Glossary of Terms for Thoracic Radiology: Recommendations of the Nomenclature Committee of the Fleischner Society

The Fleischner Society was founded in 1969 by a group of radiologists to honor the memory of Felix Fleischner and to promote the exchange of information between basic scientists and clinical investigators interested in chest disease. Today this multidisciplinary group is best known for the Symposia on Chest Disease that it conducts annually, but it has sought, in the words of its motto, "to advance knowledge of the normal and diseased chest" in various other ways. The Glossary presented here represents one such effort.

The Glossary was originally proposed at the first general meeting of the Society of 1971 in the belief that standardization of terms with respect to the description of radiographic findings would facilitate the exchange of information. Various members of the Society have contributed to its development over the intervening years, and though such an undertaking is never truly completed, the Glossary is now judged to be sufficiently inclusive to be of general interest. The Society, therefore, authorized its publication as a report of the Nomenclature Committee in May 1983.

The development of a glossary is a process that casts light on both the meaning of words and on the basics of human behavior. The use of words, it appears, is a highly personal attribute of the individual, and any disagreement with that usage is instinctively viewed as a personal assault: A nomenclature committee does not need a chairman; it needs a "peace-keeping force"! It is, therefore, a great tribute to those who participated that they were ultimately able to put personal bias and national linguistic differences aside and to agree on the definitions presented here.

The Committee, comprising more "splitters" than "lumpers," has sought to identify nuances of meaning that distinguish words of similar connotation and has systematically rejected the argument that "everyone says it that way" as a justification for the misuse of a word. It has also attempted to indicate whether specific terms are truly descriptors or are, in fact, diagnostic conclusions; and if the latter, whether or not they can appropriately be based solely on radiographic evidence. It is hoped that publication of this Glossary will stimulate interest in the standardization of descriptive terminology in chest radiology, that some will adhere to the definitions presented here, and that those who do not will, at least, become more thoughtful in their choice of words.

Thanks are due to those members of the Society who launched this effort: Gordon Cumming (Midhurst, England) and E. Robert Heitzman (Syracuse, NY); to those who sustained it: John J. Fennessy (Chicago, IL), Paul J. Friedman (San Diego, CA), Ronald Grainger (Sheffield, England), William H. Northway, Jr. (Palo Alto, CA), and the late George Jacobson (Los Angeles, CA); and most particularly to those on whom fell the burden of bringing it to fruition: John H. M. Austin (New York, NY), Robert G. Fraser (Birmingham, AL), David H. Trapnell (London, England) and Morris Simon (Boston, MA).

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Chairman, Nomenclature Committee
The Fleischner Society

Editor's Note

At its recent meeting in Santa Fe, the Fleischner Society reaffirmed its hope this Glossary will prove helpful in refining the radiographic vocabulary for describing and thinking about thoracic disease. The Society also realizes these definitions and comments on their usage (evaluations) may not satisfy all readers. A certain dogmatism has been required to reach final statements about terms that may be used differently by others. To achieve a wider consensus on the acceptance of controversial terms, the Society invites comments, criticisms, and suggested additions. These may be directed to the AJR Editorial Office or to Dr. Robert Fraser (Department of Radiology, University of Alabama Medical Center, 619 S. 19th St., Birmingham, AL 35233). Dr. Fraser is the new chairman of the Nomenclature Committee; the committee will synthesize constructive suggestions into revisions in the Glossary. Readers are urged to respond to this invitation and to help the Society reduce imprecision in our vocabulary so the complexities of thoracic disease may be better understood and communicated.

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aeration, aerate, acinar absorber,

acinar, a. Radiol. A collection of round, poorly defined, discrete or partly confluent opacities in the lung, each 4–8 mm in diameter and together producing an extended, inhomogeneous shadow. -Synonyms: rosette pattern, acinonadoose pattern (used specifically with reference to endobronchial spread of tuberculosis), alveolar pattern (incorrect descriptor; not recommended). -Qualifiers: An inflamed acinar abscess is usually used as a descriptor. An acceptable term.

acinar shadow, n. -s. Radiol. A round or ovoid, poorly defined pulmonary opacity 4–8 mm in diameter, presumed to represent an anatomic acinus rendered opaque by consolidation. Usually used only in the presence of many such opacities; cf. acinar pattern. -Evaluation: An inferred conclusion sometimes applicable as a radiologic descriptor.

acinus, n. s. Anat. The part of the lung distal to a terminal bronchus. It consists of respiratory bronchioles, alveolar ducts, alveolar sacs, and alveoli, and their blood vessels, lymphatics, and supporting tissues.

aerate, v. 1. To fill with air. 2. To expose to air. 3. To oxygenate.
aerelation, v. Radiol/Physiol. 1. The state of containing air. 2. The state or process of admitting or of being filled or inflated with air. 3. The state or process of being exhaled to air. -Qualifiers: over-airing, under-airing, hypo-airing. -Synonyms: inflation. See also ventilation, oxygenation. -Evaluation: Acceptable term with reference to inspiratory phase of respiration. Inflation is preferred in sense 3.

air, n. Radiol. Gas within the body, regardless of its composition or site. -Synonym: gas. -Evaluation: The word should be used to refer only to inspired atmospheric gas. With reference to pneumocephoses, subcutaneous emphysema or the content of the stomach, colon, etc., gas is the preferred term.

air bronchogram, n. -s. Radiol. The radiographic shadow of an air-filled bronchus peripheral to the hilum and surrounded by airless lung (whether by virtue of absorption of air, replacement of air or both); a finding generally regarded as evidence of the patency of the more proximal airway; hence, any bandike tapering and/or branching luency within opacified lung corresponding in size, location, and shape to a bronchus or bronchi and presumed to represent an air-filled segment of the bronchial tree. -Evaluation: A specific feature of radiologic anatomy whose absence is often inferred. A useful and recommended term.

air-fluid level, n. -s. Radiol. See fluid level.

airspace, n. Anat. The gas-containing part of the lung exclusive of the purely conducting airways, but including the respiratory bronchioles.

-air, adj. Pathol/Physiol/Radiol. Of or pertaining to any process believed to be confined to the anatomic airspace or to a part thereof (e.g., airspace consolidation, adenoma, alveolar).

air trapping, n. 1. Pathophysiolog. The retention of excess air in all or part of the lung as a result of airway closure during the expiratory maneuver; classically implies an increasing amount of retained air at equivalent expiratory positions in successive expiratory maneuvers. 2. Radiol. The retention of excess air in all or in some part of the lung at any stage of expiration. -Evaluation: 2. A specific radiologic statement to be used only if excess air retention is demonstrated by a dynamic study (e.g., inspiration-expiration radiography or fluoroscopy). Not to be used with reference to overinflation of the lung at full inspiration (total lung capacity). -Synonyms: airspace consolidation, alveolar over-distention, airspace dilatation, alveolar air trapping.

airway, n. Anat. 1. A collective term for the air-conducting passages from the larynx to and including the respiratory bronchioles. 2. Any air-conducting tube or passage. -adj. Pathol/Physiol/Radiol. Of or pertaining to the anatomic airway or a part thereof (e.g., obstructive airway disease). -Synonym: inflation. -Evaluation: Inferior conclusion appropriately based on radiologic evidence. An acceptable descriptor.

alveolarization, n. Radiol. The opacification of clusters of minor airways (presumed to be alveoli) by a contrast agent. -Evaluation: Excessive filling of peripheral airways by a contrast agent usually used for bronchography may opacify respiratory bronchioles, but seldom alveoli. Thus, the correct term is broncholar filling or broncholar opacification.

