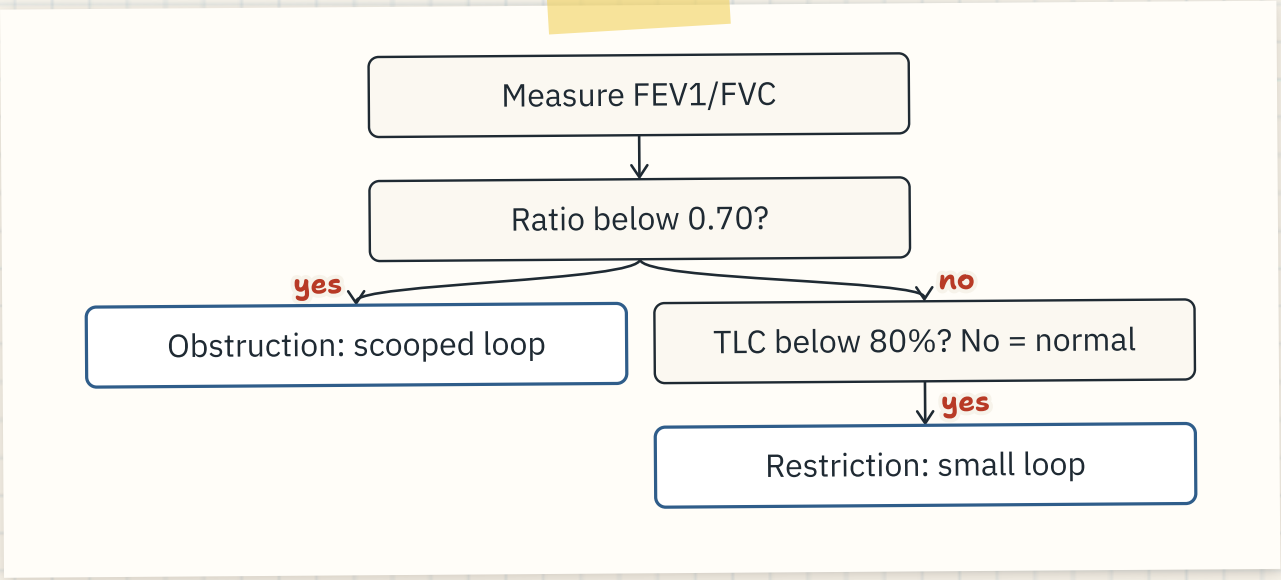
Obstructive vs restrictive

FEV1/FVC, TLC and loop shape



Step by step

1. Measure FEV1 and FVC; take the ratio.
2. Ratio below 0.70 after a bronchodilator: obstruction (if TLC is also low, think mixed).
3. Ratio not low: check TLC.
4. TLC below 80% of predicted: restriction.

FEV1/FVC RATIO

`ratio = FEV1 ÷ FVC`

Healthy adult about 0.8. Obstruction: below 0.70 after a bronchodilator (GOLD); ATS/ERS use the lower limit of normal.

	Obstructive	Restrictive
Ratio	Low	Normal or high
FEV1, FVC	FEV1 falls more	Both fall together
TLC	Normal or high	Low (below 80% predicted)
Loop	Scooped expiratory limb	Smaller, normal shape

Obstructive vs restrictive

Rule of thumb

Ratio low: think obstruction.

Ratio normal, TLC low: think restriction.

Exam traps

- Spirometry cannot measure TLC: it needs plethysmography or gas dilution.
- A scooped limb is obstruction; restriction keeps a normal outline, only smaller.
- Cut-offs are an exam convention; current ATS/ERS standards use the lower limit of normal.

Obstructive vs restrictive lung disease: FEV1/FVC and loops

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/respiratory-physiology/obstructive-vs-restrictive-lung-disease-fev1-fvc

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