in cellular biology, the authors applied Still's mechanistic viewpoint to cellular physiology. The following passage not only illustrates this approach, but demonstrates the desire of the profession to state osteopathic philosophy and principles in terms of concise tenets based on contemporary scientific knowledge:

The osteopathic view of the cell … is largely covered by the following statements:

- Normal structure is essential to normal function.
- Normal function is essential if normal structure is to be maintained.
- Normal environment is essential to normal function and structure, though some degree of adaptation is possible for a time, even under abnormal conditions.

In the human body, with its diversified functions, we may add also,

- The blood preserves and defends the cells of the body.
- The nervous system unifies the body in its activities.
- Disease symptoms are due either to failure of the organism to meet adverse circumstances efficiently, or to structural abnormalities.
- Rational methods of treatment are based upon an attempt to provide normal nutrition, innervation and drainage to all tissues of the body, and these depend chiefly upon the maintenance of normal structural relations (12).

The addition of medications in the practices of osteopathic physicians and surgeons over the years affected how the philosophy was stated. For example, in 1948, the faculty at the College of Osteopathic Physicians and Surgeons in Los Angeles added the following phrase to their basic osteopathic principles statement: "Like a machine, the body can function efficiently only when in proper adjustment and when its chemical needs are satisfied either by food or medical substances" (37). Further evolution occurred in 1953, when the faculty of the Kirksville College of Osteopathy and Surgery (KCOS) agreed on the following:

Osteopathy, or Osteopathic Medicine is a philosophy, a science and an art. Its philosophy embraces the concept of the unity of body structure and function in health and disease. Its science includes the chemical, physical and biological sciences related to the maintenance of health and the prevention, cure, and alleviation of disease. Its art is the application of the

philosophy and the science in the practice of osteopathic medicine and surgery in all its branches and specialties.

Health is based on the natural capacity of the human organism to resist and combat noxious influences in the environment and to compensate for their effects; to meet, with adequate reserve, the usual stresses of daily life and the occasional severe stresses imposed by extremes of environment and activity. Disease begins when this natural capacity is reduced, or when it is exceeded or overcome by noxious influences.

Osteopathic medicine recognizes that many factors impair this capacity and the natural tendency towards recovery, and that among the most important of these factors are the local disturbances or lesions of the musculoskeletal system. Osteopathic medicine is therefore concerned with liberating and developing all the resources that constitute the capacity for resistance and recovery, thus recognizing the validity of the ancient observation that the physician deals with a patient as well as a disease (38).

They then combined several concepts and restated them as four principles:

> The osteopathic concept emphasizes four general principles from which are derived an etiological concept, a philosophy and a therapeutic technic that are distinctive, but not the only features of osteopathic diagnosis and treatment.
>
> 1. The body is a unit.
> 2. The body possesses self-regulatory mechanisms.
> 3. Structure and function are reciprocally inter-related.
> 4. Rational therapy is based upon an understanding of body unity, self-regulatory mechanisms, and the inter-relationship of structure and function (38).

Over the ensuing 40 years, advances in the biologic sciences elucidated many mechanisms in support of the concept that optimal health calls for integration of countless

functions ranging from the molecular to the behavioral level. When this integration breaks down, dysfunction and disease commonly follow. Infectious and metabolic diseases, as well as diseases of aging and genetics are frequent examples. Interdisciplinary fields of study have been developed to investigate and delineate the complex interactions of numerous coordinated body functions in health and disease. Psychoneuroimmunology, for example, provides substantial evidence linking mind, body, and spiritual activities with a wide variety of biologic observations (39–42).

Clinical applications of the advances in molecular, cellular, neurologic, and behavioral sciences, combined with the decreased emphasis on mechanical factors within osteopathic medical practice, demanded a new consensus statement. Using the 1953 Kirksville faculty statement as a beginning, the associate editors of the first edition of this text (1997) stated:

> Health is the adaptive and optimal attainment of physical, mental, emotional, and spiritual well-being. It is based on our natural capacity to meet, with adequate reserves, the usual stresses of daily life and the occasional severe stresses imposed by extremes of environment and activity. It includes our ability to resist and combat noxious influences in our environment and to compensate for their effects. One's health at any given time depends on many factors including his or her polygenetic inheritance, environmental influences, and adaptive response to stressors (43).

The editors modified the four key principles of osteopathic philosophy as

1. The body is a unit; the person is a unit of body, mind, and spirit.
2. The body is capable of self-regulation, self-healing, and health maintenance.
3. Structure and function are reciprocally interrelated.
4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function (43).

