

Ataxia in children can appear suddenly or develop gradually over time, depending on the cause.

1. Sudden or Acute Onset Ataxia

When symptoms appear within hours or days, they are usually due to an acquired or temporary condition. Common causes include:

- *Infections and inflammation:* Viral infections such as chickenpox, flu, or other childhood fevers can lead to inflammation of the cerebellum (acute cerebellitis) or a post-infectious ataxia.
- *Immune-related conditions:* Occasionally, the body's immune system mistakenly affects the brain, as seen in acute disseminated encephalomyelitis (ADEM) or, rarely, in multiple sclerosis (MS).
- *Opsoclonus-myoclonus-ataxia syndrome (OMAS):* A rare immune disorder that may occur after an infection or, in rare cases, with certain tumours such as neuroblastoma. It causes abnormal eye movements, jerky limb movements, and unsteadiness while walking.
- *Stroke or injury:* Bleeding, clots, or head trauma involving the cerebellum can cause sudden imbalance and loss of coordination.
- *Post vaccination*
- *Medication overdose*

2. Intermittent Ataxia

In some children, ataxia occurs in brief episodes separated by periods of normal movement. These episodes may be triggered by fasting, illness, or stress. Common causes include:

- *Metabolic causes:* Sudden energy-related problems such as glucose transporter type 1 (GLUT1) deficiency, pyruvate dehydrogenase deficiency, or maple syrup urine disease can cause intermittent unsteadiness.
- *Episodic ataxia:* A group of genetic conditions (for example, CACNA1A-related episodic ataxia) where children can experience short spells of ataxia, often triggered by stress or exertion.

3. Subacute or Chronic (Gradually Progressive) Ataxia

When unsteadiness develops slowly over months or years, the causes are often long-term or inherited. These include:

- *Vitamin deficiencies:* Low levels of vitamins B1, B12, or E can cause gradual balance problems if not corrected.
- *Metabolic or mitochondrial disorders:* Conditions affecting the body's energy production, which may impact both the brain and muscles.
- *Autoimmune causes:* Subacute-onset ataxia may occur in association with anti-GAD antibody-related disease, autoimmune thyroiditis etc..
- *Toxins or medications:* Long-term exposure to certain drugs (such as anticonvulsants or chemotherapy) or heavy metals like lead or mercury can cause unsteadiness.
- *Hereditary ataxias:* Inherited disorders such as Friedreich's ataxia, ataxia-telangiectasia, ataxia with oculomotor apraxia, and ARSACS (Charlevoix-Saguenay ataxia).
- *Congenital or structural brain abnormalities:* Brain malformations like Dandy-Walker or Joubert syndrome, brain tumors, brain inflammation and craniovertebral junction anomalies can cause early imbalance and poor coordination.