Health and Disease

To better understand care at our office, one must understand the intimate role of the nervous system in the injury and disease processes. The human brain communicates through a vast network of nerves connecting different systems of the body (like telephone wires connecting multiple phones). When not connected directly by a nerve, the brain still "talks" to a particular system by producing chemical "messengers" known as hormones, neuropeptides, and cytokines. (1-5). This constant communication to and from the brain is essential for the proper function and health of every system in the body (32).

The spinal cord represents the main thoroughfare by which information is transmitted between the brain and the body. It is housed and protected by the numerous bony segments that make up the spinal column or "backbone". Alterations in the normal relationship between spinal segments can irritate the adjacent nerves ("short circuit") by means of elaborate reflexes occurring between their joints and the spinal cord (6-11). Many patients think of this as pressure on the nerve, although that is not the most accurate description. This irritation causes the nerve to function improperly and can contribute to other nervous system disorders, poor healing of injuries, inflammation, headaches, numerous pain syndromes, decreased immune function, and stress to the gastrointestinal, endocrine, and cardiovascular systems among others (1-5,12-31).

No region demonstrates the magnitude of this relationship as the upper cervical (upper neck) spine. Because of its unique design, the upper cervical complex is the most mobile area of the entire spine. This renders the area particularly vulnerable to injury, making it the most common location for spinal problems to occur. Additionally, the amount of nerve information transmitted from the upper cervical spine into the spinal cord and brain is the greatest in the entire body. This increases the likelihood that a nerve will be irritated, thus decreasing the quality of communication between the brain and body. The proximity of the upper cervical spine to the skull also allows for several unique problems. First, this spinal region has the unique ability to produce the greatest single influence on brain activity (32-37). Second, virtually all nerve signals must pass through the upper cervical region in order to reach lower portions of the body. Consequently any and all functions of the body can be affected by the spine at this level (32). For these reasons, the upper cervical spine is critical to the proper nervous system function and so too, for maintaining good health.

Selected Brain Regions

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