




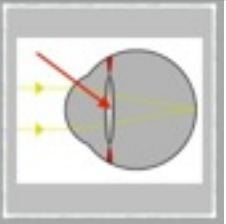



				Solutions Chapter 3
1	airborne odor molecules	moléculas de olor transportada por aire		odorants
2	allodynia	alodinia		refers to central pain sensitization (increased response of neurons) following painful, often repetitive, stimulation. allodynia can lead to the triggering of a pain response from stimuli which do not normally provoke pain. (4)
3	auditory cortex	corteza auditiva		The primary auditory cortex is the part of the temporal lobe that processes auditory information in humans and other vertebrates. It is a part of the auditory system, performing basic and higher functions in hearing.[1]
4	auditory nerve	nervio auditivo		cochlear nerve (also auditory or acoustic nerve) is one of two parts of the vestibulocochlear nerve, a cranial nerve present in amniotes. It carries auditory sensory information from the cochlea of the inner ear directly to the brain. The other portion of the vestibulocochlear nerve is the vestibular nerve, which carries spatial orientation information to the brain from the semicircular canals.
5	basilar membrane	membrane basilar		within the cochlea of the inner ear is a stiff structural element that separates two liquid-filled tubes that run along the coil of the cochlea, the scala media and the scala tympani.(4)
6	C fibers	fibras C		one of three classes of nerve fiber in the central nervous system and peripheral nervous system. the c group fibers are unmyelinated and have a small diameter and low conduction velocity. they include postganglionic fibers in the autonomic nervous system (ans), and nerve fibers at the dorsal roots (iv fiber). these fibers carry sensory information.(4)



7	caliper	calibrador		a device used to measure the distance between two opposite sides of an object. A caliper can be as simple as a compass with inward or outward-facing points.(4)
8	cochlea	cóclea		auditory portion of the inner ear, a spiral-shaped cavity in the bony labyrinth, making 2.5 turns around its axis.(4)
9	cones	conos	x 	Cone cells are one of three types of photoreceptor cells in the retina of the eye. They are responsible for color vision and function best in relatively bright light, as opposed to rod cells, which work better in dim light.(4)
10	cranial nerves	nervios craneales		the nerves that emerge directly from the brain (including the brainstem), in contrast to spinal nerves (which emerge from segments of the spinal cord). Cranial nerves relay information between the brain and parts of the body, primarily to and from regions of the head and neck.(4)
11	endogenous opioid system	sistema endógeno opioide		one of the most studied innate pain-relieving systems. this system consists of widely scattered neurons that produce three opioids: beta-endorphin, the met- and leu-enkephalins, and the dynorphins. these opioids act as neurotransmitters and neuromodulators at three major classes of receptors, termed mu, delta, and kappa, and produce analgesia. (5)
12	endorphins	endorfinas		endogenous opioid neuropeptides. they are produced by the central nervous system and the pituitary gland. (4)
13	fiber	fibra		a slender, threadlike element or cell, as of nerve, muscle, or connective tissue.(2)


14	focus	foco		a point at which rays of light, heat, or other radiation, meet after being refracted or reflected. The focal point of a lens. [Optics.] (2)
15	fovea	fóvea		fovea centralis is a small, central pit composed of closely packed cones in the eye. It is located in the center of the macula lutea of the retina.(4)
16	funnel	pasar por un embudo o canal	x 	to pass along; channel. (1)
17	fuse	fundir, unir		to combine or blend by melting together. (2)
18	ganglion cell	célula ganglionar		also retinal ganglion cell (RGC) is a type of neuron located near the inner surface (the ganglion cell layer) of the retina of the eye. It receives visual information from photoreceptors via two intermediate neuron types: bipolar cells and retina amacrine cells. (4)
19	gene therapy	terapia genética		the therapeutic delivery of nucleic acid polymers into a patient's cells as a drug to treat disease.(4)
20	hammer	martillo	x 	also, malleus /'mæliəs/ is a hammer-shaped small bone or ossicle of the middle ear which connects with the incus and is attached to the inner surface of the eardrum. It transmits the sound vibrations from the eardrum to the incus.(4)
21	hearing	oído	x 	auditory perception, or audition is the ability to perceive sound by detecting vibrations,[1] changes in the pressure of the surrounding medium through time, through an organ such as the ear.(4)