alveolar pore, n. -s. Anat/Physiol. A microscopic communication between alveoli. Together with the canals of Lambert and direct airway anastomoses, the alveolar pores provide for the collateral passage of gas or liquid from one pulmonary unit to another; cf. collateral ventilation. -Synonym: pore of Kohn.

anterior junction line, n. Radiol. A vertically oriented linear or curvilinear opacity about 1 mm wide and commonly projected on the tracheal air shadow. It is produced by the shadows of the right and left pleura in intimate contact between the aerated lungs anterior to the great vessels and sometimes extending above the suprasternal notch. -Synonyms: anterior mediastinal septum, anterior mediastinal line. -Evaluation: A specific feature of radiologic anatomy; preferred to cited synonyms.

aortic knob, n. Radiol. That part of the aortic arch that is seen end-on in a frontal radiograph. In the normal, it is characterized by a sharply defined, arcuate superolateral border and lies to the left of the trachea above the main pulmonary artery. -Synonyms: aortic knuckle. -Evaluation: A specific feature of radiologic anatomy. An acceptable term.

aortopulmonary window, n. 1. Anat. A mediastinal space bounded anteriorly by the ascending aorta; posteriorly by the descending aorta; superiorly by the aortic arch; inferiorly by the left pulmonary artery; mediadly by the left side of the trachea, left main bronchus, and esophagus; and laterally by the left lobe of the liver, if it is situated the ductus ligament, the recurrent laryngeal nerve, lymph nodes, and fat. 2. Radiol. A zone of relative luency in the mediastinal shadow, which is best seen in the frontal projection and which corresponds to the anatomic space defined above. On a frontal chest radiograph, the lateral margin of this space constitutes the aortopulmonary window interface. -Synonym: aortopulmonary window.

arteriovenous fistula, n. -s. Anat. A direct communication between an artery and a vein that bypasses the capillary bed. 2. Radiol. A shadow complex, commonly occurring pulmonary artery opacity associated with dilated vascular shadows, that is presumed to represent an arteriovenous fistula in the anatomic sense. (Such lesions are often multiple, especially in the presence of arteriovenous aneurysm, arteriovenous malformation. Arteriovenous fistula or aneurysm refers to a lesion of congenital or traumatic origin, arteriovenous malformation should be reserved for lesions of congenital origin. -Qualifiers: traumatic, congenital. -Evaluation: In conventional radiographs, an inferred conclusion sometimes justified by the radiographic evidence alone. In pulmonary arteriography, an explicit radiographic diagnosis.

atelectasis, n. 1. Pathol. Phys. Less than normal inflation of all or part of the lung with corresponding diminution in lung volume. 2. Radiol. Radiologic evidence of diminished volume affecting all or part of a lung, which may include loss of normal luency in the affected part of lung. (This finding is not to be confused with diminished volume produced by resection of pulmonary tissue.) -Qualifiers: Excessive, lobar, segmental, subsegmental,玩意, discoid, platter, linear. -Synonyms: collapse, atelectatic, atelectasis (preferred). -Evaluation: A conclusion concerning pathophysiology that is appropriately based on radiographic evidence alone.


azygoesophageal recess, n. 1. Anat. A space or recess in the right side of the mediastinum into which the mediastinal edge of the right lower lobe (crista pulmonis) extends. It is limited superiorly by the arch of the azygos vein, posteriorly by the azygos vein in front of the vertebral column, and medially by the esophagus and its adjacent structures. (The exact relation between the mediastinal edge of the lung and the mediastinal structures varies.) 2. Radiol. In a frontal chest radiograph, a vertically oriented interface between air in the right lower lung and the adjacent mediastinum that represents the medial limit of the anatomic azygoesophageal recess. -Synonyms: azygos muscle, azygoesophageal recess. -Evaluation: A specific feature of radiologic anatomy; preferred to cited synonyms. -Synonyms: azygos muscle, azygos esophageal recess. -Evaluation: A specific feature of radiologic anatomy; preferred to cited synonyms. -Synonym: azygos esophageal recess. -Evaluation: A specific feature of radiologic anatomy; preferred to cited synonyms.

azygos vein, n. Radiol. A slight, ovoid prominence of the mediastinal shadow commonly seen in frontal chest radiographs in the angle formed by the right main bronchus and the trachea. The shadow is produced principally by the azygos vein projected end-on, but azygos lymph nodes may contribute to it. -Evaluation: A feature of radiologic anatomy of some descriptive value-

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in the left heart border seen in the frontal (or right anterior oblique) chest radiograph just below the left hilum and representing the junction between the main pulmonary artery and the left ventricular myocardium. The left atrial appendage may underlie the incisura.

**Evaluation:** A feature of radiologic anatomy. An acceptable term.

**carinal angle, n.** An angle formed between the subcarinal bronchus in a frontal chest radiograph. —Synonyms: bifurcation angle, angle of tracheal bifurcation. —Evaluation: A definitive anatomic and radiologic measurement.

**cavity, n.** A hollow space within a zone of pulmonary consolidation or within a mass or nodule, produced by the expulsion of a necrotic part of the lesion via the bronchial tree. 2. Radiol. A lucency within a zone of pulmonary consolidation, a mass, or a nodule; hence, a lucent area within the lung that may or may not contain a fluid level and that is surrounded by a wall, usually of varied thickness. —Evaluation: 2. An inferred conclusion often used as a descriptor. The term expresses pathologic anatomy without causative connotation. It is a useful radiologic descriptor; it is justified with abscess, which may exist without cavitation.

**circumscribed, adj.** Possessing a completely or nearly completely visible border. —Evaluation: A radiologic descriptor; cf. defined.

**coin lesion, n.** A sharply defined, circular opacity within the lung, suggestive of the appearance of a coin and usually representing a spherical or nodular lesion. —Synonyms: pulmonary nodule, pulmonary mass. —Evaluation: A radiologic descriptor, the use of which is to be condemned. The term coin may be descriptive of the shadow, but certainly not of the lesion producing it.

**composite, adj.** Radiol. Comprising more than one element; said of a shadow complex made up of multiple contiguous or superimposed elements that may or may not be separately identifiable.

**consolidate, v. 1. To become firm or hard (as by solidifying). 2. To cause to become firm or hard. 3. To become more opaque to x-rays than its surround; an opacity or radiopacity. 5. The degree of opacity of an absorber to x-rays; used to express in terms of the nature of the absorber (e.g., bone density).

**contrast media:** A group of materials used in the diagnosis of disease by modifying the degree of image formation. They may be processed to change their absorption characteristics, hence: a. The property of an exposed and processed photographic emulsion that determines its light absorption/transmission characteristics; hence: b. The opacity of a radiographic shadow to visible light; film blackening.