Although Korr applies 20th century physiologic concepts in his explication of osteopathic principles, he maintains Still's basic premise: "It is the patient who gets well, and not the practitioner or the treatment that makes them well" (44).

In order to represent an increasingly diverse group of osteopathic physicians, the American Osteopathic Association (AOA) adopted a general statement regarding osteopathic medicine. Since 1991, the official AOA definition of *osteopathic medicine* has been reviewed periodically. The latest rendition is available by consulting the AOA website at *www.aoa-net.org* and clicking on the "yearbook" icon. It was last reviewed and accepted as policy by the AOA House of Delegates in 1998:

> Osteopathy (Osteopathic Medicine): A complete system of medical care with a philosophy that combines the needs of the patient with current practice of medicine, surgery and obstetrics; that emphasizes the interrelationship between structure and function; and that has an appreciation of the body's ability to heal itself.

The Educational Council on Osteopathic Principles

In the contemporary era, the evolution, growth, and teaching of osteopathic philosophy have been coordinated through the Educational Council on Osteopathic Principles (ECOP) of the American Association of Colleges of Osteopathic Medicine. This organization consists of the chairs of the departments of osteopathic manipulative medicine and osteopathic principles and practice from each osteopathic medical school. It is the "expert panel" in the osteopathic profession in regard to osteopathic manipulative medicine and osteopathic philosophy and principles. These osteopathic physicians are considered leading-edge thinkers in terms of osteopathic philosophy and principles.

One of ECOP's charges is to obtain consensus on the usage of terms within the profession. *The Glossary of Osteopathic Terminology* was first published in 1981 (45), and is

updated annually. The 2002 edition is included at the back of this text. The Glossary elaborates upon the AOA definition of osteopathic medi- cine:

> Osteopathic medicine is a philosophy of health care and a distinctive art, supported by expanding scientific knowledge; its philosophy embraces the concept of unity of the living organism's structure (anatomy) and function (physiology). Its art is the application of the philosophy in the practice of medicine and surgery in all its branches and specialties. Its science includes the behavioral, chemical, physical, spiritual and biological knowledge related to the establishment and maintenance of health as well as the prevention and alleviation of disease.

One of the products of ECOP's work is the development of a method of organizing osteopathic concepts using systems theory and modern concepts in physiology. The primary approach taken was to adopt a health-oriented perspective while also focusing on competent diagnosis and clinical management.

Five basic integrative and coordinated body functions and coping strategies are considered in a context of healthful adaptation to life and its circumstances:

1. Posture and motion, including fundamental structural and biomechanical reliability
2. Neurologic integration, including central, peripheral, autonomic, neuroendocrine, neurocirculatory, and somatic elements
3. Macro- and microrespiratory and circulatory factors
4. Metabolic processes of all types
5. Psychosocial, cultural, behavioral, and spiritual elements

Figure 1.2 depicts the musculoskeletal system as the core or hub of a five-spoked wheel. Careful observation and educated palpation help make the musculoskeletal system a natural entry point for both diagnosis and treatment. Importantly, the musculoskeletal system often reflects numerous signs relating to internal diseases.

OSTEOPATHIC PRINCIPLES AS PRACTICE GUIDELINES

The contributions of A.T. Still and the osteopathic medical profession affect many aspects of general patient care. First, irrespective of diagnoses or practitioner, the patient is of central importance. Second, a competent differential diagnosis is essential. This includes all aspects of the person (body, mind, and spirit) (Table 1.2). Third, clinical activities integrate realistic expectations with measurable outcomes. Finally, and ideally, patient-oriented educational efforts pragmatically address both personal and family-related concerns. The patient is ultimately responsible for long-term self-health care. Emphasis is on health restoration and disease prevention.

An ad hoc interdisciplinary committee of osteopathic educators, philosophers, and researchers recently proposed osteopathic principles for patient care:

The Patient Is the Focus for Health Care

All osteopathic physicians, irrespective of the specialty of the practitioner, are trained to focus on the individual patient. The relationship between clinician and patient is a partnership in which both parties are actively engaged. The osteopathic physician is an advocate for the patient, supporting his or her efforts to optimize the circumstances to maintain, improve, or restore health.

The Patient Has the Primary Responsibility for His or Her Health

While the physician is the professional charged with the responsibility to assist a patient in being well, the physician can no more impart health to another person than he or she can impart charm, wisdom, wit or any other desirable trait. Although the patient–physician relationship is a partnership, and the physician has significant obligations to the patient, ultimately the patient has primary responsibility for his or her health. The patient has inherent healing powers and must nurture these through diet and exercise, as well as adherence to appropriate advice in regard to stress, sleep, body weight, and avoidance of abuse.

