

Ocular Photoscreening

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Guideline

Instrument-based ocular screening using photoscreening is covered as medically necessary for vision screening for the following:

- As a preventive screening instrument for children 1–3 years of age (ends on 4th birthday)
- Individuals 4 years of age and older who are developmentally delayed and are unable or unwilling to cooperate with routine visual acuity screening

Limitations/Exclusions

Instrument-based ocular screening using photoscreening is unproven and not medically necessary for all other patient populations including children younger than 1 year of age. More age-appropriate screening methods are available for these populations.

Retinal birefringence scanning for the detection of eye misalignment or strabismus (CPT 0469T) is not considered medically necessary, as its effectiveness has not been established.

Clinical Evidence

Ocular photoscreening has been investigated as an alternative screening method to detect risk factors for amblyopia, which include strabismus, high refractive errors, anisometropia, and media opacities. Many children permanently lose vision each year as a result of these treatable ocular disease processes. Early diagnosis and treatment of these conditions has been shown to yield better visual outcomes.

The U.S. Preventive Services Task Force (USPSTF, 2017) recommended vision screening for amblyopia and its risk factors in children aged 3 to 5 years. Evidence was insufficient to assess the benefits and harms of vision screening in children younger than 3 years. Various screening tests are used in primary care to identify visual impairment among children, including visual acuity tests, stereoacuity tests, the cover-uncover test, and the Hirschberg light reflex test (for ocular alignment/strabismus). Photoscreeners (instruments that detect amblyogenic risk factors and refractive errors) may also be used.

Infants and young preverbal children are difficult to screen because they are unable to provide subjective responses to visual acuity testing and do not easily cooperate with testing of ocular alignment or stereoacuity (AAP, 2002). For similar reasons, it also is difficult to screen certain older children, such as those who are nonverbal or have developmental delays.

Ocular photoscreening has been used to screen for amblyogenic factors, such as strabismus, media opacities, and significant refractive errors, in children (AAP, 2002). An advantage of ocular photoscreening over standard methods of testing visual acuity, ocular alignment and stereoacuity is that photoscreening requires little cooperation from the child, other than having to fixate on the appropriate target long enough for photoscreening. Thus, photoscreening has the potential to improve vision screening rates in preverbal children and those with developmental delays who are the most difficult to screen. Many of the children that are most difficult to screen using conventional methods are also at highest risk of amblyopia (e.g., premature infants, children with developmental delays).

In a retrospective study, Longmuir et al. (2013) reported their experience with vision screening in children and compared the results of photoscreening in children younger than 3 years with those of children of preschool age and older. During the 11 years of the study, 210,695 photoscreens on children were performed at 13,750 sites. In the 3 years old. According to the authors, these results confirm that early screening, before amblyopia is more pronounced, can reliably detect amblyogenic risk factors in children younger than 3 years of age, and they recommend initiation of photoscreening in children aged 1 year and older.

In a cross-sectional study, Longmuir et al. (2010) reported on a cohort of preschool children screened by a photoscreening program (using MTI PhotoScreener) over a 9-year period from a single, statewide vision screening effort. Children who failed the photoscreening were referred to local eye care professionals who performed a comprehensive eye evaluation. Over the 9 years of the continuously operating program, 147,809 children underwent photoscreens to detect amblyopic risk factors at 9746 sites. Because of abnormal photoscreen results, 6247 children (4.2%) were referred. The overall positive predictive value (PPV) of the MTI PhotoScreener was 94.2%.

Professional Societies

American Academy of Ophthalmology (AAO)

The American Academy of Ophthalmology (AAO) Preferred Practice Patterns for Pediatric Eye Evaluations (2017) state that vision screening should be performed at an early age and at regular intervals throughout childhood. The elements of vision screening vary depending on the age and level of cooperation of the child. Subjective visual acuity testing is preferred to instrument-based screening in children who are able to participate reliably. Instrument-based screening is useful for some young children and those with developmental delays. Instrument-based screening techniques, such as photoscreening and autorefraction, are useful for assessing amblyopia and reduced-vision risk factors for children ages 1 to 5 years, as this is a critical time for visual development. Instrument-based screening can occur for children at age 6 years and older when children cannot participate in optotype-based screening.

