

CHAPTER 3

Terminology for Healthcare Professionals

- **Lesson Purpose**

To give the student a clear understanding of language fundamentals, anatomical terms and related definitions, along with common diagnostic and procedural terms.

- **Lesson Objective**

Upon completion the student will:

- Learn basic chiropractic and medical language fundamentals
- Learn the body planes, anatomical positions, and movements
- Learn common diagnostic and procedural terms

“It’s like learning a language; you can’t speak a language fluently until you find out who you are in that language, and that has as much to do with your body as it does with vocabulary and grammar.”

–Fred Frith

Language Fundamentals

The first step toward working in the chiropractic profession is mastering the language. It is imperative to acquire everyday familiarity with formal medical terminology, abbreviations, and acronyms. This chapter will introduce terminology typically used. As in traditional learning practices, the more time spent studying the material, the more comprehension and understanding you will gain. The goal of specialized vocabulary is to improve verbal and written communication, resulting in clearer information being communicated from doctor to staff and staff to patient. This section will explain common medical root words, prefixes, and suffixes. Most medical terminology comes from the root languages of Greek and Latin. Some translations are pure in form, while others are combined forms of Greek and Latin. Word sounds and basic phonetic concepts will assist you in knowing how and where to look up unfamiliar terms.

Listed on the following pages are many of the common Latin and Greek roots used in the chiropractic profession.

Common Latin and Greek Word Roots

Root	Definition
abdominus	abdomen
acantha	spine
acousia	hearing
acro	extremity
actin	ray
acuo	sharp, sudden
aden	gland
adeps	fat
adit	entrance, approach
aer	air
al	wing
alba	white
alex	to protect
algia	pain
ama	together
ana	to build up
andro	man
anglo	vessel
anima	soul
ankylo	loop, adherence
anom	irregular
ansa	handle
antero	before
anthrop	man
antrum	cavity
anulus	circular
aqua	water
arche	beginning
archo	anus
arcus	bow, arc
arthro	joint
articulus	joint
astro	star
atom	vapor, air
atrophy	a wasting away
audio	to hear
auris	the ear

Common Latin and Greek Word Roots

Root	Definition
auto	self
bacter	rod
baro	weight
bary	heavy
basis	foundation
bilis	bile
blōs	life
blast	germ
bovine	cow, ox
brachlon	arm
brachium	arm
brachys	short
bradys	slow
brevis	short
bromos	stench
bronchus	bronchial tube
bubon	groin
bursa	sac, pouch
caco	bad, poor, sick
calor	heat
caput	head
cardio	heart
carno	flesh
cartilage	gristle
cata	down
cauda	tail
cavum	cavity
cele	hernia
celia	abdomen
entesis	puncture
cephal	head
chir(o)	hand
chole	bile
chondra	cartilage
chroma	color
chyle	juice

Common Latin and Greek Word Roots

Root	Definition
cide	to kill
clast	breaking down
color	hue
cor	heart
corpus	body
costa	rib, side
crico	ring
cruces	the cross
cry	cold
crypt	hidden
cutis	skin
cyano	blue
cyna	dog
cyte	cell
dacry	tear
dactyl	finger
deca	ten
demo	people
dens	tooth
derma	skin
dexia	on the right
dexter	right
digit	finger, toe
diplo	double
dolor	pain
durus	hard, lasting
dynia	ache, pain
dys	difficult, painful
ectasis	dilatation of
ecto	without, outside
ectopy	displacement of
embryo	to grow within
emia	blood
endo	within

Common Latin and Greek Word Roots

Root	Definition
ensis	sword
entero	intestine
equus	equal
erotic	pulsation
erythro	red
esthesia	feeling, touch
eu	good, healthy
exo	outside, without
febris	fever
femina	woman
fibra	fiber
fila	thread
flex	bend
galactia	milk
gastr	the stomach
gen	to beget
genu	knee
germen	germ, sprig
gingiva	the gum
glossa	tongue, speech
glycol	sugar
graph	to write, record
gravi	weight, serious
gyne	women
gyros	circle
hala	breath, air
helio	the sun
hema	blood
hepat	the liver
heter	other, different
hidro	perspiration
histo	tissue
homo	like, same
humerus	shoulder
hydro	water
hygea	health
hypno	sleep

