A See Point A (subspinale).
AAO See American Association of Orthodontists.
AAOF See American Association of Orthodontists Foundation.
AAOIC See American Association of Orthodontists Insurance Company.
AAOSI See American Association of Orthodontists Services, Inc.
ABO See American Board of Orthodontics.
abfraction The pathologic loss of hard tooth substance caused by biomechanical loading forces. Such loss is thought to be due to flexure and chemical fatigue degradation of enamel or dentin at a site distant from the site of actual point of loading.
abrasive 1. a substance used for abrading, smoothing or polishing. 2. tending to abrade, causing irritation.
abrasive strips Thin flexible tapes or strips that are coated with abrasive particles of different grain size and are used to remove, polish and finish tooth contours. These are usually used for interproximal reduction. They can be polyester, stainless steel or diamond abrasive strips.
acromegaly (from Greek akros “extreme” or “extremities” and megalos “large”) A disease caused by increased activity of the anterior pituitary producing excess growth hormone (hGH) after epiphyseal plate closure and characterized in part by a marked lengthening of the mandible.
acrylic Methyl methacrylate, an organic resin commonly used for the construction of dental appliances, including appliances for active orthodontic tooth movement.
activation The process of deforming an appliance or a part of an appliance from its passive state (e.g., the stretching of an elastic) and completing its engagement to produce a force system transmitted by the appliance to the dentition.
activation site The intraoral location of the activating process, often where the orthodontic force system is to be transmitted to the dentition.
activator 1. A removable growth guidance orthodontic appliance, originally developed by Pierre Robin, Viggo Andresen and Karl Haupl, with later modifications by Schwarz, Bimler, Balters, Frankel, Fleischer, Peters, etc. It is a type of functional appliance. 2. a chemical agent which triggers an initiator chemical to begin a chemical reaction.
Adams clasp A circumferential retention clasp (see crib) designed by C. Philip Adams to stabilize removable appliances by means of point contact with the mesio- and disto-buccal undercuts of individual buccal teeth.
adenoïd face See long-face syndrome.
adenoidectomy The surgical removal of the adenoids. They may be removed for several reasons which include impaired nasal breathing and chronic infections or earaches.

adenoids Lymphatic tissue that forms a prominence of the wall of the pharyngeal recess of the nasopharynx.

adhesive resin Any resin material with incorporated adhesive chemicals such as organophosphates, HEMA (hydroxyethyl methacrylate), or 4-META (4-methacrylethyl trimelletic anhydride); in orthodontics and dentistry, it describes the luting agent used with composite resins to bond (e.g. brackets) to the tooth structure.

adolescent dentition See dentition.

adult dentition See dentition.

agenesis A failure of development. For example tooth agenesis (lack of tooth development), condylar agenesis (lack of condylar development).

agnathia A developmental anomaly characterized by the lack of development of the mandible.

air abrasion The process of altering the surface of a material by the use of abrasive particles which are propelled by compressed air.

alloy A mixture of two or more metals or metalloids that are mutually soluble in molten state. It can be binary, ternary, quaternary etc. depending upon the number of metals in it. Alloying elements are added to alter the physical properties of a pure metal. Alloys can also be classified based on their behavior such as- noble metal, base metal etc.

alveolar bone The bone that surrounds and supports the roots of the teeth.

alveolar process The unshaped ridge of maxillary or mandibular alveolar bone that surrounds and supports the roots of the teeth.

amalgam Dental amalgam is an alloy of mercury, silver, copper, tin, zinc that is used for restorative procedures.

American Association of Orthodontists (AAO) The AAO is a professional association of educationally qualified orthodontic specialists dedicated to advancing the art and science of orthodontics and dentofacial orthopedics, improving the health of the public by promoting quality orthodontic care, and supporting the successful practice of orthodontics.

American Association of Orthodontists Foundation (AAOF) The AAOF, a 501(c)(3) organization, is the charitable arm of the AAO. The AAOF raises money for an endowment the earnings from which are used to support orthodontic research and teaching fellowships.

American Association of Orthodontists Insurance Company (a Risk Retention Group) (AAOIC) The AAOIC provides professional liability insurance for eligible United States members of the AAO. AAOIC is unique in that coverage is only available to AAO members and only orthodontists are insured by the company. The policyholders are also the shareholders of the Company. AAOIC is governed by a group of dedicated orthodontists and other experts who have one goal in mind: to provide a stable, efficiently run
professional liability insurance company designed specifically to meet the unique needs of the AAO member orthodontists. See Risk Retention Group.

**American Association of Orthodontists Services, Inc. (AAOSI)** The AAOSI is the for-profit subsidiary of the AAO, dedicated to the evaluation and management of services that benefit the members’ pursuit of professional success and financial security through quality insurance products and other services.

**American Board of Orthodontics (ABO)** The ABO is recognized by the American Dental Association as the official certifying body for the specialty of orthodontics. Though sponsored by the American Association of Orthodontists, it is a separate and autonomous entity. The mission of the ABO is to establish and maintain the highest standards of clinical excellence in orthodontics.

**anchorage** Resistance to force. Anchorage may come from any of the following sources: intraoral – teeth, bone, soft tissue, implants; extraoral – cervical = back of the neck, occipital = back of the head, cranial = top of the head.

**Andresen appliance** See activator.

**Angle classification of malocclusion** A classification of malocclusion introduced by Edward H. Angle (1855-1930). The governing criterion is the anteroposterior relationship of maxillary and mandibular first molars.

**Class I malocclusion** (neutroclusion) A malocclusion in which the mesiobuccal cusp of the maxillary first molar occludes in the buccal groove of the mandibular first molar. "Class I" is sometimes incorrectly used as a synonym for normal occlusion, whereas it signifies only a normal sagittal relationship of maxillary and mandibular posterior teeth as they meet.

**Class II malocclusion** (distoclusion) A distal (posterior) placement of the mandibular (lower) molar, a mesial (anterior) relationship of the maxillary (upper), or a combination of the two. The mesiobuccal cusp of the maxillary first molar occludes mesial to the buccal groove of the mandibular first molar, usually near the embrasure between the mandibular molar and second premolar.

**Class II, Division 1** A Class II molar relationship with proclined maxillary incisors.

**Class II, Division 2** A Class II molar relationship, usually with the maxillary central incisors tipped lingually, the maxillary lateral incisors tipped labially. This malocclusion, in many instances, has and an excessive overbite.

Subdivision of any malocclusion category denotes a unilateral malocclusion classification (e.g. Class II, division 2, subdivision).

**Class III malocclusion** (mesioclusion) Mesial (anterior) relationship of the mandibular first molar to the maxillary first molar, a retruded relationship of the maxillary first molar to the mandibular, or a combination of the two. The mesiobuccal cusp of the maxillary first molar will typically occlude near the embrasure between the mandibular first and second molars.
angular cheilitis Inflammation of the corners of the mouth which causes redness and fissures; also called perleche.

ankyloglossia The attachment of the tip of the tongue to the floor of the mouth or the lingual alveolar ridge. It restricts mobility of the tongue and may lead to a speech impediment. Also called “tongue-tie”.

ankylosis Abnormal immobility, union or fusion. May occur between two bones at their articulation (i.e., TMJ) or between teeth and alveolar bone. In the latter case, the periodontal ligament is obliterated by a 'bony bridge' and the tooth root is fused to the alveolar bone. Dental ankylosis prevents both eruption and orthodontic movement. In a growing child, an ankylosed tooth appears to 'submerge' as adjacent unaffected teeth and alveolar bone continue their normal pattern of eruption and growth.

anneal To heat a material in order to remove internal stresses and create a desired degree of toughness, temper or softness to a material.

anodontia a rare disorder characterized by congenital absence of all teeth (both deciduous and permanent).

anterior deprogramming device Various types of devices or materials used to eliminate the proprioceptive influence on occlusion and mandibular closure.

antegonial notch A concavity usually present in the lower border of the mandible, immediately anterior to the angle of the mandible. A deeper than normal antegonial notch may be indicative of mandibular underdevelopment.

anterior cranial base The anterior aspect of the floor of the cranial vault, commonly delimited cephalometrically by sella turcica and nasion.

anterior guidance 1. The influence of the contacting surfaces of maxillary and mandibular incisors that guides the mandible downward and creates disarticulation of the posterior teeth. 2. The influence of the contacting surfaces of the guide pin and anterior guide table on articulator movements.

anterior nasal spine Pointed bony process at the inferior margin of the piriform aperture, formed by the forward prolongation of the two maxillae. In cephalometric radiography, the tip is often used to define the anterior end of the palatal plane.

anteroposterior The global direction perpendicular to the coronal plane of the dentofacial complex; the anterior direction/sense is forward, and the posterior direction/sense is rearward.

anthropometry Measurement of the human body and its parts.

antiflux Materials that prevent the flow of solder.

apertognathia Condition in which either the anterior or posterior teeth of opposing arch do not contact. See also open bite.

apical Of or pertaining to the apex (usually of the tooth).

apical base Maxillary and mandibular bone that support and are continuous with the alveolar processes (see basal bone). Although the demarcation between alveolar and basal bone is not specific, it is generally considered to lie at the level of the apices of the roots.
apnea A cessation, or near cessation, of respiratory airflow that lasts 10-15 seconds or longer. Also see sleep apnea.

appliance Any device designed to influence the shape and/or function of the stomatognathic system.

fixed appliance A bonded or banded appliance affixed to individual teeth or groups of teeth.

functional appliance Any device, removable or fixed, designed primarily to effect skeletal and/or dental changes by modifying and utilizing the neuromuscular forces of the stomatognathic system (e.g., activator, bionator).

orthodontic appliance Any device used to influence the position of teeth and jaws.

orthopedic appliance Any device used to influence the growth or position of bones.

removable appliance An appliance that can be removed from the mouth and replaced at will by the patient.

arch Collectively, the teeth of either jaw, i.e., the term maxillary arch would include all teeth in the maxillary arch.

alveolar arch The U-shaped alveolar bone that surrounds the dentition of either jaw.

dental arch The composite structure of the dentition and alveolar ridge basal arch.

arch bars A rigid bar used for intermaxillary fixation in treatment of fractures of the maxilla and/or mandible; or stabilization of injured teeth. These are generally attached to the remaining dentition or occlusal splints.

arch form The geometric shape of the dental arch or of an archwire when viewed in the horizontal plane (square, tapering, ovoid, etc.).

arch length A measurement of available space needed to align the teeth.

arch length deficiency Difference between available and required space to align the teeth (see discrepancy).

archwire A wire capable of causing or guiding tooth movement that is placed into orthodontic attachments which are affixed to the crowns of two or more teeth.

continuous archwire A wire that engages or could engage, through crown attachments, all of the erupted teeth in the maxillary or mandibular dental arch.

sectional or segmental archwire An archwire that engages, through crown attachments, only a few teeth (e.g., only the four incisors or only a posterior dental segment).

arthralgia Pain in a joint(s).

arthritis Inflammation of a joint(s).

articular Of or relating to a joint.
articulare A constructed point on lateral cephalometric films representing the intersection of three radiographic images: the inferior surface of the cranial base and the posterior outlines of the ascending rami or dorsal contour of the mandibular condyle bilaterally (A. Bjork).

articulating paper Ink coated paper strips which are used to identify occlusal contacts.

articulator A mechanical instrument that represents the temporomandibular joint and the jaws. The maxillary and mandibular casts are attached to it.

asperities Microscopic projections on metal surfaces that result from normal surface-finishing processes. Interference between opposing asperities in sliding or rolling applications is a source of friction, and can lead to metal welding and scoring.

austenitic The name given to the face-centered cubic crystal structure (FCC) of ferrous metals.

autoclave A device that is used for sterilizing equipment and instruments with saturated stream filters with constant high temperature and pressure.

axis of rotation The line in a body (or in an extension of the body) about which the body has or appears to have rotated in a nontranslational displacement.

- B -

B See Point B.

balancing side A term used in the study of occlusion (i.e., for the non-functional side when the mandible is shifted laterally).

band (orthodontic) A thin metal ring, usually stainless steel, which serves to secure orthodontic attachments to a tooth. A band, with orthodontic attachments welded or soldered to it, is closely adapted to fit the contours of the tooth and subsequently cemented into place.

banding An orthodontic procedure during which bands are inserted and cemented onto teeth.

basal bone The bone that underlies, supports, and is continuous with the alveolar process (see apical base).

basal dysplasia A skeletal malrelationship related to a defect in size, shape, or position of basal bone.

basion The anterior margin of the foramen magnum, often used as a landmark on the lateral cephalogram.

