Disease	Pulmonary Function	Sleep Abnormalites	Ventilatory Control
Cerebral Palsy	**No data available**	**OA, MA > CA, hypoventilation, Abn REM**	**No data available**
Spinal muscular atrophy	**↓ TLC, FRC** **↓ MIP, MEP**	**CA, MA, hypoventilation**	**↑ occlusion pressure**
Duchenne muscular dystrophy	**↓ TLC, FRC** **↓ MIP, MEP**	**OA, MA, CA, hypoventilation,** **Nonapneic hypoxemia**	**↓ HVR, Hypercapnic VR** **N or ↑ occlusion pressure**
Myotonic dystrophy	**N or ↓ FRC** **↓ MIP, MEP**	**CA>OA, MA, REM-related hypoxemia, hypoventilation, EDS, sleep-onset REM**	**↓ HVR, Hypercapnic VR** **N or ↑ occlusion pressure**

Clinical Manifestation (SDB)

- Asymptomatic
- Morning headaches, fatigue, exertional dyspnea, irritability, hyperactivity, impaired learning, vomiting, difficulty tolerating supine position, restless sleep [Heckmatt et al 1989, Labanowski et al 1996]
- Failure to thrive, nocturnal sweating, developmental delay, cor-pulmonale [Beckerman and Hunt 1992]
- These symptoms may be erroneously attributed to the NMD rather than SDB [Gozal 2000]
- Nonrestorative sleep and EDS may be the early sign of SDB

Clinical manifestation

- PE: Bell shaped chest, tachypnea, use of accessory muscles and paradoxical breathing
- Even patients with mild symptoms may have significant unrecognized SDB [Labanowski et al 1996]
- Investigations
  - PFT
  - Ventilatory control
  - Polysomnography
  - Others: Fluoroscopy, CXR, CBC, HCO_3

Clinical assessment

- PFT
  - Spirometry, lung volumes, muscle strength assessment
  - Restrictive physiology
  - Periodic assessment of PFT especially when lung volumes < 60% [Gozal 2000]
  - PFT may not be predictive of SDB [Smith et al 1988, Heckmatt et al 1989, Manni et al 1989, White et al 1995]
  - Other factors contributing to SDB : upper airway, intercostal and diaphragmatic hypotonia, poor airway clearance, pulmonary atelectasis, abdominal distention, GER, pulmonary aspiration, progressive malnutrition or obesity [Givan 2000]