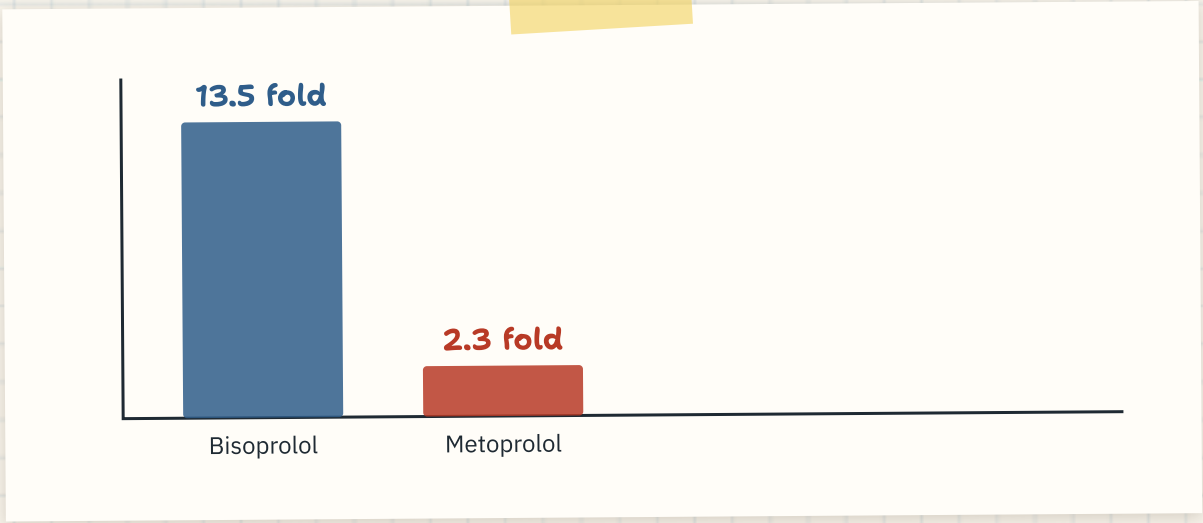
Beta blockers in 3 questions

Selectivity, ISA, alpha-1 blockade. Chart: beta-1 over beta-2 affinity, in vitro



Step by step

1. Selective for beta-1?
2. ISA (partial agonist)?
3. Also blocks alpha-1?
4. Nonselective: add beta-2 effects

Group	Drugs
Nonselective	Propranolol, nadolol, timolol
Nonselective + alpha-1	Labetalol, carvedilol
Beta-1 selective	Atenolol, metoprolol, bisoprolol, esmolol
Selective + nitric oxide	Nebivolol
ISA (partial agonist)	Pindolol (nonselective), acebutolol (beta-1 selective)

Sorting beta blockers

Rule of thumb

Selective names mostly A to M, nonselective N to Z

Exceptions: labetalol, carvedilol, nebivolol

Selectivity fades as the dose rises

Exam traps

- Alpha-1 blockade does not make labetalol or carvedilol selective.
- Selective drugs still block beta-2 at higher doses.
- ISA gives no proven benefit in coronary disease or heart failure.

Beta blocker selectivity: beta-1, ISA and alpha blockade

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/pharmacology-principles-autonomic/beta-blocker-selectivity-beta-1-isa-alpha-blockade

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