

ONE-HOUR

**HEMME APPROACH TO
MEDICAL
TERMINOLOGY**



**HEMME APPROACH TO
MEDICAL TERMINOLOGY**

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HEMME APPROACH PUBLICATIONS

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Practitioners are responsible for determining the appropriateness of any principle or technique in terms of personal competency or scope of practice. Written medical opinions are the best way to resolve any questions concerning conditions that indicate or contraindicate soft-tissue therapy, and written legal opinions are the best way to resolve any questions concerning the law.

PREFACE

The medical terminology in this glossary is taken from HEMME Approach courses such as the HEMME Approach to Soft Tissue Therapy course, the HEMME Approach to Low Back Pain course, and the HEMME Approach to Neck and Shoulder Pain course. Even though this glossary is only thirty pages compared to the average medical dictionary that is usually more than two thousand pages, all of the words in this glossary relate specifically to massage therapy. In particular, most of the words relate to anatomy, physiology, kinesiology, or pathology, and most of the concepts relate to laws or principles that apply to soft tissue therapy.

The main reason for learning medical terminology is to increase your ability to communicate with other health care professionals. By speaking a common language, a soft tissue therapist is able to communicate effectively with doctors, nurses, physical therapists, occupational therapists, or any other practitioner who is treating the same patient. Understanding medical terminology will also make it easier to read educational material, write reports, and communicate with educated patients.

With the large amount of medical information that is now available to the average person, it is not surprising that patients are using more medical terminology than they did two or three years ago. Not only are they using medical terminology, but they also expect anyone who is treating them to be equally familiar with the same terminology. This means that failure to understand medical terminology can lower your credibility in the eyes of a patient and cast serious doubt on your ability to treat the patient.

Most people will find it easier if they think of learning medical terminology as something you do because you want to, not something you do because you need to. Surprisingly enough, learning medical terminology can be fun. Of all the ways to learn medical terminology, using three-inch by five-inch index cards is one the easiest. The seven steps are:

1. Write the words being defined on the front of the card.
2. Write the definitions for the words on the back of the card.
3. Go through the entire deck of cards with the *words facing up*.
4. Each time you correctly define the words, remove the card.
5. After all cards are gone, stack the cards with the *definitions facing up*.
6. Try to identify the words that go with each definition.
7. Each time you correctly identify the words, remove the card.

HEMME APPROACH GLOSSARY

absolute zero Theoretically the lowest possible temperature because all molecular movement has stopped (-460°F or -273.2°C).

accommodation A property some nerves possess that allows them to lower their threshold of excitation as the strength of stimulus increases.

Achilles tendon reflex An ankle jerk caused by the involuntary contraction of the calf muscles when the Achilles tendon is sharply struck.

Acquired Immune Deficiency Syndrome An immune system disorder caused by the Human Immunodeficiency Virus (HIV). A person is diagnosed with AIDS after (1) becoming HIV-infected and (2) presenting signs or symptoms characteristic of AIDS such as Kaposi's sarcoma or Pneumocystis carinii pneumonia.

acrocyanosis A circulatory disorder in which the fingers and hands, and less commonly the toes and feet, are persistently cold and blue (cyanotic).

action Anatomical movement produced by the normal contraction of a muscle.

active exercise The force needed to move a body part is provided entirely by the voluntary contraction of muscles that normally control the body part.

active movement Movement of a body part caused entirely by a person's own effort without assistance or resistance from external forces.

active trigger points Hyperirritable spots or zones that actively produce pain and may cause autonomic responses.

active-assisted exercise The force needed to move a body part is provided primarily by the voluntary contraction of muscles that normally control the body part and secondarily by another means such as a therapist, a mechanical device, or one of the patient's other body parts.

acute Short duration, not chronic, rapid onset, severe.

acute inflammation Inflammation with rapid onset and clear termination characterized by pain, swelling, redness, heat, and loss of function.

adhesion A tissue structure holding parts together that are normally separated.

adipose Pertaining to fat.

afferent nerve A sensory nerve conveying impulses from the periphery to the central nervous system.

agonist Muscle or muscle group primarily responsible for performing some movement (prime mover).