American Academy of Ophthalmology/American Association for Pediatric Ophthalmology and Strabismus / American Association of Certified Orthoptists

The American Academy of Ophthalmology, the American Association for Pediatric Ophthalmology and Strabismus, and the American Association of Certified Orthoptists coauthored a policy statement regarding the use of instrument-based screening devices. These devices are available commercially and have had extensive validation, both in field studies as well as in the pediatrician's offices. Screening instruments detect amblyopia, high refractive error, and strabismus, which are the most common conditions producing visual impairment in children. If available, they can be used at any age but have better success after 18 months of age. Instrument-based screening can be repeated at each annual

preventive medicine encounter through 5 years of age or until visual acuity can be assessed reliably using optotypes. Using these techniques in children younger than 6 years can enhance detection of conditions that may lead to amblyopia and/or strabismus compared with traditional methods of assessment (Donahue and Baker, 2016).

Revision History

May 8, 2020 — added clarification that retinal birefringence scanning (CPT code 0469T) is not considered medically necessary.

Applicable Procedure Codes

99174	Instrument-based ocular screening (e.g., photoscreening, automated-refraction), bilateral; with remote analysis and report
99177	Instrument-based ocular screening (e.g., photoscreening, automated-refraction), bilateral; with on-site analysis

Applicable Diagnosis Codes

E78.71	Barth syndrome
E78.72	Smith-Lemli-Opitz syndrome
F07.9	Unspecified personality and behavioral disorder due to known physiological condition
F09	Unspecified mental disorder due to known physiological condition
F45.8	Other somatoform disorders
F70	Mild intellectual disabilities
F71	Moderate intellectual disabilities
F72	Severe intellectual disabilities
F73	Profound intellectual disabilities
F78	Other intellectual disabilities
F79	Unspecified intellectual disabilities
F80.4	Speech and language development delay due to hearing loss
F82	Specific developmental disorder of motor function
F84.0	Autistic disorder
F84.3	Other childhood disintegrative disorder
F84.5	Asperger's syndrome
F84.8	Other pervasive developmental disorders
F84.9	Pervasive developmental disorder, unspecified
F90.0	Attention-deficit hyperactivity disorder, predominantly inattentive type
F90.1	Attention-deficit hyperactivity disorder, predominantly hyperactive type
F90.2	Attention-deficit hyperactivity disorder, combined type
F90.8	Attention-deficit hyperactivity disorder, other type
F90.9	Attention-deficit hyperactivity disorder, unspecified type
G12.0	Infantile spinal muscular atrophy, type I [Werdnig-Hoffman]
G20	Parkinson's disease
G21.4	Vascular parkinsonism
G23.0	Hallervorden-Spatz disease
G23.1	Progressive supranuclear ophthalmoplegia [Steele-Richardson-Olszewski]