Common Latin and Greek Word Roots

Root	Definition
hyster	womb
ichthy	fish
idio	self
ileum	hip bone
intestinum	intestine, entrail
ipso	same
iso	equal
jecur	liver
juxta	near
keras	horn, cornea
kine	motion
lachryma	tear
lact	milk
later	side
lati	broad
lave	wash
lipid	scale, scaly
lepsy	spasm, seizure
leuko	white
lexia	word
lien	the spleen
lingua	tongue
lipa	fat
lith	stone, calculus
logue	speech
luna	moon
lysis	to dissolve, break down
macro	great, long
mal	bad, painful
malacia	softening
mamma	breast
mania	madness
mas	man, male
mast	breast
medicamentum	medicine
medio	middle
mega	large, great

Common Latin and Greek Word Roots

Root	Definition
melano	black
meno	month
mentis	mind
meso	middle
meta	between, after, beyond
meter	measure
metro	the uterus
micro	tiny, minute
mis	bad, poor, dislike
mono	single, alone, one
morbus	disease
mortis	death, dead
muco	mucus
multi	many
musculus	muscle
myelo	marrow
myo	muscle
nano	dwarf
naso	nose
nasus	nose
natus	birth
necro	death
neo	new
nephr	kidney
nervus	nerve
neuro	nerve
nidus	nest
niger	black
nocte	night
nomen	name
nosto	to return, go
novus	new
nychia	nail of finger, toe
ob	against, obstructive
odont	tooth
odor	smell
lig	little, sparse, few

Common Latin and Greek Word Roots

Root	Definition
omni	all
onoma	name
oophor	ovary
ophthalma	the eye
ora	mouth
orch	testicle
ortho	straight, regular
os	mouth
osma	odor
osteo	bone
ot	ear
ovum	egg
pachy	thick
paleo	old, ancient, past
pan	all
para	to bear
paries	wall
path	disease, disorder
pedi	child
pedis	foot
penia	poverty, poorness
pexy	fixation
phagy	to eat
pharmac	medicine, drug
phil	to love
phleb	vein
phobia	morbid fear
phone	voice, sound
photo	light
phrasia	utterance, speech
phren	mind, head, skull
phylaxis	anti-infection
physic	nature
plasia	to form
pnea	to breathe, breath
pneumo	lung
podia	foot

Common Latin and Greek Word Roots

Root	Definition
polio	gray
poly	many, excessive
procto	anus
pseudo	fase, mimic
psyche	mind, soul, spirit
pteryg	wing
ptya	sputum, saliva
pulmo	lung
pulsus	pulse, stoke, beat
puter	rotten, putrid
pyelo	rough, basin
pyo	pus
pur	fire
pyreto	fever
quadri	four
rachis	spine
ramus	branch
rar	thin, rare, sparse
ren	kidney
rheo	current
rhin	the nose
ruber	red
salping	tube
salpinx	tube
sanguis	blood
sanitas	health
sapro	putrid
sarco	flesh
sarx	flesh
schist(o)	to separate, split
schiz	to divide, split
sclera	hard
scopy	observation of
scota	darkness
sect	to cut
sial	saliva
sito	food

Common Latin and Greek Word Roots

Root	Definition
soma	body
somnus	sleep
spasm	seizure, convulsion
sphen	wedge
sphygma	pulse, throb
spina	spine
spiritus	spirit
splanchna	organ, viscus
spondy	vertebra, spine
squama	a scale
staphyl	grape
stasis	stopping, checking
stere	solid
steth	chest
stoma	mouth
stomachus	stomach
sudor	perspiration
super	over, abnormal
supra	above
tachy	swift
tact	touch
tend	tendon
teno	tendon
testis	testicle
tetra	four
thana	death
thenia	strength, power
theo	god, deity
therapy	treatment
therm	heat, temperature
thorax	chest
thrombo	blood clot
thyro	shield, thyroid
tocia	childbirth
toco	childbirth
tonus	tone, sound
tricho	hair

Common Latin and Greek Word Roots

Root	Definition
trophy	nutrition, growth
ula	gum
ultra	over, beyond, excess
unguis	nail
unus	one, single
uria	urine
uter	womb
vas	vessel
ven	vein
vertebra	spine, backbone
xanth	yellow
xero	dry
xylo	wood
zoo	animal
zymo	to ferment

Basic Chiropractic and Medical Terminology

Common Prefixes and Descriptions

a-	without, not, absence of
ab-	from, away from, negative
abdomin-	abdomen
acid-	sour
acou-	hearing
acr-, acro-	extremity
act-	do, drive, act
actin-	ray, ray like
acu-	needle
ad-	to, toward, on, near, beside
aden-, adeno-	gland
adip-	fat
aer-, aero-	air
alb-	white
all-	other, different
alve(o)-	cavity, socket, channel
ama-	together
ambi-, amphi-	both, around
an-	without, absence of
ana-	up, back again, increase
angi-, angio-	blood vessel
ankylo-	adherence, fusion
anomalo-	irregular
ante-	before
anter-	front
ant-, anti-	against, counter
arthr-, arthro-	joint
articu-	joint surface
auto-	self
baro-	weight
bary-	heavy
bi-	two, twice, double
brachi-	arm
brachy-	short
brady-	slow
burs-	sac, pouch