AIDS Acronym for Acquired Immune Deficiency Syndrome.

algnesia Hypersensitivity to pain.

algesic Painful or causing pain.

algesiogenic Pain-producing, algogenic.

algogenic Pain-producing, algesiogenic.

algometer An instrument for measuring the degree of sensitivity to pain.

algometry The process of measuring pain.

all-or-none law The weakest stimulus capable of producing a response causes skeletal muscle *fibers* to contract maximally.

allodynia Pain or distress resulting from non-noxious stimulus.

anabolism The constructive phase of metabolism.

analgesia A decrease or absence of sensitivity to pain.

anesthesia Partial or complete loss of feeling, with or without loss of consciousness.

aneurysm A localized abnormal dilation of a blood vessel.

ankylosis Fixation of a joint.

anoxia Without oxygen.

antagonist Muscle or muscle group that opposes the movement of the agonist and produces the opposite movement.

antalgic A posture or gait that avoids pain.

antibody A protein substance developed in response to an antigen as part of the body's immune response process. Also called immune bodies, antibodies protect the body by neutralizing foreign invaders.

antidromic Propagation of an impulse along an axon in a direction opposite to the normal direction.

antigen A substance that triggers the formation of antibodies as part of the body's immune response process (**antibody generating**).

antipyretic An agent that reduces fever.

aponeurosis A flat fibrous sheet of connective tissue that attaches muscles to bone.

approximate To bring close together.

apraxia Loss of ability to perform purposeful movement in the absence of paralysis.

asthenia Loss of strength or energy.

asymptomatic No visible symptoms.

ataxia Loss of motor coordination.

athetosis Snakelike movements.

atonia Lack of tension or tone, flaccid.

atrophy Decrease in size of an organ or tissue.

auscultation Evaluating a patient by listening to sounds within the body.

axonotmesis The interruption of the axons of a nerve followed by complete degeneration distal to the injury without the nerve being severed.

bacteriostatic Inhibiting or retarding growth or reproduction of bacteria.

ballistics A study of motion and trajectory.

balneotherapy Partial or complete immersion of the body in mineral water as a form of therapy.

baroreceptor A sensory nerve ending that is sensitive to stretching that results from pressure.

barrier An obstruction that tends to restrict free movement.

bath immersion of the body or any of its parts in water—liquid or vapor—for therapeutic purposes.

Beevor's axiom The brain knows nothing of individual muscles, but thinks only in terms of movement.

biohazardous (in Florida, biomedical) Anything hazardous to man, other species, or the environment.

blanch To become pale, white, or lose color.

blepharitis Inflammation of the eyelids characterized by swelling, redness and dried mucus.

calorie The amount of heat energy needed to raise the temperature of one gram of water 1°C.

capsid A shell of protein covering the central core of a virus particle.

capsulitis Inflammation of a capsule.

CAT SCAN Computerized (axial) tomography scan.

catabolism Destructive phase of metabolism.

caudad In direction toward the feet, tail, or distal end, opposite cephalad.

causalgia Burning pain.

cavitation Formation of a cavity or microscopic bubbles.

CD4 The antigen on the surface of T-helper lymphocyte cells (CD4 cells), that HIV bind to before entering the cell.

CDC Abbreviation for Centers of Disease Control.

cephalad In direction toward the head, opposite caudad.

chemotaxis The movement of leukocytes to an area of inflammation in response to chemicals.

chronic Long duration, normally more than six months.

chronic inflammation A persistent inflammation appearing quickly or slowly with a vague termination and characterized more by pain, loss of function, and new connective tissue formation than by swelling, redness, or heat.

claudication Lameness resulting from inadequate circulation.

clinical trial A research protocol designed to evaluate the efficacy or safety of a drug or a therapeutic agent and to produce scientifically valid results.

clonus Uncontrolled spasmodic muscle jerking.

coagulation A clotting process that transforms blood from a liquid to a solid.

cocontraction Mutual contraction of antagonistic muscles for the purpose of stabilizing a body part.

cold compress A cloth dipped in cold or ice water, wrung out, and applied to the body as a form of cryotherapy.

cold mitten friction Cold water and friction applied to the body with a terry cloth towel or friction mitts as a form of stimulation.

collagen A white fibrous protein found in connective tissue.

compensatory Making up or compensating for a defect, deficiency, or loss.

concentric contraction A muscle shortens during contraction.

conduction Transfer of heat between two objects in contact with each other.

confidential testing The name of the person being tested is used, but only the client can receive the test results unless a records release form is signed by the client.

conjunctivitis Inflammation of the conjunctiva characterized by red eyes, a thick discharge, and sticky eyelids in the morning.

consensual A reflex action in which stimulation on one side of the body causes a circulatory, muscular, or glandular response on the opposite side of the body. A consensual reaction to light occurs when light directed at one eye causes the opposite pupil to contract (consensual light reflex).

contamination The introduction of disease germs or infectious material into a normally sterile environment.

contractility Having the ability to contract or shorten in response to stimulus.

contraction Increased tension caused by physiologic shortening of a muscle.

contracture A pathologic shortening of a muscle due to spasm or fibrosis that increases resistance to active or passive stretch.

contraindication A special symptom or circumstance that makes the use of a particular therapy inappropriate, normally because of risk.

contralateral Affecting opposite side or on opposite sides of the body.

convection Transfer of heat in liquids or gases by movement of heated currents.

convergence The moving of two or more forces toward the same point.

