

AI-03051 DDx Acute Lightheadedness

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Perform a DDx acute lightheadedness

Acute lightheadedness is a common symptom that can arise from a variety of causes. A differential diagnosis (DDx) requires careful consideration of the patient's history, associated symptoms, and physical examination findings to distinguish between benign and potentially serious conditions. The underlying pathophysiology often involves insufficient blood flow to the brain (cerebral hypoperfusion) or a disruption of the brain's ability to utilize oxygen and glucose. Here is a differential diagnosis for acute lightheadedness, categorized by system:

1. Cardiovascular Causes (The Most Common)

These conditions typically lead to a drop in blood pressure and subsequent cerebral hypoperfusion.

- Orthostatic Hypotension: This is a very common cause, especially in the elderly. It is defined as a drop in systolic blood pressure of at least 20 mmHg or diastolic blood pressure of at least 10 mmHg within three minutes of standing.
 - Causes: Dehydration (vomiting, diarrhea, poor fluid intake), blood loss (GI bleed, trauma), certain medications (diuretics, antihypertensives, nitrates, antidepressants), autonomic dysfunction (Parkinson's disease, diabetes), or prolonged bed rest.
- Arrhythmias: Both tachyarrhythmias (e.g., atrial fibrillation with rapid ventricular response, supraventricular tachycardia) and bradyarrhythmias (e.g., sick sinus syndrome, heart block) can decrease cardiac output and

cause lightheadedness. The patient may also report palpitations or a racing/slow heartbeat.

- Structural Heart Disease: Conditions that impede cardiac output can cause lightheadedness, particularly with exertion.
 - Examples: Aortic stenosis, hypertrophic obstructive cardiomyopathy (HOCM), or myocardial infarction (MI).
- Vasovagal Syncope (Neurocardiogenic Syncope): A very common cause of transient lightheadedness that can progress to fainting. It is triggered by a sudden drop in heart rate and blood pressure, often by a stressful or emotional event, pain, or prolonged standing. Patients often report a "prodrome" of lightheadedness, pallor, sweating, and nausea before the event.

1. Neurological Causes

These conditions involve the central or peripheral nervous system.

- Vertebrobasilar Insufficiency (Transient Ischemic Attack - TIA): A TIA in the posterior circulation (vertebrobasilar system) can cause lightheadedness, which should be distinguished from vertigo. It is a key warning sign for a potential stroke.
 - Associated Symptoms: Unilateral weakness, numbness, difficulty speaking (dysarthria), or vision changes (diplopia, hemianopsia). The presence of these focal neurological deficits is a red flag.
- Migraine-Associated Dizziness: Lightheadedness can be a part of a migraine aura, sometimes without a headache. It is often accompanied by other migraine-related symptoms like phonophobia (sound sensitivity) or photophobia (light sensitivity).
- Seizure: Lightheadedness can occur during a partial seizure or in the post-ictal phase (after a seizure).

1. Metabolic Causes

These conditions affect the body's energy supply and function.

- Hypoglycemia (Low Blood Sugar): This is a critical diagnosis to consider, especially in patients with diabetes. The brain is highly dependent on glucose for energy.

- Associated Symptoms: Tremor, sweating, anxiety, confusion, and hunger. A fingerstick glucose test is diagnostic.
- Hypoxia (Low Blood Oxygen): Conditions that impair oxygen delivery can cause lightheadedness.
 - Causes: Anemia, chronic obstructive pulmonary disease (COPD) exacerbation, asthma attack, or carbon monoxide poisoning.
- Electrolyte Abnormalities: Severe hyponatremia (low sodium) or hypokalemia (low potassium) can affect cardiac and neurological function, leading to lightheadedness.

1. Psychiatric and Psychological Causes

These are diagnoses of exclusion, but are very common, especially when other causes are ruled out.

- Anxiety and Panic Attacks: Hyperventilation during an anxiety or panic attack can lead to a drop in carbon dioxide levels (hypocapnia). This causes cerebral vasoconstriction, decreasing blood flow and leading to lightheadedness, tingling sensations (paresthesias), and shortness of breath.
- Depression: Dizziness and lightheadedness are common somatic symptoms of depression.

1. Other Systemic and Medications

- Dehydration: Simple dehydration from inadequate fluid intake, fever, or excessive sweating can lead to a reduced blood volume and orthostatic lightheadedness.
- Medication Side Effects: Many medications can cause lightheadedness as a side effect, including:
 - Antihypertensives (especially at initiation or dose increase)
 - Diuretics
 - Psychotropic drugs (e.g., antidepressants, antipsychotics)
 - Muscle relaxants
 - Certain antibiotics

Key Distinctions for a Focused DDx:

- Lightheadedness vs. Vertigo: Lightheadedness is a feeling of faintness or impending syncope. Vertigo is a distinct sensation of spinning or rotational movement, either of oneself or the surroundings.
- Positional Lightheadedness: If symptoms occur specifically with standing up, orthostatic hypotension is the most likely cause.
- Associated Symptoms: The presence of chest pain, palpitations, or shortness of breath points to a cardiac origin. Fever or other signs of infection may suggest dehydration. Focal neurological deficits are a major red flag for TIA/stroke.