Common Prefixes and Descriptions

cata-	down, under
caud-	tail, tail-like
cephal-	head
cervic-	neck
chondra-	cartilage
circum-	around
co-, com-, con-	together, with
contra-	against, opposite
cry-, cryo-	cold
de-	down, away, removal
dermat-	skin
di-	double, twice
dia-	through, apart, between
digi-	finger, toe
dis-	apart, away from
dors-	back, toward the back
dys-	difficult, bad, painful
epi-	on, over, upon
esthesio-	touch, sensation, feeling
eu-	good, well, pleasant
ex-, exo-, extra-	-away from, outside
flex-	bend
gravi-	weight, serious, heavy
hemi-	half
hetero-	other, different
histo-	tissue
humer-	shoulder
hydro-	water, fluid
hyper-	over, beyond, excess
hypo-	under, deficiency
idio-	self
infra-	beneath, below
inter-	between, among
intra-	within, into
ipsi-	same
iso-	equal
kinesi-	movement, motion
later-, latero-	side

Common Prefixes and Descriptions

lip-, lipo-	fat
macro-	long, great, large
mal-	painful, bad, poor
medi-, medio-	mid, middle
mega-	great, large
meta-	beyond, change, between
micro-	small, minute
mis-	bad, dislike
mono-	one, single, alone
musculo-	muscle
myelo-	marrow
myo-	muscle
nervi-, nervo-,	nerve
neuro-	nerve
noct-	night
non-	not, against
ob-	against, in the way of
om-	shoulder
ortho-	regular, normal, straight
oste-, osteo-	bone
para-	near, by the side of
ped-	child
pedi-	foot
per-	through
peri-	around
physi-	nature
pod-	foot
poly-	many, excessive
post-	after, behind
pre-	before, in front of
pro-	affirmative
quadri-	four
retro-	behind, backward
semi-	half, part
soma-	body
spasmo-	seizure, convulsion
spino-	spine
spondylo-	vertebra, spine

Common Prefixes and Descriptions

sub-	less, below
super-	over, above, excessive
supra-	above, upon, on
sym-, syn-	together
tact-	touch, sensation
tend-	tendon
thera-	to heal, treat
thoraco-	chest
topo-	place, location, site, surface
trans-	across, through
ultra-	over, excess, beyond
un-	not
uni-	one
vertebr-	vertebra, spine
pulsus-	pulse, stoke, beat

Common Suffixes and Descriptions

-algia	pain, ache
-cele	swelling, tumor, hernia
-cyte	cell
-ectomy	surgical removal
-emia	blood
-genic	origin, producing
-gram	picture, tracing
-graph	record, chart
-ic, -ical	pertaining to, relating to
-itis	inflammation
-kinesis	movement
-kinetic	motion, dynamic
-lysis	splitting, setting free
-malacia	softening
-odynia	Pain, ache
-oid	like, resembling
-oma	tumor, new growth
-osis	abnormal condition
-ostomy	opening for drainage
-otomy	to cut into
-ous	full of
-pathy	disease
-plasty	repair
-penia	lack of
-phage	eat, consume
-plegia	paralysis
-practic	the practice of
-ptosis	drooping, falling
-rrhage/-rrhagia	sudden flow
-rrhea	discharge, flow
-scopy	direct examination of
-trophy	nutrition
-tropy	a turning, change

Anatomical Terms and Related Definitions

Bodily Planes

Planes are real or theoretical flat surfaces containing all the straight lines required to connect two points within them. In a two-dimensional reference system, the plane is simply divided into four quadrants by a perpendicular vertical line (called the Y axis) and a horizontal line (the X axis). A third axis (usually called the Z axis) can be added to expand the system to three dimensions. The Z axis crosses where the X and Y meet, and is perpendicular to both (SEE FIGURE 3.A). Anatomically, the body can be divided into planes of reference that correspond somewhat to typical X-Y-Z reference planes.

