

## Glossary of Abbreviations and Acronyms

**AAFP:** American Academy of Family Physicians.  
**AAPM:** American Academy of Pain Medicine.  
**AEDs:** Antiepileptic drugs.  
**AHCPR:** Agency for Health Care Policy and Research; now known as the Agency for Healthcare Research and Quality (AHRQ).  
**AHRQ:** Agency for Healthcare Research and Quality; formerly known as the Agency for Health Care Policy and Research (AHCPR).  
**APS:** American Pain Society.  
**ASA:** American Society of Anesthesiologists.  
**ASAM:** American Society of Addiction Medicine.  
**ATC:** Around-the-clock.  
**BPI:** Brief Pain Inventory.  
**CARF:** Commission on Accreditation of Rehabilitation Facilities.  
**CBT:** Cognitive behavioral therapy.  
**CNCP:** Chronic noncancer pain  
**CNMP:** Chronic nonmalignant pain  
**CNS:** Central nervous system  
**COX:** Cyclooxygenase  
**CPGs:** Clinical practice guidelines.  
**CPMP:** Chronic pain management program.  
**CPS:** Chronic pain syndrome  
**DH:** Dorsal horn  
**ECG:** Electrocardiogram.  
**EEAs:** Excitatory amino acids  
**EMLA®:** Eutectic Mixture of Local Anesthetics (lidocaine and prilocaine).  
**FPS:** Faces Pain Scale.  
**FSMB:** The Federation of State Medical Boards of the United States.  
**GABA:**  $\gamma$ -Aminobutyric acid, which is an inhibitory neurotransmitter.  
**GI:** Gastrointestinal.  
**HIV:** Human immunodeficiency virus.  
**IASP:** International Association for the Study of Pain.  
**IM:** Intramuscular.  
**IV:** Intravenous.  
**JCAHO:** Joint Commission on Accreditation of Healthcare Organizations.  
**LAs:** Local anesthetics.  
**LBP:** Low back pain.  
**MPQ:** McGill Pain Questionnaire.  
**NMDA:** N-methyl-D-aspartic acid.  
**NRS:** Numeric rating scale.  
**NSAIDs:** Nonsteroidal anti-inflammatory drugs.

**OA:** Osteoarthritis.  
**OT:** Occupational therapy.  
**PCA:** Patient-controlled anesthesia.  
**PGs:** Prostaglandins.  
**PN:** Peripheral neuropathy.  
**PO:** Per os (oral).  
**PRN:** As needed.  
**PT:** Physical therapy.  
**RA:** Rheumatoid arthritis.  
**SCD:** Sickle cell disease.  
**TCAs:** Tricyclic antidepressants.  
**TENS:** Transcutaneous electrical nerve stimulation.  
**VAS:** Visual analog scale.  
**VHA:** Veterans Health Administration.

## Glossary of definitions

**A- $\delta$  nociceptors:** Nociceptors associated with relatively rapidly conducting A-delta fibers.

**abstinence syndrome:** A syndrome that may occur with abrupt cessation or diminution of chronic drug administration; the nature and time of onset of this syndrome vary with drug actions and half-life.

**activation:** Excitation of a neuron sufficient to generate a nerve impulse (action potential).

**addiction:** A primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations; addiction is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

**adjuvant analgesic:** A medication that is not a primary analgesic but that has independent or additive pain-relieving effects.

**agonists:** Agents that exert pharmacologic effects by binding to and activating stereospecific receptors.

**allodynia:** Pain caused by a stimulus that normally does not provoke pain.

**analgesia:** Absence of pain.

**analgesic ceiling:** A dose of an analgesic beyond which no additional analgesia is obtained.

**ankylosing spondylitis:** Ankylosing (fusing together) spondylitis (spinal inflammation) is a type of arthritis that affects the spine.