22	histamine	histamina		an organic nitrogenous compound involved in local immune responses as well as regulating physiological function in the gut and acting as a neurotransmitter.
23	inherit	heredar		to receive (a genetic character) by the transmission of hereditary factors.(2)
24	inner ear	oído interno	x 	(internal ear, auris interna) is the innermost part of the vertebrate ear. In vertebrates, the inner ear is mainly responsible for sound detection and balance. (4)
25	lateral geniculate nucleus	núcleo lateral geniculado		LGN (also lateral geniculate body or lateral geniculate complex) is a relay center in the thalamus for the visual pathway. It receives a major sensory input from the retina. The LGN is the main central connection for the optic nerve to the occipital lobe. In humans, each LGN has six layers of neurons (grey matter) alternating with optic fibers (white matter). (4)
26	lens	Lente cristalino	x 	also crystalline. A part of the eye behind the pupil that focuses images on the retina.(2)
27	macula	mácula		or macula lutea is an oval-shaped pigmented area near the center of the retina of the human eye. It has a diameter of around 5.5 mm (0.22 in). (It) is subdivided into the umbo, foveola, foveal avascular zone (FAZ), fovea, parafovea, and perifovea areas.(4)


28	macular degeneration	degeneración macular		also age-related macular degeneration (AMD or ARMD), is a medical condition which may result in blurred or no vision in the center of the visual field. (4)
29	middle ear	oído medio		the portion of the ear internal to the eardrum, and external to the oval window of the inner ear.(4)
30	morphine	morfina		a pain medication of the opiate type. It acts directly on the central nervous system (CNS) to decrease the feeling of pain.(4)
31	mucus membrane	membrana mucosa		a membrane that lines various cavities in the body and surrounds internal organs. It consists of one or more layers of epithelial cells overlying a layer of loose connective tissue.(4)
32	muscle	músculo	x 	a tissue composed of cells or fibers, the contraction of which produces movement in the body.(2)
33	nociceptor	nociceptor		a sensory nerve cell that responds to damaging or potentially damaging stimuli by sending signals to the spinal cord and brain. This process, called nociception, usually causes the perception of pain in sentient beings.(4)
34	noxious	nocivo, dañino		harmful or injurious to health or physical well-being. (2)
35	olfactory bulbs	bulbos olfatorios		a neural structure of the vertebrate forebrain involved in olfaction, or the sense of smell.(4)
36	olfactory cortex	corteza olfatoria		also, primary olfactory cortex is a portion of the cerebral cortex involved in olfaction.

37	opioid receptor	opio receptor		a group of inhibitory G protein-coupled receptors with opioids as ligands. dynorphins, enkephalins, endorphins, endomorphins and nociceptin. The opioid receptors are ~40% identical to somatostatin receptors (SSTRs). Opioid receptors are distributed widely in the brain, and are found in the spinal cord and digestive tract.(4)
38	optic chiasm	quiasma óptico		or optic chiasma. It is the part of the brain where the optic nerves (CN II) partially cross. The optic chiasm is located at the bottom of the brain immediately below the hypothalamus. (4)
39	optic nerve	nervio óptico		also known as cranial nerve II, is a paired nerve that transmits visual information from the retina to the brain.
40	orbital cortex	corteza orbital		also, orbitofrontal cortex (OFC) is a prefrontal cortex region in the frontal lobes in the brain which is involved in the cognitive processing of decision-making.(4)
41	pain therapy	terapia contra el dolor		also, Pain management, pain medicine, pain control or algiatry , is a branch of medicine employing an interdisciplinary approach for easing the suffering and improving the quality of life of those living with chronic pain
42	painkilling drugs	analgésicos		an analgesic or painkiller is any member of the group of drugs used to achieve analgesia, relief from pain. analgesic drugs act in various ways on the peripheral and central nervous systems. (4)
43	palate	paladar		the roof of the mouth in humans and other mammals.(4)