G23.2	Striatonigral degeneration
G23.8	Other specified degenerative diseases of basal ganglia
G23.9	Degenerative disease of basal ganglia, unspecified
G37.0	Diffuse sclerosis of central nervous system
G37.5	Concentric sclerosis [Balo] of central nervous system
G40.001	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, with status epilepticus
G40.009	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, without status epilepticus
G40.011	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, with status epilepticus
G40.019	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, without status epilepticus
G40.101	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable, with status epilepticus
G40.109	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable, without status epilepticus
G40.111	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, with status epilepticus
G40.119	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, without status epilepticus
G40.201	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable, with status epilepticus
G40.209	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable, without status epilepticus
G40.211	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, with status epilepticus
G40.219	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, without status epilepticus
G40.301	Generalized idiopathic epilepsy and epileptic syndromes, not intractable, with status epilepticus
G40.309	Generalized idiopathic epilepsy and epileptic syndromes, not intractable, without status epilepticus
G40.311	Generalized idiopathic epilepsy and epileptic syndromes, intractable, with status epilepticus
G40.319	Generalized idiopathic epilepsy and epileptic syndromes, intractable, without status epilepticus
G40.401	Other generalized epilepsy and epileptic syndromes, not intractable, with status epilepticus
G40.409	Other generalized epilepsy and epileptic syndromes, not intractable, without status epilepticus
G40.411	Other generalized epilepsy and epileptic syndromes, intractable, with status epilepticus
G40.419	Other generalized epilepsy and epileptic syndromes, intractable, without status epilepticus
G40.501	Epileptic seizures related to external causes, not intractable, with status epilepticus
G40.509	Epileptic seizures related to external causes, not intractable, without status epilepticus
G40.801	Other epilepsy, not intractable, with status epilepticus
G40.802	Other epilepsy, not intractable, without status epilepticus
G40.803	Other epilepsy, intractable, with status epilepticus
G40.804	Other epilepsy, intractable, without status epilepticus
G40.811	Lennox-Gastaut syndrome, not intractable, with status epilepticus
G40.812	Lennox-Gastaut syndrome, not intractable, without status epilepticus
G40.813	Lennox-Gastaut syndrome, intractable, with status epilepticus
G40.814	Lennox-Gastaut syndrome, intractable, without status epilepticus
G40.821	Epileptic spasms, not intractable, with status epilepticus
G40.822	Epileptic spasms, not intractable, without status epilepticus
G40.823	Epileptic spasms, intractable, with status epilepticus

G40.824	Epileptic spasms, intractable, without status epilepticus
G40.833	Dravet syndrome, intractable with status epilepticus
G40.834	Dravet syndrome, intractable, without status epilepticus
G40.89	Other seizures
G40.901	Epilepsy, unspecified, not intractable, with status epilepticus
G40.909	Epilepsy, unspecified, not intractable, without status epilepticus
G40.911	Epilepsy, unspecified, intractable, with status epilepticus
G40.919	Epilepsy, unspecified, intractable, without status epilepticus
G40.A01	Absence epileptic syndrome, not intractable, with status epilepticus
G40.A09	Absence epileptic syndrome, not intractable, without status epilepticus
G40.A11	Absence epileptic syndrome, intractable, with status epilepticus
G40.A19	Absence epileptic syndrome, intractable, without status epilepticus
G46.3	Brain stem stroke syndrome
G46.4	Cerebellar stroke syndrome
G46.5	Pure motor lacunar syndrome
G46.6	Pure sensory lacunar syndrome
G46.7	Other lacunar syndromes
G46.8	Other vascular syndromes of brain in cerebrovascular diseases
G52.7	Disorders of multiple cranial nerves
G60.8	Other hereditary and idiopathic neuropathies
G71.20	Congenital myopathy, unspecified
G71.21	Nemaline myopathy
G71.220	X-linked myotubular myopathy
G71.228	Other centronuclear myopathy
G71.29	Other congenital myopathy
G72.3	Periodic paralysis
G80.0	Spastic quadriplegic cerebral palsy
G80.1	Spastic diplegic cerebral palsy
G80.2	Spastic hemiplegic cerebral palsy
G80.3	Athetoid cerebral palsy
G80.4	Ataxic cerebral palsy
G80.8	Other cerebral palsy
G80.9	Cerebral palsy, unspecified
G83.81	Brown-Sequard syndrome
G83.82	Anterior cord syndrome
G83.83	Posterior cord syndrome
G83.84	Todd's paralysis (postepileptic)
G83.89	Other specified paralytic syndromes
G83.9	Paralytic syndrome, unspecified
G90.09	Other idiopathic peripheral autonomic neuropathy
G90.3	Multi-system degeneration of the autonomic nervous system
G93.1	Anoxic brain damage, not elsewhere classified
G97.31	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating a nervous system procedure
G97.32	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating other procedure