An Effective Treatment Program for Patient Care

An effective treatment program for patient care is founded on the above tenets and incorporates evidenced-based guidelines, optimizes the patient's natural healing capacity, addresses the primary cause of disease, and emphasizes health maintenance and disease prevention. The emphasis on the musculoskeletal system as an integral part of patient care is one of the defining characteristics of osteopathic medicine. When applied as part of a coherent philosophy of the practice of medicine, these tenets represent a distinct and necessary approach to health care ….

Evidence-based guidelines should be used to encourage those treatments with proven efficacy and to discourage those that are not beneficial, or even harmful. Osteopathic medicine embraces the concept of evidence-based medicine as part of a valuable reformation of clinical practice.

Andrew Taylor Still told his students to "look for health; anyone can find disease." This precept provides a useful orientation in patient care. An emphasis on health rather than disease helps to promote optimism. It may facilitate efforts to engage the patient as an active participant in recovery from illness. It may also encourage the realization that no single treatment approach is successful for every patient. Rather, optimal approaches will use diet, exercise, medications, manipulative treatment, surgery, or other modalities according to the needs and wishes of the patient and the skill and aptitude of the practitioner (46).

In end-stage conditions, treatment may be only palliative, yet, as Korr points out,

[I]t is the physician's responsibility, while giving palliative and remedial attention to the patient's immediate problem, to support each patient's internal health care system, to remove impediments to its competence, and above all, to do it no harm. It is also the responsibility of physicians to instruct patients on how to do the same for themselves and to strive to motivate them to do so, especially by their own example (44).

Osteopathically oriented problem-solving and treatment plans help guide the application of osteopathic principles in medical, behavioral, and surgical care. In 1987, ECOP developed guidelines for use by osteopathic physicians in developing an osteopathic management plan (47). The extent to which palpatory diagnosis and manipulative treatment are specifically useful interventions for a wide variety of neuromusculoskeletal problems remains to be seen through research. However, since many clinical presentations commonly interfere with a patient's ability to meet the requirements of normal daily activities, including appropriate exercise, it stands to reason that improving the efficiency of the neuromusculoskeletal system would benefit each patient. "There is a somatic component in all clinical situations. The somatic component is addressed to the extent that it influences patient well-being. Conceptually, osteopathic manipulative treatment is designed to address both structural abnormalities and self-regulatory capabilities."

SUMMARY

Based on a health-oriented medical philosophy, osteopathic medicine uses a number of concepts to implement its principles. The neuromusculoskeletal system is used as a common point of reference, because it directly relates the individual to the physical environment on a day-to-day basis. The practitioner's primary roles are to:

- Address primary cause(s) of disease using available evidence-based practices
- Enhance the patient's healing capacity
- Individualize patient management plans with an emphasis on health restoration and disease prevention
- Use palpatory diagnosis and manipulative treatment to focus on and affect somatic signs of altered structural, mechanical, and physiologic states

Osteopathic philosophy is meant to guide osteopathic physicians in the best use of scientific knowledge to optimize health and diminish disease processes. Upon founding his profession and school, Still expressed the hope that "the osteopath will take up the subject and travel a few miles farther toward the fountain of this great source of knowledge and apply the results to the relief and comfort of the afflicted who come for counsel and advice" (6). It is the intention of the authors to organize current medical knowledge and place it on a foundation of osteopathic philosophy. We do this in order to provide the osteopathic medical student with a road map that will lead to the further study of the science of osteopathy and the practice of the highest quality patient-centered health care possible.

Editor's note: For 50 years, Irwin M. Korr, scientist, philosopher, and humanist, has led and inspired several generations of osteopathic physicians and educators. His final treatise on osteopathic philosophy was written for the first edition of this text.

AN EXPLICATION OF OSTEOPATHIC PRINCIPLES

IRVIN M. KORR

At this stage of your medical training, you have become familiar with osteopathic principles and can recite them in their usual brief, maxim form. The purpose of this section is to explore more fully the meaning, biological foundations, and clinical implications of the founding principles of osteopathic medicine.

Remember that these principles began to evolve centuries ago, even before the time of Hippocrates. However, their basis in animal and, more specifically, human biology did not begin to become evident through research until late in the 19th century. The origin of these principles, therefore, was largely empirical; that is, they were the product of thoughtful and widely shared observations of ill and injured people. For example, it could hardly escape notice, even in primitive societies, that people (and animals) recovered from illness and wounds healed without intervention and, therefore, some natural indwelling healing power must be at work.