**diffuse, adj.** Widespread. 2. Pathophysiologic. Widely distributed through an organ or type of tissue. 3. Radiol. Widespread and continuous [said of shadows and, by extension, to processes producing them]. —Synonyms: disseminated, generalized, systemic, widespread. In the context of chest radiology, diffuse connotes widespread, anatomically continuous, but not necessarily complete involvement of the lung or other thoracic structure or tissue; disseminated connotes widespread but anatomically discontinuous involvement; generalized connotes com-
pletely or nearly complete involvement, whereas systemic connotes involvement of a thoracic structure or tissue as part of a process involving the entire body. —Evaluation: 3. A useful and acceptable term if used in strict accordance with the definition above.

dirty chest, n. Radiol. An appearance of the lungs characterized by the complex of abnormal shadows of wide distribution and varying form and character. —Synonym: dirty lung. —Evaluation: A colloquial descriptor so indefinite as to defy accurate definition. (This is to be rejected in favor of more precise descriptors.)

disseminate, v. To spread, as seed. disseminated, adj. 1. Widespread; sown as seed. 2. Pathophysiologic. Widely but discontinuously distributed through an organ or type of tissue. 3. Radiol. Widespread but anatomically discontinuous [said of shadows and, by inference, of the states or processes producing them]. —Evaluation: 3. A useful and acceptable term.

doubling time, n. ~. Radiol. The time in which a pulmonary nodule or mass doubles in volume (increases by a factor of 1.25); a semiquantitative expression of the growth rate of a lesion. —Evaluation: An acceptable term. The concept of growth rate is of very limited value as a diagnostic tool distinguishing benign from malignant nodules.

eggshell calcification, n. Radiol. Thin, sharply defined, curvilinear, calcific opacities occurring in the periphery of a lesion or anatomic structure such as a lymph node. —Synonym: curvilinear calcification. —Evaluation: An acceptable radiologic descriptor.

embolism, n. 1. Pathol. The complete or partial obstruction of the lumen of a blood vessel, usually an artery, by the sudden impaction of foreign material carried in the bloodstream; cf. infarction. 2. Radiol. A complex of radiographic and/or scintigraphic abnormalities presumed to represent embolism in the pathologic sense. —Evaluation: An inferred conclusion that in some cases can be based on radiographic or scintigraphic evidence alone.

embolization, n. Pathol. The pathologic process by which a blood vessel is obstructed by blood clot or foreign material carried out in the bloodstream. —Qualifiers: therapeutic; referring to the technique by which the lumen of a blood vessel is deliberately occluded by the introduction of foreign objects or materials.

embolus, n. ~. 1. Pathol. A blood clot or mass of foreign material that has been carried in the bloodstream and that partly or completely occludes the lumen of a blood vessel; cf. thrombus. 2. Radiol. A lucent defect or obstruction within an opacified vessel presumed to represent an embolus in the pathologic sense. —Qualifiers: Expressing clinical course: acute, chronic. Expressing nature of embolic material: air, fat, amniotic fluid, parasitic, neoplastic, tissue, foreign material. Text: iodized oil, mercury, tantalum. Metastatic: septic, therapeutic, paradoxic. —Evaluation: 2. A radiologic conclusion that may appropriately be based on anortiographic evidence alone.

empyema, n. 1. Pathol. anat. a. A morbid condition of the lung characterized by abnormally expanded air spaces distal to the terminal bronchiolo and the complete destruction of the alveolar walls (per Ciba Conference, 1959). b. As above, but “with destruction of the walls of involved air spaces” specified (per World Health Organization, 1961, and American Thoracic Society [ATS], 1962). 2. Radiol. Hyperinflation (q.v.) of all or part of one or both lungs, with or without associated alteration in pulmonary vascular pattern, presumed to represent morphologic emphysema; appropriate clinical setting, and, in the sense of the ATS definition, not applicable to spasmodic asthma or compensatory hyperinflation. —Qualifiers: Morphol. centrilobular, panlobular, basilar, alveolar duct, alveolar, cavitary, etc.; Clin. local, general, lobar, segmental, sequestrum, compensatory, surgical, mild, moderate, severe, etc. —Synonyms: None; somewhat and hyperaeration are not strictly synonymous with emphysema; emphysematous lung are invariably overinflated, but overinflated lungs are not invariably emphysematous. —Evaluation: 2. An inferred conclusion acceptable only if used in strict accordance with the definition above.

exudate, n. ~. 1. Pathophysiologic. A highly proteinaceous fluid that may or may not contain inflammatory cells, is derived from the blood, is elaborated as part of the inflammatory response of the lung, pleura, or other tissues, and is deposited in extracellular tissue spaces and on tissue surfaces. b. An accumulation of such fluid. 2. Radiol. A poorly defined opacity in the lung that neither destroys nor displaces its gross architecture; applicable only if based on the basis of clinical or other evidence, can be attributed with reasonable certainty to a pulmonary infection or other inflammatory process. —Evaluation: 2. An inferred conclusion accepted as a descriptor. A useful and acceptable term used when in accordance with the definition above. To be distinguished from transudate.

exudation, n. The process by which an exudate (v.s.) is formed. exudative, adj. Of or pertaining to an exudate.

fibrocalcific, adj. Radiol. Of or pertaining to sharply defined, linear, and/or nodular opacities containing calcification(s) (v.s.), usually occurring in the upper lobes and presumed to represent old granulomatous lesions. —Evaluation: A widely used and acceptable radiologic descriptor.

fibronodular, adj. Radiol. Of or pertaining to sharply defined, approximately circular opacities, occurring singly or in clusters and in the upper lobes of the lungs and associated with linear opacities and distortion (retraction) of adjacent structures. A finding usually presumed to represent old granuloma, as disease, but no inference concerning the activity of such a lesion is justified on the basis of a single radiograph. —Evaluation: An inferred conclusion usually used as a radiologic descriptor. Its use is not recommended.

fibrosis, n. 1. Pathol. a. Cellular fibrous tissue or dense acellular collagenous tissue. b. The process of proliferation of fibroblasts leading to the formation of collagenous tissue. 2. Radiol. Any opacity presumed to represent fibrous or collagenous tissue; applicable to linear, nodular, or stellate opacities that are sharply defined, linear, nodular, or stellate. —Evaluation: Acceptable radiologic term. Fibrosis may be formed by two layers of vascular and parietal pleura. 2. Radiol. A linear opacity normally 1 mm or less in width that corresponds in position and extent to the anatomic pulmonary lobes or segments. —Qualifiers: minor, major, horizontal, oblique, accessory, anomalous, aygoss, inferior accessory. —Synonym: 1. Interlobar septum. 2. Evaluation: A descriptor of radiologic anatomy; an appropriate and useful term.

fleischner line, n. ~. Radiol. A straight, curved, or irregular linear opacity along the peripheral lung projection. It is customarily situated in the lower lobe of the lung; is usually approximately horizontal, but may be oriented in any direction; may or may not appear to extend to the pleural surface.
Such lines vary markedly in length and width; their exact pathologic significance is unknown. — **Qualifiers:** In radiologic description, the location, length, width, and orientation of such a line should be specified. — **Synonyms:** Non-specific, plate-like, discoid, and platte alatecias should not be used as synonyms. In the absence of clear histologic evidence of the significance of F. lines, this use of differentiation of such lines with a form of atelectasis is unwarranted. — **Evaluation:** An acceptable term. The term linear opacity properly qualified with respect to location, dimensions, and orientation is preferred, however, fluffy, adj. Radiol. [said of opacities]. Poorly defined, lacking clear-cut margins; resembling down or fluff. — **Synonyms:** shaggy, poorly defined. — **Evaluation:** An imprecise descriptor of limited usefulness.

**fluid level**, n. Radiol. The shadow complex produced by a horizontal x-ray beam traversing a space containing both gas and liquid or, less often, two liquids of different attenuation characteristics. Hence, a horizontal interface between zones of relative lucency above and opacity below. — **Synonyms:** air-fluid level (fluid level is preferred), gas-fluid level, gas-liquid level. — **Evaluation:** A useful and acceptable descriptor.