H93.25	Central auditory processing disorder
I67.2	Cerebral atherosclerosis
I67.81	Acute cerebrovascular insufficiency
I67.82	Cerebral ischemia
I67.89	Other cerebrovascular disease
I68.0	Cerebral amyloid angiopathy
I68.8	Other cerebrovascular disorders in diseases classified elsewhere
I69.00	Unspecified sequelae of nontraumatic subarachnoid hemorrhage
I69.010	Attention and concentration deficit following nontraumatic subarachnoid hemorrhage
I69.011	Memory deficit following nontraumatic subarachnoid hemorrhage
I69.012	Visuospatial deficit and spatial neglect following nontraumatic subarachnoid hemorrhage
I69.013	Psychomotor deficit following nontraumatic subarachnoid hemorrhage
I69.014	Frontal lobe and executive function deficit following nontraumatic subarachnoid hemorrhage
I69.015	Cognitive social or emotional deficit following nontraumatic subarachnoid hemorrhage
I69.018	Other symptoms and signs involving cognitive functions following nontraumatic subarachnoid hemorrhage
I69.019	Unspecified symptoms and signs involving cognitive functions following nontraumatic subarachnoid hemorrhage
I69.020	Aphasia following nontraumatic subarachnoid hemorrhage
I69.021	Dysphasia following nontraumatic subarachnoid hemorrhage
I69.023	Fluency disorder following nontraumatic subarachnoid hemorrhage
I69.031	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting right dominant side
I69.032	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting left dominant side
I69.033	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
I69.034	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
I69.039	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting unspecified side
I69.041	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting right dominant side
I69.042	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting left dominant side
I69.043	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
I69.044	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
I69.049	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting unspecified side
I69.051	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting right dominant side
I69.052	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting left dominant side
I69.053	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
I69.054	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
I69.059	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting unspecified side
I69.061	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting right dominant side
I69.062	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting left dominant side
I69.063	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
I69.064	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting left non-dominant side

169.065	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage, bilateral
169.069	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting unspecified side
169.090	Apraxia following nontraumatic subarachnoid hemorrhage
169.091	Dysphagia following nontraumatic subarachnoid hemorrhage
169.092	Facial weakness following nontraumatic subarachnoid hemorrhage
169.093	Ataxia following nontraumatic subarachnoid hemorrhage
169.098	Other sequelae following nontraumatic subarachnoid hemorrhage
169.10	Unspecified sequelae of nontraumatic intracerebral hemorrhage
169.110	Attention and concentration deficit following nontraumatic intracerebral hemorrhage
169.111	Memory deficit following nontraumatic intracerebral hemorrhage
169.112	Visuospatial deficit and spatial neglect following nontraumatic intracerebral hemorrhage
169.113	Psychomotor deficit following nontraumatic intracerebral hemorrhage
169.114	Frontal lobe and executive function deficit following nontraumatic intracerebral hemorrhage
169.115	Cognitive social or emotional deficit following nontraumatic intracerebral hemorrhage
169.118	Other symptoms and signs involving cognitive functions following nontraumatic intracerebral hemorrhage
169.119	Unspecified symptoms and signs involving cognitive functions following nontraumatic intracerebral hemorrhage
169.120	Aphasia following nontraumatic intracerebral hemorrhage
169.121	Dysphasia following nontraumatic intracerebral hemorrhage
169.123	Fluency disorder following nontraumatic intracerebral hemorrhage
169.131	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting right dominant side
169.132	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting left dominant side
169.133	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting right non- dominant side
169.134	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting left non- dominant side
169.139	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting unspecified side
169.141	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting right dominant side
169.142	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting left dominant side
169.143	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting right non- dominant side
169.144	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting left non-dominant side
169.149	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting unspecified side
169.151	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting right dominant side
169.152	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting left dominant side
169.153	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting right non- dominant side
169.154	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting left non- dominant side
169.159	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting unspecified side
169.161	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting right dominant side
169.162	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting left dominant side
169.163	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting right non- dominant side
169.164	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting left non- dominant side
169.165	Other paralytic syndrome following nontraumatic intracerebral hemorrhage, bilateral

