RESPIRATORY DISORDERS OF THE NEW BORN

RESPIRATORY DISORDERS IN NEW BORN

- Pulmonary and nonpulmonary causes
- Signs of respiratory distress
- Tachypnea
- RR rate less than 60/min
- Chest retraction
- grunting

RESPIRATORY DISORDERS IN NEW BORN

- **Non pulmonary causes**
  - **Cardiac –CHF,CHD**
  - **Metabolic- hypoglycemia, metabolic acidosis**
  - **CNS- asphyxia, cerebral edema**

RESPIRATORY DISORDERS IN NEW BORN

- **PULMONARY CAUSES**
  - **Respiratory distress syndrome**
  - **Meconium aspiration syndrome**
  - **Pneumonia**
  - **Transient tachypnea of newborn**
  - **Pneumothorax**
  - **TEF**
  - **UPPER AIRWAY OBSTRUCTION**

RESPIRATORY DISORDERS IN NEW BORN

SCORING SYSTEM FOR REPIRATORY DISORDERS			
SCORE	0	1	2
Respiratory rate	Less than 60	60-80	Greater than 80/apnea
Cyanosis	None in room air	In 40% o2	In more than 40% o2
Retraction	none	mild	moderate
Grunting	none	Audible with stethoscope	Audible with stethoscope
Air entry	clear	decreased	Barely audible

RESPIRATORY DISORDERS IN NEW BORN

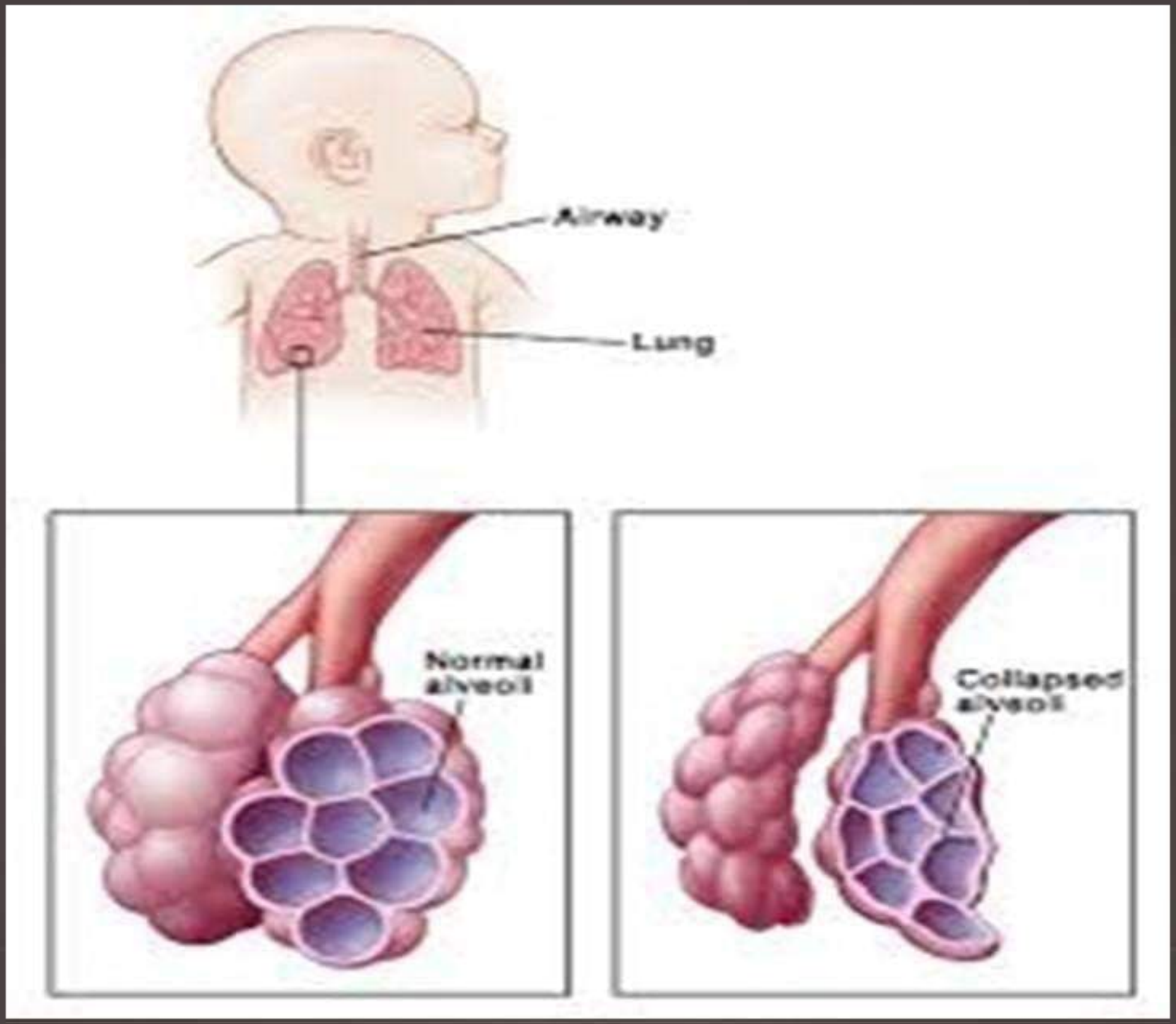
Interpretation of the score	
0-4	Less than 40%
5-7	CPAP
More than 7	Assisted ventilation