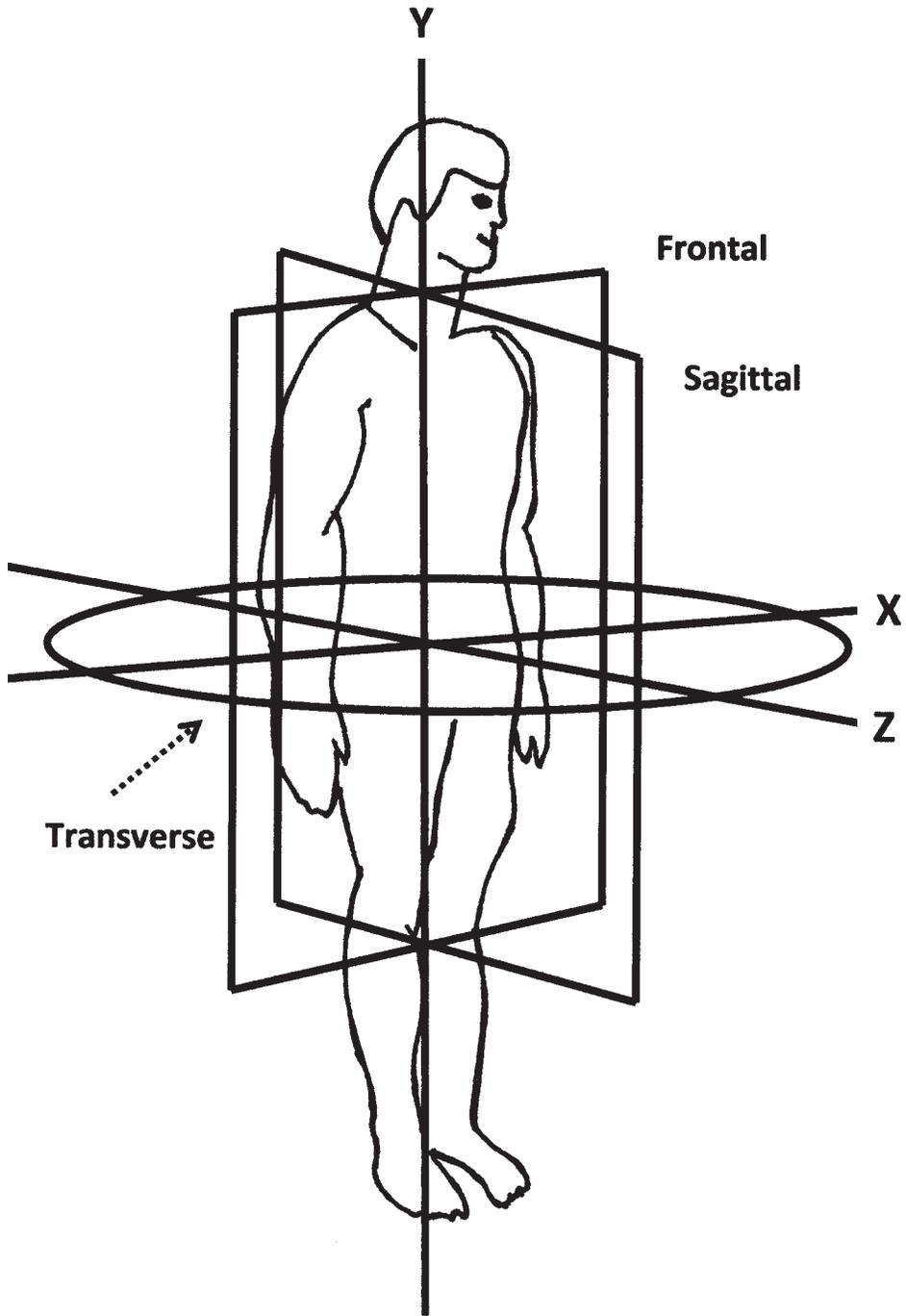
The Median (or midsagittal) Plane is a vertical plane that passes lengthwise through the midline of the body from front to back, *dividing it into right and left halves*.

The Sagittal Planes are any vertical planes passing through the body, dividing it into unequal right and left halves. These are also called the parasagittal planes.

The Coronal Planes (frontal) are any vertical planes passing through the body perpendicular to the median plane, dividing it into anterior (front) and posterior (back) portions.

The Horizontal Planes (transverse) are any planes passing through the body at right angles to both the median and coronal planes and is parallel to the ground. A horizontal plane divides the body into *superior* (upper) and *inferior* (lower) portions.

