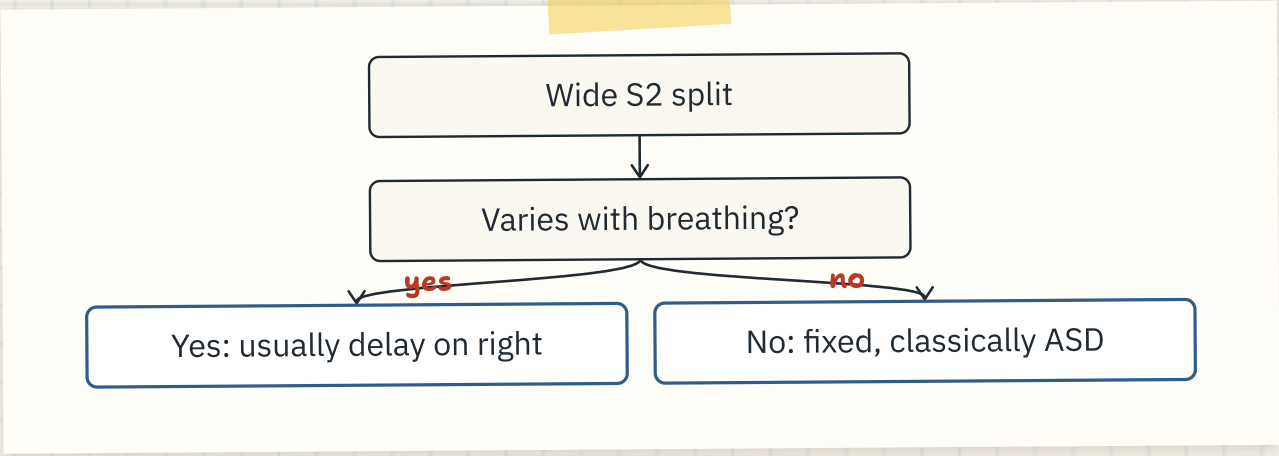
S2 splitting in 2 questions

Heart sounds S1–S4 and the four S2 patterns



Step by step

1. S1: mitral + tricuspid close
2. S2: A2 (aortic) + P2 (pulmonic) close
3. Ask: which valve is late?
4. Ask: does the gap move with breathing?

Pattern	What you hear	Cause
Physiological	Split in, single out	Normal
Wide	Wide, varies with breathing	RBBB, pulmonic stenosis
Fixed	Wide, never varies	Atrial septal defect
Paradoxical	Split out, single in	LBBB, aortic stenosis, HOCM

S2 splitting patterns

Rule of thumb

Wide and moves: usually delay on the right

Wide and never moves: classically ASD

Paradoxical: the exact reverse of normal

S3 = filling too fast or too full; S4 = stiff ventricle

Exam traps

- Fixed splitting does not change with breathing at all.
- Paradoxical means delayed A2, not delayed P2.
- S3 can be normal when young; S4 is considered abnormal.

S2 splitting and heart sounds S1–S4, explained

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/heart-sounds-murmurs-ecg/heart-sounds-s1-s4-s2-splitting

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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