Even at the time of the founding of the osteopathic profession in 1892, the available knowledge in the sciences of physiology, biochemistry, microbiology, immunology, and pathology was meager. Indeed, immunology, biochemistry, and various other neurosciences and biomedical sciences had yet to appear as distinct disciplines. Therefore, these principles could only be expressed as aphorisms, embellished perhaps with conjectures about their biological basis. It is to the credit and honor of the osteopathic profession that it contributed cogent elaboration of the principles, developed effective methods for their implementation, built a system of practice upon those principles, and disclosed much about their basis in biological mechanisms through research.

In view of the enormous amount of biomedical knowledge recorded throughout the 20th century, it is timely to examine the principles that guide osteopathic practice in the light of that knowledge and to explore their relevance to clinical practice and to current and future health problems. What follows is an effort in that direction, without detailed reference to individual research.

THE PERSON AS A WHOLE

The Body

The principle of the unity of the body, so central to osteopathic practice, states that every part of the body depends on other parts for maintenance of its optimal function and even of its integrity. This interdependence of body components is mediated by the communication systems of the body: exchange of substances via circulating blood and other body fluids and exchange of nerve impulses and neurotransmitters through the nervous system.

The circulatory and nervous systems also mediate the regulation and coordination of cellular, tissue, and organ functions and thus the maintenance of the integrity of the body as a whole. The organized and integrated collaboration of the body components is reflected in the concept of homeostasis, the maintenance of the relative constancy of the internal environment in which all the cells live and function.

In view of this interdependence and exchange of influences, it is inevitable that dysfunction or failure of a major body component will adversely affect the competence of other organs and tissues and, therefore, one's health.

The Person

Important and valid as is the concept of body unity, it is incomplete in that it is, by implication, limited to the physical realm. Physicians minister not to bodies but to individuals, each of whom is unique by virtue of his or her genetic endowment, personal history, and the variety of environments in which that history has been lived.

The person, obviously, is more than a body, for the person has a mind, also the product of heredity and biography. Separation of body and mind, whether conceptually or in practice, is an anachronistic remnant of such dualistic thinking as that of the 17th century philosopher-scientist,

René Descartes. It was his belief that body and mind are separate domains, one publicly visible and palpable, the other invisible, impalpable, and private. This dualistic concept is anachronistic because, while it is almost universally rejected as a concept, it is still acted out in much of clinical practice and in biomedical research.

Clinical and biomedical research (as well as everyday experience) has irrefutably shown that body and mind are so inseparable, so pervasive to each other, that they can be regarded–-and treated–-as a single entity. It is now widely recognized (whether or not it is demonstrated in practice) that what goes on (or goes wrong) in either body or mind has repercussions in the other. It is for reasons such as these that I prefer unity of the person to unity of the body, conveying totally integrated humanity and individuality.

The Person as Context

Phenomena assigned to mind (consciousness, thought, feelings, beliefs, attitudes, etc.) have their physiological and behavioral counterparts; conversely, bodily and behavioral changes have psychological concomitants, such as altered feelings and perceptions. It must be noted, however, that it is the person who is feeling, perceiving, and responding not the body or the mind. It is you who feels well, ill, happy, or sad, and not your body or mind. What goes on in body and mind is conditioned by who the person is and their entire history.

In short, the person is far more than the union of body and mind, in the same sense that water is more than the union of hydrogen and oxygen. Nothing that we know about either oxygen or hydrogen accounts for the three states of water (liquid, solid, and gas), their respective properties, the boiling and freezing points, viscosity, and so forth. Water incorporates yet transcends oxygen and hydrogen. To understand water we must study water and not only its

components. In the same way, at an enormously more complex level, the person comprises yet transcends body and mind.

Moreover, once hydrogen and oxygen are joined to form water, they become subject to the laws that govern water. In the same but infinitely more complex sense, it is you who makes up your mind, changes your mind, trains and enriches your mind, and puts it to work. It is you who determines from moment to moment whether and in what way you will express, through your body, what is in or on your mind.

Thus the person is the context, the environment, in which all the body parts live and function and in which the mind finds expression. Everything about the person–-genetics, history from conception to the present moment, nutrition, use and abuse of body and mind, parental and school conditioning, physical and sociocultural environments, and so on–-enters into determining the quality of physical and mental function. The better the quality of the environment provided by the person for the mental and bodily components, the better they will function. For example, someone who has a peptic ulcer is not ill because of the ulcer. The ulcer exists because of an unfavorable internal environment.