FIGURE 3.A BODILY PLANES



Directional Positioning

Anterior

Toward or nearer the front or belly/chest side of the body, also known as *ventral*

Posterior

Toward or nearer the back or backside of the body, also known as *dorsal*

Caudad

Toward the feet (or tail)

Cephalad

Toward the head

Proximal

Near the point of reference or origin. (Usually the body is used as the reference point)

Distal

Away from the point of reference or origin

Inferior

Below or caudad

Superior

Above or cephalad

Lateral

Away or farther from the midsagittal plane, right or left of the midline, or toward the side

Medial

Toward or nearer the midline of the body or midsagittal plane

Ipsilateral

On the same side

Contralateral

On the opposite side

Palmar

Refers to the palm or *volar* surface of the hand

Plantar

Refers to the sole or *volar* surface of the foot

Static Positions

Anatomical Position

Refers to the position of reference for all anatomical descriptions. This descriptor assumes the body is in the standard position which is accepted worldwide. By using this position, any part of the body can be related to any other part of it. A person is in the anatomical position when he/she is standing erect with the head, eyes, and toes directed forward, heels and toes together, and the upper limbs hanging by the sides with the palms facing anteriorly. Since this is not a normal postural configuration, it must be remembered that the differences (and common points for confusion) are that, 1) the palms of the hands face anteriorly, and 2) the big toes touch and point forward. Many patient placements or presentation positions are also standard, and carry proper descriptive names as well.

Adams Position

Standing with the heels together, knees locked, and the spine fully flexed forward

Knee-Chest Position

Resting on the knees and upper chest

Knee-Elbow Position

Resting on the knees and elbows (also known as the Genucubital Position)

Lateral Recumbent Position

Lying on either side with one or both hips and elbows flexed

Lithotomy Position

Lying on the back with the hips and knees flexed at right angles. The feet are typically supported by stirrups.

Sims' Position

Lying in a lateral recumbent position with one arm behind the back; the thighs are flexed, the upper more than the lower

Prone Position

Lying face down

Supine Position

Lying on the back, face up

Antalgic Position

Any physical position assumed to gain some relief from pain

Movements

The spine is a living, dynamic, and segmented structure that is in constant motion during activity, and every breath taken during rest. The terms previously described concerning position, direction, and location generally refer to a body that is apparently still. Given the body is a dynamic, moving structure that rarely is seen in a static plane of position, additional terms are necessary to describe specific directional movements of the body.

Motion

Refers to a continuous change (displacement) of position

Kinetics

Is the study of the relationship between a force acting on a body or body segment and the changes produced in the body motion.

Kinetic actions are expressed in amounts per units of time.

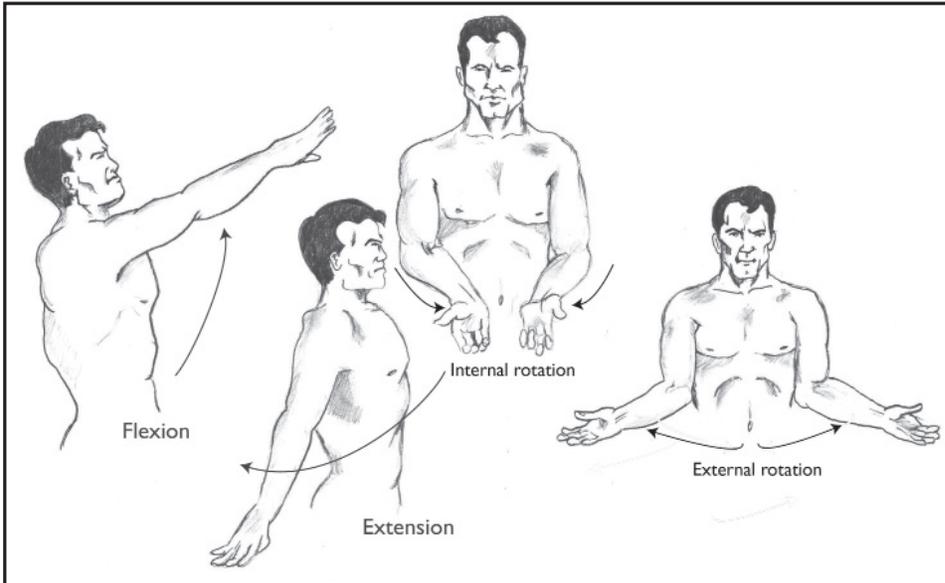
Kinematics

Is the complex study of motions of the body parts and forces causing motion (with emphasis on displacement, acceleration, and velocity) that is mainly the result of muscle activity

Flexion and Extension

Generally, when the angle of the joint becomes smaller than when it is in anatomical position, it is considered to be in *flexion*. For

FIGURE 3.B



example, when the elbow is bent, the angle of the joint decreases; therefore, it is said to be in *flexion*. The opposite of flexion is *extension*. When the elbow is fully straight, it is considered to be in full extension. Most joints in the body can flex and extend. When motion exceeds that which is considered normal, it is called hyperflexion or hyperextension (SEE FIGURE 3.B).