RESPIRATORY DISTRESS SYNDROME

- Onset –first 6 hrs of life
- Disease of the preterm

DEFINITION

- Idiopathic respiratory distress syndrome is an acute respiratory disorder occur in preterm infant due to surfactant deficiency and physiologic immaturity of the lungs


Airway
Lung
Normal alveoli
Collapsed alveoli

ETIOLOGY

- Preterm infants
- Drug exposed infants
- Cesserian section delivery
- Chronic intrauterine stress
- Non pulmonary orgin

- In RDS the basic deficiency is surfactant deficiency.
- The preterm infants are born with numerous underdeveloped and many uninflatable alveoli.
- Because the final unfolding of the alveolar septa which increases the surface area of lungs occurs during the last trimester of pregency.
- In addition the fetal chest wall is highly compliant because of predominance of cartilage.
- Functionally fetal lungs are deficient in surfactant (a mixture of lipids, proteins, lipoproteins-lecithin & sphingomyelin) – surface active phospholipids secreted by type 2 cells of alveolar epithelium.
- Surfactant production starts at 20 weeks of life and peaks at 35 weeks of gestation.
- So any neonate less than 35 weeks is prone to develop RDS.

- In the absence of surfactant
- Surface tension increases
- Alveoli tends to collapse during expiration
- During inspiration more negative pressure is needed (work load increases)
- There is inadequate oxygen + increase work of breathing
- Hypoxemia and acidosis
- Pulmonary artery constriction
- R-L shunting across foramen ovale
- Worsens hypoxemia
- Eventually leads to respiratory failure

CLINICAL MANIFESTATIONS

- Tachypnea
- Dyspnea
- Retractions
- Inspiratory crackes
- Audible grunt
- Flarring of external nares
- Cyanosis
- Low BP
- Hypothermia
- Hypoglycemia
- Pneumothorax
- Auscultation findings

DIAGNOSIS

- L/S ratio
- Chest X-ray
- Negative shake test

MANAGEMENT

- **Humidified incubator**
- **Adequate oxygenation**
- **Ventillation**
- **Supportive care**
- **Administration of extragenous surfactant**

PREVENTION

- Prenatal steroids
- Avoidance of premature deliveries
- Surfactant to symptomatic infants immediately after birth

COMPLICATIONS

- Pneumothorax
- Bronchopulmonary dysplasia
- Retinopathy of prematurity