44	papillae	papilas		also, Lingual papillae (singular papilla) are the small, nipple-like structures on the upper surface of the tongue that give the tongue its characteristic rough texture. There are 4 types of papillae on the human tongue, they have different structures and are named accordingly: filiform, fungiform, foliate and circumvallate papillae.(4)
45	photoreceptor	fotoreceptor		a photosensitive cell in the retina of vertebrate eyes. (4)
46	pinna	pabellón auricular	x 	also, auricle or auricula is the visible part of the ear that resides outside of the head.
47	pitch	timbre		a perceptual property of sounds that allows their ordering on a frequency-related scale,[1] or more commonly, pitch is the quality that makes it possible to judge sounds as "higher" and "lower" (4)
48	prostaglandins	prostaglandina		a group of physiologically active lipid compounds having diverse hormone-like effects in animals.
49	pupil	pupila	x 	the expanding and contracting opening in the iris of the eye, through which light passes to the retina. (3)
50	receptive field	campo receptivo		of an individual sensory neuron is the particular region of the sensory space (e.g., the body surface, or the visual field) in which a stimulus will trigger the firing of that neuron. This region can be a hair in the cochlea or a piece of skin, retina, tongue or other part of an animal's body.(4)

51	rods	bastones	x 	Rod cells are photoreceptor cells in the retina of the eye that can function in less intense light than the other type of visual photoreceptor, cone cells. Rods are concentrated at the outer edges of the retina and are used in peripheral vision.
52	sense	sentido		any of the faculties, as sight, hearing, smell, taste, or touch, by which humans and animals perceive stimuli originating from outside or inside the body. (2)
53	sensory cortex	corteza sensorial		can refer informally to the primary somatosensory cortex, or it can be used as an umbrella term for the primary and secondary cortices of the different senses.(4)
54	sensory system	sistema sensorial		a part of the nervous system responsible for processing sensory information. It consists of sensory receptors, neural pathways, and parts of the brain involved in sensory perception. (4)
55	stereocilia	esterocilia		the mechanosensing organelles of hair cells, which respond to fluid motion in numerous types of animals for various functions, including hearing and balance. They are about 10–50 micrometers in length.(4)
56	stirrup	estribo		also, stapes /'steipi:z/ is a bone in the middle ear of humans and other mammals which is involved in the conduction of sound vibrations to the inner ear. The stirrup-shaped small bone is on and transmits these to the oval window, medially. (4)
57	strabismus	estrabismo		also heterotropia, a condition that interferes with binocular vision because it prevents a person from directing both eyes simultaneously towards the same fixation point; the eyes do not properly align with each other.(4)

58	superior temporal gyrus	cisura superior temporal		one of three (sometimes two) gyri in the temporal lobe of the human brain, which is located laterally to the head, situated somewhat above the external ear.
59	tactile	táctl		of, pertaining to, endowed with, or affecting the sense of touch.(2)
60	taste	gusto	x 	also, gustatory perception, or gustation is one of the five traditional senses that belongs to the gustatory system. Taste is the sensation produced when a substance in the mouth reacts chemically with taste receptor cells located on taste buds in the oral cavity, mostly on the tongue.(4)
61	taste bud	papila gustative		contain the taste receptors. They are located around the small structures known as papillae found on the upper surface of the tongue, soft palate, upper esophagus, the cheek and epiglottis.[1] These structures are involved in detecting the five elements of taste perception: salty, sour, bitter, sweet and umami; through the combination of these elements we detect "flavors."(4)
62	tectorial membrane	membrane tectorial		(TM) is one of two acellular membranes in the cochlea of the inner ear, the other being the basilar membrane (BM). The TM is located above the spiral limbus and the spiral organ of Corti and extends along the longitudinal length of the cochlea parallel to the BM.(4)
63	touch	tacto	x 	one of the sensations processed by the somatosensory system giving rise to touching behavior.(4)

64	touch receptor	receptor táctil		also, cutaneous receptors are the types of sensory receptor found in the dermis or epidermis. They are a part of the somatosensory system. Cutaneous receptors include cutaneous mechanoreceptors, nociceptors (pain) and thermoreceptors (temperature).(4)
65	tympanic membrane	membrana timpánica o tímpano		also, eardrum, or tympanic membrane, is a thin, cone-shaped membrane that separates the external ear from the middle ear in humans and other tetrapods. Its function is to transmit sound from the air to the ossicles inside the middle ear, and then to the oval window in the fluid-filled cochlea.(4)
66	visual acuity	agudeza visual	x 	also (VA), it commonly refers to the clarity of vision. Visual acuity is dependent on optical and neural factors, i.e., (i) the sharpness of the retinal focus within the eye, (ii) the health and functioning of the retina, and (iii) the sensitivity of the interpretative faculty of the brain.(4)
67	visual cortex	corteza visual		the part of the cerebral cortex responsible for processing visual information.(4)
68	visual transduction	transducción visual		the transportation of visual stimuli to the nervous system. (4)

