

SYNCOPE IN CHILDREN

CAUSES & MANAGEMENT

Syncope is a temporary loss of consciousness ("fainting") caused by a brief reduction in blood flow to the brain.



**MOST CASES ARE BENIGN,
BUT SERIOUS CAUSES MUST BE EXCLUDED.**



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*Compassionate Care.
Advanced Expertise. Better Futures.*

CAUSES OF SYNCOPE

1 VASOVAGAL SYNCOPE (NEUROCARDIOGENIC) Most common in children and adolescents. Typical Triggers • Prolonged standing • Heat exposure • Dehydration • Emotional stress/fear • Pain • Seeing blood • Sudden standing Warning Symptoms (Prodrome) ✓ Dizziness ✓ Nausea ✓ Blurred vision ✓ Sweating ✓ Paleness ✓ Ringing in ears ✓ Feeling warm Mechanism A sudden reflex causes a drop in heart rate and widening of blood vessels, leading to a temporary drop in blood pressure and reduced blood flow to the brain.	2 ORTHOSTATIC HYPOTENSION Occurs when blood pressure drops after standing. Causes • Dehydration • Rapid growth during adolescence • Illness • Medications • Autonomic dysfunction Symptoms ✓ Lightheadedness ✓ Vision dimming ✓ Weakness shortly after standing	3 POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME (POTS) A form of autonomic dysfunction commonly seen in adolescents. Features ✓ Rapid heart rate upon standing ✓ Fatigue ✓ Brain fog ✓ Palpitations ✓ Dizziness ✓ Exercise intolerance ✓ Near-fainting episodes	4 CARDIAC SYNCOPE Less common but potentially life-threatening. Cardiac Causes Include • Arrhythmias • Long QT syndrome • Hypertrophic cardiomyopathy • Congenital heart disease • Myocarditis • Coronary anomalies Red Flags Suggesting Cardiac Syncope ▲ Syncope during exercise ▲ Syncope triggered by sudden exertion ▲ Chest pain ▲ Palpitations before fainting ▲ Family history of sudden cardiac death ▲ Known heart disease ▲ Abnormal cardiac examination ▲ Abnormal ECG	5 NEUROLOGICAL CAUSES Less common. Examples • Seizures • Migraines • Increased intracranial pressure Features Suggesting Seizure Rather Than Syncope ✓ Prolonged unconsciousness ✓ Tongue biting ✓ Incontinence ✓ Post-event confusion ✓ Rhythmic jerking before collapse	6 OTHER CAUSES • Hypoglycemia • Severe anemia • Anxiety/panic attacks • Hyperventilation • Medication side effects • Substance use
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INITIAL EVALUATION OF SYNCOPE

DETAILED HISTORY The most important diagnostic tool. • What happened before the event? • Was there a trigger? • Was exercise involved? • Any warning symptoms? • Duration of unconsciousness? • Recovery time? • Family history of sudden death? • Any medications?	PHYSICAL EXAMINATION Important components include: • Orthostatic vital signs • Cardiac examination • Neurological examination • Hydration assessment	ESSENTIAL TEST: ELECTROCARDIOGRAM (ECG) An ECG should be considered in nearly all children with syncope to screen for: • Long QT syndrome • Wolff-Parkinson-White syndrome • Arrhythmias • Cardiomyopathy clues	ADDITIONAL TESTS (WHEN NEEDED) Depending on clinical suspicion: • Echocardiogram • Holter monitor • Exercise stress testing • Tilt-table testing • Blood tests • Neurology evaluation
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MANAGEMENT OF SYNCOPE IN CHILDREN