In conclusion, just as the proper study of mankind is man (Alexander Pope), so is the study of human health and illness also man. As will become evident, the principle of the unity of the person leads us naturally to the next principle.

THE PLACE OF THE MUSCULOSKELETAL SYSTEM IN HUMAN LIFE

The Means of Expression of Our Humanity and Individuality

Structure determines function, structure and function are reciprocally interrelated, and similar aphorisms have traditionally represented another osteopathic principle. That principle recognizes the special place of the musculoskeletal system among the body systems and its relation to the

health of the person. We examine now the basis for the osteopathic emphasis on the musculoskeletal system in total health care.

Human life is expressed in human behavior, in humans doing the things that humans do. And whatever humans do, they do with the musculoskeletal system. That system is the ultimate instrument for carrying out human action and behavior. It is the means through which we manifest our human qualities and our personal uniqueness–-personality, intellect, imagination, creativity, perceptions, love, compassion, values, and philosophies. The most noble ethical, moral, or religious principle has value only insofar as it can be overtly expressed through behavior.

That expression is made possible by the coordinated contractions and relaxations of striated muscles, most of them acting upon bones and joints. The musculoskeletal system is the means through which we communicate with each other, whether it be by written, spoken, or signed language, or by gesture or facial expression. Agriculture, industry, technology, literature, the arts and sciences–-our very civilization–-are the products of human action, interaction, communication, and behavior, that is, by the orchestrated contractions and relaxations of the body's musculature.

Relation to the Body Economy

The musculoskeletal system is the most massive system in the community of body systems. Its muscular components are collectively the largest consumer in the body economy. This is true not only because of their mass, but because of their high energy requirements. Furthermore, those requirements may vary widely from moment to moment according to what the person is doing, with what feelings and in what environments.

The high and varying metabolic requirements of the musculoskeletal system are met by the cardiovascular, respiratory, digestive, renal, and other visceral systems. Together, they supply the required fuels and nutrients, remove the products of metabolism, and control the composition and physical properties of the internal environment. In servicing the musculoskeletal system in this manner, these organ systems are at the same time servicing each other (and, of course, the nervous system).

The nervous system is also, to a great degree, occupied with the musculoskeletal system, that is, with behavior and motor control. Indeed, most of the fibers in the spinal nerves are those converging impulses to and from the muscles and other components of the musculoskeletal system. In addition, the nervous system, its autonomic components, and the circulatory system mediate communication and exchange of signals and substances between the soma and the viscera. In this way, visceral, metabolic, and endocrine activity is continually tuned to moment-to-moment requirements of the musculoskeletal system, that is, to what the person is doing from moment to moment.

Consequences of Visceral Dysfunction

Impairment or failure of some visceral function or of communication between the musculoskeletal system and the viscera is reflected in the musculoskeletal system. When the resulting dysfunction is severe and diffuse, motor activity and even maintenance of posture are difficult or impossible and automatically imposed.

The Musculoskeletal System as Source of Adverse Influences on Other Systems

In view of the rich afferent input of the musculoskeletal system into the central nervous system and its rich interchange of substances with other systems through the body fluids, it is inevitable

that structural and functional disturbances in the musculoskeletal system will have repercussions elsewhere in the body.

Such structural and functional disturbances may be of postural, traumatic, or behavioral origin (neglect, misuse, or abuse by the person). Further, it must be appreciated that the human framework is, compared with other (quadruped) mammals, uniquely unstable and vulnerable to compressive, torsional, and shearing forces, because of the vertical configuration, higher center of gravity, and the comparatively small, bipedal base.

The human musculoskeletal system, therefore, is the frequent source of aberrant afferent input to the central nervous system and its autonomic distribution, with at least potential consequences to visceral function. Which organs, blood vessels, etc. are at risk is determined by the site of the musculoskeletal dysfunction and the part(s) of the central nervous system, (e.g., spinal segments) into which it discharges its sensory impulses.

When a dysfunction or pathology has developed in a visceral organ, that disturbance is reflected in segmentally related somatic tissues. Viscus and soma become linked in a vicious circle of afferent and efferent impulses, which sustain and exacerbate the disturbance. Appropriate treatment of the somatic component reduces its input to the vicious circle and may even interrupt that circle with therapeutic effect.