- antagonists:** Agents that competitively bind with the binding sites of agonists and thereby inhibit the agonist's actions.
- arachnoiditis:** Inflammation and thickening of the arachnoid membrane (one of three membranes covering the central nervous system) around nerve roots.
- atelectasis:** The absence of gas in part or all of lung (i.e., partial or complete lung collapse).
- autonomic responses:** See sympathetic (nervous system) hyperactivity.
- biofeedback:** The process of training a person (or animal) to regulate physiologic responses by providing feedback (typically sounds or light patterns) about those responses. Clinically, patients are typically taught to control finger temperature, perspiration, muscle tension, and other responses.
- breakthrough pain:** Pain that “breaks through” pain relief provided by ongoing analgesics.
- C-nociceptors:** Nociceptors associated with slowly conducting unmyelinated C-fibers.
- central nervous system (CNS):** Consists of the brain and spinal cord.
- central sensitization:** Enhanced excitability and responsiveness of spinal neurons.
- cerebral cortex:** Gray cellular “mantle” of the brain, which includes the sensory cortex, motor cortex, and association cortex.
- chronic noncancer pain (CNCP):** Persistent pain that is not associated with cancer.
- chronic nonmalignant pain (CNMP):** Persistent pain that is not attributable to a life-threatening condition; some prefer to use alternate terms (i.e., chronic non-cancer pain, chronic non-cancer–related pain).
- chronic pain syndrome (CPS):** Psychosocial disorder that occurs in some patients with chronic noncancer pain in which symptoms of the pain consume the attention of and incapacitate the patient.
- continuous dysesthesia:** A continuous type of neuropathic pain that manifests as burning, electrical, or other abnormal sensations.
- cyclooxygenase (COX):** Enzyme involved in prostaglandin synthesis; there are two isoforms: COX-1 and COX-2.
- deep somatic pain:** A type of somatic pain associated with ongoing activation of nociceptors in muscles, tendons, joint capsules, fasciae, or bones.
- deep tissues:** Tissues including bone, muscle, tendons, joint capsules, and fasciae.
- dermatomes:** Cutaneous sensory pathways that are defined by sensation; each dermatome corresponds to the area of skin that is supplied by the dorsal roots of a particular sensory nerve.
- dorsal horn (DH):** The posterior gray matter of the spinal cord, which contains cell bodies or neurons; the spinal cord consists of 10 laminae (segments), and laminae I–VI comprise the dorsal horn.
- dorsal horn neurons:** Neurons in the dorsal horn of the spinal cord, including interneurons and second order (projection) neurons.
- dysesthesia:** An unpleasant abnormal sensation, which may be spontaneous or evoked.
- endogenous opioids:** Natural opioids produced by the body; also referred to as enkephalins and endorphins.
- epidural:** Situated on the outside of the dura mater (a tough lining that surrounds the spinal cord).
- equianalgesic:** Having an equivalent analgesic effect.
- equianalgesic dose chart:** A chart that is used to convert from one analgesic or route of administration to another. Such charts typically describe the dose of an opioid required to produce the same degree of pain relief provided by a standard oral or parenteral dose of morphine.
- excitatory amino acids (EAAs):** These include the neurotransmitters glutamate and aspartate, which mediate most excitatory transmission in the central nervous system.
- glutamate:** An excitatory amino acid neurotransmitter responsible for much of excitatory transmission in the central nervous system.
- hyperalgesia:** An abnormally painful response to a stimulus.
- hyperpathia:** An abnormally painful and exaggerated response to a stimulus, especially a repetitive stimulus.
- iatrogenic:** A response to a medical or surgical treatment induced by the treatment itself.
- inflammation:** A pathologic process involving complex chemical and cellular reactions that occurs in tissues in response to injury or abnormal stimulation. Its cardinal signs—*rubor* (redness), *calor* (heat or warmth), *tumor* (swelling), and *dolor* (pain)—reflect processes directed at destroying/removing injurious material and at promoting repair and healing.
- inflammatory mediators:** Inflammatory mediators include prostaglandins, bradykinin, serotonin, and histamine.
- ischemia:** A reduction in local blood flow due to obstruction of the blood supply.
- lancinating pain:** A type of neuropathic pain that manifests as an episodic shooting, stabbing, or knifelike pain.
- limbic system:** The limbic system includes structures such as the amygdala, hippocampus, septal nuclei, hypothalamus, and transitional cortical regions (e.g., cingulate gyrus). This part of the brain is involved with emotional responses.
- mu agonists:** Opioids that bind to  $m_1$  and  $m_2$  receptors in the brain, spinal cord, and under certain conditions

(i.e., inflammation), the periphery to exert their effects.

**multimodal analgesia:** Also known as “balanced analgesia,” this approach to pain management involves the use of more than one method or modality of controlling pain (e.g., drugs from two or more classes, drug plus nondrug treatment) to obtain additive beneficial effects, reduce side effects, or both.