**gas shadow**, n. 1. Pathophysiol/Clm. A shadow of such exceptional lucency relative to adjacent anatomic shadows and to the inferred thickness of the absorber as to exclude the possibility of its representing a solid or liquid absorber. — **Evaluation:** An inferred conclusion appropriately based on radiographic evidence alone and useful as a descriptor.

**ground-glass**, adj. Radiol. [usually with appearance]. Any extended, finely granular pattern of pulmonary opacity within which normal anatomic details are partly obscured; from a fancied resemblance to etched or abraded glass. — **Evaluation:** A nonspecific radiologic descriptor of limited usefulness.

**H**

**heart failure**, n. 1. Pathophysiol/Clm. Inability of the heart to satisfy the circulatory needs of the tissues of the body without raising ventricular end-diastolic pressure above 12 mm Hg, even though filling pressures may be adequate. 2. Radiol. The presence within the thorax of a complex of signs of pulmonary or systemic venous hypertension including, but not limited to, cardiomegaly, pulmonary bloodflow redistribution, interstitial and/or alveolar edema, generalized decrease in pulmonary volume, and, in the case of right ventricular failure only, generalized systemic venous distention. — **Qualifiers:** Expressing course of development: acute, chronic. Expressing nature of involvement: left, right, biventricular. — **Synonyms:** cardiac decompensation, cardiac failure, congestive heart failure. — **Evaluation:** An acceptable term used in the clinical and pathophysiology sense. 2. An inferred conclusion justified by the presence of cited radiographic findings in an appropriate clinical setting. Cardiac decompensation or congestive heart failure are the preferred terms.

**hernia**, n. 1 Anatom. A depression or pit in that part of an organ where the vessels and nerves enter. 2. Radiol. The cone of the skin and subcutaneous fat over each lung produced by bronchi, arteries and veins, lymph nodes, nerves, bronchial vessels, and associated areolar tissue. — **Synonyms:** hilus, hilum. A specific and element of radiologic anatomy. Hilum and hila are preferred to hilus and hilii. — adj. hilar.

**homogeneous**, adj. Radiol. Of uniform opacity and texture throughout. — **Synonyms:** inhomogeneous, nonhomogeneous, heterogeneous. — **Evaluation:** An acceptable radiologic descriptor. Inhomogeneous is the preferred antonym as a descriptor of radiographic shadows. — **homo-**

**honeycomb pattern**, n. 1. Pathol. A multitude of irregular cystic spaces in pulmonary tissue that are generally lined with bronchial epithelium and have thickened walls composed of dense fibrous tissue, with or without areas of chronic inflammation. 2. Radiol. A number of closely approximated ring shadows representing air spaces 5-10 mm in diameter with walls 2-3 mm thick that resemble a true honeycomb; a finding whose occurrence implies "end-stage" lung. — **Synonyms:** None. A useful descriptor that usually can be used in the past and, therefore, with imprecise meaning. It is recommended that it be used strictly in accordance with the dimensional limits cited above, in which case it will have specific significance.

**Hounsfield unit**, n. -s. Physiol. phys. The unit ([\text{H}] \text{U}) of an arbitrary scale on which the x-ray attenuation of air, water, and compact bone are defined to be -1000, 0, and +1000, respectively. Each such unit represents 0.1% difference in attenuation with respect to that of water. Abbr: H.

**hyperechogenicity**, n. 1. Pathol. An excess of blood in a part of the body; engorgement. 2. Physiol. Increased blood flow as part of the inflammatory response. 3. Radiol. Apparent increase in number or caliber of small vessels secondary to an inflammatory process. — **Synonyms:** pleonema. — **Evaluation:** An inferred conclusion appropriately used as a descriptor only in artiography. — **adj.** hyperemic.

**hypertension**, n. Clin. Greater than normal systolic and/or diastolic pressure within the systemic or pulmonary vascular bed. Generally accepted empirical boundary levels are as follows: systemic arterial h., >140 mm Hg systolic; >90 mm Hg diastolic; systemic venous h., >12 mm Hg; pulmonary arterial h., >30 mm Hg systolic; >15 mm Hg diastolic; pulmonary venous h., >12 mm Hg. — **Evaluation:** An inferred conclusion, but except in the case of systemic arterial hypertension, it can be approximated with useful accuracy on the basis of radiologic evidence.

**infarct**, n. -s. 1. Pathol anat. a. A region of ischemic necrosis surrounded by hemorrhagic tissue resulting from occlusion of the region's feeding vessel, usually by an embolus; a complete infarct. b. A region of tissue injury and hemorrhage resulting from occlusion of the region's feeding vessel, usually by an embolus; an incomplete infarct. 2. Radiol. A pulmonary opacity that by virtue of its temporal development and clinical setting is considered to result from thromboembolic occlusion of a feeding vessel. Such an opacity is commonly, but not exclusively, hump-shaped and pleural-based when seen in profile; poorly defined and round when viewed en face. (Subsequent events may establish that the opacity was the result of either hemorrhage or tissue necrosis.) — **Synonyms:** infarction. — **Evaluation:** 1. Infarct is preferred to infarction in this sense. 2. An inferred conclusion, which, in the absence of true occlusion, may be based on the radiograph. The word should not be used in the absence of a pulmonary opacity. — adj. Pathol. To produce an infarct, def. 1 above.


**infarrollate**, n. -s. 1. Pathophysiol. Any substance or type of cell that occurs within or spreads through the interstices (interstitium and/or alveoli) of the lung, that is foreign to the lung, or that accumulates in greater than normal quantity within it. An accumulation of such a substance or type of cell. 2. Radiol. A poorly defined opacity in the lung that neither destroys nor displaces the gross morphology of the lung and is presumed to represent an infiltrate in the pathophysiologic sense. Any poorly defined opacity in the lung. — **Evaluation:** Majority: An inferred and often unproved concept; its use as a descriptor is to be condemned. Minority: Were the term to be used in strict accordance with definition 2a, it would be a useful descriptor to distinguish processes that do not distort lung architecture from expanding processes that do. — v. 1. To penetrate the interstices of. 2. To spread or cause spread by infiltration.

**infiltrated**, adj. 1. Having entered or spread by penetration of the interstices of a tissue. 2. Having undergone infiltration.

**infiltration**, n. 1. The process by which substances and/or cells spread through lung tissue via its interstices without destroying or displacing its normal architecture. See infiltrate, def. 1b. — **Evaluation:** To expand. — **adj.** infiltrated, adj. Expanded or filled with gas. — **Qualifiers:** See below.

**infiltration**, n. Physiol/Radiol. The state or process of being expanded or filling specifically with reference to the expansion of the lungs with air. — **Qualifiers:** over- (preferred) or hyper- under- (preferred) or hypo- — **Synonyms:** aeration; inflation, insufflation, ventilation. Inflation connotes expansion with gas or air. Aeration connotes the admission of air, exposure to air. Inhalation refers specifically to the act of drawing air into the lungs in the process of breathing (as opposed to exhalation); and inspiration with reference to breathing, is similar in connotation. Ventilation connotes both the intake and expulsion of air from the lungs. — **Evaluation:** The word inflation avoids the confusion that surrounds the meanings of aeration and ventilation as a result of common misuse. It is the preferred term. — **interstitium**, n. Radiol. The condensed interstices of the shadows of two juxtaposed structures or tissues of different texture or opacity. — **Synonyms:** edge, border, silhouette, junction. — **Evaluation:** A useful radiologic descriptor.