conversion 1. Transformation of electrical or mechanical energy into heat.
2. Changing emotions, such as hysteria, into physical manifestations.

cosine law The intensity of radiation is highest when rays from a source strike the patient at an angle of 90 degrees.

counterirritation Superficial irritation that relieves another irritation or deep pain.

cramp Strong and painful spasm.

creep Deformation of viscoelastic materials when exposed to a slow, constant, low-level force for long periods of time.

crepitus The sound of bone rubbing against bone.

cryoglobulinemia The presence of abnormal plasma protein (cryoglobulin) in the blood plasma.

cryotherapy Therapeutic application of cold.

cyanosis Bluish or gray discoloration of skin because of reduced hemoglobin in blood.

cyst A closed sac or pouch containing fluid, semisolid, or solid material.

decompression Remove pressure.

decontamination The process of rendering an object, person, or area free from contaminating substances such as infectious materials, poison gas, or radioactive materials.

decubitus ulcers A chronic ulcer caused by the pressure of body weight when patients are confined to bed or otherwise immobilized (bedsore).

demineralization A loss or decrease of mineral salts, especially from bone.

dental dam A thin sheet of latex rubber used in dentistry to isolate teeth from fluids in the mouth.

denudation Remove protective covering.

derivation The drawing of blood or body fluids away from congested parts of the body to other parts of the body.

diapedesis The passage of blood or blood cells through the intact walls of blood vessels.

diaphoresis Profuse sweating or perspiration.

diathermy Use of high-frequency currents to heat deep tissue.

digit A finger (including the thumb) or toe.

DIP Acronym for distal interphalangeal joint.

discography X-ray taken after injecting an absorbable contrast medium into an intervertebral disk.

disease A morbid or pathologic condition that deviates from normal function where the agent, signs, and symptoms are identifiable.

disinfectant A substance that prevents infection by killing bacteria and other infection-producing organisms.

disinhibition Removal or inhibition of an inhibition.

distal Situated away from the center of the body.

distract To separate.

distraction Extension of a limb to separate joint surfaces.

divergence The moving of two or more forces away from a common center.

DNA Abbreviation for deoxyribonucleic acid.

dysesthesia Unpleasant sensations produced by an ordinary stimulus.

dystrophy Progressive abnormal changes that result from defective nutrition of a tissue or organ.

eccentric contraction A muscle lengthens during contraction.

efferent nerve A motor nerve conveying impulses from the central nervous system to the periphery.

elastic Having the property of returning to the original shape after being stretched, compressed, or otherwise distorted.

elastin A yellow elastic fibrous mucoprotein found in connective tissue.

EMG Abbreviation for electromyogram, the graphic record of muscle contraction that results from electrical stimulation.

encephalitis Inflammation of the brain.

endemic A disease with low mortality that occurs continuously in a particular population.

endogenous Produced or developed from within the organism.

enthesitis Traumatic disease occurring at the insertion of muscles where repeated stress causes inflammation and possibly fibrosis or calcification.

entrapment syndrome Entrapment of a nerve by hard or soft tissue.

enzyme Complex proteins produced by living cells that are capable of inducing chemical changes in other substances without being changed themselves.

epidemic A disease that attacks many people at the same time in the same geographic region.

epidemiology A science that defines and explains the interrelationships between factors relating to the frequency and distribution of disease.

ergonomics Study of human factors relating to the design and operation of machines and the physical environment.

ergotropic Mechanisms of the nervous system that expend energy, opposite of trophotropic.

erythema Inflammatory redness of skin that results from dilatation and congestion of superficial capillaries.

etiology Scientific study involving the causes of disease.

exacerbation Aggravating symptoms or increasing the severity of a disease.

exostosis Bony growth arising from the surface of bone.

extensibility The ability to lengthen.

exteroceptor A sense organ receiving stimuli from outside the body.

extracellular Outside the cell.

extravasation Fluids escaping from vessels into surrounding tissue.

fascia A fibrous connective tissue membrane covering, supporting, and separating a muscle.

fasciculation Spontaneous contraction or twitch of a group of muscle fibers.

fasciitis Inflammation of any fascia.

FDA Abbreviation for Food and Drug Administration.

fibrinolytic Dissolution or splitting up of fibrin.

fibroblast A cell that produces connective tissue.

fibroma A fibrous, connective tissue tumor.

fibroplasia Development of fibrous tissue during wound healing.

fibroplastic Producing fibrous tissue.

fibromyalgia Chronic pain and stiffness in muscles or joints.

flaccid Soft, relaxed, flabby, or without muscular tone.

flail joint Excessive mobility of a joint, usually because of paralysis.

flush Sudden or transient redness of skin.

