3 Clinical Assessment of Respiratory Distress

CLINICAL ASSESSMENT FOR RESPIRATORY DISTRESS SYNDROME (RDS)

Tachypnea (respiratory rate more than 60/min): Respiratory count should be for a minute and should be rechecked if the child has borderline of increased respiratory rates.

Presence of chest retractions: Specifically define whether the retraction is suprasternal or infrasternal or intercostal. Suprasternal recession more often suggests upper airway obstruction and may be a pointer toward upper airway anomaly in neonates. Intercostal retraction suggests alveolar involvement.

Grunting: This signifies the patients effort to maintain functional residual capacity. The patient exhales against a partially closed glottis thereby attempting to keep the alveoli open. This again suggests presence of atelectasis.

Cyanosis: Presence of cyanosis indicates significant right to left shunt resulting from widespread atelectasis. Objectivity for assessment and monitoring for respiratory distress may be achieved by using Silverman-Anderson scoring (Tables 3.1 and 3.2) or Downe's scoring (Table 3.3). It is recommended that clinicians make regular use of any of these scoring systems to make management decisions at the bedside.

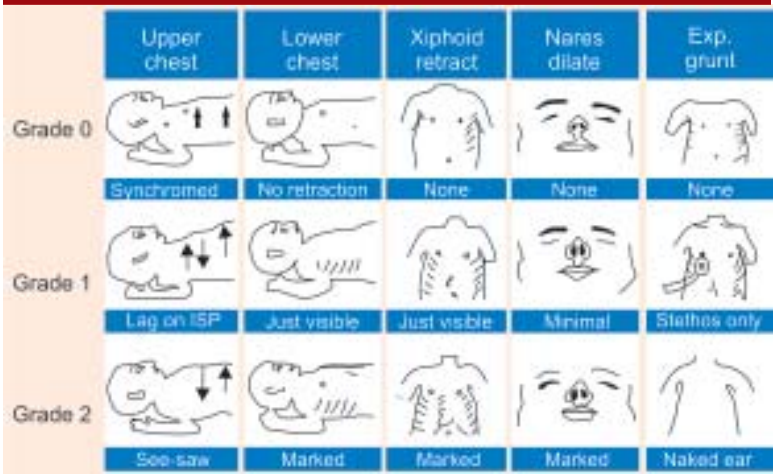
In Silverman-Anderson score, inspection or auscultation of the upper and lower chest and nares are scored on a scale of 0, 1 or 2 using this system are:

Chest movement: Synchronized vs minimal lag or sinking of the upper chest as the abdomen rises. In the most extreme instances, a seesaw-like movement of the chest and abdomen is observed and would be given a score of 2.

Table 3.1: Silverman-Anderson index

Feature	*Score 0*	*Score 1*	*Score 2*
Chest Movement	Equal	Respiratory Lag	See-saw Respiration
Intercostal Retraction	None	Minimal	Marked
Xiphoid Retractions	None	Minimal	Marked
Nasal Flaring	None	Minimal	Marked
Expiratory Grunt	None	Audible with stethoscope	Audible without stethoscope

Table 3.2: Silverman-Retraction Score



Intercostal retractions: Retraction between the ribs is rated as none, minimal or marked. This indicates loss of functional residual capacity.

Xiphoid retractions: Similarly, retraction below the xiphoid process are rated as none, minimal or marked.

Nasal flaring: Normally, there should be no nasal flaring. Minimal flaring is scored 1 and marked flaring is scored 2.

Expiratory grunting: Grunting that is audible with a stethoscope is scored 1, and grunting that is audible without using a stethoscope is scored 2. The higher the score, the more severe the respiratory distress. A score greater than 7 indicates that the baby is in respiratory failure.

Table 3.3: Downe's scoring system

	0	*1*	*2*
Cyanosis	None	In room air	In 40% FiO_2
Retractions	None	Mild	Severe
Grunting	None	Audible with stethoscope	Audible without stethoscope
Air entry	Clear	Decreased or delayed	Barely audible
Respiratory rate	Under 60	60-80	Over 80 or apnea

Score: > 4 = Clinical respiratory distress; monitor arterial blood gases
> 8 = Impending respiratory failures

The author is of the opinion that this scoring system is very practical and easy to use with good sensitivity and specificity in preterm babies

A baby who appears unwell clinically, appears to be exhausted or pale on any form of ventilatory assistance has to be evaluated for the cause and appropriate action taken. The author opines that early anticipatory action based on a protocolised approach is important for a good neurological outcome.

Improvement in air entry is also a good measure of improvement with CPAP especially in baby more than 1.5 kg.