169.169	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting unspecified side
169.190	Apraxia following nontraumatic intracerebral hemorrhage
169.191	Dysphagia following nontraumatic intracerebral hemorrhage
169.192	Facial weakness following nontraumatic intracerebral hemorrhage
169.193	Ataxia following nontraumatic intracerebral hemorrhage
169.198	Other sequelae of nontraumatic intracerebral hemorrhage
169.20	Unspecified sequelae of other nontraumatic intracranial hemorrhage
169.210	Attention and concentration deficit following other nontraumatic intracranial hemorrhage
169.211	Memory deficit following other nontraumatic intracranial hemorrhage
169.212	Visuospatial deficit and spatial neglect following other nontraumatic intracranial hemorrhage
169.213	Psychomotor deficit following other nontraumatic intracranial hemorrhage
169.214	Frontal lobe and executive function deficit following other nontraumatic intracranial hemorrhage
169.215	Cognitive social or emotional deficit following other nontraumatic intracranial hemorrhage
169.218	Other symptoms and signs involving cognitive functions following other nontraumatic intracranial hemorrhage
169.219	Unspecified symptoms and signs involving cognitive functions following other nontraumatic intracranial hemorrhage
169.220	Aphasia following other nontraumatic intracranial hemorrhage
169.221	Dysphasia following other nontraumatic intracranial hemorrhage
169.223	Fluency disorder following other nontraumatic intracranial hemorrhage
169.231	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting right dominant side
169.232	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting left dominant side
169.233	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting right non-dominant side
169.234	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting left non-dominant side
169.239	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting unspecified side
169.241	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting right dominant side
169.242	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting left dominant side
169.243	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting right non-dominant side
169.244	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting left non-dominant side
169.249	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting unspecified side
169.251	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting right dominant side
169.252	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting left dominant side
169.253	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting right non-dominant side
169.254	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting left non-dominant side
169.259	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting unspecified side
169.261	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting right dominant side

169.262	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting left dominant side
169.263	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting right non-dominant side
169.264	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting left non-dominant side
169.265	Other paralytic syndrome following other nontraumatic intracranial hemorrhage, bilateral
169.269	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting unspecified side
169.290	Apraxia following other nontraumatic intracranial hemorrhage
169.291	Dysphagia following other nontraumatic intracranial hemorrhage
169.292	Facial weakness following other nontraumatic intracranial hemorrhage
169.293	Ataxia following other nontraumatic intracranial hemorrhage
169.298	Other sequelae of other nontraumatic intracranial hemorrhage
169.30	Unspecified sequelae of cerebral infarction
169.310	Attention and concentration deficit following cerebral infarction
169.311	Memory deficit following cerebral infarction
169.312	Visuospatial deficit and spatial neglect following cerebral infarction
169.313	Psychomotor deficit following cerebral infarction
169.314	Frontal lobe and executive function deficit following cerebral infarction
169.315	Cognitive social or emotional deficit following cerebral infarction
169.318	Other symptoms and signs involving cognitive functions following cerebral infarction
169.319	Unspecified symptoms and signs involving cognitive functions following cerebral infarction
169.320	Aphasia following cerebral infarction
169.321	Dysphasia following cerebral infarction
169.323	Fluency disorder following cerebral infarction
169.331	Monoplegia of upper limb following cerebral infarction affecting right dominant side
169.332	Monoplegia of upper limb following cerebral infarction affecting left dominant side
169.333	Monoplegia of upper limb following cerebral infarction affecting right non-dominant side
169.334	Monoplegia of upper limb following cerebral infarction affecting left non-dominant side
169.339	Monoplegia of upper limb following cerebral infarction affecting unspecified side
169.341	Monoplegia of lower limb following cerebral infarction affecting right dominant side
169.342	Monoplegia of lower limb following cerebral infarction affecting left dominant side
169.343	Monoplegia of lower limb following cerebral infarction affecting right non-dominant side
169.344	Monoplegia of lower limb following cerebral infarction affecting left non-dominant side
169.349	Monoplegia of lower limb following cerebral infarction affecting unspecified side
169.351	Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side
169.352	Hemiplegia and hemiparesis following cerebral infarction affecting left dominant side
169.353	Hemiplegia and hemiparesis following cerebral infarction affecting right non-dominant side
169.354	Hemiplegia and hemiparesis following cerebral infarction affecting left non-dominant side
169.359	Hemiplegia and hemiparesis following cerebral infarction affecting unspecified side
169.361	Other paralytic syndrome following cerebral infarction affecting right dominant side
169.362	Other paralytic syndrome following cerebral infarction affecting left dominant side
169.363	Other paralytic syndrome following cerebral infarction affecting right non-dominant side
169.364	Other paralytic syndrome following cerebral infarction affecting left non-dominant side
169.365	Other paralytic syndrome following cerebral infarction, bilateral
169.369	Other paralytic syndrome following cerebral infarction affecting unspecified side