Begg appliance A fixed appliance developed by P. R. Begg that uses light forces, round wires and modified ribbon-arch attachments.

Beilby layer Eponym for the molecular disorganized surface layer of a highly polished metal. A relatively scratch free microcrystalline surface produced by a series of abrasives of decreasing coarseness.

bends
first order Offsets in the archwire to accommodate the labiolingual and buccolingual thickness of teeth or to produce horizontal forces.

second order Offsets in the archwire in the vertical plane that are used for tipping and/or uprighting teeth.

third order A twist in a rectangular archwire along its long axis that produces torque.

gable, tent bends Bends to upright teeth at extraction sites.

"V" bends Place to mark, solder or twist wire or activate tooth movement.

Bennett movement (Sir Norman G. Bennett 1870-1947) Lateral translation (sideshift) of the working condyle during lateral excursions.

beta-titanium A bcc allotropic form of titanium alloy comprising of titanium, molybdenum, vanadium and trace elements. Beta titanium alloys have a strength/modulus of elasticity ratios almost twice those of 18-8 austenitic stainless steel, larger elastic deflections in springs, and reduced force per unit displacement 2.2 times below those of stainless steel appliances. The titanium alloys have good formability and can be easily welded.

bialveolar protrusion Anterior protrusion limited to the teeth and their alveolar processes.

bilateral Relating to both sides (of the body).

Bimler appliance A modification of the removable activator functional appliance.

biologic width The combined width of connective tissue and junctional epithelial attachment adjacent (part of the gingival complex) to a tooth and superior to the crestal bone.

biomechanics The study of mechanical principles applied to biological functions; the application of mechanical laws to living structures; the study and knowledge of biological function from an application of mechanical principles.

bionator A modified removable functional appliance, developed by Balters to provide better control of the buccal musculature than some other functional appliances.

biostatistics The science of the application of statistical methods to biological facts, as in the mathematical analysis of biological data.

bisphosphonates (also called diphosphonates) are a class of drugs that inhibit osteoclast action and the resorption of bone. Its uses include the prevention and treatment of osteoporosis, ostetis deformans, bone metastasis (with or without hypercalcemia), multiple myeloma and other conditions that feature bone fragility.

biteblock An upper or lower removable appliance, usually covering the occlusal surfaces of the teeth, used for vertical control or for TMJ problems.

biteplate or bite plane A removable orthodontic appliance designed to open the bite and/or prevent selected teeth from occluding.

Board Certification An examination program that establishes the clinical competency of a dental specialist according to the procedures established by the individual specialty certification board under the
rules and authority of the Council on Dental Education of the American Dental Association. The recognized board in the specialty of orthodontics and dentofacial orthopedics is The American Board of Orthodontics.

**Board Certified** The status of an orthodontist who has successfully completed both the Written and the Clinical Examination administered by The American Board of Orthodontics.

**Board Diplomate** An orthodontist who has successfully completed both the Written and the Clinical Examination administered by The American Board of Orthodontics.

**Board Eligible** The American Dental Association’s Council on Dental Education and Licensure defines Board Eligibility as any doctor who has completed a CODA accredited program in orthodontics.

**bodily movement** Translational movement of a tooth or dental segment, ordinarily understood to be perpendicular to the long axis/axes.

**Bolton analysis** A method developed by Wayne Bolton for the evaluation of tooth-size discrepancies (mesiodistal crown diameter) between the maxillary and mandibular arches.

**Bolton Point** A landmark, as viewed on the lateral cephalometric film; the highest point on the averaged outlines of the retrocondylar incisures of the occipital bone. It approximates the antero-posterior center of the foramen magnum. It was named in honor of Charles B. Bolton, a patron of the pioneer cephalometric researcher, B. Holly Broadbent Sr.

**bonding** The process by which orthodontic attachments are affixed to the teeth by an adhesive.

- **direct bonding** An intraoral procedure during which orthodontic attachments are placed on a tooth surface directly.

- **indirect bonding** A two-step process by which orthodontic attachments are affixed temporarily to study cast teeth and then transferred en masse to the mouth by means of a molded matrix that preserves their predetermined orientation and permits them to be bonded simultaneously.

**braces** See fixed appliance.

**brachycephalic** Cranial form characterized by a large width (broad head). The cephalic index is greater than 81.0; the opposite of dolichocephalic.

**brachyfacial (brachyprosopic)** A facial pattern characterized by a broad, square face; preferred term is euryprosopic.

**brazing** A joining process wherein coalescence is produced by heating to suitable temperatures above 800°F and by using a non-ferrous filler metal having a melting point below that of the base metals. The filler metal is distributed between the closely filled surfaces of the joint by capillary attraction. See also soldering.

**bruxism** 1. the parafunctional grinding of teeth. 2. an oral habit consisting of involuntary rhythmic or spasmodic nonfunctional gnashing, grinding or clenching of teeth, in other than chewing movements of the mandible, which may lead to occlusal trauma, attrition of the teeth, muscle ischemia, pain and damage to the supporting tissues. It is also called tooth grinding or occlusal neurosis.
bracket An orthodontic attachment that is secured to a tooth (either by bonding or banding) for the purpose of engaging an archwire. Brackets can be fabricated from metal, ceramic or plastic.

buccal Toward the cheeks.

buccoversion Buccal malposition of a tooth or groups of teeth.

-c-
canine guidance A form of mutually protected articulation in which the vertical and horizontal overlap of the canine teeth disengage the posterior teeth in lateral excursive movements. Also called canine protected occlusion.

capitation dentistry A capitation dental program is one in which a dentist or dentists contract with the program's sponsor or administrator to provide all or most of the dental services to subscribers who are covered under the program in return for payment on a per capita basis.

cast (dental) A plaster replica (plaster model) of the teeth and surrounding tissues, typically made from an alginate impression and used for diagnosis, treatment planning and appliance fabrication. It is a part of the patient's permanent record.

cast (metallurgical) To produce a shape by thrusting molten liquid or plastic material into a mold possessing the desired shape. Used to make cast appliances, brackets etc.

CBCT Abbreviation for Cone Beam Computed Tomography.

CDABO See College of Diplomates of the American Board of Orthodontics.

center of resistance The center of resistance (CR) of a tooth is the point of concentrated resistance to movement. A force that acts on a body at CR causes a tooth to translate in the direction of the line of force without rotation. The center of resistance can be considered an area rather than a point in three dimensions. In free space, the CR is the center of the tooth which happens to correspond to the center of gravity of the tooth.

center of rotation The point about which a body appears to have rotated in a nontranslational plane (two-dimensional) displacement.

centric occlusion Mandibular position dictated by maximum and habitual intercuspsation of the maxillary and mandibular teeth; variously referred to as intercuspal position, habitual centric, usual occlusal position. The condylar position may or may not be in harmony with centric relation. Because of this, the term habitual occlusion is preferable. Historically, a gnathologic and articulator oriented term.

centric relation A gnathologic term that denotes optimal condyle-articular eminence-glenoid fossa relationships, determined by muscle balance and independent of tooth intercuspation. Changing concepts no longer accept the most retruded, rearmost or hinge axis definition, originally derived from prosthetic articulators. To the orthodontist, the condylar position can vary somewhat, but is generally recognized as high on the posterior surface of the articular eminence. Lack of harmony of centric occlusion and centric relation status is particularly important in diagnosis of TMJ problems.
cephalic index The ratio of the maximum width of the head to its maximum length (i.e., in horizontal plane), sometimes multiplied by 100 for convenience. The head shape can be characterized as either dolichocephalic (long headed), mesocephalic (moderate headed), or brachycephalic (broad headed).

cephalogram A term used as a synonym for cephalometric radiograph.

cephalometer An instrument developed from the anthropologic cephalostat, used now on patients to obtain standardized and oriented craniofacial images on radiographic film. The design of the instrument permits longitudinal study with minimal positional and magnification error.

cephalometric analysis The process of evaluating dental and skeletal relationships by way of measurements obtained directly from the living head or, more commonly, from cephalometric radiographs and tracings. Refers also to the standardized sets of cephalometric measurements (e.g., Downs Analysis) commonly used in the evaluation.

cephalometric landmarks Points on a cephalometric radiograph or tracing representing certain hard or soft tissue anatomical structures (anatomical landmarks) or intersections of lines (constructed landmarks).

A point Subspinale (Downs) The deepest (most posterior) midline point on the curvature between the ANS and prosthion.

ANS anterior nasal spine The tip of the bony anterior nasal spine at the inferior margin of the piriform aperture, in the midsagittal plane.

AR articulare A (Bjork) constructed point representing the intersection of three radiographic images: the inferior surface of the cranial base and the posterior outlines of the ascending rami or dorsal contour of the mandibular condyles bilaterally.

B point (Downs) The deepest (most posterior) midline point on the bony curvature of the anterior mandible, between infradentale and pogonion. Also called supramentale.

Bolton point (Broadbent) The highest points on the outlines of the retrocondylar fossae of the occipital dome, approximates the center of the foramen magnum.

Co condylion The highest point on the superior outline of the mandibular condyle.

glabella The point between the superciliary arches in the midline.

gnathion The most anterior-inferior point on the chin; a cephalometric landmark in the lateral view.

GO gonion The most posterior inferior point on the outline of the angle of the mandible. In cephalometrics, it is identified by bisecting the angle formed by the tangents to the mandibular corpus (mandibular plane) and posterior border of the mandible (dorsal ramal plane); when both the angles of the mandible appear on the sagittal cephalometric radiograph, a point midway between the right and left side is used.

incision superius Incisal edge of the maxillary incisor.

incision inferius Incisal edge of the mandibular incisor.

infradentale The highest and most forward point of the alveolar process between the mandibular central incisors.
key ridge The most inferior point on the zygomatic process of the maxilla as seen in a lateral cephalometric radiograph; the craniometric point zygomaxillare.

labrale inferior Most forward point of the lower lip.
labrale superior Most forward point of the upper lip.
menton The most inferior point on the chin in the lateral view. A cephalometric landmark.
NA nasion The intersection of the internasal and frontonasal sutures in the midsagittal plane.
OR orbitale The lowest point on the inferior orbital margin.
POG pogonion The most anterior point on the contour of the bony chin in the midsagittal plane.
PO porion The superior surface of the external auditory meatus. In craniometry it is identified as the margin of the bony canal on the skull. In cephalometrics it may be identified from the earpost of the cephalostat (machine porion) or from bony landmarks on the film (anatomical porion).
PNS posterior nasal spine The most posterior point on the bony hard palate in the midsagittal plane; the meeting point between the inferior and the superior surfaces of the bony hard palate (nasal floor) at its posterior aspect.
pronasale Most forward point of the tip of the nose.
prosthion The lowest and most forward point of the alveolar process between the maxillary central incisors.
R point (Broadbent) A cephalometric reference point for registration of superimposed tracings.
S sella turcica The geometric center of the pituitary fossa (sella turcica), determined by inspection – a constructed point in the mid-sagittal plane.
stomion Intersection of the closed upper and lower lips.
subnasale The intersection of the columella of the nose and the upper lip.
Xi point (Ricketts) A constructed landmark on the center of the ramus of the mandible.

cephalometric radiograph A standardized radiograph of the head characterized by a precisely defined relationship among x-ray source, subject and film. By convention, the distance between x-ray source and the 'center' of the subject (midsagittal plane or transporionic axis) is either 5 feet (152.4 cm.) or 150 cm. The distance between the midsagittal plane or transporionic axis of the subject and film is approximately 12 cm, but may be standardized at a different value or varied according to head size and recorded for each exposure. The standard projections are lateral (profile) and posteroanterior (P-A).

cephalometric tracing A fine line tracing on an acetate film overlay of salient cephalometric structures, landmarks and pertinent measurements, which is used for diagnostic purposes.
ceramic brackets Crystalline alumina tooth-shade or clear synthetic sapphire brackets that are esthetically more attractive than conventional metal attachments.
cervical anchorage See anchorage.
cervical appliance Primarily an extraoral appliance that, when activated, delivers responsive force, by means of a pad, placed on the back of the neck.
chin cap A component of an extraoral orthopedic appliance capable of delivering superiorly and posteriorly directed force to the chin.
cleft lip A unilateral or bilateral congenital fissure in the upper lip, usually lateral to the midline. The defect can extend into the nares and may involve the alveolar process. It is caused by a defect in the fusion of the maxillary and nasal processes and may be accompanied by cleft palate.
cleft palate A unilateral or bilateral congenital fissure in the palate. It is caused by a failure of the premaxilla and lateral palatine process to fuse and may be accompanied by a cleft lip.
clenching Nocturnal parafunctional activity of temporalis, masseter and pterygoid muscles that is considered to be part of a stress-strain-tension release syndrome, frequently associated with bruxism and temporomandibular joint disturbances.
clicking A term applied to abnormal soft tissue sounds (usually audible or by stethoscope or on palpation) emanating from one or both temporomandibular joints during jaw movement.
closed bite Excessive vertical overlap of the anterior teeth; deep bite.
closing loop An “auxiliary” incorporated into an archwire that, upon mesiodistal-pulling activation (which opens the loop), moves adjacent teeth together.
cold working The process of changing the form or cross-section of a piece of metal at a temperature below the softening or recrystallization point, but commonly at or about room temperature. It includes rolling, drawing, pressing and stretching.