FMS Acronym for fibromyalgia syndrome.

fomentation A warm and moist cloth applied to the surface of the body.

force That which changes or tends to change a body's motion or shape.

gamma motor neuron An efferent nerve cell that innervates the ends of intrafusal muscle fibers.

ganglion Benign cystic tumors developing on a tendon or aponeurosis.

gangrene Necrosis (tissue death) due to a loss or decrease of blood supply or bacterial invasion.

genome Genetic material contained in a virus. In the retrovirus HIV, the genetic material is RNA rather than DNA.

goniometry The measurement of joint angles and range of motion.

GTO Acronym for Golgi tendon organ.

guarding Involuntary muscle contractions that limit range of motion to avoid pain.

handedness Preferential use of right or left hand when performing voluntary motor acts.

Head's law If painful stimulus is applied to areas of low sensibility in close central connection with areas of high sensibility, pain may be felt where sensibility is high.

heat of fusion The heat needed to change water from a solid at 32°F to a liquid at 32°F.

heat of vaporization The heat needed to change water from a liquid at 212°F to a gas (vapor) at 212°F.

heliotherapy Exposure to sunlight for therapeutic purposes.

hematoma A localized collection of blood in a tissue or organ.

HEMME Acronym for History, Evaluation, Modalities, Manipulation, and Exercise.

HEMME's 1st law Most conditions treatable by soft-tissue therapy are characterized by pain, limited range of motion, or weakness.

HEMME's 2nd law Most conditions treatable by soft-tissue therapy can be identified and treated by using five basic steps: *History, Evaluation, Modalities, Manipulation, and Exercise*.

HEMME's 3rd law Always be ready, willing, and able to disregard any law, principle, axiom, or belief that proves to be incorrect.

hemophilia A hereditary blood disease characterized by abnormal bleeding due to defective coagulation.

herniated disk Protrusion of the nucleus pulposus through the outer ring (annulus fibrosus) of an intervertebral disk. Also called a *ruptured disk* or *slipped disk*.

hertz (Hz) A unit for measuring frequency equal to 1 cycle per second. One million hertz (Hz) equal one megahertz (MHz).

Hilton's law The nerve trunk that supplies a joint also supplies the muscles that move the joint and the skin that covers the insertions of the muscles that move the joint.

HIV Abbreviation for human immunodeficiency virus.

homeostasis A state of equilibrium in the body controlled by positive and negative feedback.

Hooke's law The stress applied to stretch or compress a body is proportional to the strain or changes in length thus produced, provided that the elastic limit of the body has not been exceeded.

humidity Moisture, dampness, or water vapor in the atmosphere.

hydrolytic Causes hydrolysis: chemical decomposition of a substance into simpler compounds by splitting bonds and adding the elements of water.

hydrostatic pressure The pressure exerted by fluids.

hydrotherapy The use of water in any of its three forms—liquid, solid, or vapor—for therapeutic purposes.

hypalgesia Decreased sensitivity to pain.

hyper- Prefix meaning more than, excessive, above.

hyperalgesia Increased sensitivity to pain, opposite of hypalgesia.

hyperalgia Increased sensitivity to pain, opposite of hypalgesia.

hyperemia Increased quantity of blood in a body part shown by redness of skin.

hyperesthesia Increased sensitivity to touch, pain, or other sensory stimulus.

hyperhidrosis Excessive or profuse sweating.

hyperirritable Increased response to stimulus.

hyperkeratosis Overgrowth of the horny layer of the epidermis.

hypermobility Excessive mobility of any joint.

hypersensitivity Abnormal sensitivity to stimulation by a foreign agent with exaggerated responses.

hyperthermia Abnormally high fever induced therapeutically.

hypertonia Excessive tone of skeletal muscles that increases resistance to passive stretch.

hypertonic A state of greater than normal tension in muscles.

hypertrophic scar An elevated scar resembling a keloid scar but not spreading in surrounding tissues.

hypertrophy Increase in size of an organ or tissue.

hypo- A prefix meaning less than, deficient, beneath.

hypoesthesia Decreased sensitivity to touch or pain.

hypokinetic Decreased motor function.

hypomobility Decreased mobility of a joint or range of motion.

hypothermia A body temperature significantly below 98.6°F because of prolonged exposure to cold.

hypotonia Diminished tone in skeletal muscles and decreased resistance to passive stretch.

hypotonic A state of less-than-normal tension in muscles.

hypoxia Inadequate or decreased concentration of oxygen.

hysteresis Energy loss in viscoelastic materials subjected to stress or cycles of loading and unloading.

hysteria A neurotic condition presenting somatic symptoms in the absence of organic disease.

iatrogenic An adverse state or condition induced by treatment.

idiopathic A disease of spontaneous origin with unknown cause.

immune Highly resistant to infectious disease because of antibodies.

impulse 1. Sudden pushing or rapid loading. 2. Suddenly applied force or rapid loading because of changes in momentum that occur over a short time interval. 3. A change in momentum calculated by multiplying magnitude of force by time of application.