169.390	Apraxia following cerebral infarction
169.391	Dysphagia following cerebral infarction
169.392	Facial weakness following cerebral infarction
169.393	Ataxia following cerebral infarction
169.398	Other sequelae of cerebral infarction
169.80	Unspecified sequelae of other cerebrovascular disease
169.810	Attention and concentration deficit following other cerebrovascular disease
169.811	Memory deficit following other cerebrovascular disease
169.812	Visuospatial deficit and spatial neglect following other cerebrovascular disease
169.813	Psychomotor deficit following other cerebrovascular disease
169.814	Frontal lobe and executive function deficit following other cerebrovascular disease
169.815	Cognitive social or emotional deficit following other cerebrovascular disease
169.818	Other symptoms and signs involving cognitive functions following other cerebrovascular disease
169.819	Unspecified symptoms and signs involving cognitive functions following other cerebrovascular disease
169.820	Aphasia following other cerebrovascular disease
169.821	Dysphasia following other cerebrovascular disease
169.823	Fluency disorder following other cerebrovascular disease
169.831	Monoplegia of upper limb following other cerebrovascular disease affecting right dominant side
169.832	Monoplegia of upper limb following other cerebrovascular disease affecting left dominant side
169.833	Monoplegia of upper limb following other cerebrovascular disease affecting right non-dominant side
169.834	Monoplegia of upper limb following other cerebrovascular disease affecting left non-dominant side
169.839	Monoplegia of upper limb following other cerebrovascular disease affecting unspecified side
169.841	Monoplegia of lower limb following other cerebrovascular disease affecting right dominant side
169.842	Monoplegia of lower limb following other cerebrovascular disease affecting left dominant side
169.843	Monoplegia of lower limb following other cerebrovascular disease affecting right non-dominant side
169.844	Monoplegia of lower limb following other cerebrovascular disease affecting left non-dominant side
169.849	Monoplegia of lower limb following other cerebrovascular disease affecting unspecified side
169.851	Hemiplegia and hemiparesis following other cerebrovascular disease affecting right dominant side
169.852	Hemiplegia and hemiparesis following other cerebrovascular disease affecting left dominant side
169.853	Hemiplegia and hemiparesis following other cerebrovascular disease affecting right non-dominant side
169.854	Hemiplegia and hemiparesis following other cerebrovascular disease affecting left non-dominant side
169.859	Hemiplegia and hemiparesis following other cerebrovascular disease affecting unspecified side
169.861	Other paralytic syndrome following other cerebrovascular disease affecting right dominant side
169.862	Other paralytic syndrome following other cerebrovascular disease affecting left dominant side
169.863	Other paralytic syndrome following other cerebrovascular disease affecting right non-dominant side
169.864	Other paralytic syndrome following other cerebrovascular disease affecting left non-dominant side
169.865	Other paralytic syndrome following other cerebrovascular disease, bilateral
169.869	Other paralytic syndrome following other cerebrovascular disease affecting unspecified side
169.890	Apraxia following other cerebrovascular disease
169.891	Dysphagia following other cerebrovascular disease
169.892	Facial weakness following other cerebrovascular disease
169.893	Ataxia following other cerebrovascular disease
169.898	Other sequelae of other cerebrovascular disease

