

Caring for Persons with Cerebral Palsy

Cerebral palsy is a nonprogressive disorder of movement due to early CNS insult during pre- and perinatal (80%) or postnatal (20%) period. Occurs in ~ 3 per 1000 live births. Symptoms and comorbidities vary across subsets as classified by:

- Type - spastic 70-80%, dyskinetic 2.5 -10%, ataxic 1-2.5% or mixed 15%
- Distribution - hemiplegia 25-40%, diplegia 35%, triplegia, quadriplegia 20%
- Severity - General Motor Functional Classification System I-V, least to most severe, 58% ambulatory

Comorbidity	Summary	Management
Intellectual disability	<ul style="list-style-type: none"> ▪ IQ <70 in 19% GMFCS 1-2, 35% GMFCS 3-5 ▪ IQ < 50 (7-55%) assoc. w/ GMFCS, spastic quadriplegia, hypotonia 	<ul style="list-style-type: none"> ▪ Dysarthria is not indicative of ID ▪ Verify prior testing for adaptations and planning. ▪ Access adaptive services
Communication difficulties	<ul style="list-style-type: none"> ▪ 61% overall - hypotonia 95%, dyskinesia 94%, spastic quadriplegia 89% 	<ul style="list-style-type: none"> ▪ Verify ability to report pain and illness ▪ Use augmentative communication – ipad, PECS, etc.
Mental health	<ul style="list-style-type: none"> ▪ Depression 21%; anxiety 21%; mood disorders 23%, dementia 3.8%, w/ID 16% ▪ Hyperactivity 31%, emotional difficulties 29%, conduct problems 17% 	<ul style="list-style-type: none"> ▪ w/o ID - PHQ9 & GAD7, w/ ID adapted PHQ9 & GAD7 or Glasgow scales. First line SSRI, consider GABA analogue. ▪ Watch neuro sx, interaction of meds w/ spasticity. ▪ Screen for aging changes eg. NTG-EDSD
Hearing loss	<ul style="list-style-type: none"> ▪ 5% to 16% w/ increasing GMFCS, or hypotonia, higher in dyskinetic, ataxic 	<ul style="list-style-type: none"> ▪ Periodic hearing screen. Check cerumen impaction. ▪ Adaptive services for impairment.
Vision loss	<ul style="list-style-type: none"> ▪ 30 – 49% assoc w/inc. GMFCS, hypotonia, eg. strabismus, retinopathy of prematurity, cortical visual impairment, field defects, blindness 5.5% assoc w/ GMFCS V or tri/quadruplegia. 	<ul style="list-style-type: none"> ▪ Routine vision exam ▪ Adaptive services for impairment.
Seizures and other neuro issues	<ul style="list-style-type: none"> ▪ 23-28%, small subset resolve by age 5 ▪ GMFCS V 65%, tri/quadruplegia 53% ▪ Pain 65% - back 47%, spasticity ▪ Autonomic dysfunction 33% - flushing, tremors, acute HTN, bradycardia, stroke risk 	<ul style="list-style-type: none"> ▪ Surveillance for seizure-like activity ▪ Address pain management ▪ Spasticity Rx – meds esp. baclofen, botox, surgery ▪ Urgent Rx - sit up, loosen clothes, relieve noxious trigger – bladder, constipation, Rx BP w/nitropaste
GI issues	<ul style="list-style-type: none"> ▪ GERD 16%, fecal incontinence 14.6% ▪ Constipation 17%, non-ambulatory 59%, ID 67% ▪ Underweight 16.5%, non-amb 22.9%, ID 12-17% ▪ Short stature (shortest quadriplegia vs di/hemi) 	<ul style="list-style-type: none"> ▪ Verify stooling frequency, consistency ▪ Verify diet intake, BMI ▪ Nutrition support, supplements, multivitamins. ▪ Consider growth hormone deficiency
MSK	<ul style="list-style-type: none"> ▪ Contractures, scoliosis 46% w. progression risk ▪ Hip dislocation (esp. non-ambulatory) ▪ Age 30-40 risk mobility loss, inc. w/ age, early osteoarthritis 16-19% 	<ul style="list-style-type: none"> ▪ Maintain surveillance of scoliosis curve ▪ Shared decision making for surgery w/ curve > 40-50 or hip relocation ▪ PT for loss of function
Fragility fractures	<ul style="list-style-type: none"> ▪ 5.5% overall up to 38%, risks - immobility, undernutrition, anticonvulsant use. 	<ul style="list-style-type: none"> ▪ Consider Vit D testing, DEXA ▪ Encourage weight bearing as able
Lung disease	<ul style="list-style-type: none"> ▪ Asthma 24%, COPD 11%, CLD from perinatal injury, fibrosis 2.4% from recurrent aspiration, restriction from severe scoliosis 	<ul style="list-style-type: none"> ▪ Verify swallowing concerns ▪ Consider swallow study ▪ Adapt diet and feeding positioning as needed
Cardiovascular disease	<ul style="list-style-type: none"> ▪ Increased hypertension 26%, ischemic heart disease, stroke, cerebrovascular disease 	<ul style="list-style-type: none"> ▪ Regular BP testing, routine cholesterol screening
Urinary incontinence	<ul style="list-style-type: none"> ▪ 32%, increase w/ worse motor or cognitive function, CKD 3.1%, UTIs, hydronephrosis 	<ul style="list-style-type: none"> ▪ Continence supplies prn ▪ Low muscle mass, use cystatin C for GFR https://www.kidney.org/professionals/gfr_calculator
Skin ulcers	<ul style="list-style-type: none"> ▪ 7.8- 9.2%, non-ambulatory 27.9%, ambulatory 1.8%, w/ ID 35.3%, w/o ID 1.7% 	<ul style="list-style-type: none"> ▪ Screen skin, teach home surveillance ▪ Verify weight shifting, safe transfers, etc.
Dental	<ul style="list-style-type: none"> ▪ High dental caries, due to hygiene, enamel hypoplasia, GERD, medication effects ▪ Bruxism, malocclusion, hypersalivation 	<ul style="list-style-type: none"> ▪ Regular dental care, accommodations prn ▪ Supportive care for drooling, meds, salivary surgery.

Reference: Ryan JM, et al (2023). Prevalence and incidence of chronic conditions among adults with cerebral palsy: a systematic review and meta-analysis. *Developmental Medicine & Child Neurology*, 65(9), 1174-1189.

Summary by CYACC: April 2025