incontinent Inability to prevent discharge of urine or feces.

incubation The time period between exposure to infection and the appearance of the first signs or symptoms.

induration Hardening of soft tissue caused by extravasation of fluids.

infection Multiplication of pathogenic organisms in the body.

inflammation A localized protective response to tissue damage or irritation that is characterized by pain, swelling, redness, heat, and loss of function.

innocuous Harmless or benign.

inoculation The point at which infectious materials, HIV, or other microorganisms are introduced into the blood stream.

insidious A disease that appears slowly and progresses with few or no symptoms indicating the illness.

inspection Examination by the eye.

inverse-square law The intensity of radiation varies inversely with the square of the distance from the source.

ipsilateral Affecting same side or on same side of the body.

ischemia Insufficient or decreased blood supply to a tissue or organ due to constriction, obstruction, or pressure (ischemic pressure).

isolytic contraction A muscle lengthens involuntarily during contraction.

isometric contraction Contraction of a muscle with no change in length.

isotonic contraction Contraction of a muscle with a decrease in length.

itis- A suffix that is often used to indicate inflammation.

joint mice Bits of bone or cartilage that are present in joint space.

jump sign A general, involuntary response caused by withdrawal from pain when pressure is applied to a trigger point.

keloid scar A raised, red, smooth scar that is often painful.

kinetics A study of forces acting on a system.

KS Abbreviation for Kaposi's sarcoma.

kyphosis Backward convexity, prominence, or hump on the spine caused by flexion.

latent State of being concealed, hidden, or inactive.

latent trigger points Trigger points that lie dormant except when palpated.

law of reciprocity The intensity and duration of radiant energy are inversely proportional.

lesion Pathologically altered tissue, injury, or wound.

leukocyte Any white blood cell.

leukoplakia Disease marked by development of thick white spots or patches on the mucous membrane of cheek, tongue, or gum.

ligament A band of fibrous connective tissue connecting the articular ends of bones.

lipoma A fatty tumor that is not metastatic.

loading To increase the mass or weight supported by an object or organism.

lordosis Forward convexity in the curvature of the lumbar or cervical spine as viewed from the side.

lumbar-pelvic-rhythm A combination of lumbar and pelvic movements that occur during maximum trunk flexion.

lymphocytes Mononuclear and nonphagocytic white blood cells without cytoplasmic granules.

lymphoma A general term for any neoplastic disorder of lymphoid tissue.

lyse Break up or disintegrate.

lysosome A membranous organelle found in many cells that contains a hydrolytic enzyme capable of digesting foreign material such as bacteria.

malignancy A cancer that causes serious illness or death.

malinger Pretending to be ill.

manipulation Therapeutic use of hands with or without impulse.

matrix The intercellular substance of a tissue.

mechanism of injury The forces that caused the injury.

mechanoreceptor A receptor that responds to mechanical pressure or distortion.

Meltzer's law (Contrary Innervation): All living functions are continually controlled by two opposing forces.

meralgia A pain in the thigh.

metabolite Any product of metabolism.

metastasis Spread of malignant cells.

microtrauma Very small or microscopic injury or lesion.

mobilization Making a joint movable.

modality A therapeutic or physical agent such as thermotherapy (heat), cryotherapy (cold), hydrotherapy (water), or vibration.

monocytes A relatively large mononuclear leukocyte (white blood cell).

mononucleosis An acute infectious disease that affects lymphoid tissue and is characterized by fever, malaise, sore throat, swollen lymph nodes, spleen enlargement, and hepatic dysfunction.

mottled A blotchy discoloration of skin often caused by heat.

MPS Acronym for myofascial pain syndrome.

MRI Acronym for magnetic resonance imaging.

MS Acronym for muscle spindle.

mucous membrane A normally moist membrane lining passages and cavities that communicate with air such as the digestive tract and vagina.

muscle atrophy A decrease in the size of a muscle.

muscle hypertrophy An increase in the size of a muscle because of activity.

mutation A permanent variation in genetic material or structure.

myalgia Muscular pain.

myelography X-ray of spinal column after injection of contrast medium into the spinal subarachnoid space.

myofascial Involving muscles and fascia.

myofascial release An osteopathic technique for slowly stretching muscles and fascia that follows the principle of creep.

myofibroblasts A cell seemingly responsible for contracture of wounds.

myofibrosis Replacement of muscle tissue by fibrous connective tissue.

myositis Inflammation of a voluntary muscle.

myotenositis Inflammation of a muscle and its tendon.

necrosis Death of a tissue.

necrotic inflammation Acute inflammation with fairly rapid necrosis.

neoplasm A new and abnormal formation of tissue with uncontrolled and progressive cell growth, which may be malignant or benign.

neoplastic Pertaining to abnormal tissue growth.

nerve conduction velocity The speed at which a peripheral nerve impulse travels the length of a nerve.

neuralgia Pain along the course of a nerve.

neuritis Inflammation of a nerve.

neuropraxia 1. A traumatized nerve that no longer conducts even though anatomic structure appears to be intact. 2. Loss of conduction in a nerve because of local pressure or ischemia.

nociceptor A nerve for receiving and transmitting injurious or painful stimuli.