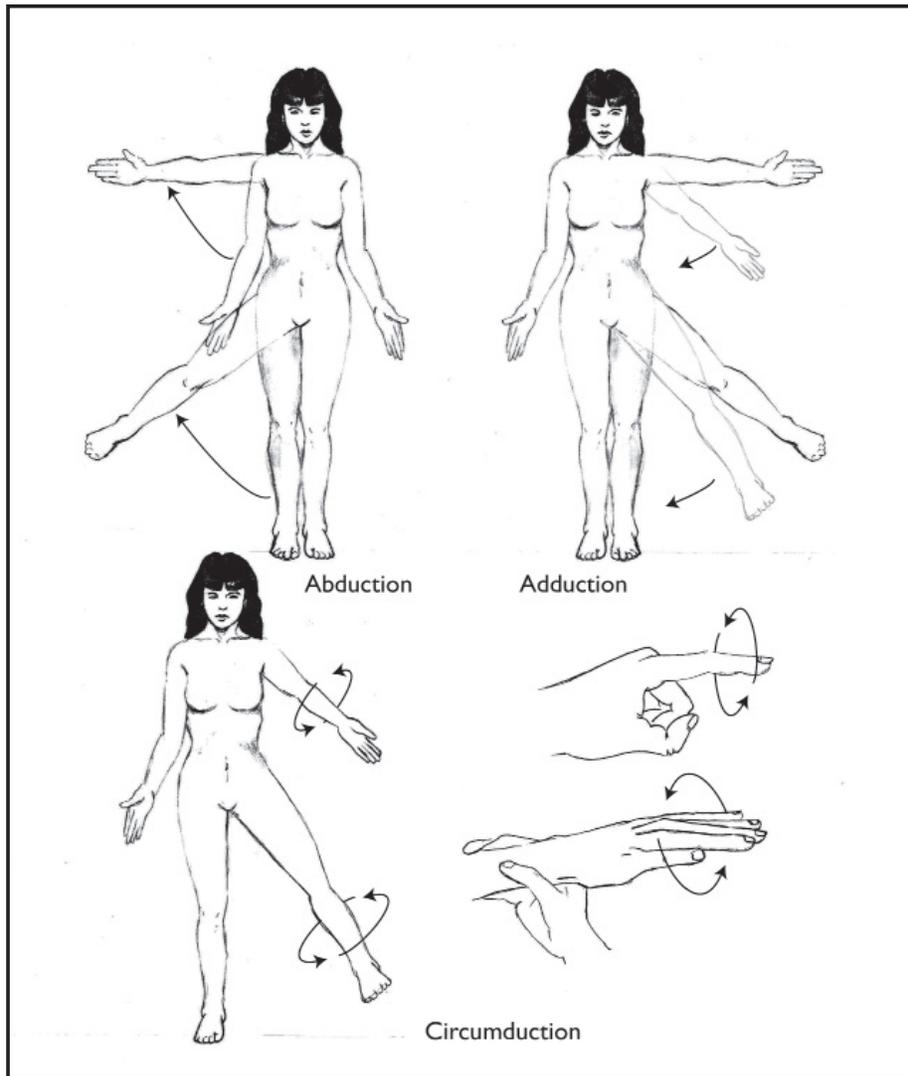
Abduction and Adduction

When a body part is farther from the midline of the body than when in anatomical position, it is said to be in *abduction*. When it approximates or gets closer to the midline, it is said to be in *adduction*. These movements typically occur in the fingers, toes, shoulders, and hips (SEE FIGURE 3.C).

Rotation (internal and external)

When a joint is capable of motion on its axis (rotating), it is said to be capable of rotation. Turning the anterior surface of a body part toward the midline is called *internal rotation*. The opposite of this motion is termed *external rotation* (SEE FIGURE 3.B).