1 VASOVAGAL SYNCOPE MANAGEMENT HYDRATION One of the most effective treatments. Encourage increased water intake and electrolyte-containing fluids when appropriate. SALT INTAKE Higher salt intake may help increase blood volume in selected patients. AVOID TRIGGERS • Avoid prolonged standing • Prevent overheating • Maintain regular meals • Improve sleep habits EXERCISE Regular aerobic conditioning improves autonomic stability. PHYSICAL COUNTERPRESSURE MANEUVERS When symptoms begin: Leg crossing Muscle tightening Squatting Sit or lie down immediately	2 MANAGEMENT OF POTS Treatment often includes: ✓ Aggressive hydration ✓ Increased salt intake ✓ Compression garments ✓ Structured exercise program ✓ Sleep optimization ✓ Physical therapy Some patients may require medications under specialist guidance.	3 MANAGEMENT OF CARDIAC SYNCOPE Requires pediatric cardiology evaluation. Treatment depends on cause and may include: • Medications • Activity restrictions • Ablation procedures • Pacemaker • Implantable cardioverter-defibrillator (ICD)
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WHEN TO SEEK URGENT MEDICAL ATTENTION Seek immediate evaluation if syncope: ▲ Occurs during exercise ▲ Happens while swimming ▲ Occurs without warning ▲ Is associated with chest pain ▲ Is associated with palpitations ▲ Has prolonged unconsciousness ▲ Has seizure-like activity ▲ Has a strong family history of sudden death	PROGNOSIS Most pediatric syncope cases are benign and improve with: ✓ Hydration ✓ Lifestyle adjustments ✓ Recognition of triggers However, identifying the small percentage of children with cardiac causes is critically important.	KEY TAKEAWAYS • Vasovagal syncope is the most common cause in children. • A careful history and physical examination are essential. • Cardiac causes must always be excluded. • Hydration, salt intake, exercise, and trigger avoidance are central to management. • Syncope during exercise is a major red flag requiring urgent cardiology evaluation.	Remember Stay hydrated. Know your triggers. Listen to your body. Seek help when needed. <i>We are here to help.</i>
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HEART HEALTHY — LIFESTYLE —

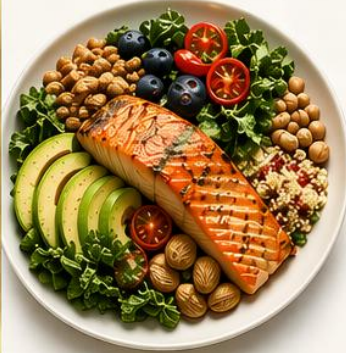
Small choices today, stronger heart tomorrow.



CARING
COMPASSION
EXCELLENCE

1 NUTRITION: EAT FOR YOUR HEART

A heart-healthy diet is the foundation of prevention and long-term wellness.



- ✓ Focus on whole foods: vegetables, fruits, whole grains, legumes
- ✓ Choose healthy fats: olive oil, nuts, seeds, fatty fish (e.g., salmon)
- ✓ Limit saturated fats & trans fats (fried foods, processed snacks)
- ✓ Reduce salt intake (aim <2,300 mg/day; lower if hypertensive)
- ✓ Minimize added sugars and sugary drinks
- ✓ Stay well hydrated (primarily water)



2 PHYSICAL ACTIVITY: KEEP MOVING

Regular movement strengthens the heart muscle and improves circulation.



Aim for **150 minutes/week** of moderate exercise (e.g., brisk walking)



Include strength training 2–3 times/week



Reduce sedentary time (break up long sitting periods)



Start gradually and increase safely, especially in patients with heart disease

3 WEIGHT & METABOLIC HEALTH

Maintaining a healthy weight reduces strain on the heart.



Target a healthy BMI and waist circumference



Manage blood pressure, cholesterol, and blood sugar regularly



Even **5–10%** weight loss can significantly improve risk factors



4 AVOID HARMFUL HABITS



QUIT SMOKING
(major reversible risk factor)



AVOID SECONDHAND SMOKE



AVOID ALCOHOL



AVOID VAPING AND RECREATIONAL DRUGS



Quitting smoking and avoiding tobacco products are among the most powerful steps you can take for your heart.

5 STRESS & MENTAL WELL-BEING

Chronic stress contributes to hypertension and heart disease.



Practice stress management: prayer, mindfulness, breathing exercises



Maintain strong social connections



Seek help for anxiety or depression



Make time for hobbies and things you enjoy

6 SLEEP: A HIDDEN PILLAR



Aim for **7–9 hours** of quality sleep per night



Treat conditions like sleep apnea



Maintain a consistent sleep schedule



KEY TAKEAWAY



A heart-healthy lifestyle is not a single change—it's a **daily pattern of choices**. Small, consistent habits lead to **lifelong cardiovascular protection** and a healthier, longer life.



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