**interstitium**, n. 1. Anat/Radiol. A continuum of loose connective tissue throughout the lung comprising three subdivisions: (1) the bronchovascular (axial), surrounding the bronchi, arteries, and veins from the lung root to the level of the respiratory bronchiole; (2) the paranchymal (acinar), situated between alveolar and capillary basement membranes; and (3) the subpleural, situated beneath
the pleura as well as in the interlobar septa. —

*Synonym:* interstitial space. — *Evaluation:* A useful anatomic term. The interstitium of the lung is not normally visible radiographically; it becomes visible only when disease (e.g., edema) increases its volume and attenuation. — *adj.* interstitial.

**K**

**Karley line,** *n.* — *[usually in the plural.] Radiol.* A septal line (q.v.). *b.* A linear opacity, which, depending on its location, extent, and orientation, may be further classified as follows: **K.** A line: An essentially straight linear opacity 2–5 cm long and 1–3 mm wide, usually situated in an upper lung zone, that points toward the hilum centrally and is directed toward, but does not extend to, the pleural surface peripherally. **K. B** line: A straight linear opacity 1.5–2 cm long and 1–2 mm wide, usually situated at the lung base and oriented at right angles to the pleural surface with which it usually is in contact peripherally. **K. C** lines [always in the plural]: A group of branching, linear opacities producing the appearance of a fine net, situated at the lung base and representing **K.** B lines seen in face. — *Synonyms:* septal lines, lymphatic lines. Except when it is essential to distinguish **A.** B, and **C** lines, the term septal line is to be preferred. Lymphatic line is anatomically inaccurate and should never be used. — *Evaluation:* A specific feature of pathologic/radiologic anatomy. An acceptable but not preferred term.

**L**

**line,** *n.* Radiol. An extended longitudinal shadow (in the lung or mediastinum, an opacity) no greater than 2 mm in width; cf. stripe. — *Evaluation:* A useful term appropriately used in the description of radiographic shadows within the mediastinum (e.g., anterior junction line) or lung (e.g., interlobar fissures).

**linear opacity,** *n.* *-ies.* Radiol. A shadow resembling a line; hence, any elongated opacity of approximately uniform width. — *Qualifiers:* The length, width, anatomic location, and orientation of such a shadow should be specified. — *Synonyms:* line, line shadow, linear shadow, band shadow. Band shadow and line shadow have been used by some to identify elongated shadows more than 5 mm wide and less than 5 mm wide, respectively. Linear opacity qualified by a statement of specific dimensions is to be preferred. — *Evaluation:* A generic radiologic descriptor of great usefulness. The term includes a variety of linear shadows whose anatomic location, orientation, and dimensions imply their specific anatomic or pathologic significance (e.g., septal lines). Linear opacity is to be preferred to more specific anatomic or pathologic terms (e.g., discoid atelectasis), unless the true nature of the shadow is known or can be inferred with reasonable certainty.

**lobar,** *adj.* Anat/Radiol. Of or pertaining to a lobe. *lobe,* *n.* — *[usually in the plural.] Anat/Radiol.* One of the principal divisions of the lung (usually three in the right, two on the left) each of which is enveloped by viscerale pleura except at the lung root and in any area of developmental deficiency where a fissure is incomplete. 2. Radiol. One of the principal divisions of the lungs (usually three on the right, two on the left) that are separated in whole or in part by pleural fissures.

**lubular,** *adj.* Anat. Of or pertaining to a pulmonary lobule.

**lobule,** *n.* — *[usually in the plural.] Anat.* A unit of lung structure. 1. Primary: The terminal unit of an acinus; the part of the lung distal to the terminal respiratory bronchiole. It comprises alveolar ducts, alveolar sacs, alveoli, and their accompanying blood vessels, lymphatics, and supporting tissues. 2. Secondary: A variable number of acini (usually 3–5) bounded, in most cases, by thin connective tissue septa. — *Evaluation:* 1. Acinus is the preferred anatomic/physiologic unit of lung structure. 2. The word lobule when unmodified refers to a secondary lobule. The concept of the primary lobule as defined has been largely abandoned. Local, adj. Radiol. Occupying or confined to a limited space within a defined structure; cf. circumscribed. — *Synonyms:* localized, focal. — *Antonyms:* generalized, general. — *Evaluation:* An acceptable descriptor.

**lucent,** *n.* *-ies.* Radiol. 1. The capacity to transmit light (translucency); hence, by extension, the capacity to transmit x-radiation. 2. The degree of x-ray transmission of an object, usually expressed in terms of transmission of one object relative to another. 3. The shadow of an absorber that attenuates the primary x-ray beam less effectively than other absorbers. Hence, in a radiograph, any circumscribed area that appears more nearly black (of greater photometric density) than its surround: Usually applied to the shadows of acute, generalized, or confined to a limited space within a defined structure; cf. circumscribed. — *Synonyms:* translucency, transradiancy. — *Evaluation:* This term, used by analogy with opacity, is acceptable in usage, although it is etymologically indefensible. In British usage, transradiancy is preferred.

**lucent, adj.** Radiol. Capable of transmitting radiant energy; specifically, x-radiation.

**lymphadenopathy,** *n.* Clin/Pathol anat/Radiol. Any abnormality of lymph nodes; by common usage, usually restricted to enlargement of lymph nodes. — *Synonyms:* lymph node enlargement (preferred), adenopathy. — *Evaluation:* Lymph nodes are not glands. Lymphadenopathy and adenopathy are therefore, inappropriate terms and any reference to lymph glands is to be condemned.

**m**

**marking,** *n.* — [usually in the plural.] Radiol. A vague descriptor usually varied with reference to: (1) the shadow produced by normal pulmonary blood vessels; (2) the shadow produced by a combination of normal pulmonary structures (blood vessels, bronchi, etc.), or (3) abnormal pulmonary shadows of no specific characteristics of significance. — *Synonyms:* opacity, [usually] linear opacity. — *Qualifiers:* The type, dimensions, and anatomic distribution of such shadows should be specified (e.g., bronchovascular, trabeicular). The term should not be used without qualification. — *Evaluation:* When used alone, a vague descriptor of no value; not recommended. With proper qualification, the term is acceptable, but opacity or shadow is usually to be preferred.

**mass,** *n.* — *[usually in the plural.] Radiol.* Any collection of tissue differentiated from surrounding tissues. 2. Radiol. Any pulmonary or pleural lesion represented in a radiograph by a discrete opacity greater than 30 mm in diameter (without regard to contour, border characteristics, or homogeneity), but explicitly shown or presumed to be extended in all three dimensions. — *Qualifiers:* Should always be qualified with respect to size, location, contour, definition, homogeneity, opacity, and quality, cf. nodule. — *Evaluation:* 2. A useful and recommended descriptor.

**miliary pattern,** *n.* — *[usually in the plural.] Radiol.* A collection of tiny discrete pulmonary opacities that are generally uniform in size and widespread in distribution and each of which is 2 mm or less in diameter. — *Synonym:* micronodular pattern. — *Evaluation:* An acceptable descriptor without causative connotation.

**mucoid impaction,** *n.* Pathol/Radiol. A broad linear and/or branching opacity (— , — , or V-shaped) caused by the presence of thick, tenacious mucus within a proximal airway (lobar, segmental, or subsegmental bronchus) and usually associated with airway dilatation. — *Evaluation:* An inferred conclusion without precise causative connotation. A useful descriptor.