Importance of the Personal Context

Whether or not visceral or vasomotor consequences of somatic dysfunction occur, and with what consequences to the person, depends on other factors in the person's life, such as the genetic, nutritional, psychological, behavioral, sociocultural, and environmental. As research has shown, however, the presence of somatic dysfunction and the accompanying reflex and neurotrophic effects exaggerate the impact of other detrimental factors on the person's health. Effective

treatment of the musculoskeletal dysfunction shields the patient by reducing the deleterious effects of the other factors. Such treatment, therefore, has preventive as well as therapeutic benefits.

Such treatment directed to the musculoskeletal system assumes even greater and often crucial significance when it is recognized that the other kinds of harmful factors, such as those enumerated above, are not readily subject to change and may even require social or governmental intervention. The musculoskeletal system, however, is readily accessible and responsive to osteopathic manipulative treatment. I view these considerations as the rationale for osteopathic manipulative treatment and its strategic role in total health care.

Finally, the osteopathic philosophy and the unity of the person concept enjoins the physician to treat the patient as a whole and not merely the affected parts. Hence, appropriate corrective attention should also be given to other significant risk factors that are subject to change by both patient and physician.

OUR PERSONAL HEALTH CARE SYSTEMS

The Natural Healing Power

Appreciation, even in ancient times, of our inherent recuperative, restorative, and rehabilitative powers is reflected in the Latin phrase, *vis medicatrix naturae* (nature's healing force). We recover from illnesses, fevers drop, blood clots and wounds heal, broken bones reunite, infections are overcome, skin eruptions clear up, and even cancers are known to occasionally undergo spontaneous remission. But miraculous as is the healing power (and appreciated as it was until we became more impressed by human-made miracles and breakthroughs), the other, more recently revealed components of the health care system with which each of us is endowed are no less marvelous.

The Component System That Defends against Threats from Without

This component includes, among others, immune mechanisms that defend us against the enormous variety and potency of foreign organisms that invade our bodies, wreaking damage and even bringing death. These same immune mechanisms guard us against those of our own cells that become foreign and malignant as the result of mutation. Included also are the mechanisms that defend against foreign and poisonous substances that we may take in with our food and drink or that enter through the skin and lungs, by disarming them, converting them to innocuous substances, and eliminating them from the body. They defend us (until overwhelmed) even against the toxic substances that we ourselves introduce into the atmosphere, soil, water, or more directly into our own bodies.

Mechanisms That Defend against Changes in the Internal Environment

We humans are exposed to, and adapt to, wide variations in physical and chemical properties of our environment (e.g., temperature, barometric pressure, oxygen, and carbon dioxide concentrations) and sustain ourselves with chemically diverse food and drink. But the cells of our body can function and survive only in the internal environment of interstitial fluids which maintain body functions within relatively narrow limits as regards variations in chemical composition, temperature, tissue, osmotic pressure, pH, etc.

This phenomenon, called homeostasis, is based on thousands of simultaneously dynamic equilibria occurring throughout the body. Examples include rates of energy consumption and replenishment by the cells. Homeostasis constancy and quick restoration of constancy must be accomplished regardless of the variations in the external environment, composition of food and drink, and the moment-to-moment activities of the person. It is accomplished by an enormously complex array of regulatory mechanisms that continually monitor and control respiratory,

circulatory, digestive, renal, metabolic, and countless other functions and processes. Maintenance of optimal environments for cellular function is essential to health. The homeostatic mechanisms may, therefore, be viewed as the health maintenance system of the body.

Commentary

These, then are the three major components of our indwelling health care system, each comprising numerous component systems. In the order in which humans became aware of them, they are (a) the healing (remedial, curative, palliative, recuperative, rehabilitative) component; (b) the component that defends against threats from the external environment; and (c) the homeostatic, health-maintaining component. These major component systems, of course, share subcomponents and mechanisms.

When the internal health care system is permitted to operate optimally, without impediment, its product is what we call health. Its natural tendency is always toward health and the recovery of health. Indeed, the personal health care system is the very source of health, upon which all externally applied measures depend for their beneficial effects. The internal health care system, in effect, makes its own diagnoses, issues its own prescriptions, draws upon its own vast pharmacy, and in most situations, administers each dose without side effects.

Health and healing, therefore, come from within. It is the patient who gets well, and not the practitioner or the treatment that makes them well.

THE THREE PRINCIPLES AS GUIDES TO MEDICAL PRACTICE

The Unity of the Person

In caring for the whole person, the well-grounded osteopathic physician goes beyond the presenting complaint, beyond relief of symptoms, beyond identification of the disease and treatment of the impaired organ, malfunction, or pathology, important as they are to total care.

