

### F Muscular Dystrophy

*Muscular dystrophy* (MD) is a condition in which the muscles progressively become weaker. One common type, Duchenne's muscular dystrophy (DMD), occurs in boys and usually is detected by 5 years of age. The boy walks with a waddling gait and has difficulty climbing stairs because of weakness in the pelvic and abdominal musculature. Usually between 8 and 10 years of age, the boy falls more and becomes more fatigued.<sup>23</sup> At this point, a power wheelchair with a manual wheelchair backup becomes necessary. A power wheelchair is helpful to avoid excessive fatigue. One of the biggest difficulties in a boy with DMD is the development of spinal deformities, usually lordosis, scoliosis, or *kyphoscoliosis*<sup>24-26</sup> because of the weakening of the abdominal muscles. By the age of 15, usually the young man requires postural support to sit upright. As muscular weakness progresses, respiration is affected. This occurs by the early 20s, and sometimes earlier. Respiratory insufficiency is a sign of the pre-terminal stage of DMD. Seating supports depend on the boy's level of weakness and function.

#### Seating Goals

In the early stages of MD, the seating goals are<sup>11</sup>:

- **Independent mobility.** This may mean providing powered mobility sooner so that the boy can keep up with his peers.
- **Maximize function.** Postural support should enhance arm and hand function. Sometimes when the abdominal muscles are weak, the boy relies on his arms for support. Providing abdominal support can free his arms for function. Also, seating intervention should make transfers as easy as possible.
- **Delay spinal deformities and hip flexion contractures.** In conjunction with range of motion exercises, power tilt, recline, and seating supports can help keep the boy more in midline. Timing is critical for seating intervention. Once the spinal deformity begins, it can progress rapidly.<sup>27</sup> Some have found that the progression of scoliosis can be slowed by supporting the spine in extension to increase weight bearing through the facet joints.<sup>28,29</sup>
- **Enhance comfort.** Postural support can help improve comfort by preventing excessive pressure in one area, for instance, on one ischial tuberosity.<sup>30</sup>

As the disease progresses, the child may or may not undergo spinal surgery. In either case, as the disease progresses, the seating goals are<sup>11</sup>:

- **Maximize comfort** because shifting weight to relieve pressure is more difficult, a pressure relief cushion, tilt, and back support recline may be appropriate.
- **Encourage independent mobility.**
- **Maximize function.**
- **Accommodate spinal deformities, contractures, and/or a fused spine** by using postural supports.