

# Diseases of the Nervous System

## GENERAL TERMINOLOGY

**Neuralgia**—nerve pain.

**Neuritis**—inflammation of a nerve.

**Neuropathy**—weakness in a distal area of a peripheral nerve as a result of trauma or degeneration.

**Dementia**—overall deficiency in memory storage, time and space orientation, language processing, problem solving and planning, and execution of voluntary movements.

**Referred pain**—pain felt in a region of the body distant from the site of tissue damage or injury (e.g., angina pectoris).

## DISORDERS

**Hydrocephalus**—increased cerebrospinal fluid (CSF) surrounding the brain; can accompany many other disorders

**Cause:** oversecretion or impaired absorption of CSF; obstruction of CSF drainage pathways.

**Contraindications/indications:** typically not a contraindication; may be prudent to obtain approval of client's doctor before performing bodywork if in doubt.

**Meningitis**—inflammation of the meninges (coverings of the brain and spinal cord); 50 to 60% of cases are fatal if untreated, and 5 to 6% are fatal with treatment; infecting microorganisms invade the subarachnoid space and, together with cellular debris and fibrin, can block cerebrospinal fluid drainage, causing a rapid increase in intracranial pressure; leads to hearing and vision loss and brain damage; symptoms include fever, malaise, headache, lethargy, seizures, delirium, and coma.

**Cause:** bacterial or viral infection of the meninges spread from an upper respiratory tract infection, otitis media, or pneumonia.

**Contraindications/indications:** do not touch client because he or she is contagious; massage would be beneficial after medical treatment to promote general relaxation.

**Encephalitis**—inflammation of the brain; leads to nerve cell degeneration and ultimately brain damage; symptoms include fever, malaise, headache, lethargy, seizures, delirium, and coma.

**Cause:** almost always a viral infection transmitted through the bite of a mosquito, tick, or rabid animal or through respiratory channels.

**Contraindications/indications:** massage is not indicated.

**Seizures**—sudden, involuntary, and sometimes violent contractions of a group of skeletal muscles accompanied by loss of consciousness.

**Cause:** increased electrical activity of the brain from injury, fever, or tumor.

**Contraindications/indications:** massage is contraindicated during a seizure; deep tissue or painful massage is contraindicated for those who are prone to seizures; avoid perfumes or colognes (may trigger an episode); obtain approval of client's doctor before performing bodywork if in doubt.

The term *meningoencephalitis* is used if an infection involves both the meninges and the brain.

**Stroke (cardiovascular accident [CVA])**—brain damage resulting from ischemia to an area of the brain; the third leading cause of death in the United States after heart disease and cancer.

**Cause:** blood vessel rupture or occlusion.

**Contraindications/indications:** obtain advice and approval of client's doctor before performing bodywork; generally, massage should be gentle and rhythmic; avoid pressure on any artery.

**Poliomyelitis**—inflammation of the gray matter of the spinal cord; sometimes results in partial paralysis (1% of cases); can be fatal if respiratory muscles are involved; other symptoms include respiratory and intestinal tract infections; antibodies are very effective in fighting poliovirus, and the available oral vaccination should provide long-lasting immunity after one administration.

**Cause:** viral infection that destroys only certain motor nerve cells in the brain and spinal cord.

**Contraindications/indications:** in postacute phase, massage can increase circulation to affected areas, reduce associated anxiety, and promote muscle tonus.

**Amyotrophic lateral sclerosis (Lou Gehrig disease)**—a disease characterized by loss of motor neurons in the spinal cord and lower cranial nerves; results in skeletal muscle weakness and eventual death; signs and symptoms include progressive muscle weakness usually beginning with the muscles of the mouth, throat, and extremities and ending with impairment of respiratory muscles; often affects those from 50 to 75 years of age; leads to death within 2 to 6 years after diagnosis; no treatment currently available; incidence is about 2 per 100,000.

**Cause:** unknown.

**Contraindications/indications:** massage may soothe muscle spasm and improve motor function and psychological well-being; consult with client's doctor; involve a family member or friend in treatment.

**Multiple sclerosis**—a progressive disease involving demyelination of the neurons in the central nervous system (areas of demyelination are called plaques); faulty nerve conduction causes muscle weakness and uncoordinated muscle activity; affects people between 20 and 40 years of age; symptoms become worse and then resolve for some time, only to become worse again.

**Cause:** unknown.

**Contraindications/indications:** use caution because of impaired neurologic sensitivity; massage can reduce muscle spasm and associated anxiety.

**Huntington disease**—a progressive disease of the nervous system characterized by rapid, writhing contortions or rigidity of the muscles in the hands, arms, trunk, and face; leads to total incapacitation and death after about 15 years.

**Cause:** genetic defect affecting the frontal cortex of the brain.

**Contraindications/indications:** massage may soothe muscular spasm, improve motor function, and improve psychological well-being; consult with client's doctor; involve a family member or friend in treatment.

**Spina bifida**—failure of the vertebral arch (laminae and spinous processes) to close during early fetal development; condition remains asymptomatic unless the meninges or spinal cord protrudes.

**Cause:** genetic defect.

**Contraindications/indications:** avoid the immediate area; general massage would be beneficial to reduce stress, muscle contractions, and muscle spasms; energy work would also be appropriate.

**Thoracic outlet syndrome**—compression of the brachial plexus or subclavian artery as it passes through the anterior and middle scalene muscles and under the clavicle and pectoralis minor muscle on its way into the axillary region.