The osteopathic physician also explores those factors in the person and the person's life that may have contributed to the illness and that, appropriately modified, compensated, or eliminated, would favor recovery, prevent recurrence, and improve health in general.

The physician then selects that factor or combination of factors that are readily subject to change and that would be of sufficient impact to shift the balance toward recovery and enhancement of health. The possible factors include such categories as the biological (e.g., genetic, nutritional), psychological, behavioral (use, neglect, or abuse of body and mind; interpersonal relationships; habits; etc.), sociocultural, occupational, and environmental. Some of these factors, especially some of the biological, are responsive to appropriate clinical intervention, some are responsive only to social or governmental action, and still others require changes by patients themselves. Osteopathic whole-person care, therefore, is a collaborative relationship between patient and physician.

The Place of the Musculoskeletal System in Human Biology and Behavior: The Strategic Role of Osteopathic Manipulative Treatment

It is obvious that some of the most deleterious factors are difficult or impossible for patient and physician to change or eliminate. These include (at least at present) genetic factors (although some inherited predispositions can be mitigated by lifestyle change). They include also such items as social convention, lifelong habits (e.g., dietary and behavioral), widely shared beliefs, prejudices, misconceptions and cultural doctrines, attitudes, and values. Others, such as the quality of the physical or socioeconomic environments, may require concerted community, national, and even international action.

Focus falls, therefore, upon those deleterious factors that are favorably modifiable by personal and professional action, and that, when appropriately modified or eliminated, mitigate

the health-impairing effects of the less changeable factors. Improvement of body mechanics by osteopathic manipulative treatment is a major consideration when dealing with these complex interactions.

OUR PERSONAL HEALTH CARE SYSTEMS

This principle has important implications for the respective responsibilities of patient and physician and for their relationship. Since each person is the owner and hence the guardian of his or her own personal health care system, the ultimate source of health and healing, the primary responsibility for one's health is each individual's. That responsibility is met by the way the person lives, thinks, behaves, nourishes himself or herself, uses body and mind, relates to others, and the other factor usually called lifestyle. Each person must be taught and enabled to assume that responsibility.

It is the physician's responsibility, while giving palliative and remedial attention to the patient's immediate problem, to support each patient's internal health care system, to remove impediments to its competence, and above all, to do it no harm. It is also the responsibility of physicians to instruct patients on how to do the same for themselves and to strive to motivate them to do so, especially by their own example.

The relationship between patient and osteopathic physician is therefore a collaborative one, a partnership, in maintaining and enhancing the competence of the patient's personal health care system. The maintenance and enhancement of health is the most effective and comprehensive form of preventive medicine, for health is the best defense against disease. As stated by A.T. Still, "To find health should be the object of the doctor. Anyone can find disease."

Relevance to the Current and Future Health of the Nation

The preventive strategy of health maintenance and health enhancement, intrinsic to the osteopathic philosophy, is urgently needed by our society today. One of the greatest burdens on the nation's health care system and on the national economy is in the care of victims of the chronic degenerative diseases, such as heart disease, cancer, stroke, and arthritis, which require long-term care.

The incidence of these diseases has increased and will continue to increase well into the next century as the average age of our population continues to increase. The widely accepted (but usually unspoken) assumption that guides current practice (and national policy) is that the chronic degenerative diseases are an inevitable aspect of the aging process; that is, that aging is itself pathological. It is now increasingly apparent, however, that the increase of their incidence with age is because the longer one lives, the greater the toll taken by minor, seemingly inconsequential, inconspicuous, treatable impairments and modifiable contributing factors in and around the person. They are, therefore, largely the natural culmination of less-than-favorable lifestyles, and, hence, they are largely preventable.

The great national tragedy is that, while the nation's health care system is so extensively and expensively absorbed in the care of millions of older adult victims of chronic disease (at per capita cost 3.5 times that of persons under the age of 65 years), tens of millions of younger people and children are living on and embarking on life paths that will culminate in the same diseases. The health care system simply must move upstream to move people from pathogenic to salutary paths. And the osteopathic profession can show the way.

The osteopathic profession has a historic opportunity to make an enormous contribution to the enhancement of the health of our nation. It can do this by giving leadership in addressing

this great tragedy by bringing its basic strategy of whole-person, health-oriented care to bear on the problem and demonstrating its effectiveness in practice.