**Müller maneuver,** *n.* Physiol. Inspiration against a closed glottis, usually, but not necessarily, from a position of residual volume, for the purpose of producing transient decrease in intrathoracic pressure.

**N**

**nodular pattern,** *n.* Radiol. A collection of innumerable, small, roughly circular, discrete pulmonary opacities ranging in diameter from 2 to 10 mm, generally uniform in size, widespread in distribution, and without margin. — *Synonyms:* primary, secondary, generalized, or focal nodular pattern. — *Evaluation:* An acceptable radiologic descriptor without specific pathologic or causative implications. The size of the nodules shall be specified, either as a range or as an average.

**nodule,** *n.* — *[usually in the plural.]* Morphol/Gen’l med. Any small, nearly spherical collections of differentiated tissue, 2. Radiol. Any radiopaque opacity represented in a radiograph by a sharply defined, discrete, nearly circular opacity 2–30 mm in diameter. — *Qualifiers:* Should always be qualified with respect to size, location, border characteristics, number, and opacity. — *Synonym:* coin lesion (q.v.); cf. mass. — *Evaluation:* A useful and recommended descriptor to be used in preference to coin lesion.

**oligemia,** *n.* Physiol. Less than normal blood flow to the lungs or a part thereof. 2. Radiol. General or local decrease in the apparent width of visible pulmonary vessels, suggesting less than normal blood flow. — *Qualifiers:* acute, chronic, local, general. — *Synonym:* reduced blood flow. — *Evaluation:* An inferred conclusion appropriately based on the radiographic appearance and usually used as a descriptor. An acceptable term. — *adj.* oligemic.

**opacity,** *n.* — *[usually in the plural.] Radiol.* 1. Imperviousness to radiant energy; specifically, x-rays; the capacity to attenuate an x-ray beam. 2. The degree of x-ray attenuation produced by an absorber, usually expressed in terms of the attenuation of one absorber relative to another. 3. The shadow of an absorber that attenuates the x-ray beam more effectively than do surrounding absorbers. Hence, in a radiograph, any circumscribed area that appears more nearly white (of lesser photometric density) than its surround. Usually applied to the shadows of nonspecific pulmonary collections of fluid, tissue, etc., whose attenuation exceeds that of the surrounding aerated lung. — *Synonym:* radiopacity. — *Evaluation:* 3. An essential and recommended radiologic descriptor. In the context of radiologic reporting, radiopacity is acceptable but appears redundant, particularly since radio- does not serve to distinguish between the opacity of an absorber to x-rays and opacity of a radiographic shadow to
visible light rays. Radiopaque is preferred in Brit-
ish usage, nevertheless. Density (q.v.) should never be used in this context.

opaque, n. -s. Radiol. That which is opaque (Webs-
ter), contrast medium that is opaque to x-rays. —Synonyms: contrast med-
dium, contrast agent, contrast material. —Evaluation: A concise and acceptable term. Contrast medium, agent, and material are preferred, how-
ever. N.B.: The terms contrast and contrast me-
dia (when referring to a single agent) are collo-
quial, grammatically incorrect, and should not be used. —adj. Radiol. Impervious to x-rays. —Synonym: radiopaque. —Evaluation: Opake and radiopaque are both acceptable terms; opaque is preferred. See opacity.

osalphic, adj. Of or pertaining to osea.

osalphication, n. -s. The state or process of being ossified. Specifically: pulmonary osalphication, n. 1. Pathophysiol. a. The process by which trabec-
bacular bone is formed within lung tissue. b. The state in which trabecular bone exists within the lung tissue. c. A mass or focus of trabecular bone occurring in lung tissue. 2. Radiol. Calcific opacities, within the lung that represent trabecular bone; applicable to disseminated calcific opacities that (1) display morphologic characteristics of trabecular bone (i.e., trabeculation and a defined contour), and (2) occur in association with a lesion known histologically to produce trabecular bone within lung (e.g., mithral stenosis). —Synonyms: osstic noduleation, osstic nodules (q.v.). —Evaluation: A primary radiologic diagnosis. 2(1). An inferred conclusion. In either case, a useful radiologic term; to be distinguished from pulmonary calcification.

osalphic, adj. To change into or form bone.

P

paraspinal line, n. -s. Radiol. A vertically oriented interface usually seen in a frontal chest radi-
ography to the left and rarely to the right of the thoracic vertebral column. It extends from the aortic arch to the diaphragm and represents con-
tact between aerated lung (of a lower lobe) and adjacent mediastinal tissues. On the left, the paraspinal interface is situated posterior to the descending aorta, and its radiographic shadow is usually seen between the left lateral margins of the mediastinum and the pleural reflection, left paraspinous interface. —Evaluation: A specific feature in radiologic anatomy. Either of the synonyms cited is preferred to paraspinal line, inasmuch as the shadow, in fact, represents an interface, not a line.


phantom tumor, n. -s. Radiol. The shadow pro-
duced on a radiograph of fluid in one of the interlobar fissures, usually possessing an elliptical configuration in one projection (e.g., the lateral) and a round configuration in the other (e.g., the frontal). It is usually caused by gas, usually seen as a single homogeneous shadow, but may be explicit by the presence of serial radiographs. In the latter case, it is an acceptable radiologic descriptor.

plateslike atelectasis, n. Radiol. A linear or planar opacity of uncertain significance, presumed to represent diminished volume in part of the lung seen end-on. —Synonyms: platter, linear, or dis-
sected atelectasis. —Evaluation: An inferred con-
cclusion, usually both palpable and often, but not necessarily, unwarranted. Its use as a descriptor is not recom-
Sended. Linear opacity, planar opacity, etc. are preferred.

pleomonia, n. 1. Physiol. Increased blood flow to the lungs or a part thereof. 2. Radiol. General or local increase in the apparent width of visible pulmonary vessels, suggesting greater than nor-
mal blood flow. —Synonyms: hyperemia, in-
creased blood flow. —Evaluation: An inferred conclusion appropriately based on the radi-
ographic findings alone. Because pleomonia serves to distinguish increased blood flow of other causes from increased blood flow resulting from inflammation (hyperemia), it is the preferred term in this sense. —adj. pleomonic.

pneumatocele, n. -s. 1. Pathol. a. A thinned,
gas-filled space within the lung, usually occurring in association with acute pneumonia (most commonly of staphylococcal origin) and almost invariably in the form of pulmo-
nary azy. 2. Radiol. An approximately round, transient lucency within the lung that is usually associated with, and adjacent to, a zone of re-
solved pulmonary consolidation. —Synonyms: hyperemia, in-
creased blood flow. —Evaluation: An inferred conclusion appropriately based on the radi-
ographic findings alone. Because pleomonia serves to distinguish increased blood flow of other causes from increased blood flow resulting from inflammation (hyperemia), it is the preferred term in this sense. —adj. pleomonic.

primary complex, n. 1. Pathol. The combination of a focus of pneumonia produced by a primary infection (e.g., tuberculosis), sometimes associated with granulomas in the draining hilar or medi-
tinal lymph nodes. 2. Radiol. a. The combination of one or more irregular pulmonary parenchymal opacities of variable extent and location assumed to represent consolidation with enlargement of the draining hilar or mediastinal lymph nodes; an appearance assumed to represent an active in-
flection. b. The combination of a sharply defined parenchymal opacity (often calcified) with calcification of the draining hilar or mediastinal lymph nodes; an appearance usually regarded as evidence of an inactive process. —Synonyms: Ranke complex, Ghana complex. Primary complex is to be preferred to Ranke complex, which is acceptable but rarely used, and Ghon complex, which represents an inappropriate use of the eponym and is unacceptable. —Evaluation: A useful inferred conclusion.