FIGURE 3.C



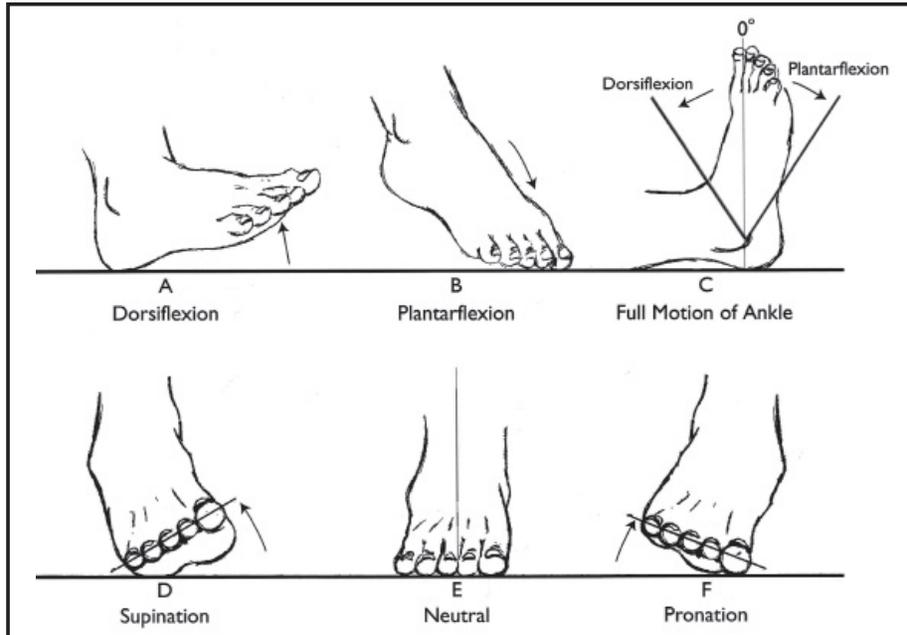
Elevation and Depression

Raising a part from its normal (zero) position is called *elevation*. *Depression* means to lower a part from its normal position. Good examples of both are revealed in the shoulder.

Circumduction

Movement of a joint in a three-dimensional, cone-shaped direction is called *circumduction*. This motion is a combination of many movements, typically including flexion, extension, abduction, and adduction (SEE FIGURE 3.C).

FIGURE 3.D



Translation

Movement in a line when all parts of an object, at a given time, have the same direction of movement, much like a train on a track, or the body during walking.

Pronation

The act of assuming the prone position. For example, to *pronate* the hand would mean to turn it inward at the forearm, turning the palm posteriorly, away from anatomical position (SEE FIGURE 3.D).

Supination

The opposite of pronation. It is the act of turning the palm forward or upward or of raising the medial margin or longitudinal arch of the foot. Pronation and supination movements are seen at the forearm (rotation of forearm between the wrist and elbow, palm turning down or up, respectively) and in the foot. However, *inversion* and *eversion* are better terms to use for actions of the foot than pronation and supination (SEE FIGURE 3.D).

Dorsiflexion/Plantar Flexion

Backward flexion, moving the part toward its dorsal surface (such as in hand or foot) is called *dorsiflexion*. The opposite of this movement is called *plantar flexion*. These movements typically occur at the wrist, ankle, fingers, and toes (SEE FIGURE 3.D).

Inversion/Eversion

A turning inward, inside-out, or reversal of the normal relation of a part is called *inversion*. Eversion is the opposite of inversion, referring to a position where the part in question is turned outward. These terms are typically reserved to describe motions of the foot.

Range of Motion (ROM)

The difference between two points of physiologic extremes of motion. Range of motion is measured in degrees.

Qualifying or Interconnecting Terms

Accompanying

Denotes companionship with, but not dependent upon or necessarily closely joined. *Accompanying* signs or symptoms may co-exist, but could be independent of the primary condition.

Associated

Denotes something that is closely joined, but not necessarily dependent upon.

Attendant

Denotes a sign or symptom that follows the original as a consequence of it.

Concomitant

Denotes that which accompanies or is attendant with the original.

Consequent

A sign or symptom that follows the original as a result of it.

Predisposing

Something that gives a tendency toward.

Pre-existing

That which exists before, but does not necessarily give a tendency toward.

Common Musculoskeletal Diagnoses and Definitions

Sprain

An injury to the ligamentous tissues of a given joint. Sprains are classified by their severity as follows:

- Grade 1* A simple sprain from mere overexertion of the ligaments. This injury is characterized by tenderness over the ligament(s) with swelling, other symptoms of inflammation, and no appreciable joint instability.
- Grade 2* A moderate sprain with a partial laceration or tear of the ligament. This injury is characterized by all the symptoms of a Grade 1 sprain, along with a lack of resistance to pressure over the ligament(s), and increased joint movement on tension or passive range of motion (PROM). PROM refers to motion that occurs without a muscle activation.
- Grade 3* A severe sprain with gross or complete laceration or tearing of the ligament(s). This injury is characterized by findings of a moderate sprain as well as a marked excess in joint motion.

