Dizziness Summary Notes

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Definitions:

Vertigo: the perception of movement (rotational or otherwise) where no movement is occurring"
Presyncope: light-headedness with concern for an impending loss of consciousness.
Syncope: transient loss of conscious due to insufficient perfusion to the parenchyma of the brain, with quick resolution upon going horizontal.
Dysequilibrium: a feeling of unsteadiness, imbalance, or a sensation of floating while walking

Ultimately, people are quite poor at differentiating between these so a broad differential must be considered in working these patients up

STEP 1: Rule out life-threatening causes (which are often not true vertigo)

Cause	Category	Signs and Symptoms	Useful investigations and exam maneuvers
Arrythmia	Presyncope/syncope	Syncope Palpitations SOB Irregular pulse	ECG Holter High suspicion in family history or previous cardiac event
Myocardial infarction	Presyncope/syncope	Syncope/cardiogenic shock Retrosternal crushing chest pain Nausea and vomiting Diaphoresis Pain (right arm and jaw)	ECG – ST changes! Tn – look for the delta because an initial troponin may not be elevated or may be elevated for other reasons. =
Stroke (usually posterior circulation)	Often vertigo but possible presyncope	Ophthalmoparesis Hemianopsia Nausea, vomiting Headache Ataxia/Dysarthria Unilateral motor or sensory changes Horners	HINTS exam!! - NORMAL VOR (i.e no correction saccade) - Bidirectional, vertical or rotary nystagmus - Positive test of skew CT head High suspicious in "valculopaths"
Vertebral artery dissection	Presyncope/syncope	Sudden onset Unilateral headache Neck pain/Trauma Neurological features such as ataxia and dysarthria	CTA
AAA	Presyncope/syncope	Syncope Back or abdominal pain Hypotension	Ultrasound CTA Suspect in "vasculopaths"
GI Bleed	Presyncope/syncope	Syncope Hematemesis, melena, hematochezia **upper GI bleeds can also present with BRBPR if they are brisk**	Elevated BUN Suspect in those with drink alcohol or with a history or ulcers

Sepsis	Presyncope/syncope	Syncope Fever History of infection, commonly UTI, pneumonia, diverticulitis, meningitis	Blood and urine cultures, sputum/lumbar puncture if relevant CXR Start on fluids and antibiotics after cultures!

STEP 2: If it is true vertigo, is it peripheral or central?

Peripheral vertigo: originating from the vestibular organs (i.e. BPPV, Meniere's)

Central vertigo: Originating from the brain or brainstem (i.e. mass, stroke)

FEATURE	PERIPHERAL VERTIGO	CENTRAL VERTIGO
Onset	Sudden	Can be Sudden or Slow
Severity	Intense Spinning	Ill-defined and often less intense
Pattern	Paroxysmal and Intermittent	Constant
Aggravated by position/movement	Yes	Variable
Associated Nausea or Diaphoresis	Frequently	Variable
Fatigue of Symptoms/Signs	Yes	No
Hearing loss or tinnitus	May occur	Does not occur
Abnormal tympanic membrane	May occur	Does not occur
Nystagmus	Rotary-vertical, or horizontal	Vertical
CNS Symptoms/Signs	Absent	Usually present

The timing helps with the differential diagnosis

Time Course of Episodes	Likely Vertigo Conditions	Other helpful features
Lasting Seconds	Probably BPPV	Triggered by head turning Positive Dix-Hallpike
	Postural Hypotension	Triggered by postural changes Orthostatic vitals (30-20-10)
Minutes	Transient Ischemic attacks	Vasculopath Other neurological features
Lasting Hours	Meniere's disease	May also have tinnitus, hearing loss, and a sense of aural fullness
	Vertiginous migraine	Photophobia, headache
Constant for more than 24 hours	Acute vestibular syndrome	Assess for peripheral or central

STEP 3: After ruling out all other causes, consider medications and psychiatric causes as contributors

Many medications can cause a sensation of dizziness. Consider antihypertensives, Flomax, anti-depressants. Vestibulotoxic drugs including antibiotics like aminoglycosides.

Helpful physical exam maneuvers

1. A full neurologic exam, especially focusing in on cranial nerves, cerebellar tests (finger to nose!), and Romberg.
2. Orthostatic vitals. Remember 30-20-10 for orthostasis.
    a. The heart rate increases by 30 or more when standing (sensitive and specific for large intravascular blood loss)
    b. The systolic blood pressure falls by 20 or more when standing (very specific)
    c. The diastolic blood pressure falls by 10 or more when standing