College of Diplomates of the American Board of Orthodontics (CDABO) An organization of orthodontists who are board-certified by the American Board of Orthodontics. Any board-certified orthodontist is eligible to become a member of the CDABO. The purpose of the CDABO is to support, encourage and facilitate the process of board certification for all orthodontists. The CDABO also sponsors cutting edge, family-oriented, continuing education meetings for its members.

comprehensive orthodontics A coordinated diagnosis and treatment leading to the improvement of a patient's craniofacial dysfunction and/or dentofacial deformity which may include anatomical, functional and/or esthetic relationships. Treatment may utilize fixed and/or removable orthodontic appliances and may also include functional and/or orthopedic appliances in growing and non-growing patients. Adjunctive procedures to facilitate care may be required. Comprehensive orthodontics may incorporate treatment phases focusing on specific objectives at various stages of dentofacial development.

compressive deformation The shortening of a dimension of a “body” due to a pushing force.
computer-assisted tomography (CATscan) The presentation of anatomical information from a cross-sectional plane of the body by computer synthesis of an image from x-rays. Transmission data is obtained in many different directions through the plane under consideration.
computerized cephalometrics The process of entering cephalometric data in digital format for analysis by any one or more of a variety of analyses available in software format.
computerized digital imaging Substitution of a radiation detector plate for radiographic film in the film cassette. The detectors store the radiation energy at each pixel as a latent image for release into the
computer in digital format. Advantages include a radiograph with a much wider dynamic range for improved edge enhancement, and the ability to change contrast in specific regions.

**condyle** The rounded cartilage and bone articulating element of the mandible. The superior portion of the ramus that articulates with the temporal eminence in the glenoid fossa.

**condylar displacement** A functional abnormality in which one or both mandibular condyles are displaced from their normal relationships with their articular discs and eminentia in the glenoid fossae.

**condylar guidance** 1. Mandibular guidance generated by the condyle and articular disc traversing the contour of the glenoid fossa. 2. The mechanical form located in the upper posterior region of an articulator that controls movements of its mobile member.

**condylar growth** Proliferation of condylar cartilage, followed by its endochondral ossification. The condyle is a site of growth that is important to the overall development of the mandible. Condylar growth normally stops shortly after that of the rest of the face, although it may continue well beyond adolescence, particularly in males, or it may stop and begin again.

**condylion** The highest point on the superior outline of the mandibular condyle.

**continuous orthodontic force** Action of an appliance against the dentition that decreases little in magnitude during the between-appointments period.

**corticotomy** In bone surgery, a corticotomy is a cutting of the bone that splits it in two but involves cortex only, leaving intact the medullary vessels and periosteum. Corticotomy is particularly important in distraction osteogenesis and also where RAP (regional acceleratory phenomenon) is used to accelerate tooth movement.

**cosmetic orthodontics** Orthodontic therapy, the purpose of which is limited to improving the appearance of the teeth or face.

**couple** A pair of equal and opposite non-collinear forces applied to a body. A couple always results in the creation of a pure moment with a tendency to rotate around the center of resistance.

**couple-force ratio** The ratio of magnitudes of the crown couple to the crown force, having net units of length (e.g., mm), in the two-dimensional analysis of tooth movement.

**coupling** Designates the stereotyped sequence of bone resorption-formation within the evolving secondary harvesian systems. It involves the concerted action of the osteoclasts and osteoblasts.

**cranial base** The inferior part of the skull or the brain case that forms predominantly by endochondral ossification. Because the bones of the cranial base stop growing relatively early, they are often used as a reference in the superimposition of serial cephalograms or tracings to measure changes due to growth, time and treatment.

**craniometry** The direct measurement of dry skulls; an anthropometric technique that forms the basis of cephalometric radiography.

**crepitus** A grating or grinding sound in a moving joint or fracture.

**crib** A type of wrought-wire clasp that surrounds or encloses a tooth; occasionally, used to describe an interceptive fixed transpalatal tongue and/or finger appliance.
crossbite An abnormal relationship of a tooth or teeth to the opposing teeth, in which normal buccolingual or labiolicual relationships are reversed. Also called Reverse articulation.
crowding Dental malalignment caused by inadequate space for the teeth.
Crozat appliance A wrought-wire removable orthodontic appliance introduced by George Crozat.
curve of Spee [Ferdinand Graf von Spee (1855-1937)] The anatomic curve established by the occlusal and incisal surfaces of the tooth crowns, as projected into the median plane in either dental arch. This curve is generally concave upward in the mandibular arch and convex for the maxillary arch. Also called Anteroposterior curve.
curve of Wilson (George H. Wilson 1855-1922) Because the long axes of the mandibular molars and premolars converge towards the midline, the occlusal surfaces of these teeth, bilaterally, form a curve in a buccolingual direction. This imaginary curve which is defined by a line tangent to the buccal and lingual cusps of the mandibular posterior teeth bilaterally, is termed the curve of Wilson. Also called Mediolateral curve.
cyst A sac (normal or abnormal) in bone or soft tissue, usually lined by epithelium and containing a liquid or semisolid material.

debanding The removal of cemented orthodontic bands.
debonding The removal of bonded orthodontic attachments.
decompenation Orthodontic tooth movement that is done to bring teeth into optimum position in their respective jaws in preparation for orthognathic surgery.
DDS or DMD Doctor of Dental Surgery or Doctor of Dental Medicine, two equivalent degrees awarded by dental schools to graduates of the doctoral dental program.
depit bite Excessive overbite; closed bite.
deflection Any change in the geometry (size and/or shape) of a body produced by the application of force.
dehiscence A fissural defect in the facial alveolar plate extending from the free margin apically.
dental plaque A “conglomeration” of bacteria and organic matter which adheres to the teeth and related structures.
dentin The hard tissue of the tooth surrounding the central core of nerves and blood vessels (pulp). It forms the bulk of a tooth and is covered by enamel on the coronal part and cementum on the radicular portion of the tooth.
dentition

primary dentition Teeth that develop and erupt first in order of time and are normally shed and replaced by permanent (succedaneous) teeth.
transitional dentition A phase in the change from primary to permanent dentition, in which the primary molars and canines are in the process of exfoliating and the permanent successors are emerging.

adolescent dentition The dentition that is present after the normal loss of primary teeth and prior to cessation of growth that could affect orthodontic treatment.

adult dentition The dentition that is present after the cessation of growth that could affect orthodontic treatment.

dentofacial deformity Malformation of the dental and/or facial structures characterized by disharmonies of size, form and function, malocclusion, cleft lip and palate and other skeletal or soft-tissue deformities, including various types of muscular dysfunction.

dentofacial orthopedics A synonym for orthodontics that more fully describes the scope of contemporary practice. See orthodontic.

developmental guidance See guidance.

diagnostic set up A laboratory procedure in which teeth are removed from the plaster cast and repositioned in wax. It may be used as a diagnostic tool to evaluate alternative treatment plans, particularly in interdisciplinary treatment, when a tooth size discrepancy exists or when orthognathic surgery is required along with orthodontic treatment.

diarthoses Another term for synovial joints.

diastema A space between two adjacent teeth in the same dental arch.

differential moment The application of different moments to adjacent teeth that create different tendencies to rotate with different equilibrium forces present.

digital image A rectangular array of numbers representing the gray scale of a radiograph or color shades of a color image.

digitization Conversion of any landmark of interest to numerical values on a two or three-dimensional coordinate system. The process allows for automatic measurement of landmark relationships and reduces the human error to landmark identification.

Diplomate A dental specialist who has achieved certification by the recognized certification board in that specialty, as attested by a certificate from the Board. See American Board of Orthodontics.

direct reimbursement A self-funded program in which the individual is reimbursed, based on a percentage of the cost of dental care. Allows beneficiaries to seek treatment from the dentist of their choice.

disclusion Separation of opposing occlusal surfaces as the mandible moves into different functional positions.

discrepancy A disparity in the ratio of tooth size to arch length.

displacement A movement from the usual place or position.

distal A direction oriented along the dental arch away from the dental midline; right or left in the anterior segment posteriorly in the buccal segments.
distal segment Synonymous with posterior segment.
distoclusion Mandibular teeth occlude posterior to their normal relationship to the maxillary teeth, as in an Angle Class II malocclusion.
distoversion A term sometimes used to describe a tooth positioned distal (posterior) to its normal position.
distraction osteogenesis A surgical technique used for lengthening of bones for the correction of skeletal deformities; in the craniofacial area it is used for the treatment of hypoplasias of the maxilla or the mandible.

DHMO (dental health maintenance organization) A legal entity that accepts responsibility and financial risk for providing specific services to a defined population during a defined period of time at a fixed cost. An organized system of healthcare delivery that provides comprehensive care to enrollees through designated providers. Enrollees are generally assessed a monthly payment for healthcare services and may be required to remain in the program for a specified amount of time. See HMO.
dolichocephalic Long, narrow cranial form (cephalic index 75.9 or less); the opposite of brachycephalic.
dolichofacial A facial pattern characterized by a long, narrow face; preferred term is leptoprosopic.
down-fracture In orthognathic surgery, a procedure in which all or part of the maxillary alveolar or basal bone is separated and/or broken away from the more superior elements of the midfacial skeleton. See Le Fort 1.

Downs analysis A group of ten lateral cephalometric measurements developed by William B. Downs for the purpose of evaluating dentofacial relationships.
drift See mesial drift.
dysfunction Partially impaired or abnormal function.
dysplasia Abnormality in development.

- E -

early orthodontic treatment Orthodontic treatment started while the patient is still in the transitional or primary dentition.
EARR Abbreviation for External Apical Root Resorption.
ectopic Located away from normal position; often used to describe a condition in which a tooth develops or erupts in an abnormal position.
edge-to-edge occlusion An occlusion in which the anterior or posterior teeth of both jaws meet along their incisal or buccal cuspal edges. Often associated with a Class III molar relationship.
edgewise appliance A fixed orthodontic appliance characterized by attachment brackets that have a rectangular slot for engagement of a rectangular orthodontic wire.
elastic descriptive of material behavior such that, upon unloading from a deformed state, recovery is totally to the configuration prior to loading (adjective). A flexible appliance auxiliary, that exhibits substantial force.
elastics (rubber bands) Variably used as Class II elastics, Class III elastics, Diagonal elastics, Up-down (vertical) elastics and cross-elastics. Usually made of latex.
elastic deformation A deformation not sufficiently severe to take the most strained element of a body beyond the elastic limit of the material.
elastic limit The limit of load, stress, deformation, or strain beyond which the loaded (activated) body will exhibit permanent deformation (a new passive shape) upon complete unloading (deactivation).
elastic range The deformation or strain coordinate of the elastic limit.
elastic strength The load or stress coordinate of the elastic limit.
elastomeric ligature A polymeric or rubber band or thread that is stretched around the tie-wings of an orthodontic bracket for the purpose of preventing disengagement of an archwire or auxiliary from the bracket-slot.

electrosurgery The application of a high-frequency electric current to tissue as a means to remove lesions, arrest bleeding, or cut tissue. Electrosurgery can be used to cut, coagulate, desiccate or fulgurate tissue.

embrasure 1. the space formed when adjacent surfaces flair away from one another. 2. in dentistry, it is the space that is formed around the adjoining contact of two teeth.

emergence Coming out of; often used to describe the initial appearance of a tooth as it breaks through the gingival tissue during eruption.

