

Diagnosis	Recommendations
Cerebral palsy (CP) Gross Motor Function Classification System levels IV and V, with established baseline fitness	Reduce sedentary behavior: Begin with active play on the floor for 10 minutes daily, adding five minutes every other week, or have patient stand for 15 minutes twice daily and gradually increase that time.
Cerebral palsy (CP) Gross Motor Function Classification System levels I-III, with established baseline fitness	Perform aerobic and strengthening exercises for at least 20 minutes, two to three times weekly. Strength exercises (multi- or single-joint) should begin with light weights, with 1 to 4 sets of repetitions performed on non-consecutive days. Gradually increase the amount of weight and number of repetitions.
Mild traumatic brain injury (TBI) or concussion	After a brief period of physical and cognitive rest, begin a gradual return to activity as symptoms permit, following usual return-to-play guidelines.
Moderate to severe TBI	<p>Aerobic activity is generally encouraged following acute rehabilitation to promote recovery and neuroprotective effects on locomotion, cognition, learning and memory.</p> <p>Additional considerations: Children recovering from craniotomy should avoid returning to sports until the bone flap is fully healed, which is typically about a year after injury, and avoid contact or collision sports.</p>
Ventriculoperitoneal shunts	In general, it is probably reasonable to follow the same guidelines that apply to children with CP and allow them to participate in sports after a discussion of potential risks, benefits and medical guidelines.
Spinal cord dysfunction due to spinal cord injury (SCI) or spina bifida	If following guidelines for adults with SCI, exercise should include either at least 20 minutes of moderate to vigorous-intensity aerobic exercise on three or more days a week; or at least 30 minutes of moderate aerobic exercise, five days a week; and strength training on two or more days a week.
Amputation and limb deficiency, acquired or congenital	These children may participate in exercise or sports with or without adaptive equipment. If a prosthesis or orthosis is required, ensure a proper fit to help maintain skin health and appropriate biomechanics. Watch for pain or injury to an intact lower limb, including stress fractures and muscle strains, and back pain due to compensatory lateral flexion and extension of the lumbar spine during activity. Addressing core strength, overall flexibility, and balance and agility can help optimize overall physical performance.
<p>Additional considerations: Medical assessment and oversight are necessary because of side effects associated with medications commonly used (such as oxybutynin and baclofen) and other potential serious risks of the various diagnoses, including autonomic dysreflexia, orthostatic and exertional hypotension, bone fragility, thermoregulatory dysfunction, and sensory impairment leading to pressure sores or wounds.</p>	

### Diagnosis- and disability-specific recommendations and guidelines

This chart highlights some of the recommendations and guidelines for children that Dr. Driscoll and co-authors present in their review article published in Current Physical Medicine and Rehabilitation Reports in 2019.