Obstructive Sleep Apnea

Complications of Sleep Apnea (aka: why this is important)	
Daytime function and cognition	Daytime sleepiness, inattention, exacerbation of cognitive deficits, increased errors and accidents
Motor vehicle crashes	2-3 times more common in OSA
Cardiovascular	HTN, PAH, CAD, heart failure, CVA • Unclear whether treatment improved mortality; see SAVE study in NEJM 2016
Metabolic syndrome	Independent of obesity, OSA is a risk for incident diabetes
Nonalcoholic fatty liver	Again seems to be independent of obesity; 2-3 fold increase in risk
Perioperative complications	Respiratory failure, cardiac arrest, and ICU transfer
All-cause mortality	AHI >30 has a 2-3x increase; more in women; not present in untreated mild OSA

Risk factors for OSA	
Age	Plateaus around the sixth to seventh decade
Gender	2-3x more common in males; gap narrows in menopausal women
Obesity	This is the strongest risk; 10% increase in weight confers a 6x OSA risk
Craniofacial, upper airway	Short mandible, wide craniofacial base, tonsillar/adenoid hypertrophy

Medical Conditions Associated with Increased OSA Prevalence	
Pregnancy	Asthma, COPD, IPF
CHF	CVA and TIA
ESRD	Acromegaly
Hypothyroidism	Polycystic ovary syndrome

A note on screening questionnaires: not adequately tested as a screening tool for asymptomatic patients and are not recommended for diagnosis. They tend to have a high false positive rate and thus are more useful to rule out OSA when the score is low. For example, the STOP-Bang questionnaire has a sensitivity and specificity of 84 and 56% for AHI >5 and a sensitivity and specificity of 93 and 43 for AHI >15.

So for whom should I perform diagnostic testing?

- Basically anyone with excessive daytime sleepiness
- In the absence of excessive daytime sleepiness, if the patient snores and works in a "mission-critical" profession (airline pilots, bus drivers, truck drivers) or has two additional features of OSA
- For patients who do not snore and do not have daytime sleepiness, consider testing high risk groups like PAH, resistant HTN, secondary polycythemia.

Diagnosis – need one of the following two conditions:

1. Five or more obstructive events (apneas, hypopneas, or respiratory effort related arousals) per hour of sleep with one or more of: sleepiness, gasping or choking, snoring, comorbidity (HTN, mood, CAD, CVA, CHF, AFib, DM II)
2. 15 of more obstructive events per hour of sleep regardless of symptoms or comorbidities

Differential –These are other conditions that cause excessive daytime sleepiness	
Periodic limb movements	Jerks in arms and legs fragment sleep
Shift workers	These workers get 7 hours per week less sleep than non-shift workers
Narcolepsy	Daytime sleepiness, cataplexy, hypnagogic hallucinations, sleep paralysis
Upper airway resistance syndrome	Considered a type of OSA, not many apneas of hypopneas, rather respiratory effort related arousals; common in thin women with craniofacial abnormalities
Central sleep apnea	No respiratory effort
Primary snoring	Most patients who snore do not have OSA
GERD	Can causes choking and dyspnea and may actually improve with NIV!