EMG Abbreviation for electromyography.

enamel The hard, thin, translucent layer of calcified tissue that surrounds the dentin in the coronal part of the tooth. It is also the hardest material in the human body.
enameloplasty the reshaping of the enamel, often done as occlusal adjustment.
enucleate A surgical procedure that describes the removal of a complete structure, such as an unerupted tooth or a cyst.
equilibrates To reshape the occlusal (functional) surfaces of the teeth in order to alter the functional relationship, thereby redistributing and balancing the functional load.
eruption Movement of teeth in an incisal or occlusal direction into the oral cavity through the supporting bone and gingival tissue.
esthetics, facial See facial esthetics.
etch The application of a weak acidic solution to the labial or lingual surfaces of teeth as part of preparation for bonding orthodontic attachments to the teeth.
etchant An agent that is capable of etching the surface.
etiology The cause of a medical or dental condition.
excessive force Force delivered by an orthodontic appliance that is of such magnitude that it may damage supporting tissue or cause anchorage loss.
exfoliate Physiological loss or shedding, as when a primary tooth is lost prior to the eruption of the permanent tooth.
exostosis  An overgrowth of bone which results in a bony projection, as a tori or spur.
exansion  Enlargement; often used to describe the mechanical widening of the dental arches.
exansion key  An instrument used to turn the "jackscrew" in an expansion appliance.
exansion screw  A mechanical device incorporated in a removable or a fixed appliance that is used to enlarge the dental arch in some dimension.
exansion, rapid palatal (RPE)  See rapid palatal expansion.
extraction  Removal of a tooth.
extraction, serial  See serial extraction.
extraoral anchorage  Anchorage located outside the mouth.
extraoral force or traction  A force that originates outside the oral cavity.
extrusion  A translational form of tooth displacement with movement occlusally directed and parallel to the long axis of the tooth.

- F -

facebow  1. A long metal bow which is used in conjunction with extraoral traction anchored on the back of the head or neck. The metal bow inserts intraorally into an orthodontic appliance and is generally used to distalise teeth or bones or prevent their forward movement. 2. A caliper-like instrument used to record the spatial relationship of the maxillary arch to some anatomic reference point or points and then transfer this relationship to an articulator; it orients the dental cast in the same relationship to the opening axis of the articulator.
facemask  The component of an (primarily) extraoral, reverse-pull or protraction appliance that distributes responsive force across much of the face.
facial  Of or relating to the face. Often used to identify the surface of a tooth located nearest the face.
facial asymmetry  A term used in the negative sense to describe a reduction of similarity or proportion between the right and left sides of the face or the craniofacial skeleton. May also be applied to any structure that is too large or small so as to be out of balance or not proportional to other structures.
facial concavity  A term applied to the analysis of a profile. The shape is described as an inwardly rounded curve from the forehead to the lips to the chin. A concave facial profile is often associated with a Class III malocclusion.
facial convexity  A term similar to facial concavity, but describes an outwardly rounded curve from the forehead to the lips to the chin. Facial convexity indicates a fullness in the lip region and is associated with a Class II malocclusion.
facial esthetics  A term pertaining to facial beauty, symmetry, balance and proportion.
facial form  The configuration, shape or appearance of the face from an anterior frontal view.
facial growth  The process of enlargement of the craniofacial skeleton and soft tissues.
facial pattern  A term generally used to describe the facial form or the direction and type of facial growth.
facial proportions An assessment of the balance of the face from a frontal or profile view. The intent of the assessment is to determine asymmetry or imbalance.

facial type A classification of the face. Three facial types are described: brachycephalic or euryprosopic (wide, short), dolichocephalic or leptoprosopic (long, narrow), and mesocephalic or mesoprosopic (average).

faciolingual The local direction perpendicular to the mesiodistal direction and parallel to the occlusal plane; the facial direction/sense is away from and the lingual (or palatal) direction/sense is toward the tongue; labial and facial are synonymous in the anterior portion of the dental arch, and buccal is synonymous with facial in the posterior portions of the dental arch.

fatigue The tendency for a metal to break under conditions of repeated cyclic stressing considerable below the ultimate tensile strength.

fee for service dentistry A method of paying practitioners on a service-by-service basis rather than a salaried or capitated basis.

fenestration A window defect of the gingival tissue or alveolar bone contiguous to the root surface.

fiberotomy A surgical procedure designed to sever the gingival and/or transseptal periodontal fibers around a tooth in an attempt to reduce the tendency for relapse of corrected tooth rotations.

finger spring A configured segment of wire that may be included in an orthodontic appliance or a retainer that, when activated, tips a tooth in a desired direction.

finishing A stage of treatment that is toward the end of comprehensive orthodontic care in which the teeth are placed in their final positions.

first order bends See bends, first order.

first order rotation A tooth as a whole rotates about an occlusogingival axis. The angulation/orientation of the long axis of the tooth does not change.

fixation Immobilization of the facial bones after a surgical procedure by means of wires, screws, plates, elastics, or splints until the healing process is complete.

fixed appliance An orthodontic appliance whose attachments are bonded or cemented to the teeth and cannot be removed by the patient. Generally termed 'braces' by the lay public.

flush terminal plane A developmental stage. The normal and desirable time-linked relationship of the distal surfaces of the maxillary and mandibular second primary molars.

flux A material used when soldering or brazing to remove surface oxides and impurities and to improve wettability.

FMA Cephalometric assessment of the inclination of the lower border of the mandible to the Frankfort plane.

FMIA Common cephalometric assessment of the mandibular incisor inclination with the lower border of the mandible.
force  A mechanical action of one body on another that tends to displace and/or deform the body receiving it. Force may be continuous, intermittent, interrupted, intraoral, extraoral, orthodontic, orthopedic, elastic, spring, magnetic, etc. depending on the motivating elements involved.

fossa, glenoid  See glenoid fossa.

Fränkel appliance (introduced by Rolf Fränkel)  An activator type functional appliance that is intended to stimulate or inhibit jaw growth, retrain muscles or widen the dental arches. It is unique in that it is the only tissue borne functional appliance.

free-way space  The clearance or interocclusal distance between the maxillary and mandibular teeth when the mandible is in its postural resting position.

frenectomy  The surgical removal or repositioning of a frenum. Performed to enhance the stability of a corrected diastema or to alleviate a "tongue-tie".

frenum  A fold of mucous membrane and underlying fibrous tissue that connect lip, cheek or tongue to the alveolar mucosa. (May be labial or lingual).

friction  A resistance to the relative displacement of contacting bodies in a direction tangent to the plane of contact.

frontal cephalometric radiograph  A radiograph taken with the x-ray source located behind the head and the x-ray film located in front of the face. More correctly termed a postero-anterior (P-A) cephalometric radiograph. See cephalometric radiograph.

full treatment  Comprehensive orthodontic treatment including both maxillary and mandibular dental arches.

functional appliance  A term used to describe a class of appliances which utilize the muscle action of the patient to produce orthodontic or orthopedic forces.

functional jaw orthopedics  The form of therapy, usually with activator-type appliances, that utilizes the musculature to create dentofacial changes.

functional matrix  A theory, which explains the interrelationship between osteogenesis and local functional demands, proposed by Melvin L. Moss.

functional occlusion  An arrangement of the teeth intended to minimize stress on the temporomandibular joint; maximize function, stability and esthetics of the teeth; and provide for protection and health of the periodontium.

- G -

gemination (twinning)  Abnormal tooth development due to incomplete division of a single tooth bud.

genial  Pertaining to the chin.

genioplasty  A surgical procedure designed to reshape the contour of the chin, usually by augmentation or reduction.
gingiva The fibrous investing tissue, covered with epithelium, which immediately surrounds the teeth and is contiguous with the periodontal ligament and with the mucosal tissues of the mouth.

gingival attachment The fibrous attachment of the gingiva to the tooth/teeth.

gingival crevicular fluid (GCF) The fluid that usually seeps into the sulcular area around the tooth from the crevicular epithelium. The flow of this fluid is increased in the presence of inflammation.

gingival display Measure of exposure of gingival tissue during a smile. See gummy smile.

gingival graft A surgical procedure usually performed to establish an adequate amount of attached gingiva around a tooth or group of teeth.

gingival recession Shift of a gingival margin apically so that part of the root of the tooth is exposed.

gingivitis Inflammation of the gingiva.

glenoid fossa The depression or fossa in the temporal bone in which the condyle of the mandible is positioned; part of the temporomandibular joint (TMJ).

glossectomy Partial or total resection of the tongue.

gnathion The most anterior-inferior point on the chin; a cephalometric landmark in the lateral view.

gnathology The study of the functional and occlusal relationships of the teeth as they relate to the TMJ; sometimes also used to identify a specific philosophy of occlusal function and treatment or articulator simulation of these movements.

golden proportion The ratio between succeeding terms in a mathematical progression (Fibonacci series) in which each number is the sum of the preceding two numbers (1, 1, 2, 3, 5, 8, 13, 21, …….). The ratio converges approximately on 1.618 to 1. It is suggested that such a ratio exists in the natural dentition, the balanced faces, skeletal structures and thus used in orthodontics.

gonial angle The most postero-inferior point on the angle of the mandible. It is located where the mandibular body and ramus join in the region of the attachment of the masseter muscle. (Gonion).

graft A portion of tissue used for implantation.

grinding Usually a term synonymous with bruxism or parafunctional activity.

group function Multiple simultaneous contacts of several maxillary and mandibular teeth on the working side in lateral movements of the jaw during which forces are distributed on a number of teeth.

growth An increase in size.

growth forecast (or prediction) A predicted estimation of change in the location or size of the bones of the craniofacial skeleton due to expected growth and development and/or the effects of treatment.

growth potential An estimation of the amount of growth yet to occur.

growth site An area where growth occurs.

growth spurt An increase in the rate of growth (velocity) during adolescence. It usually occurs at 10-12 in the female and 12-14 in males coincident with the events of puberty.

guard, mouth See mouth guard.

guidance, condylar See condylar guidance.
guidance, developmental  A planned orthodontic and orthopedic effort to influence the growth of the jaws and eruption of the teeth, with the objective of guiding abnormal development into a normal situation. This generally requires a combination of carefully timed appliance therapies and supervisory examinations involving radiographic and other diagnostic records at various stages of development. This may be required from the earliest date of detection of a developing malformation until the craniofacial skeleton is mature.

guide plane  A fixed or removable orthodontic appliance designed to deflect the functional path of the mandible and alter positions of specific teeth.

guided tissue regeneration (GTR)  A procedure that attempts to regenerate lost periodontal tissues or alveolar bone through differential tissue response.

gummy smile  A popular term for excessive exposure of maxillary gingival tissue during a full smile.

- H -

habit  In dentistry, a term applied to frequently repeated negative activity such as finger or lip sucking or tongue thrusting. Such activity may alter the normal development of the teeth or bones.

habit therapy  Treatment designed to prevent potentially deforming finger, lip or tongue habits and/or correct a malformation of the teeth or bones caused by a habit. Treatment might occur with counseling or with appliance therapy or both.

habitual occlusion  The usual intercuspatation position of the teeth which may or may not coincide with centric occlusion or centric relation.

hand-wrist x-ray  An x-ray of the carpal, metacarpal and phalangeal bones of the hand and wrist which can be used to evaluate the progress of the individual toward maturity (bone age or developmental age or skeletal age).

hardness  The resistance of metal to plastic deformation by indentation. The most common method of measurement is Rockwell. Other methods are Brinell, Tukon and Vickers.

hardness number  The number used to designate the hardness of metal. The number is related to the scale of values of a particular hardness test, as Rockwell B 80 or Brinell 150.

Hawley appliance  A Hawley retainer modified to allow for minor corrective procedures.

Hawley retainer  A passive removable acrylic and wire appliance, generally used to stabilize teeth in their new position after orthodontic correction. See retainer.

headcap  The component of an (primarily) extraoral appliance that distributes and transfers responsive force to the cranium.

headfilm  A common term for a cephalometric radiograph.

headgear  Common generic term for an extraoral traction appliance that can be used for growth modification, tooth movement and anchorage.