169.90	Unspecified sequelae of unspecified cerebrovascular disease
169.910	Attention and concentration deficit following unspecified cerebrovascular disease
169.911	Memory deficit following unspecified cerebrovascular disease
169.912	Visuospatial deficit and spatial neglect following unspecified cerebrovascular disease
169.913	Psychomotor deficit following unspecified cerebrovascular disease
169.914	Frontal lobe and executive function deficit following unspecified cerebrovascular disease
169.915	Cognitive social or emotional deficit following unspecified cerebrovascular disease
169.918	Other symptoms and signs involving cognitive functions following unspecified cerebrovascular disease
169.919	Unspecified symptoms and signs involving cognitive functions following unspecified cerebrovascular disease
169.920	Aphasia following unspecified cerebrovascular disease
169.921	Dysphasia following unspecified cerebrovascular disease
169.923	Fluency disorder following unspecified cerebrovascular disease
169.931	Monoplegia of upper limb following unspecified cerebrovascular disease affecting right dominant side
169.932	Monoplegia of upper limb following unspecified cerebrovascular disease affecting left dominant side
169.933	Monoplegia of upper limb following unspecified cerebrovascular disease affecting right non-dominant side
169.934	Monoplegia of upper limb following unspecified cerebrovascular disease affecting left non-dominant side
169.939	Monoplegia of upper limb following unspecified cerebrovascular disease affecting unspecified side
169.941	Monoplegia of lower limb following unspecified cerebrovascular disease affecting right dominant side
169.942	Monoplegia of lower limb following unspecified cerebrovascular disease affecting left dominant side
169.943	Monoplegia of lower limb following unspecified cerebrovascular disease affecting right non-dominant side
169.944	Monoplegia of lower limb following unspecified cerebrovascular disease affecting left non-dominant side
169.949	Monoplegia of lower limb following unspecified cerebrovascular disease affecting unspecified side
169.951	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting right dominant side
169.952	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting left dominant side
169.953	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting right non-dominant side
169.954	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting left non-dominant side
169.959	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting unspecified side
169.961	Other paralytic syndrome following unspecified cerebrovascular disease affecting right dominant side
169.962	Other paralytic syndrome following unspecified cerebrovascular disease affecting left dominant side
169.963	Other paralytic syndrome following unspecified cerebrovascular disease affecting right non-dominant side
169.964	Other paralytic syndrome following unspecified cerebrovascular disease affecting left non-dominant side
169.965	Other paralytic syndrome following unspecified cerebrovascular disease, bilateral
169.969	Other paralytic syndrome following unspecified cerebrovascular disease affecting unspecified side
169.990	Apraxia following unspecified cerebrovascular disease
169.991	Dysphagia following unspecified cerebrovascular disease
169.992	Facial weakness following unspecified cerebrovascular disease
169.993	Ataxia following unspecified cerebrovascular disease
197.810	Intraoperative cerebrovascular infarction during cardiac surgery
197.811	Intraoperative cerebrovascular infarction during other surgery
197.820	Postprocedural cerebrovascular infarction following cardiac surgery
197.821	Postprocedural cerebrovascular infarction following other surgery
Q05.0	Cervical spina bifida with hydrocephalus
Q05.1	Thoracic spina bifida with hydrocephalus