Having reviewed and enlarged on the principles of osteopathic medicine, their meaning, biological foundations, and clinical implications, it seems appropriate to propose a definition of osteopathic medicine. The author offers the following: Osteopathic medicine is a system of medicine that is based on the continually deepening and expanding understanding of (a) human nature; (b) those components of human biology that are centrally relevant to health, namely the inherent regulatory, protective, regenerative, and recuperative biological mechanisms, whose combined effect is consistently in the direction of the maintenance, enhancement, and recovery of health; and (c) the factors in and around the person that both favorably and unfavorably affect those mechanisms.

The practice of osteopathic medicine is, essentially, the potentiation of the intrinsic health-maintaining and health-restoring resources of the individual. The methods and agents employed are those that are effective in enhancing the favorable factors and diminishing or eliminating the unfavorable factors affecting each individual. Osteopathic medical practice necessarily includes the application of palliative and remedial measures, but always on the condition that they do no harm to the patient's own health-maintaining and health-restoring resources. This stipulation governing the choice of methods and agents is based on the recognition that all therapeutic methods depend on the patient's own recuperative power for their effectiveness and are valueless without it and that health and the recovery of health come from within.

The art and science of osteopathic medicine are expressed in the identification and selection of those factors in each individual that are accessible and amenable to change and that, when changed, would most decisively potentate the person on health-supporting resources.

Osteopathic physicians give special emphasis to factors originating in the musculoskeletal system, for the following reasons:

1. The vertical human framework (a) is highly vulnerable to compressive (gravitational), torsional, and shearing forces, and (b) encases the entire central nervous system.
2. Since the massive, energy-demanding system has rich two-way communication with all other body systems, it is, because of its vulnerability, a common and frequent source of impediments to the functions of other systems.
3. These impediments exaggerate the physiological impact of other detrimental factors in the person's life, and, through the central nervous system, focus it on specific organs and tissues.
4. The musculoskeletal impediments (somatic dysfunctions) are readily accessible to the hands and responsive to the manipulative and other methods developed and refined by the osteopathic medical profession.

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FIGURE 1.1. Like many physicians before and after him, Dr. Still applied his new philosophy first to himself and then to his patients. In a famous early anecdote, he stopped a headache by suspending his neck across a low-lying rope swing. He later applied self-adjustments of spinal joint dysfunction to abate an attack of "flux" (bloody dysentery). After he was successful at curing 17 children of the same affliction by adjusting their spinal joint dysfunctions, he realized he was onto something worthwhile. (From Still AT. *Autobiography of Andrew T. Still.* Rev ed. Kirksville, MO: Published by the author; 1908. Distributed, Indianapolis: American Academy of Osteopathy.)

FIGURE 1.2. Osteopathic philosophy of health displayed as the coordinated activity of five basic body functions, integrated by the musculoskeletal system, adapting to environmental stressors. Evaluation and treatment of the musculoskeletal system is performed in light of its

ability to affect not only the five functions, but also how it ultimately affects the person's ability to adapt to internal and external stressors.

TABLE 1.1. CLASSIC OSTEOPATHIC PHILOSOPHY

A. T. Still's fundamental concepts of Osteopathy can be organized in terms of health, disease, and patient care.

Health

1. Health is a natural state of harmony.
2. The human body is a perfect machine created for health and activity.
3. A healthy state exists as long as there is normal flow of body fluids and nerve activity.

Disease

4. Disease is an effect of underlying, often multifactorial causes.
5. Illness is often caused by mechanical impediments to normal flow of body fluids and nerve activity.
6. Environmental, social, mental, and behavioral factors contribute to the etiology of disease and illness.

Patient Care

7. The human body provides all the chemicals necessary for the needs of its tissues and organs.
8. Removal of mechanical impediments allows optimal body fluid flow, nerve function, and restoration of health.
9. Environmental, cultural, social, mental, and behavioral factors need to be addressed as part of any management plan.
10. Any management plan should realistically meet the needs of the individual patient.

TABLE 1.2. OSTEOPATHIC PATIENT EDUCATION AND GUID-ANCE FOR SELF-CARE

While osteopathically oriented medical care emphasizes competent comprehensive patient management, it also places importance on restoration of well being appropriate for the patient's age and health potential. This includes addressing:

- Physical, mental, and spiritual components
- Personal safety, such as wearing seat belts
- Sufficient rest and relaxation
- Proper nutrition
- Regular aerobic, stretching, and strengthening exercises
- Maintaining rewarding social relationships
- Avoidance of tobacco, and other abused substances
- Eliminating or modifying abusive personal, interpersonal, family, and work-related behavior patterns
- Avoidance of environmental radiation and toxins