Health Maintenance Organization (HMO)  A legal entity that accepts responsibility and financial risk for providing specific services to a defined population during a defined period of time at a fixed price. An
organized system of healthcare delivery that provides comprehensive care to enrollees through designated providers. Enrollees are generally assessed a monthly payment for healthcare services and may be required to remain in the program for a specified amount of time. See DHMO.

**helix** A spiral bend placed in an orthodontic archwire in the shape of a closed circle.

**hemisection** The procedure of sectioning a multirooted tooth, most commonly the mandibular molar.

**Herbst appliance** Fixed or removable appliance designed to effect an orthopedic change of the mandible much like an activator. The appliance obliges the jaw to function in an anterior position to stimulate sagittal correction of Class II malocclusions. It is named for Emil Herbst.

**high angle malocclusion** A general term applied to a craniofacial pattern in which growth is more vertical than normal; more specifically, a patient with an unfavorable steep angle of the lower border of the mandible. See hyperdivergent.

**high-pull headgear** A (primarily) extraoral appliance that transmits force to a facebow, J-hooks, or chin cap so that, from a sagittal perspective, the cited force includes a superiorly directed component.

**HMO** See Health Maintenance Organization.

**hinge axis** The axis of mandibular rotation in the initial opening movement; usually passing through the mandibular condyles; in gnathologic terms, the most retruded position of the condyle in the glenoid fossa from which functional movements initiate. (also called transverse horizontal axis).

**holding arch** See lingual arch.

**Hooke's law** The ratio of mechanical stress to mechanical strain is a constant, as in an elastic modulus of material.

**hooks** Attachments soldered or welded to archwires for the placement of elastics, headgear, or elastic chains.

**hypercementosis** An excessive deposition of cementum.

**hyperdivergent** A facial pattern which includes a high angle of the mandible to Frankfurt plane, possibly a prognathic maxilla, a retrognathic mandible, tendency to open bite, lip incompetence and often a long, sloping forehead.

**hyperplasia** Tissue enlargement through multiplication of cells, often a response to inflammation or drugs.

**hypertrophy** An increase in tissue bulk due to an increase in size of the tissue elements.

**hypodivergent** A facial pattern characterized by a low mandibular plane angle, generally favorable horizontal skeletal relationships, maxillary retrusion, deep overbite of the incisor teeth, a prominent chin, a short nose and a straight or concave profile.

**hypodontia** Congenital absence of one or more teeth.

**hypoplasia** Incomplete development of a tissue or structure.

**hysteresis** The lagging or delay in the effect of a system’s change. In orthodontics, the term is often used for the load deflection curve of the superelastic wires where there is separation between the loading and unloading curves.
**iatrogenic** An unfavorable response induced by a therapeutic effort.

**ideal occlusion** A theoretical placement of the teeth in the dental arches which maximizes esthetics function, stability and longevity of the dentition and supporting structures.

**idiopathic** Pain, disease or disorder of unknown causation.

**imaging** The process of acquiring representations of structures in either two or three dimensions.

**imbrication** An overlap of incisors and canines due to crowding.

**immobilization** To fix in place so that no movement is possible. Usually used in regard to orthognathic surgery.

**impaction (tooth)** A condition that describes the total or partial lack of eruption of a tooth well after the normal age for eruption.

**impaction (surgical)** A term usually used to describe orthognathic surgery involving the superior repositioning of the upper jaw. See Le Fort 1.

**implant** 1. Any object or material, such as an alloplastic substance or other tissue, which is partially or completely inserted or grafted into the body for therapeutic, diagnostic, prosthetic, or experimental purposes. 2. Generally an artificial structure placed into bone which provides for prosthetic replacement of some missing structure. Also used to describe a graft placed in soft tissue.

**impression** A negative likeness or copy in reverse of the surface of an object; an imprint of the teeth and adjacent structures for use in dentistry/orthodontics. An impression in orthodontics is typically produced by placing an elastic compound like alginate in a preformed tray, and placing the loaded tray over the teeth until the material stiffens. The impression is removed from the mouth and may be filled with plaster to produce an exact positive reproduction of the teeth or dental arch.

**incisal** Pertaining to the cutting edge of the anterior teeth.

**inclination** The angle of the long axis of a tooth from a particular line of reference; the tilt or tip of a tooth.

**inclined plane** An acrylic ledge or platform which is usually added to a maxillary Hawley retainer and is designed to intrude teeth or to position the lower jaw forward.

**index of malocclusion** A system of measurement to describe and quantify malocclusion characteristics.

**indirect bonding** A procedure for bonding orthodontic attachments to the teeth. A laboratory process is performed to position the attachments on plaster casts; the prepositioned attachments are then bonded to the teeth utilizing an elastic impression tray as a transfer device.

**Individual Practice Association (IPA)** A partnership, corporation or other legal entity which contracts with an HMO, union or other provider to provide care to an enrolled group for a fixed monthly amount. In the IPA, the provider can work from his office instead of an HMO center or clinic. Fee-for-service patients can be treated alongside those in the IPA plan. Patients in the IPA plan must use a participating provider. The provider must follow IPA practices, accept reimbursement as full payment and comply with IPA peer review and quality assurance procedures. Typically, the IPA pays the provider a percentage of his fee,
with the remaining percentage held in a reserve pool that may be divided at year’s end by the provider if any funds remain.

**inelastic deformation** Deformation of a member sufficiently substantial to exceed the elastic limit of the material and, upon total unloading (deactivation), the result is in a 'permanent set' (a change in geometry/shape from the passive state prior to the deformation).

**infection control** Measures practiced by healthcare personnel in healthcare facilities to decrease transmission and acquisition of infectious agents (e.g., proper hand hygiene, scrupulous work practices, use of personal protective equipment (PPE) [masks or respirators, gloves, gowns, and eye protection]. These guidelines are set by CDC, OSHA, etc.

**informed consent** An agreement by the patient or parent to proceed with or decline treatment after the benefit and risks of treatment options have been presented.

**infradentale** The highest and most forward point of the alveolar process between the mandibular central incisors.

**infraocclusion** A tooth or teeth positioned below the normal plane of occlusion.

**intensifying screen** A stiff sheet of plastic impregnated with a material which fluoresces when exposed to x-radiation. It is used in an x-ray cassette to intensify the x-ray image and reduce the patient's exposure to radiation. See rare earth screen.

**interceptive orthodontics** An extension of preventive orthodontics that may include localized tooth movement. Such treatment may occur in the primary or transitional dentition and may include such procedures as required for the redirection of ectopically erupting teeth, correction of dental crossbites or recovery of space loss where overall space is inadequate. When initiated during the incipient stages of a developing problem interceptive orthodontics may reduce the severity of the malformation and mitigate its cause. Complicating factors such as skeletal disharmonies, overall space deficiency, or other conditions may require subsequent comprehensive therapy.

**interdental spacing** Spacing between the teeth.

**interdigitation** Intercuspation.

**interleukins (IL)** A group of proteins that function as cytokines and are regulatory of immune function. These proteins are produced as metabolites of arachidonic acid.

**intermaxillary** Between the upper and lower jaws.

**intermaxillary anchorage** (Baker’s anchorage) Anchorage in which units in one jaw are used to effect tooth movement or to apply traction on the other dental arch.

**intermaxillary elastic traction** Use of elastics to apply traction between the upper and lower jaws.

**intermittent force** An orthodontic or orthopedic force that is inactive for intervals of time during the between-appointments period, often exhibiting a cyclic, long-term, magnitude-time pattern (e.g., force exerted by an extraoral appliance worn only at night).
**internal derangement** An intracapsular problem of the TMJ which may relate to arthritis, fibrosis, tumors, condylolysis, condylar hyperplasia or other internal factors. This condition often reflects a displacement or malrelation of the articular disk to the condyle and articular eminence.

**interocclusal clearance** Synonymous with freeway space.

**intramaxillary** Within one dental arch.

**intramaxillary anchorage** A situation where a tooth or group of teeth provides anchorage to apply traction to other teeth within the same arch.

**intraoral anchorage** Anchorage located inside the mouth.

**intraoral force** Force which is generated by orthodontic appliances in the oral cavity.

**intrusion** A translational form of tooth movement directed apically and parallel to the long axis of a tooth.

**irregularity index** An assessment of the crowding of the anterior teeth developed by R. Little.

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**J**

**J-hook headgear** An extraoral appliance (headgear) that uses a pair of metallic hooks, each in the shape of the letter ‘j,’ which, when attached to a tooth or to an archwire, delivers a force bilaterally to anterior, intraoral sites.

**jackscrew** Synonymous with expansion screw.

**jaw** A common term for either the maxilla (upper jaw) or mandible (lower jaw).

**jaw relationship** The position of the upper jaw in relationship to the lower jaw; usually an anteroposterior or transverse assessment.

**joint symptoms** A generalized term that refers to various aspects of TMJ dysfunction, internal derangement or other conditions involving the TMJ.

**jumping the bite** A “slang” term - The correction of a crossbite brought about by horizontal movements of teeth and, occasionally, the jaw, to their correct position.

**jumper** A spring appliance that is attached to fixed appliances to move teeth (similar to a Herbst appliance and developed by J. J. Jasper.)

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**K**

**key ridge** The most inferior point on the zygomatic process of the maxilla as seen in a lateral cephalometric radiograph; the craniometric point zygomaxillare.

**Kloehn headgear** See Headgear.

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**L**

**labial** Of or pertaining to the lip. A term that describes a tooth surface facing the lips. Has the same meaning as 'facial' in the anterior portion of the dentofacial complex.
labial arch or bow A wire that traverses the labial surfaces of the teeth.
labial sulcus The furrow that lies between the lips and the alveolar process.
labial root (lingual crown) torque The third-order couple of a transverse force system applied to the crown(s) of a tooth or dental segment that has the potential for rotational displacement which results in labial movement of the root(s) and/or lingual movement of the crown(s).
labiolingual appliance A fixed orthodontic appliance that includes both facial and lingual crown attachments and archwires.
labioversion General term indicating the deviation of a tooth toward the labial.
labrale inferior Most forward point of the lower lip.
labrale superior Most forward point of the upper lip.
laminography Tomography, i.e., sectional radiography.
landmarks, cephalometric Anatomic and constructed measure points used in analysis of cephalometric radiographs.
LASER Abbreviation for Light Amplification by Stimulated Emission of Radiation. A device that concentrates light into an intense, narrow beam used to cut or destroy tissue. It is used in surgery (frenectomy, canine exposure, gingival recontouring etc.), photodynamic therapy, and for a variety of diagnostic purposes.
lateral cephalometric radiograph An x-ray taken according to cephalometric conventions with the x-ray source facing the right side of the face and perpendicular to the mid sagittal plane. The x-ray film faces the left side of the face. This radiograph is used to measure and determine sagittal and vertical craniofacial relationships. See cephalometrics.
lateral excursion Movement of the mandible away from its centric position.
leeway space The difference between the combined widths of the three buccal primary teeth (canine and two molars) and their permanent successors (canine and two premolars).
Le Fort surgical procedure Surgical procedure in which parts of the upper face are completely separated from their supporting structures and repositioned to effect corrective alignment.

Le Fort I surgical procedure A horizontal segmented fracture of the alveolar process of the maxilla, in which the teeth are usually contained in the detached portion. (Also called Guerin’s fracture)

Le Fort II surgical procedure A pyramidal fracture of the midfacial skeleton with the principal fracture lines meeting at an apex at or near the superior aspect of the nasal bones. The lateral orbital rims and nasal processes are typically intact.