Strain

An injury that affects the muscular and/or tendinous structures. Clinically, a *strain* elicits pain on muscular effort, even without joint movement. Strains are classified similarly to sprains, with the symptoms and findings directed to musculotendinous structures instead of the ligaments.

Myofasciitis

Inflammation of the muscle and its fascia (the skin-like covering). This is the most common form of myositis in response to trauma.

Myositis Ossificans

The conversion of a muscular area to calcification, then to bone. This usually occurs due to trauma and resultant marked bruising of the muscle.

Muscular Spasm

A full involuntary contraction of muscular tissue. Spasms can be either tonic (persistent), or clonic (alternating).

Muscular Hypertonicity

An increased tone or tightening of a muscle. Hypertonicity is a more common entity than muscular spasm and is descriptive of palpable or visible alterations or differences of elasticity within muscular tissue or in comparison to surrounding or opposing musculature.

Tendonitis

An inflammation of the tendons or muscle-tendon attachments. Tendonitis is most common in short tendons of the body that do not have tendon sheaths.

Tendonosis

A chronic deterioration of a tendon.

Tenosynovitis

An inflammation of tendon sheaths. This condition is more common than tendonitis, provided a muscular sheath is present.

Bursitis

An inflammation of a specific bursa. This condition can progress to calcific bursitis, during which the bursa takes on calcium deposits.

Capsulitis

An inflammation of a joint capsule. This condition can progress to adhesive capsulitis, during which the capsule takes on adhesions and restricts the motion of the joint.

Synovitis

An inflammation of a synovial membrane. Tenosynovitis, capsulitis, and bursitis are all specific variations of this condition.

Fibrositis and Myofibrositis

An inflammatory buildup of fibrous tissue, particularly of the muscle sheaths and fascial layers. If the condition is non-inflammatory, it is called *fibrosis*, and can be periarticular (if involvement is of the connective tissues surrounding the joint) or termed *myofibrositis* or *myofibrosis* if the involvement is of the musculature itself.

Radiculitis

An inflammation of a nerve root. This typically produces pain over the distribution of a specific dermatome (an area of skin associated with a pair of dorsal roots from the spine.)

Paresthesia

An abnormal sensory awareness over a specific area. It is usually associated with minimal radicular irritation and radiates over a specific dermatome.

Reflex Neuralgia

Pain radiating along the course of a sensory nerve as a referral from another source along the course of the nerve. This differs from radiculitis in that it may not follow a specific dermatome.

Neuralgia

Pain in a nerve, usually extending along the course of one or more adjacent nerves.

Neuritis

Inflammation of a nerve. Inflammation can be of many or multiple sources, including mechanical, toxic, metabolic, or vascular.

Common Chiropractic Procedural Terms and Definitions

According to the American Chiropractic Association, chiropractic is that branch of the healing arts which is concerned with human health and disease processes. Doctors of chiropractic are physicians who consider man as an integrated being, but give special attention to spinal mechanics, musculoskeletal, neurological, vascular, nutritional, and environmental relationships.

Chiropractic is based on the premise that the relationship between structure and function in the human body is a significant health factor and that such relationships between the spinal column and the nervous system are the most significant, since the normal transmission and expression of nerve energy are essential to the restoration and maintenance of health.

Adjustment

Any chiropractic therapeutic procedure that utilizes controlled force, leverage, direction, amplitude, and velocity which is directed at specific joints or anatomical regions. Chiropractors commonly use such procedures to influence joint and neurophysiological function.

Manipulation

A manual procedure that involves a directed thrust to move a point past the physiological range of motion, without exceeding the anatomical limit.

Mobilization

Movement applied singularly or repetitively within or at the physiological range of joint motion, without imparting a thrust or impulse, with the goal of restoring joint mobility.

Motion Segment

A functional unit made up of the two adjacent articulating surfaces and the connecting tissues binding them to each other.

Spinal Motion Segment

Two adjacent vertebrae, and the connecting tissues binding them to each other.

Subluxation

A vertebral motion segment in which alignment, motion integrity, and/or physiological function are altered, although contact between joint surfaces remains intact.

Subluxation Complex

A theoretical model of motion segment dysfunction (subluxation) which incorporates the complex interaction of pathological changes in nerve, muscle, ligamentous, vascular, and connective tissues.

Subluxation Syndrome

An aggregate of signs and symptoms that relate to pathophysiology or dysfunction of spinal and pelvic motion segments or to peripheral joints.