prolifiation, n. -s. Radiol. A qualitative expression of the number of small opacities per unit anatomic structures, most commonly ribs and pulmonary vessels, that does not, in fact, represent a cavity. —Synonyms: 2. 3. 4. 5. The term is without causative connotation. Its use is not rec-
Ommended.

pulmonary blood flow redistribution, n. 1. Physiol. Any departure from the normal distribution of blood flow in the lungs, whether physiologic or pathological. 2. Radiol. Nonuniform, nonanatomic, nonsegmental distribution of the number of visible pulmonary vascular shadow-
s in one or more lung regions associated with corresponding widening and increase in the number of visible pulmonary vascular shadows in the
remaining lung regions. —Evaluation: An inferred
conclusion, often used as a descriptor and appro-
 priately based on radiographic evidence alone.

pulmonary edema, n. 1. Pathophysiol. The ac-
 cumulation of interstitial or intravascular fluid in the lung with or without associated alveolar filling. Specifically, the accumulation of water, protein, and solutes (transudate) usually due to (1) increased capillary permeability; (2) increased microvascular permeability; or (3) im-
paired lymphatic drainage. Also, the accumula-
tion of water, protein, and inflammatory cells (exudate) in response to inflammation of any
 type (e.g., infection, hypersensitivity, trauma, or circulating toxins). 2. Radiol. An inferred conclu-
sion applicable to a pattern of opacity (often bilaterally symmetric and perihilar in distribution) believed to represent alveolar filling and/or inter-
stitial thickening when associated findings and/or history suggest one of the processes enumer-
ated above. —Qualifiers: 1. Interstitial edema: pulmonary edema confined to the interstitial com-
partments of the lung; initially the bronchovas-
cular interstitial space and its continuum, subse-
quently the alveolar wall interstitial space. Alveo-
lar edema: pulmonary edema involving the alveoli
as well as the interstitial system. Synonyms: 2. Wet
lung, boggy lung, moist lung, drowned lung.
—Evaluation: An inferred conclusion often used as a
descriptor. A useful and acceptable term when used in an appropriate clinical setting. The
symptomatic terms are colloquialisms to be avoided.

pulmonary perfusion, n. 1. Physiol. The passage
of blood through the vessels of the lung or a part
thereof. 2. Radiol. Any radiologic evidence of pul-
monary blood flow in the physiologic sense. It may
be explicit (in the case of pulmonary angiog-
raphy) or inferred (in the case of conventional
—Evaluation: A physiologic conclusion that can properly be based on, or inferred from, radiologic
evidence alone. A useful and recommended term.

radiographic contrast, n. Radiol. 1. The dif-
ference in optical density between two specified
shadows (usually adjacent) in a processed radi-
ograph. 2. The resultant of film contrast and subject contrast. —Evaluation: A fundamental concept of radiologic physics, useful in a clinical
context as one determinant of radiographic qual-
ity.

radiographic quality, n. 1. Radiol. An expression
of the acceptability of a diagnostic radiograph to
the interpreter; a subjective evaluation. 2. Radiol
phys. An expression of the correspondence be-
 tween the physical characteristics of a radiograph
and some predefined standards, usually with re-
spect to contrast, resolution, and density; an
objective evaluation. —Synonym: film quality.
—Evaluation: A useful concept, but only in a loose,
qualitative sense. The term defies precise quan-
titative definition and is not in either sense an
expression of the diagnostic usefulness of a ra-
diographic image.

radiologic sign, n. —Radiol. A shadow or shadow
complex said to be reliable evidence of a specific
pathologic state, process, or relation. A list (in-
complete) of common good ones, their requisites,
and their reliability is as follows: broken bough s.: peripheral bronchial occlusion (highly unreliable). camaleote s.: echinococcus cyst (reli-
able). crescentic s.: pneumomediastinum (usually reliable). crescent s.: intracavitary mass; hydatid cyst, fungus ball, etc. (reliable evi-
dence of an intracavitary mass but not specific with respect to cause). glazed finger s.: un-
chiestasis (usually reliable). hilar bifurcation s.: va-
ascular vs. extravascular hilar enlargement (limited
usefulness). hilum overlay s.: cardiomegaly vs.
 anteorial mediastinal mass (limited usefulness).
healing ice s.: pulmonary infarction (limited
usefulness). hyperlucent s.: 1-2-3 s.: pul-
monary sarcoiosis (unreliable). misleading.
rabbit ear s.: bronchialalveolar cell carcinoma
(unreliable). milk s.: pneumomediastinum, pul-
monary venous return (unreliable). silhouette s.: presence and localization of intrathoracic lesion
(reliable). talli s.: rabbit ear s. (unreliable).
water lily s.: see camaleote s. (reliable). Wester-
mark s.: pulmonary embolus (usually reliable).
—Evaluation: Signs are seldom as specific as their
authors believe, and their meanings are often
confused through frequent misuse. Many are un-
reliable (e.g., rabbit ear) or totally erroneous (e.g.,
1-2-3 sign of sarcoiosis). With the exception of
a few generally recognized and usually reliable
signs (scimitar, silhouettte, Westermark), the use
of signs as descriptors is not recommended. Specific
description of the individual finding is preferred.

residual, n. Radiol. Any nonspecific opacity of un-
certain cause believed to represent an inactive
process. —Synonym: scar. —Evaluation: An
inferred conclusion. The term is vague, grammati-
cally incorrect (residual is singular), and should
be rejected in favor of more precise diagnostic
statements.
—adj. Of pertaining to a residue or remainder.
resolution, n. 1. Radiol. A quantitative expres-
sion of the number of punctate or linear
absorbers that can be recorded as perceptibly
discrete shadows per unit distance across a ra-
diographic receptor; usually expressed in linear
distance per millimeter. (Metallic wires are usually
used as test objects for such measurements.)
2. The characteristic of a radiographic receptor sys-
tem that expresses its ability to record closely
approximated absorbers as discrete shadows.
3. The spatial frequency response of a radiographic
system, usually expressed in terms of its modu-
lation transfer function (MTF). d. A measure of the
"fidelity" of the imaging system. —Synonym:
resolution power. —Evaluation: Resolving power is
technically limited by virtue of long usage, resolu-
tion is acceptable in this sense.
2. Pathol/Radiol. The process by which a lesion,
specifically a consolidation, clears. It may be
complete or partial. —Evaluation: An explicit diagnos-
tic statement appropriately based on serial ra-
diographs.

respiratory failure, n. Physiol. A pathologic state
resulting from impaired respiratory function and
characterized by an arterial Po2 below 80 mm Hg
or an arterial PC02 above 49 mm Hg, in a subject
at rest as well. —Qualifiers: acute, chronic.
—Synonym: pulmonary insufficiency. —Eval-
uation: A useful term in its clinical and physiologic
usage that should never be used as a radiologic
descriptor. It is preferred to pulmonary insuf-
ciency.

reticular pattern, n. —Radiol. A collection of
innumerable small linear opacities that together
produce an appearance resembling a net with
small superimposed nodules. In common usage,
the reticular and nodular elements are dimen-
sionally of similar magnitude. —Qualifiers: fine,
medium, coarse. —Evaluation: An acceptable
radiologic descriptor without specific pathologic
significance.