Le Fort III surgical procedure A craniofacial dysjunction fracture in which the entire maxilla and one or more facial bones are completely separated from the cranial base. Also called Transverse facial fracture.
leveling A phase of comprehensive orthodontic treatment when fixed appliances are used to change the line of intercuspation from a curve to a straight line; to align the teeth in the same plane.

leveling wire Orthodontic wire, sometimes round (in cross-section) and that exhibits low flexural stiffness, used in the leveling phase of treatment.

ligament, periodontal See periodontal ligament.

ligation The act of tying, of applying a ligature. In orthodontics the term is often used to denote tying a wire to the orthodontic brackets.

ligature A tie that secures the archwire in the bracket-slot typically annealed wire, rubber, or a polymer.

light-wire technique An orthodontic treatment modality in which the appliance components to be activated are relatively flexible. Small force values, active over long time periods are used.

limited orthodontic treatment Typically focuses on limited objectives, not necessarily involving the entire dentition. It may be directed at the only existing problem, or at only one aspect of a larger problem in which a decision is made to defer or forego a more comprehensive plan of therapy.

lingual Of or pertaining to the tongue. A term used to describe surfaces and directions toward the tongue.

lingual appliances Orthodontic appliances fixed to the lingual (toward the tongue) surface of the teeth.

lingual arch A single orthodontic wire, that traverses the lingual surfaces of the teeth, usually from molar to molar. Generally used for stabilization, as a holding arch for space maintenance, for expansion, or to provide anchorage for intermaxillary traction.

lingual frenum See frenum.

lingual retainers A variation of the lingual arch that traverses the lingual surfaces of the mandibular anterior teeth between the cuspids. The purpose is to stabilize the teeth.

lingual root (labial crown) torque The third-order couple of a transverse force system applied to the crown(s) of a tooth or dental segment that has the potential for rotational displacement which results in lingual movement of the root(s) and/or labial movement of the crown(s).

lingual version Denotes malposition of one or more teeth to the lingual; same as linguoclusion.

linguoclusion An occlusal relationship in which the position of one or more teeth is abnormally lingual. Affected teeth must be identified when this term is used.

lip bumper An appliance designed to eliminate excessive lip pressure on the anterior teeth and transfer that force to the molars. Typically consists of a labial archwire with or without an anterior plastic pad, fitted into tubes on the molars. The treatment objectives are to allow incisors to move forward and to distalize the molars, thereby increasing the arch length.

lip incompetence A gap between the relaxed upper and lower lips because of a vertical hard and soft tissue imbalance.

long-face syndrome A craniofacial pattern characterized by a long and narrow face, an increased mandibular plane angle, an anterior open bite malocclusion and lip incompetence. It is thought by some to result partly from a lack of adequate airway.
long-axis rotation A nontranslational tooth movement characterized by the coincidence of the long axis and the axis of rotation.

luxation Forceful movement or displacement of an anatomic structure. In dentistry, may describe displacement of the mandibular condyle or the intentional movement of a tooth in its alveolus with tearing of the periodontal fibers; sometimes used in an effort to free an ankylosed tooth.

- M -

macrodontia Teeth that are larger than normal.

magnetic force Repelling and attracting forces created by small rare earth magnets, incorporated in fixed and removable orthodontic appliances to cause changes in tooth position or optimize response in functional magnetic growth guidance appliances.

MRI (Magnetic Resonance Imaging) Creation of images specifically of the TMJ for studies of articular disc position.

mal- Prefix denoting a bad or unfavorable condition. Malalignment, malocclusion, malposition and malrelation are common terms used in describing unfavorable tooth positions.

malocclusion (relationship of teeth in occlusion) A deviation in intramaxillary and/or intermaxillary relations of teeth from normal occlusion. Often associated with other dentofacial deformities. See Angle classification.

malar Relating to the cheek or cheekbone. See zygoma.

mandible The lower jaw.

mandibular resection (osteotomy) Surgical removal of a part of the mandible to allow repositioning of the remaining parts.

mandibular osteotomy Surgical sectioning of the mandible into two or more parts to allow repositioning of the resulting components.

mastication The process of chewing food for swallowing and digestion.

materia alba White accumulation or aggregation of microorganisms, desquamated epithelial cells, blood cells and food debris loosely adhered to surfaces of teeth, soft tissues, dental restorations and orthodontic appliances. Less adherent than plaque, but may change into plaque.

maxilla Paired facial bones that form the base for the upper dental arch, floor of the nose and much of the lower border of the orbit and cheek bones.

maxillary Of or pertaining to the upper jaw. May be used to describe teeth, dental restorations, orthodontic appliances or facial structures.

maxillary osteotomy Surgical sectioning and repositioning of maxillary bone structure to alter bone and jaw relationships.

maximum force An orthodontic force having the greatest magnitude within a range of force values that will produce tooth movement at a clinically acceptable rate.

mechanotherapy Orthodontic treatment with mechanical forces, that act on the dentofacial complex.
mediolateral The direction perpendicular to a sagittal plane of the dentofacial complex; the medial direction/sense is toward, and the lateral direction/sense is away from the mid-sagittal plane.

menton The most inferior point on the chin in the lateral view. A cephalometric landmark.

mesial Toward or facing the midline, following the dental arch. Used to describe surfaces of teeth, as well as direction.

mesial drift A term applied to either a natural developmental phenomenon whereby the posterior teeth continually move slightly forward as the interproximal surfaces wear or where contiguous teeth are missing and there is movement into that space.

mesioclusion An occlusal relationship in which the mandibular teeth are positioned mesially (forward) relative to the maxillary teeth, similar to the relationship in an Angles Class III malocclusion.

mesiodens A supernumerary tooth located in the midline of the maxillary alveolar process. Often unerupted, it may inhibit or otherwise disrupt eruption and the position of the incisor teeth.

mesiodistal The local direction tangent to the ideal arch form and parallel to the occlusal plane; the mesial direction/sense is toward, and the distal direction/sense is away from, the midline of the dentition.

midsagittal plane The imaginary, vertical plane that separates the left and right sides of the dentofacial complex.

miniscrews Small titanium alloy or stainless steel surgical bone screws.

mesognathic Position of jaws forward from their normal position in relation to other facial structures.

microdontia Abnormal smallness of teeth.

microglossia Presence of a small tongue.

micrognathia An abnormally small jaw.

migration (dental) Spontaneous movement of a tooth or teeth after eruption.

mixed dentition The developmental stage during which both primary and permanent teeth are present in the mouth (approximately 6 to 12 years of age).

model (dental) Popular name for a cast of a tooth or teeth, usually in plaster or similar material.

modiolus The area near the corner of the mouth where eight facial muscles converge.

moment A tendency to rotate as a result of the application of a force that is not through the center of resistance of a body. Moments are measured either as 1) the magnitude of a single applied force times the perpendicular distance the force acts away from the center of resistance, or 2) in the case of a couple, the magnitude of one of the forces of the couple times the distance between the forces of the couple.

monobloc A removable activator type orthodontic appliance.

monomer A chemical compound that can undergo polymerization.

mouthguard A removable elastic appliance used to protect the teeth and supporting tissues during contact sports.

movement
**first order movement** 
Movement of teeth in a faciolingual or y direction; also known as in- and out- movements.

**second order movement** 
Movement of teeth in a mesiodistal, x, direction.

**third order movement** 
Movement of teeth in a vertical, z, direction.

**MS** 
Master of Science, a degree awarded by a university graduate school, after completion of an advanced dental specialty education program.

**MSD** 
Master of Science in Dentistry, a degree awarded by a dental school after completion of an advanced dental education program.

**mucoperiosteum** 
Term used to describe the mucous membrane and the periosteum together. This is used in periodontal surgery to denote the total thickness flap.

**mucosa** 
The epithelial lining of body cavities opening to the outside. The oral mucosa lines all of the soft tissue surfaces of the mouth.

**myalgia** 
Muscle pain.

**myofunctional** 
Referring to the role of muscle function in relation to the teeth and jaws.

**- N -**

**nasion** 
A cephalometric landmark on the bony profile at the junction of the frontal and nasal bones.

**natural head position** 
A standardized orientation that the head assumes when the subject focuses on a point in the distance at eye level. It is used for clinical examination of the face by anthropologists, orthodontists and maxillofacial surgeons.

**neuroclusion** 
Normal mesiodistal occlusal relationships of the buccal teeth.

**nightguard** 
A removable plastic appliance worn at night to prevent the deleterious effects of nocturnal parafunctional activity (i.e., clenching, bruxism). See mouthguard.

**normal occlusion** 
Optimal meeting of upper and lower teeth during function with no malocclusion present (such as, rotations, malpositions or abnormal jaw relationships that are encountered in Class I, Class II and Class III malocclusion categories).

**- O -**

**obturator** 
A prosthesis used to close an opening. Frequently used to close the defect caused by a cleft palate.

**occlusal** 
Pertaining to the chewing surfaces of the posterior teeth. May be used to identify those tooth surfaces, as well as the direction (upward in the lower arch, downward in the upper).

**occlusoapical** 
The local direction perpendicular to the occlusal plane; also termed 'occlusogingival.'

**occlusal dysfunction** 
A term often used to describe abnormal functional forces and improper contact of maxillary and mandibular teeth. Untoward reaction beyond the teeth and investing tissues is claimed by some dentists, with the possibility of enhancing a multifactorial TMD etiology.
occlusal index A rating or categorizing system that assigns a numeric score or alphanumeric label to an individual's occlusion. There are five types: diagnostic, descriptive-epidemiological, treatment need or priority, treatment outcome, treatment complexity.

occlusal plane The imaginary surface on which upper and lower teeth meet in occlusion. It is actually a compound curved surface, but is commonly approximated by a plane (straight line in the lateral view) based on specific reference points within the dental arches.

occlusion The relationship of the maxillary and mandibular teeth as they are brought into functional contact.

onplant An anchorage fixture integrated to a bony surface beneath the soft tissue

open bite Lack of tooth contact in an occluding position. (also called apertognathia)

oral screen See vestibular screen.

orbitale The most inferior point on the lower border of the left orbit. A craniometric and cephalometric landmark.

ortho- A prefix denoting straight or correct.

orthodontic (orthopedic) Relating to correction of abnormal dental relationships, including facial structures and neuromuscular abnormalities.

orthodontic attachment An element affixed to a tooth crown that transmits force from the archwire or auxiliary to the dentition (e.g., a bracket).

orthodontic displacement Tooth movement achieved through biomechanical remodeling of the periodontal ligament and/or the alveolar bone.

orthodontic force Force generated by the orthodontic appliance that contributes to the correction of a malocclusion.

orthodontics/ dentofacial orthopedics That dental specialty which includes the diagnosis, prevention, interception, guidance and correction of malrelationships of the developing or mature orofacial structures.

orthodontist A dental specialist who has completed an advanced post-doctoral course in orthodontics which is accredited by the American Dental Association.

orthognathic Normal relationships of the jaws.

orthognathic surgery Surgery to alter relationships of teeth and/or supporting bones, usually accomplished in conjunction with orthodontic therapy.

orthopedic Correction of abnormal form or relationship of bone structures. May be accomplished surgically (orthopedic surgery) or by the application of appliances to stimulate changes in the bone structure by natural physiologic response (orthopedic therapy).

osseous Of or pertaining to bone.

ossification The process of replacing connective tissue such as cartilage and mesenchyme with bone.

ostectomy Surgical removal of a bone or part of a bone.

osteitis Inflammation of bone.
**osteoblasts** Cells that remodel and deposit bone. These cells arise from osteoprogenitor cells that are often located in the perivascular connective tissue.

**osteoclasts** A multinucleated giant cell of hematopoietic origin that has the role of removing bone.

**osteocoduction** 3-Dimensional structural scaffold to allow for the ingrowth of capillaries, perivascular tissue and osteoprogenitor cells of the host into the graft. The scaffold itself is not osteoinductive and therefore cannot initiate bone formation.

**osteocytes** Mature osteoblasts that are encased in the bony matrix.

**osteogenesis** Development of bone; formation of bone. See also distraction osteogenesis.

**osteoinduction** Recruitment of mesenchymal stem cells from the surrounding bed, and their differentiation into osteoblasts. The recruitment and differentiation of cells are modulated by bone morphogenetic proteins. The activity of BMP does not require viable graft cells. It is present not only in autografts, but also in modified allografts.

**osteotomy** Surgical procedure that involves the cutting of bone.

**overbite** Vertical overlap of maxillary teeth over mandibular anterior teeth, usually measured perpendicular to the occlusal plane.

**overjet** Horizontal projection of maxillary teeth beyond the mandibular anterior teeth, usually measured parallel to the occlusal plane. When not otherwise specified, the term is generally assumed to refer to central incisors and is measured from the labial surface of the mandibular tooth to the lingual surface of the maxillary at the level of the edge of the upper incisor. Unique conditions may sometimes require other measuring techniques.

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**palate** The bone and soft tissue that “closes” the space encompassed by the maxillary alveolar arch. There is a posterior extension to the pharynx. Forms the roof of the mouth and is connected to the nasal septum and floor of the nose in the midline.