NSAID Acronym for nonsteroidal anti-inflammatory drug.

nystagmus Involuntary, rapid, and rhythmic oscillations of the eyeballs, either horizontal, vertical, rotary, or mixed.

OA Acronym for osteoarthritis.

occupational exposure Contact with an infected person or agent because of occupational duties.

opioid A non-opium-derived narcotic that occurs naturally in the body and decreases the sensation of pain.

opportunistic infections Diseases that occur when the body's resistance to infection is low.

osteoarthritis Chronic disease involving degeneration of joints.

osteoblast A cell that produces bone.

osteophytes A bony outgrowth that often occurs near joints.

oxidative killing Aerobic destruction of a substance or bacteria acted upon by an enzyme, with production of energy and water.

pacinian corpuscle Encapsulated sensory nerve endings that are sensitive to deep or heavy pressure and vibration.

palliative Relieving severity, intensity, or symptoms, but not a cure.

pallor Lack of color or paleness of skin.

palpation Examining the body by application of hands or fingers to the surface of the body.

pandemic A disease affecting the majority of a population in a large geographic region.

paralysis Loss or impairment of voluntary muscle function.

paresis Incomplete loss of voluntary muscle function.

paresthesia Abnormal sensation of burning, tickling, or tingling sometimes referred to as a feeling of *pins and needles*.

passive exercise The force needed to move a body part is provided entirely by a therapist, a mechanical device, or one of the patient's other body parts.

passive movement Movement of a body part that is caused entirely by external forces such as those provided by a therapist or machine.

pathogen A disease causing microorganism such as HIV.

pathogenesis The pathologic mechanism that results in development of a disease, illness, or morbid process.

pathology Condition or manifestation produced by disease.

PCP Abbreviation for *Pneumocystis carinii* pneumonia, the most serious opportunistic infection associated with AIDS. Though patients may be only slightly febrile, extreme weakness, labored breathing (dyspnea), and slight bluish or purplish discoloration of skin (cyanosis) are common.

percussion Tapping sharply on the body to determine position, size, and consistency of underlying structures.

periosteum A fibrous connective tissue membrane that covers bone.

patellar reflex A leg jerk caused by the involuntary contraction of the quadriceps muscle when the patellar tendon is sharply struck.

phagocyte A cell that can ingest and destroy foreign particulate matter such as microorganisms or antigens coated with antibodies. Microphages ingest mainly bacteria while macrophages ingest dead tissue and present antigens to T-helper lymphocytes.

phagocytosis The process of ingestion and digestion of solid substances by phagocytic cells.

physiatrist A doctor specializing in physical medicine.

piezoelectricity Electric currents generated by pressure upon certain crystals such as quartz or calcite (bone).

pilomotor Pertaining to the arrector muscles that cause hairs to move or stand erect (goose flesh).

PIP Acronym for proximal interphalangeal joint.

placebo Any substance or procedure that produces an effect because the patient expects or believes that the effect will occur.

plastic Having the property of not returning to the original shape after being stretched, compressed, or otherwise distorted.

plyometrics Exercises that use a stretch-contract sequence of movement to increase explosive power.

PNF Acronym for proprioceptive neuromuscular facilitation.

prone Lying horizontal with face down, opposite of supine.

proprioceptor A receptor within the body that responds to pressure, position, or stretch.

proteoglycans The extracellular matrix of connective tissue composed of glycosaminoglycans (GAG) bound to protein chains.

proximal Situated nearest the center of the body.

psychogenic Created by the mind.

pyogenic Related to pus formation.

pyrogen A substance that produces or causes a rise in fever.

RA Acronym for rheumatoid arthritis.

radiation The transfer of heat from objects by electromagnetic rays that can travel through a vacuum.

radiculitis Inflammation of a spinal nerve root, especially the portion of the root that lies between the spinal cord and spinal canal, accompanied by pain and increased sensitivity to touch.

range of motion The maximal span of a joint as measured by angular displacement between two adjacent segments.

Raynaud's disease A vasospastic peripheral vascular disorder that causes excessive vasoconstriction when extremities are exposed to cold.

reaction Response to brief hot or cold stimulus (heat sedates and cold stimulates).

rebound tenderness Pain or discomfort when pressure is released.

recruitment Activating additional motor units to produce greater activity as the intensity of stimulus remains constant and the duration of stimulus increases.

reflex An involuntary response to stimulus.

reflexogenic Producing, increasing, or causing a reflex action.

relative humidity The ratio between the amount of water vapor present and the amount possible for the temperature (complete saturation is 100%).

remodeling The reshaping of an injured part or area during wound healing.

resistive exercise The force needed to move a body part is provided entirely by the voluntary contraction of muscles that normally control the body part and resistance to the movement is supplied by some external force.

retrovirus A large group of RNA viruses that include HIV.

rheumatoid arthritis A form of arthritis involving inflammation of joints, stiffness, and swelling.