**Causes:** tight scalene muscles; presence of an additional (or cervical) rib.

**Contraindications/indications:** use caution when working near the brachial plexus in the neck or axilla region (massage of cervical muscles, shoulder girdle, and pectoralis minor muscle could relieve compression and stress on the brachial plexus, but avoid prolonged, deep pressure in these areas, particularly if symptoms worsen).

**Carpal tunnel syndrome (CTS)**—most common neuropathy involving the median nerve in the wrist; symptoms include pain, paresthesia (tingling or partial feeling), anesthesia (numbness), or diminished sensation in the

hand; common in people who work a lot with their hands (e.g., typists, artists, carpenters, massage therapists); leads to atrophy of the thumb muscles (often called ape hand).

**Causes:** compression on median nerve from tenosynovitis (inflammation of the synovial sheath around the tendons); inflammation of the flexor retinaculum.

**Contraindications/indications:** massage of the cervical muscles, pectoralis minor muscle, and muscles of the upper and lower arms are all indicated to relax the muscles involved and to improve circulation and nerve function.

**Epilepsy**—a condition characterized by long-term disturbances in the brain that lead to seizures; diagnosis depends on a history of at least two unexplained seizures.

**Cause:** increased electrical activity of the brain from unknown cause.

**Contraindications/indications:** massage is contraindicated during a seizure; deep tissue or painful massage is contraindicated for those who are prone to seizures; avoid perfumes or colognes (may trigger an episode); obtain approval of client's doctor before performing bodywork if in doubt.

**Parkinson disease**—a slow, degenerative disorder that affects the motor neurons in the substantia nigra in the midbrain; flow of motor programs greatly impaired; symptoms include tremors (leading to body rigidity), bradykinesia (slow movement), tiredness, weakness, poor balance, masklike expression of the face, slow speech, shuffling gait, and difficulty with fine motor movements (e.g., buttoning, handwriting).

**Cause:** loss of cells in the substantia nigra that produce dopamine (a neurotransmitter), resulting in decreased dopamine production.

**Contraindications/indications:** consult with client's doctor; massage may reduce muscle spasms and associated stress and anxiety.

**Alzheimer disease**—a progressive disease characterized by dementia and loss of memory (mainly short-term memory); the patient loses more long-term memory and suffers from personality fragmentation as the disease progresses.

**Cause:** genetic defect of chromosome 21, resulting in decreased production of acetylcholine (a neurotransmitter) in the brain.

**Contraindications/indications:** massage can soothe muscular spasm, improve motor function, and improve psychological well-being; consult with client's doctor; strongly consider having a family member or friend accompany the client during massage sessions.

**Sciatica**—neuritis of the sciatic nerve.

**Causes:** trauma (e.g., falling); tight surrounding muscles; bacterial infection.

**Contraindications/indications:** massage of the lumbar region and posterior thigh is usually very effective in reducing muscle spasm that may be compressing the nerve; if you see no improvement after several treatments, refer to doctor.

**Bell palsy**—neuritis of the facial nerve (cranial nerve VII), causing paralysis of one side of the face; paralysis can be temporary.

**Causes:** bacterial or viral infection; trauma to the nerve.

**Contraindications/indications:** massage can reduce anxiety related to this condition and reduce swelling of the nerve; use caution around the ear region.

**Trigeminal neuralgia (tic douloureux)**—degeneration or compression of the trigeminal nerve (cranial nerve V) with associated neuralgia or pain along the nerve distribution.

**Causes:** trauma; compression of nerve.

**Contraindications/indications:** avoid the entire facial region because massage could aggravate the condition; massage of nerve root area may reduce spasms and associated pain.

**Cerebral palsy**—collection of permanent, nonprogressive motor disabilities; lesions affect certain motor areas and sometimes other areas of the brain, resulting in impairment of motor movement (spastic paralysis) or mental impairment.

**Cause:** derived from perinatal brain injury (e.g., trauma, infection, toxemia).

**Contraindications/indications:** consult with client's doctor; massage may improve motor control and reduce related anxiety; avoid any deep tissue work.

**Headache**—pain felt in the head or upper neck.

**Tension headache**—most common form of headache; compression of blood vessels and nerves occurs because of sustained contraction of the muscles of the neck and scalp.

**Causes:** stress; overuse; sustained, awkward positioning of the neck.

**Contraindications/indications:** massage to posterior head, neck, and shoulders is very effective in relaxing tense muscles.

**Migraine (vascular headache)**—vasoconstriction followed by vasodilation of cerebral blood vessels; characterized by intense throbbing pain, flashing lights, blind spots, double vision, nausea, light sensitivity, and hallucinations.

**Causes:** stress; caffeine; oral contraceptives; cigarette smoke; various foods and smells.

**Contraindications/indications:** massage of the neck and shoulders may be very beneficial; use caution during an acute episode; consult with client's doctor if in doubt.

**Reflex sympathetic dystrophy (RSD)**—a chronic neurologic syndrome characterized by severe burning pain, pathologic changes in bone and skin, excessive sweating, tissue swelling, and extreme sensitivity to touch; visible signs include warm, shiny red skin near the site of injury that later becomes cool and bluish; pain increases and gets worse with time.

**Cause:** unknown; often a result of high impact injury.

**Contraindications/indications:** consult with client's doctor; light massage may be beneficial to decrease sensitivity, but avoid deep tissue work.