- **hard palate** The anterior part of the palate that is supported by and includes the palatal extensions of the maxillary and palatine bones.

- **soft palate** The part of the palate lying posterior to the hard palate, composed only of soft tissues without underlying bony support.

- **velum** Posterior appendicular portion of the soft palate.

**palatal bar** Maxillary lingual appliance, usually transpalatal, connected to the first molars and used to maintain width and increase anchorage.

**palatal expansion** The lateral movement of the maxillae to increase palatal width.

**palpation** Digital manipulation and assessment of tissue in physical diagnosis.
panoramic radiograph A radiographic tomograph of the jaws, taken with a specialized machine designed to present a panoramic view of the full circumferential length of the jaws on a single film. Also know by several proprietary brand names of machines, most of which include 'pan' as a part of the name. (Also termed panoral or panorex.)
papilla (interdental) The gingival structure that occupies the space between adjoining teeth.
passivation A process by which metals and alloys are made corrosion resistant through surface treatment. This process usually produces a thin and stable oxide layer on the surface that is protective.
periapical Pertaining to the area and tissues around the apex (tip) of the root of a tooth.
perikymata Small transverse ridges on the surface of the enamel where the prisms of enamel overlap.
perimolysis Decalcification of the teeth from exposure to gastric acid in individuals with chronic vomiting.
periodontal ligament The periodontal membrane which serves a ligamentous function in tooth attachment.
periodontal membrane (or ligament) The fibrous tissue that occupies the space between tooth root and alveolar bone. It provides a ligamentous physical attachment of the tooth to the bone and nourishment to the cementum surface of the root and the cells that permit tooth movement.
periodontal pocket A periodontal disease condition characterized by an abnormally enlarged space between tooth and alveolar bone with destruction of the attaching periodontal membrane and invasion by oral epithelium. Often progressive, it results in bone and tooth loss if not arrested by treatment.
periodontics The dental specially concerned with the maintenance of the health and integrity of the periodontal tissues that support the teeth.
periodontium The investing and supporting tissues of the teeth; the periodontal membrane and alveolar process.
periosteum A membrane that lines the outer surface of all bones, except at the joints of long bones.
permanent dentition Those teeth that succeed the primary teeth and the additional permanent molars.
pharynx That part of the respiratory tract extending from the larynx to the nasal cavity; the throat is a part of the pharynx.
pixel The smallest part of a digitized or Digital Image. It is also used in measuring image size and resolution of a digital image.
pogonon The most anterior point on the chin. A cephalometric landmark in the lateral view.
point A The deepest point in the bony concavity in the midline below the anterior nasal spine. It is often called maxillary apical base. This is a landmark on the lateral cephalometric radiograph.
point B The deepest point in the profile curvature of the mandible from pogonion on the chin to infradentale (junction of alveolar bone and the lower incisors). It is often called mandibular apical base. A landmark on the lateral cephalometric film.
porion The superior surface of the external auditory meatus. In craniometry it is identified as the margin of the bony canal on the skull. In cephalometrics it may be identified from the earpost of the cephalostat (machine porion) or from bony landmarks on the film (anatomical porion).
positioner (tooth positioner) A removable elastic orthodontic appliance molded to teeth when their positions have been altered with a ‘setup’ made by repositioning the teeth from a plaster cast. The material may be rubber or elastomeric plastic. It is typically used to achieve fine adjustments and retain corrected positions during the finishing stages of treatment.

posterior nasal spine The radiographic image on the lateral cephalogram that denotes the posterior terminus of the palatal plane.

postural rest position The resting position of the mandible in normal posture. See freeway space, rest position.

PPO (Preferred Provider Organization) A formal agreement between a purchaser of a dental benefits program and a defined group of dentists for the delivery of dental services to a specific patient population, as an adjunct to a traditional plan.

preangulated bracket An orthodontic bracket that has its slot inclined to the ordinary mesiodistal direction but permits the generation of second-order action from a passive archwire. See straight-wire.

preventive orthodontic treatment Intended to mitigate the development of a malocclusion. Typical services may include dental restorations, temporary prostheses space maintainers, to replace prematurely lost deciduous teeth and removal of deciduous teeth that fail to shed normally when this might allow their permanent successors to erupt more favorably.

primary dentition See dentition.

proclination Anterior coronal tipping of anterior teeth, as opposed to bodily protrusion, which indicates positional variation.

prognathic A forward relationship of the mandible or maxilla, relative to the craniofacial skeleton.

prognathism See prognathic.

pronasale Most forward point of the tip of the nose.

proportional limit Highest stress at which stress is directly proportional to strain. It is the highest stress at which the curve in a stress-strain diagram is a straight line. Proportional limit is equal to elastic limit for many metals.

prostaglandins (PG) A member of a group of lipid compounds that are derived enzymatically from fatty acids and have important functions in the human body. They play a role in inflammation and pain that occurs during tooth movement.

prosthion The lowest and most forward point of the alveolar process between the maxillary central incisors.

protraction Anterior displacement of the teeth and/or bones of the face.

protrusion The state of being anteriorly positioned.

proximal segment In surgery, that portion of a sectioned mandible that contains the articulating portion.

pulp (dental) The soft tissue occupying the inner (pulp) chamber of a tooth. Consists of specialized loose connective tissue, blood vessels and nerves.
pure rotation A displacement of a body, produced by couple action, characterized by the center of rotation coinciding with the center of resistance.

- Q -

quadhelix A “W” shaped fixed or removable maxillary expansion lingual arch that incorporates four helices. Usually attached to the maxillary first molar teeth.

- R -

R point (registration point) A cephalometric reference point introduced by Broadbent in his original presentation of the cephalometric technique. It is the midpoint on a perpendicular drawn from the center of sella turcica to the Bolton-nasion line.

radiograph A permanent image, typically on film, produced by ionizing radiation. Sometimes called an x-ray after the most common source of image-producing radiation.

radiographic imaging The process of acquiring representations of structures using ionizing radiation.

ramus Paired vertical posterior parts of the mandible that serve as attachment areas for the muscles of mastication and also contain the condyles that articulate with the temporal bones. Plural-rami.

rapid palatal or rapid maxillary expansion (RPE, RME) An orthopedic procedure which uses a fixed or removable appliance to separate the two maxillary bones at the mid-palatine suture.

rare earth screens Intensifying screens that are coated with special compounds to reduce x-ray exposure for cephalometric and panoral films.

reciprocal anchorage The use of equal and opposite equilibrium forces from an appliance to produce desired tooth movement on different teeth.

reference frame A set of two or three intersecting axes, ordinarily mutually perpendicular, used as a basis for location of points and directions of lines, graphically expressing relationships among variables, or undertaking vector analysis, in a plane or in space.

replantation The replacement of a tooth that has been avulsed, usually as the result of an accident.

reproximation (slenderizing) Abrasive elimination of small amounts of enamel from the proximal surfaces of the teeth, in order to reduce combined tooth-width.

resection Surgical removal of part or all of a structure.

root resection Removal of the apical portion of the root of a tooth, usually to eliminate infection.

resilience The amount of energy transferred by mechanical work to take a body from an initial, passive state to its elastic limit; the area under the load-deformation plot up to the elastic limit.

resorption Physiologic or pathologic removal of hard tissue (bone or root).

rest position The normal resting position of the mandible with teeth apart and muscles relaxed.

retainer Any orthodontic appliance, fixed or removable, that is used to maintain the position of the teeth following corrective treatment.
retention The passive treatment period following active orthodontic correction during which retaining appliances may be used.

retraction Pertaining to desired posteriorly directed, orthodontic or orthopedic displacements of teeth or of bones of the face.

retroinclination Lingual (palatal) angulation (inclination) of anterior teeth.

retrognathic A mandible or maxilla that is retruded in its relationship with other facial structures due to a size discrepancy or positional abnormality.

retrusion Teeth or jaws that are posterior to normal position or movement toward the distal.

reverse-pull or protraction headgear An (primarily) extraoral orthodontic or orthopedic appliance designed to deliver force to the dentition that is principally or totally anteriorly directed.

ribbon arch appliance An appliance developed by E.H. Angle prior to the Edgewise appliance which used a rectangular wire in a vertical slot to gain multidirectional control. The bracket was inverted and used by P.R. Begg for his technique.

rigid fixation Stabilization of two bony segments with metal plates or screws to eliminate movement between the parts.

Risk Retention Group (RRG) Formed under the Risk Retention Act of 1986, Risk Retention Groups are corporations or limited liability associations with the purpose of assuming the liability exposure of their members. RRG’s are chartered and licensed as insurance companies in a specific state known as the domiciliary state. A risk retention group must contain the phrase “Risk Retention Group” in its official name. See American Association of Orthodontists Insurance Company (a Risk Retention Group).

roentgenogram An image produced on film by roentgenography; radiograph is the preferred term.

roentgenography Production of permanent images through the use of Roentgen rays (x-rays).

root That part of the tooth not covered by enamel. It normally lies within the alveolus where it is attached to the bone by the periodontal membrane (ligament).

root movement The transverse tooth movement characterized by little displacement of the crown and the center of rotation located on the long axis and at or near bracket level.

root resorption Resorption of a part of the root of a tooth. May be either internal (pulpal) or external.

rotation Can occur around any axis. Orthodontic rotation usually refers to motion around the long axis of the tooth.

RRG See Risk Retention Group.

- S -

sagittal split osteotomy A surgical procedure in which the rami of the mandible are split parallel with the sagittal plane to allow repositioning of the mandibular body either anteriorly or posteriorly into a more favorable relationship with the maxilla.

SARPE Acronym for Surgically Assisted Rapid Palatal Expansion. Used interchangeably with SARME.

SARME Acronym for Surgically Assisted Rapid Maxillary Expansion. Used interchangeably with SARPE.
screen (intensifying) See intensifying screen.

second-order clearance The angle through which an engaged archwire may be tipped within the bracket slot, relative to the 'slot-parallel' configuration, before making contact with the occlusogingival slot surfaces.

second-order rotation A tooth as a whole rotates about a faciolingual axis and the angulation/orientation of the long axis of the tooth changes.

self ligation Specifically used with brackets that have within them the ligation mechanism to hold the wire.

sella-nasion(S-N) A frequently used cephalometric reference line connecting the center of the sella turcica with nasion.

sella turcica (sella; S) The pituitary fossa. The center is used as a cephalometric landmark.

separation An orthodontic procedure for slightly separating teeth to facilitate placing bands.

separator An object/agent (elastic module, brass wire, spring) used for separating teeth.

serial extraction A program of selective or guided extraction of primary and sometimes permanent teeth over a period of time, with the objective of relieving crowding and facilitating the eruption of remaining teeth into improved positions.

sheath A synonym for a tube used as an orthodontic attachment.

shield See vestibular screen.

sialorrhea Excessive flow of saliva.

sinus Air cavities within the facial bones, lined by mucous membranes similar to those in other parts of the airways.

sleep apnea A temporary suspension of breathing which occurs repeatedly during sleep.

soft palate See palate.

soldering Joining metals by fusion of alloys that have relatively low melting points - most commonly, lead-base or tin-base alloys, which are the soft solders. Hard solders are alloys that have silver, copper or nickel bases. Use of these alloys with melting points higher than 800°F, 427°C is properly called "Brazing".

space maintainer A prosthetic replacement for prematurely lost primary teeth intended to prevent closure of the space before eruption of the permanent successors. Often an urgent necessity in the buccal segment to prevent impaction of the permanent teeth and other complications.

space regainer An appliance that corrects tooth displacement that results from premature loss of one or more primary teeth without timely space maintenance. Effective when the space loss is recent and small. May be accomplished with varying types of corrective appliances. Often most efficiently accomplished as a part of a comprehensive orthodontic treatment plan.

specialist 1. A person with practice limited to diagnosis and treatment of one specific discipline. 2. A healthcare practitioner who devotes attention to a particular class of diseases, patients, etc.

Spee, curve of See curve of Spee.
**splint** A rigid appliance used to connect and mutually support teeth or bones. A removable form is often used to temporarily relieve occlusal interferences in functional disorders of the temporomandibular joint and related musculature.

**spring-back** The recovery exhibited by a beam, shaft, wire, or wire loop upon its unloading (deactivation).

**stabilizing wire** A stiff rectangular archwire that fills the bracket slot and is commonly used to distribute a responsive force system throughout a dental segment.