RICE Acronym for rest, ice, compression, and elevation.

RNA Abbreviation for ribonucleic acid.

ROM Acronym for range of motion.

RSD Acronym for reflex sympathetic dystrophy.

SAID Acronym for specific adaptations to imposed demands.

salicylate Any salt of salicylic acid used in drugs such as aspirin to reduce pain and temperature.

satellite trigger points A trigger point activated by another trigger point in the same reference zone.

sciatica Severe pain along the sciatic nerve.

sclerosis Hardening of an organ or tissue that may result from inflammation and the excessive growth of fibrous tissue.

scoliosis A lateral curvature of the spine normally consisting of a primary curve and a secondary compensatory curve.

secondary trigger points Trigger points that develop in a synergist or antagonist because of overload.

self-limiting A condition that runs a definite course and then stops without treatment.

sentient Capable of feeling sensation.

seroconversion The change of a serologic test from negative (seronegative) to positive (seropositive) indicating the development of antibodies in response to infection or disease.

serous inflammation Inflammation in which the exudate is predominantly a serum.

servomechanism A control mechanism that operates by positive or negative feedback.

shivering Involuntary trembling from cold or fear.

sign Objective evidence of an illness.

SITS Acronym for rotator cuff muscles: supraspinatus, infraspinatus, teres minor, subscapularis.

soft-tissue impairment A soft-tissue lesion, defect, or dysfunction that causes pain, limited range of motion, or weakness.

soft-tissue therapy Manipulation of superficial or soft tissue for therapeutic purposes, with or without modalities, exercise, or mechanical devices.

somatic dysfunction An impaired or altered function of the body that involves skeletal, arthrodial, or myofascial structures and related vascular, lymphatic, or neural structures.

SOS Acronym for separate the problem into parts, organize the parts, and simplify the problem.

spasm Involuntary contraction of a muscle beyond physiologic needs.

spastic Characterized by spasms or spasticity.

specific heat The amount of heat required to raise the temperature of 1 gram of any substance 1°C (water is 1.0, ice is 0.50, and steam is 0.48).

spermicide A substance that kills spermatozoa.

spinal segment The functional unit of a spine consisting of two contiguous vertebrae with an intervening disk, two facet joints, intrinsic muscles, and interconnecting ligaments.

splinting Rigidity or fixation of a body part because of reflex spasm.

spondylolisthesis Anterior displacement of lower lumbar vertebrae over the body of the sacrum.

spondylosis Vertebral ankylosis that may involve osteoarthritis.

spondylotherapy Spinal manipulation for treating disease.

sprain Trauma to a joint causing injury to ligaments.

sputum Mucous secretion from lungs, bronchi, and trachea that is ejected by coughing or clearing the throat.

stasis Stagnation of blood or other body fluids.

statics A study of systems that do not move.

stenosis Constriction or narrowing of a passage.

strain Trauma to a muscle or musculotendinous unit.

strength The ability of a muscle to contract and exert muscular force.

stress The results produced when a structure is acted upon by force.

stretch reflex A muscle contracts in response to passive longitudinal stretch. (also called *myotatic reflex* or *Liddell-Sherrington reflex*)

subchondral Below cartilage.

subluxation A partial or incomplete dislocation.

substitution The function of one muscle being replaced by the function of another muscle or a muscle group that has a similar function or action.

successive induction Contraction of the agonist to facilitate the antagonist.

superoxides A highly reactive form of oxygen that attacks biologic targets.

supine Lying horizontal with face up, opposite of prone.

symptom Subjective evidence of an illness.

syncope A transient loss of consciousness caused by inadequate blood flow to the brain (fainting).

syndrome A group of signs and symptoms related to each other because of a common disease.

synergist A muscle functioning in cooperation with another muscle.

telepathy Communication between two people without physical or physiological explanation, a form of extrasensory perception.

temperature A relative measure of hotness or coldness resulting from the average kinetic energy of any substance.

tendon A fibrous connective tissue attaching muscles to bones.

tendonitis Inflammation of a tendon.

tenosynovitis Inflammation of a tendon sheath.