Q05.2	Lumbar spina bifida with hydrocephalus
Q05.3	Sacral spina bifida with hydrocephalus
Q05.4	Unspecified spina bifida with hydrocephalus
Q05.5	Cervical spina bifida without hydrocephalus
Q05.6	Thoracic spina bifida without hydrocephalus
Q05.7	Lumbar spina bifida without hydrocephalus
Q05.8	Sacral spina bifida without hydrocephalus
Q05.9	Spina bifida, unspecified
Q07.00	Arnold-Chiari syndrome without spina bifida or hydrocephalus
Q07.01	Arnold-Chiari syndrome with spina bifida
Q07.02	Arnold-Chiari syndrome with hydrocephalus
Q07.03	Arnold-Chiari syndrome with spina bifida and hydrocephalus
Q14.2	Congenital malformation of optic disc
Q87.81	Alport syndrome
Q90.0	Trisomy 21, nonmosaicism (meiotic nondisjunction)
Q90.1	Trisomy 21, mosaicism (mitotic nondisjunction)
Q90.2	Trisomy 21, translocation
Q90.9	Down syndrome, unspecified
Q91.0	Trisomy 18, nonmosaicism (meiotic nondisjunction)
Q91.1	Trisomy 18, mosaicism (mitotic nondisjunction)
Q91.2	Trisomy 18, translocation
Q91.3	Trisomy 18, unspecified
Q91.4	Trisomy 13, nonmosaicism (meiotic nondisjunction)
Q91.5	Trisomy 13, mosaicism (mitotic nondisjunction)
Q91.6	Trisomy 13, translocation
Q91.7	Trisomy 13, unspecified
Q92.0	Whole chromosome trisomy, nonmosaicism (meiotic nondisjunction)
Q92.1	Whole chromosome trisomy, mosaicism (mitotic nondisjunction)
Q92.2	Partial trisomy
Q92.5	Duplications with other complex rearrangements
Q92.7	Triploidy and polyploidy
Q92.8	Other specified trisomies and partial trisomies of autosomes
Q92.9	Trisomy and partial trisomy of autosomes, unspecified
Q93.0	Whole chromosome monosomy, nonmosaicism (meiotic nondisjunction)
Q93.1	Whole chromosome monosomy, mosaicism (mitotic nondisjunction)
Q93.2	Chromosome replaced with ring, dicentric or isochromosome
Q93.3	Deletion of short arm of chromosome 4
Q93.4	Deletion of short arm of chromosome 5
Q93.5	Other deletions of part of a chromosome
Q93.7	Deletions with other complex rearrangements
Q93.81	Velo-cardio-facial syndrome
Q93.88	Other microdeletions
Q93.89	Other deletions from the autosomes
Q93.9	Deletion from autosomes, unspecified
Q95.2	Balanced autosomal rearrangement in abnormal individual

Q95.3	Balanced sex/autosomal rearrangement in abnormal individual
Q95.5	Individual with autosomal fragile site
Q95.8	Other balanced rearrangements and structural markers
Q95.9	Balanced rearrangement and structural marker, unspecified
Q96.0	Karyotype 45, X
Q96.1	Karyotype 46, X iso (Xq)
Q96.2	Karyotype 46, X with abnormal sex chromosome, except iso (Xq)
Q96.3	Mosaicism, 45, X/46, XX or XY
Q96.4	Mosaicism, 45, X/other cell line(s) with abnormal sex chromosome
Q96.8	Other variants of Turner's syndrome
Q96.9	Turner's syndrome, unspecified
Q98.0	Klinefelter syndrome karyotype 47, XXY
Q98.1	Klinefelter syndrome, male with more than two X chromosomes
Q98.3	Other male with 46, XX karyotype
Q98.4	Klinefelter syndrome, unspecified
Q99.2	Fragile X chromosome
R29.5	Transient paralysis
R41.840	Attention and concentration deficit
R62.0	Delayed milestone in childhood

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