**stiffness** The ratio of change in load to accompanying change in deformation of a member fabricated of a Hookean material and activated within its elastic limit; the slope of the load-versus-deformation plot beneath the elastic limit.

**stomatognathic system** Literally, the mouth-jaw system; the entire complex of structures of the head and neck involved in the functions of mastication, swallowing, respiration and speech.

**stomion** Intersection of the closed upper and lower lips.

**stop** A bend or auxiliary attachment placed on or incorporated into a wire to limit its sliding into a tube or into other orthodontic attachments.

**straight wire appliance** A variation of the edgewise appliance in which brackets are angulated to minimize multiple archwire bends. Brackets and molar tubes have specific orientation in three planes of space.

**strain** Local unit volumetric or distortional deformation experienced by a nonrigid body or structure subjected to external force.

**stress (mechanical)** Local intensity of distributed internal force experienced by a body or structure as a response to the application of external force to that body or structure.

**stress-relief** A heat-treatment process intended to reduce the magnitudes of residual ('locked-in') stresses induced by inelastic deformation.

**stripping of teeth** Term used for reproximating or slenderizing mesiodistal width of teeth, usually incisors.

**subnasale** The intersection of the columella of the nose and the upper lip.

**subspinale (Downs Point A)** The most posterior point in the concavity between the anterior nasal spine and prosthion, i.e., apical base.

**subtraction radiography** A darkroom technique in radiology which makes important radiographic information easier to see because it subtracts less important information from the image.

**succedaneous teeth** Those permanent teeth that replace (succeed) the primary teeth which include all the permanent teeth except the permanent molars.

**superelastic** Refers to a metallic alloy having a relatively substantial elastic range; within a specific range of temperatures, the elastic portion of the force-deformation relationship for the alloy has two distinct, sequential parts because of a (submicroscopic) metallurgic phase-change that occurs as the force-
magnitude is increased; a reversal of the phase-change occurs as the magnitude of force is subsequently decreased toward the passive state.

**superimposition** A technique of placing two roentgenographic tracings upon each other when registering on structures that remain relatively stable during the time period separating the two images useful to evaluate the changes brought about as a result of a growth and/or treatment.

**superoinferior** The global direction perpendicular to the transverse plane of the dentofacial complex or the occlusal plane of one dental arch; the superior direction/sense is upward, and the inferior direction/sense is downward.

**supernumerary teeth** Teeth in excess of the normal number. Often malformed or erupting abnormally.

**supracrestal fiberotomy** The procedure of severing the insertion of the supracrestal group of gingival fibers from the tooth; used as an aid to retain the correction of rotation.

**supramentale (Downs point B)** The deepest point on the profile curvature from Pogonion to infradentale (i.e., apical base).

**supraocclusion** Overeruption of a tooth or teeth beyond the normal level, often as a result of tooth-loss or irregularity in the opposing arch.

**surgical fixation** Stabilization of two bony segments for purposes of improving healing.

**suture** In anatomy - a fibrous junction between bones, as in the face and skull.

**symphysis (mental)** The union in the median plane of the two halves of the mandible.

**synchondroses** Joints that connect two bony structures by hyaline cartilage. As the skeleton matures, the hyaline cartilage eventually ossifies. Examples are the ends of long bones, where the bone growth is not yet complete. In the craniofacial skeleton the speno-occipital synchondroses is of great importance.

**syndrome** A group of symptoms and/or deformities that occur together in a recognizable pattern that define a specific disease or condition.

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**technique (appliance)** A method or procedure based upon the use of certain appliances in specific ways. There are numerous variations and combinations.

**telescoping bite** Total lingual crossbite of the mandibular arch.

**temporary anchorage device (TAD)** A device that is temporarily fixed to bone for the purpose of enhancing orthodontic anchorage either by supporting the teeth of the reactive unit or by obviating the need for the reactive unit altogether, and which is subsequently removed after use.

**temporomandibular articulation** The bony articulation between the mandible and the temporal bones which consists of the right and left temporomandibular joints.

**TENS** Acronym for Transcutaneous Electrical Nerve Stimulation

**TMD** Temporomandibular dysfunction.
TMJ (temporomandibular joint) One of the two paired articulations between the temporal bones of the skull and the mandible; the condylar process of the mandible articulates on the eminence of the glenoid fossa of the temporal bone.

therapeutic diagnosis An assessment of the objectives and available methods of treatment in light of conditions existing in the individual patient.

threshold force The minimum magnitude of force needed to produce a desired orthodontic displacement (a theoretical concept).

thumb (or finger) sucking A normal infantile activity that sometimes extends into middle or late childhood. In certain situations, it may produce or exacerbate malocclusion.

tie-back An omega loop, soldered or welded hook on an archwire anterior to the molar tubes which is tied to an attachment distal to it in order to fixate archwires in place.

tinnitus Noise in the ears, such as buzzing, ringing, roaring, clicking; a symptom often reported in TMJ dysfunction problems.

tomograph A radiograph of a selected layer of the body produced while shifting the film and x-ray source in opposite directions around an axis located in the region of interest. This movement blurs outside structures while maintaining sharpness in the region of interest.

tongue crib An appliance used to control undesirable and potentially deforming tongue movements, i.e., a posturing or thrusting of the tongue between the anterior teeth.

tongue thrust Interposition of the tongue between the anterior teeth, especially in the initial stage of swallowing. This action, often combined with a resting position of the tongue between the teeth, can inhibit normal eruption and produce an open bite.

tonsils Areas of lymphoid tissue on either side of the throat. The term tonsils most commonly refers to the palatine or the faucial tonsils. An infection of the tonsils is called tonsillitis.

tooth positioner See positioner.

tooth size discrepancy Lack of proportional harmony in the width (mesiodistal diameter) of various tooth crowns and the available space in the dental arch, causing relative spacing or crowding in different parts of the dentition.

torque A third order couple that moves the crown in one direction and the root in the opposite direction.

torsiversion A tooth malposition characterized by rotation around the long axis of the root (not related to torque as described above).

torus An exostosis on the palatal midline or low on the lingual alveolar surface of the mandible in the canine-premolar area. (torus palatinus/torus mandibularis)

toughness The maximum amount of energy, referenced to a passive state, transferred to a body in the form of mechanical work, that the body can absorb prior to structural failure (ordinarily by fracture or rupture); the total area under the load-deformation plot.

tracing (cephalometric) An overlay drawing made from a cephalometric radiograph that shows specific structures and landmarks that may provide a basis for a variety of measurements.
traction Pertaining to a force-delivering component of an appliance that is mechanically activated by elastically extending its characteristic length (e.g., as in the stretching of an elastic module or a coiled spring).

transitional dentition See dentition.

translation The movement of a body as a whole such that the displacements of all particles of that body are alike (equal) in magnitude, direction, and sense. The angulation of the long axis must remain unchanged for a tooth movement to be translational. Any movement of a body that is not a translation in a rotation.

transposition Teeth positioned out of their normal position in the dental arch, specifically describes an anomaly where adjacent teeth have switched positions.

transseptal fibers Gingival fibers traversing the septum between teeth that provide a fibrous connection between the teeth.

transverse displacement An orthodontic tooth movement characterized by displacements of points of the tooth at right angles (perpendicular) to the long-axis orientation.

trauma Tissue damage caused by an external force, such as a blow in an accident or abnormal clenching or grinding of the teeth.

trismus Muscle spasm (cramp).

tuberosity The posterior aspect of the maxillary alveolar process.

Tweed triangle A constructed triangle on the lateral cephalogram or tracing which is formed by the mandibular plane, Frankfurt plane and the long axis of the mandibular incisor. Used as a diagnostic aid by C.H. Tweed.

twin block appliance A functional appliance developed by William Clark, with inclined planes on maxillary and mandibular components, to guide the mandible forward.

twin bracket An edgewise bracket formed by two single brackets side by side on one base. (B. Swain)

ugly duckling stage A stage of dental development during the incisor transition, characterized generally by linguoversion of mandibular lateral incisors, malalignment and flaring of maxillary lateral incisors, and a median diastema between the maxillary central incisors. These aberrations may be self-corrective, but could persist and require treatment. B.H. Broadbent “coined” the term.

underbite An ambiguous non-technical term for negative overjet. (archaic)

undermining resorption A microscopic local condition in which resorption may occur beyond the active area, undermining bone spicules and so leading to their more rapid removal.

unilateral Relating to one side.

universal appliance An orthodontic appliance developed by S.R. Atkinson which combined some of the principles of edgewise and ribbon arch appliances with very light archwires.

uprighting Tipping inclined teeth to a more normal vertical axial inclination.
utility arch Used in the edgewise technique to upright molars and depress anterior teeth similar to a step-down or by-pass arch, developed by R. Ricketts.

- V -

velopharyngeal insufficiency (VPI) Anatomic or functional deficiency in the soft palate or superior pharyngeal constrictor muscle which affects closure of the opening between the mouth and the nose in speech. The result is in a ‘nasal’ speech quality.

veneer A protective or ornamental facing. Often used as a restoration to alter the shade and shape of the teeth for esthetics.

vertex (anatomy) The most superior point on the top of the skull.

vertical dimension The vertical distance between two selected anatomic or marked points; specifically relates to the vertical relationship of the mandible to the maxilla.

vertical elastic traction Pertaining to forces occlusally directed and delivered through orthodontic attachments to tooth crowns as the result of the (stretching) activation of an ‘up-and-down’ elastic band.

vestibular screen (oral screen) A removable appliance, used to deflect or eliminate muscle forces on certain teeth. Commonly placed in the vestibule between the lips, cheeks and the teeth.

vestibule The portion of the oral cavity that is bounded on the medial side by the gingiva, alveolar process, teeth and on the lateral side by the lips or cheek.

visceral swallowing The term used to describe the swallowing pattern in which the tongue is thrust between the teeth (i.e., infantile swallowing pattern).

Visual Treatment Objective (VTO) A diagnostic and communication aid that consists of a cephalometric tracing or computerized projection which is modified to show anticipated changes in the course of treatment.

voxel A three-dimensional version of a pixel. Voxels are generated by computer-based imaging systems, such as CT and MRI. Using voxels, three-dimensional simulations of objects can be reconstructed by imaging systems.

vulcanite An obsolete material that was used to fabricate removable appliances. It is a combination of caoutchouc and sulfur. It hardens in the presence of certain heat and pressure.

- W -

w arch W-shaped maxillary expansion arch, usually soldered to the lingual of the maxillary molars. (Also known as Porter arch.)

Waldeyer’s ring (Waldeyer’s tonsillar ring) Anatomical term that describes the lymphoid tissue ring located in the pharynx. The ring consists of (from superior to inferior) the adenoids, tubal tonsils, palatine tonsils and the lingual tonsils.
**wear facet** A flat, polished surface on a tooth which is produced by physiologic or parafunctional occlusal contact.

**weld** A joint between pieces of metal at faces that have been made plastic by heat or pressure.

**Wilson, curve of** See curve of Wilson.

**Wolff's Law** Eponym for the principle that a bone, either normal or abnormal, will develop the structure most suited to resist those forces acting on it.

**working side** The lateral segment of the dentition toward which the mandible is moved during masticatory function.

**World Federation of Orthodontists (WFO)** An organization of orthodontic specialists formed initially by 69 orthodontic organizations from 62 countries at the 4th International Congress in San Francisco, CA, USA on May 15, 1995. The purpose of the WFO is to advance the art and science of orthodontics throughout the world.

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**x-bite** Abbreviation for crossbite.

**x-ray** Electromagnetic radiation produced when electrons strike a target under high voltage in a vacuum. The term is sometimes used incorrectly as a synonym for radiograph.

**xerostomia** A symptom in which too little saliva is produced in the mouth. Also called ‘dry mouth’.

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**yield strength** The stress at which a material exhibits a specified deviation from proportionality of stress and strain. An offset of .2% is commonly used.

**Youngs modulus** (modulus of Elasticity, E) The ratio of stress to corresponding strain below the proportional limit. It is a measure of stiffness.

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**zygoma** The bone that articulates with the maxilla to form the lateral wall of the orbit and the cheek bone itself. Its posterior extension, the processus temporalis, articulates with the zygomatic process of the temporal bone, and together they provide major support for the muscles of mastication.