right tracheal stripe, n. Radiol. A vertically ori-
te d linear opacity 2-3 mm wide that extends from
the thoracic inlet to the right tracheobronchial
angle in the frontal radiograph. It is situated be-
 tween the air shadow of the trachea and the right
lung and is formed by the right tracheal wall and
conguious mediastinal interstitial tissue and ac-
dent pleura. —Synonym: right paratracheal
stripe or band. —Evaluation: A specific feature of
radiographic anatomy.

segment, n. —Anat/Radiol. One of the principal
anatomic subdivisions of the lobes of the lung
(usually 10 on the right and 9 on the left), a lobar
subdivision served by a major branch of the lobar
bronchus. —Qualifier: bronchopulmonary.

segmental, adj. Anat/Radiol. Of pertaining to a
segment.

septate lines, n. —usually in the plural. Radiol. A
generic term for fine, linear opacities of varied
distribution produced by the interstitium between pulmonary lobules when the interstitium is thck-
ened by fluid, dust deposition, cellular material,
etc. —Synonyms: Kerley lines (q.v.), lymphatic
lines; cf. interlobar septum. Septal lines is the
preferred term; Kerley lines is acceptable, partic-
ularly when one seeks to identify a particular type
of septal line (e.g., Kerley B lines). Lymphatic
lines is anatomically an inaccurate term and
should not be used in this context. —Evaluation:
A specific feature of pathologic radiologic anat-
omy, often inferred. A recommended term.

shadow, n. —Radiol. 1. In clinical radiography,
y any perceptible discontinuity in film blackening
ascribable to the attenuation of the x-ray beam
by a specific anatomic absorber or lesion on or
within the body of the patient. An opacity or lu-
ency. 2. Any shadow resulting from any other
diagnostic visual representation of the remnant
energy in an x-ray beam after its passage through
the body of the patient (e.g., a fluoroscopic im-
age, a CRT display, etc.). —Qualifiers. The
term should always be qualified as possible
with respect to size, contour, location, opacity
(lucency), etc. —Evaluation: A useful and rec-
ommended descriptor to be used only when more
specific identification is not possible.

shaggy heart, n. Radiol. A heart whose border
is partially effaced by multiple small, irregularly dis-
 tributed opacities produced by any of several
pathologic processes affecting the pericardiac
parts of the lungs and/or pleura. —Evaluation:
This term is an imprecise radiologic descriptor,
to be used with caution.

silhouette sign, n. Radiol. 1. The effacement of
an anatomic soft-tissue border by consolidation
of the adjacent lung or accumulation of fluid in
the contiguous pleural space. 2. A sign of the con-
formity and, hence, of the probable adjacency of
a pathologic opacity to a known structure: useful
in detecting and localizing a consolidation along
the axis of the x-ray beam. —Evaluation: A widely
accepted and useful radiologic descriptor. It
should be noted that the finding, in fact, involves
the loss of a silhouette.

small irregular opacity, n. —usually used in the
plural. Radiol. 1. Small pulmonary opacities that
defy classification in terms of simple geometric
descriptors, that are often poorly defined, and
that in large numbers produce an appearance
T

tension, adj. 1. The state of being stretched or strained. 2. Physiol/Med. A state characterized by a functional impairment caused by pneumo- or hydrothorax. 3. Radiol. The accumulation of gas or fluid in a pleural space in an amount sufficient to cause compression of the ipsilateral lung, markedly enlarge the hemithorax, depress the hemidiaphragm, and displace the mediastinum to the opposite side; applicable only in the presence of clinical cardiorespiratory embarrassment. —Evaluation: An inferred conclusion to be used only as specified in the definition. In fact, tension in relation to pneumothorax exists only during the expiratory phase of the respiratory cycle, since pleural pressure on inspiration is usually subatmospheric. The word should not be used in the term tension cyst, which does not satisfy the criteria cited above.

Valsalva maneuver, n. Physiol. Forced expiration against a closed glottis, usually but not necessarily from a position of total lung capacity. A maneuver used to produce transient increase in intrathoracic pressure.

vascular prominence, n. Radiol. Real or apparent increase in the caliber and/or number of pulmonary vessels beyond the expected range, which, in view of the wide range of normal, does not necessarily imply a pathologic departure from normal. —Synonyms: increased vascularity; vascular engorge, pulmonary hyperemia, pulmonary plethora, pulmonary pleonemia. These terms all represent inferred conclusions and are not, therefore, strictly synonymous with vascular prominence. Each is applicable only in specified circumstances and each must be used with care. —Evaluation: The term vascular prominence is an acceptable radiologic descriptor.

V

vasoconstriction, n. 1. Physiol. The narrowing of a muscular blood vessel by contraction of its muscle layer. 2. Radiol. Local or general reduction in the caliber of visible pulmonary vessels that is presumed to result from decreased blood flow produced by contraction of muscular pulmonary arteries. —Qualifiers: hypoxic, reflex. —Antonym: vasodilation. —Evaluation: In the interpretation of conventional radiographs, an inferred conclusion appropriately based on radiographic signs that are usually reliable. In the interpretation of angiograms, an explicit radiographic conclusion. The term is not synonymous with oligemia. Oligemia is a sign of vasoconstriction, a functional and potentially reversible process; it also applies to irreversible vessel narrowing, as in emphysema.

vasodilatation, n. 1. Physiol. The widening of the lumen of a muscular blood vessel by relaxation of its muscle layer. 2. Radiol. The local or general increase in the width of visible pulmonary vessels resulting from increased pulmonary blood flow. —Synonym: vasodilation. —Evaluation: In the interpretation of conventional radiographs, an inferred conclusion to be expressed with caution, since apparent widening of pulmonary vascular shadows may, in fact, be due to perivascular edema, neoplasm, etc. In the interpretation of angiograms, an explicit conclusion.

ventilation, v. Physiol. 1. To circulate air into and out of any closed space. 2. Specifically, to introduce fresh air and expel stale air from the lungs by physiologic or mechanical means. 3. To provide with a patulous opening for the circulation of air. —Qualifiers: hyper-; hypo-.

ventilated, adj. 1. Having had fresh air admitted and stale air expelled by physiologic or mechanical means. —Qualifiers: hyper-; hypo-.

ventilation, n. Physiol/Radiol. 1. The dynamic acts of inhaling fresh air and exhaling stale air. 2. The movement of air into and out of the lungs. 3. Inspiration and expiration. —Qualifiers: hyper- (preferred) or hypo-; hypo- (preferred) or hyper-.

—Synonyms: breathing, respiration; cf. aeration, inflation. 4. Physiol. Oxygenation of the blood, specifically in the act of respiration. —Evaluation: A useful term if properly used. The term always implies a biphasic dynamic process of inspiration and expiration; hence, cannot be assessed from a single static image. Not to be used synonymously with aeration and inflation.

X

x-ray quality, n. Radiol. phys. The effective energy or spectral distribution of an x-ray beam. 1. Usually expressed in terms of half-value layer (HVL) in mm of aluminum. 2. Often implied, but not explicitly defined, by a statement of the peak voltage applied to the x-ray tube. —Synonym: x-ray beam quality. —Evaluation: A fundamental physical measurement useful clinically in specifying and comparing radiographic equipment and techniques. The practice of expressing x-ray quality in terms of beam "hardness" is to be avoided.