TENS Acronym for transcutaneous electrical nerve stimulation.

tensile strength The maximum longitudinal (tensile) stress a material can endure without elongation.

thermal conductivity The rate of heat passage through a material.

thermography The process of taking a thermograph with an infrared camera to show distribution of the body's surface temperature.

thermostat An automatic device for regulating temperature.

thermotherapy Therapeutic application of heat.

thixotropy A property of certain gels that liquefy when agitated and become semisolid again when left standing.

thrush An infection of the oral mucosa caused by a fungus, *Candida albicans*, and characterized by white patches on a red, moist base that may result in shallow ulcers.

tonus A partial, steady contraction of skeletal muscle that causes firmness, aids in the maintenance of posture, and helps blood return to the heart.

torque A turning caused by rotary force acting about a pivot point.

traction Process of pulling apart.

trigger finger The movement of a digit is temporarily arrested during flexion or extension and then continues after a snap or jerk.

trigger point A tender point or spot on the body that produces sudden pain when stimulated by pressure or compression.

trigger zone A tender zone or area on the body that produces sudden pain when stimulated by pressure or compression.

trophic Relating to interruption of a nerve supply and nutrition.

trophotropic Mechanisms of the nervous system that restore energy, opposite of ergotropic.

tumor A swelling or enlargement, one of the four cardinal signs of inflammation.

twitch response Transient contraction of a muscle fiber group when pressure is applied to a trigger point.

urticaria Eruption of skin characterized by severe itching.

vaccine A suspension derived from infectious agents, such as killed microorganisms, administered to prevent or treat infectious disease.

van't Hoff's law The rate of chemical reactions increases twofold or more for each 10°C rise in temperature.

vasoconstriction Decrease in the caliber of a blood vessel.

vasodilation Increase in the caliber of a blood vessel.

vertigo Sensation of whirling or rotating in space or being surrounded by objects that are whirling or rotating in space.

vesiculation Blistering.

virion A complete virus particle that contains RNA or DNA genetic material (nucleoid) and a protein covering (capsid).

virucide An agent that kills or inactivates a virus.

virus A minute infectious agent that lacks independent metabolism and reproduces by entering a living cell. As the smallest disease producing microorganism, a virus can pass through filters that retain most bacteria.

viscoelastic A viscous material that is also elastic (e.g., connective tissue).

viscosity Resistance to flow or shear caused by stickiness or cohesion.

Weigert's law The loss or destruction of living tissue is apt to be followed by overproduction of such tissue during the process of wound healing.

Wolff's law Bone and collagen fibers develop a structure most suited to resist the forces acting upon them.

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HEMME APPROACH QUIZ

1. Trigger points that develop in a synergist or antagonist because of overload are called:
 - a. secondary trigger points
 - b. satellite trigger points
 - c. latent trigger points
 - d. active trigger points
2. What is it called when a muscle lengthens during contraction?
 - a. concentric contraction
 - b. eccentric contraction
 - c. isotonic contraction
 - d. isometric contraction
3. Which word implies *toward the feet*?
 - a. proximal
 - b. distal
 - c. cephalad
 - d. caudad
4. What is a flat fibrous sheet of connective tissue that attaches muscle to bone called?
 - a. tendon
 - b. ligament
 - c. adhesion
 - d. aponeurosis
5. A disease of spontaneous origin with unknown cause is called:
 - a. iatrogenic
 - b. idiopathic
 - c. innocuous
 - d. insidious

6. Inflammation of a voluntary muscle is called:
- a. tenosynovitis
 - b. radiculitis
 - c. neuritis
 - d. myositis
7. The transfer of heat in liquids or gasses by movement of heated currents is called:
- a. conduction
 - b. convection
 - c. conversion
 - d. radiation
8. A receptor within the body that responds to pressure, position, or stretch is called a:
- a. baroreceptor
 - b. exteroceptor
 - c. nociceptor
 - d. proprioceptor
9. A pain in the thigh is called:
- a. causalgia
 - b. meralgia
 - c. myalgia
 - d. neuralgia
10. Which law states that most conditions treatable by soft-tissue therapy are characterized by pain, limited range of motion, or weakness?
- a. all-or-none law
 - b. cosine law
 - c. Head's law
 - d. HEMME's 1st law

11. Which word means a decrease or absence of sensitivity to pain?
- a. algesia
 - b. algogenic
 - c. analgesia
 - d. hyperalgesia
12. Which word means a state of greater than normal tension in muscles?
- a. hypotonia
 - b. hypertrophic
 - c. hypertonic
 - d. hyperemia
13. Trauma to a muscle or musculotendinous unit is called a:
- a. spasm
 - b. sprain
 - c. strain
 - d. stress
14. Evaluating a patient by listening to sounds within the body is called:
- a. inspection
 - b. palpation
 - c. auscultation
 - d. accommodation
15. Which law states that all living functions are continually controlled by two opposing forces?
- a. Hilton's law
 - b. Hooke's law
 - c. inverse-square law
 - d. Meltzer's law
16. What is chronic pain and stiffness in muscles or joints called?
(*This is a fill-in question.*)

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