**neuroablation:** Destruction of tissue, typically by surgical, chemical (phenol), or heat (radiofrequency) lesions; the goal of neuroablative surgeries is to interrupt signal flow between peripheral sources of pain and the brain or to remove neural structures that contribute to pain.

**neurolysis:** A technique for destroying neural tissue that involves injection of a destructive chemical or use of cold (cryotherapy) or heat (radiofrequency coagulation).

**NMDA receptors:** A type of glutamate receptor involved in mediating excitatory neurotransmission; these receptors are thought to play an important role in central sensitization.

**nociceptors:** Sensory receptors that are preferentially sensitive to tissue trauma or a stimulus that would damage tissue if prolonged.

**parenteral administration:** Administration of a drug via a route other than the gastrointestinal system, such as by intravenous, intramuscular, or subcutaneous injection.

**paresthesia:** An abnormal sensation (e.g., “pins and needles” from a foot “going to sleep”), which may be spontaneous or evoked.

**patient-controlled anesthesia (PCA):** The self-administration of analgesics by a patient; often involves an intravenous, subcutaneous, or epidural opioid administered via a pump.

**perioperative pain:** Pain that is present in a surgical patient because of preexisting disease, the surgical procedure (e.g., associated drains, chest or nasogastric tubes, complications), or a combination of disease-related and procedure-related sources.

**peripheral sensitization:** A lowering of the stimulus (pain) threshold for nociceptor activation and an increase in the frequency of nerve impulse firing.

**physical dependence:** A state of adaptation that often includes tolerance and is manifested by a drug class-specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood levels of the drug, and/or administration of an antagonist.

**potency:** The dose of a drug required to produce a particular effect (e.g., pain relief).

**preemptive analgesia:** A pharmacologic intervention performed before a noxious event (e.g., surgery) that is intended to minimize the impact of the stimulus by preventing peripheral and central sensitization.

**primary afferent (nerve) fibers:** Axons of primary affer-

ent (or “first order”) neurons that transmit impulses from the periphery toward the central nervous system. Each neuron has a cell body that resides in sensory ganglia (e.g., dorsal root ganglia) and a bifurcated axon. One branch extends along a peripheral nerve and ends in a sensory receptor; the other branch projects to the spinal cord, where it synapses with a spinal neuron (e.g., interneuron, projection neuron).

**projection neurons:** Neurons in the dorsal horn of the spinal cord with nerve fibers that project to the brain in tracts; these neurons are responsible for transmitting nociceptive information from the spinal cord to higher centers.

**pseudoaddiction:** Patient behaviors that may occur when pain is undertreated (e.g., increased focus on obtaining medications or “drug seeking,” “clock watching,” use of illicit drugs, or deception) and that can be mistaken for true addiction.

**responsiveness:** The probability of achieving adequate pain relief with an analgesic without encountering unmanageable side effects.

**somatic pain:** Pain arising from tissues such as skin, muscle, tendon, joint capsules, fasciae, and bone.

**somatosensory cortex:** A subdivision of the sensory cortex.

**spinothalamic tract (STT):** Major pathway by which nociceptive information travels from the dorsal horn of the spinal cord to the thalamus.

**“stress hormone” response:** A series of responses to an acute injury or stress that leads to an increase in the metabolic rate, blood clotting, and water retention; impaired immune function; and a “fight or flight” alarm reaction with autonomic features. These responses minimize further damage and blood loss, promote healing, prevent or fight infection, and reduce blood flow to vital organs, among other functions.

**substance P:** A neuropeptide that activates spinal neurons and enhances their responsiveness to excitatory amino acids, thus facilitating nociception.

**superficial (cutaneous) somatic pain:** A type of somatic pain associated with ongoing activation of nociceptors in the skin, subcutaneous tissue, or mucous membranes.

**sympathetic (nervous system) hyperactivity:**

Symptoms and signs of sympathetic (autonomic) nervous system hyperactivity include increased heart rate, blood pressure, and respiratory rate; sweating; pallor; dilated pupils; nausea; vomiting; dry mouth; and increased muscle tension.

**tolerance:** A state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug’s effects over time.

**visceral pain:** Pain arising from visceral organs (e.g., heart, lungs, gastrointestinal tract, liver, gallbladder, kidneys, bladder).

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