Restrictive Lung Diseases

Restrictive lung diseases are defined by a reduction in lung volume and an FEV1/FVC ratio greater than 80%. There are many causes of restrictive lung disease, including mechanical problems and interstitial disease processes. Mechanical problems can include obesity, muscle damage such as polio or myasthenia gravis, or bone defects such as scoliosis, resulting in poor breathing mechanics and therefore restricting the lung's capacity. Interstitial lung diseases include a variety of disease processes that damage the lung itself. Examples include ARDS, neonatal respiratory distress syndrome, pneumoconiosis, sarcoidosis, idiopathic pulmonary fibrosis, Goodpasture's, Wegener's, eosinophilic granuloma, or lung damage from drug toxicity.



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Poor Breathing Mechanics
Hunchback with S-spine-skull
Any muscle, bone or structural defect that restricts breathing or lung expansion can be classified as restrictive lung disease. This includes obesity, scoliosis, polio, myasthenia gravis, or trauma.

Interstitial Lung Diseases
Interstate-sign
These are pulmonary diseases that occur in the actual lung interstitium and lower gas diffusion capacity. Examples include ARDS, sarcoidosis, IPF, pneumoconiosis, etc.

Goodpasture's Syndrome
Gold-pastor
This is an autoimmune disease in which antibodies attack the tissues in the lungs and kidneys. Typically this disease is only classified as an interstitial restrictive lung disease when it involves pulmonary hemorrhage.

Eosinophilic Granuloma
Eosinophilic-eagle
Also called Langerhans cell histiocytosis, this is a rare disease that involves proliferation of Langerhans cells from the bone marrow that can migrate to multiple organs. Its presence in the lungs can lead to restrictive lung disease.

Granulomatosis with Polyangiitis
Granny-llama with Polly-angel
Also called Wegener's, this is an autoimmune disease that affects the lungs and can result in restrictive lung disease.

Sarcoidosis
Shark-koi-fish
This is a syndrome that involves abnormal collections of chronic inflammatory cells called granulomas that can form nodules in multiple organs including the lungs, resulting in restrictive lung disease.

Pneumoconiosis
Nude-Mona-cone-nose
This is a type of restrictive lung disease caused by inhalation of dusts of various kinds, such as silicon for silicosis, asbestos for asbestosis, and coal for anthracosis. This is often considered an occupational hazard.

Idiopathic Pulmonary Fibrosis
Fiber-ball hitting Lungs
Idiopathic pulmonary fibrosis is a chronic and progressive disease characterized by progressive fibrosis in the interstitium of the lungs. Lung fibrosis impairs gas diffusion capacity and increases stiffness, resulting in restrictive conditions.

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Drug Toxicity

Toxic Drugs

There are many drugs that can damage the lungs, including but not limited to bleomycin, busulfan and amiodarone. Damage to the lungs can result in restrictive lung disease.

Acute Respiratory Distress Syndrome (ARDS)

Acute-angle Lungs Shooting Flare-gun

Acute respiratory distress syndrome is a type of restrictive lung disease caused by a serious and potentially fatal reaction to injuries or acute infection to the lungs.

Neonatal Respiratory Distress Syndrome

Newborn with Flare-gun tightening belt around the Lungs

Also called hyaline membrane disease, NRDS is a type of restrictive lung disease that results from developmental insufficiency of surfactant production and structural immaturity in the lungs.

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