TOPIC: DRUG INTERACTIONS: SYNERGISM & ANTAGONISM

Drug Synergism & Antagonism

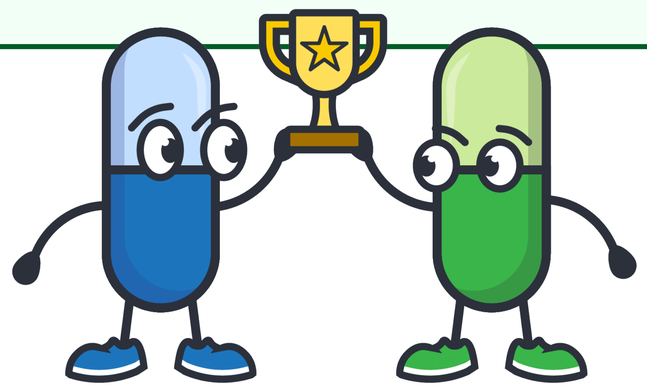
◆ The _____ of a drug can be _____ by the presence of another drug.

Synergism

◆ Using 2 drugs together __ effectiveness.

◆ Possible mechanisms:

- Different _____ of the same pathway.
- One drug improves the _____ of another.
- One drug blocks the _____ of another.

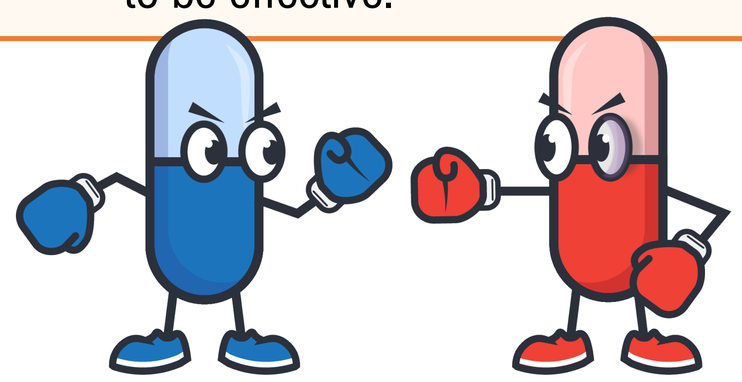


Antagonism

◆ Using 2 drugs together __ effectiveness.

◆ Possible mechanisms:

- Bacterio_____ & bacteri_____ used together.
  - Bactericidal often needs _____ to be effective.



EXAMPLE

Mark the following as examples of synergism (S), antagonism (A), or neither (N).

- Drug A blocks an enzyme that inhibits drug B, which allows drug B to be more effective:	_____
- A bacteriostatic drug & a bactericidal drug reduce each other's effectiveness:	_____
- Drug C & drug D both compete for the same receptor, reducing the effect of both drugs:	_____
- Two drugs are given to a patient to fight two different infections simultaneously:	_____
- Drug E increases the absorption of drug F into the patient's bloodstream:	_____
- Drug G increases the rate that drug H is broken down in the body, reducing its concentration:	_____

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PRACTICE

Which of the following do you think would be an example of possible synergism between two antimicrobial drugs?

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a) Vancomycin, which targets Gram-positive bacteria, & cefepime, which targets Gram-negative bacteria.

b) Penicillin, which is bactericidal, & tetracyclines, which are bacteriostatic.

c) Clindamycin, which targets anaerobes & some Gram-positive bacteria, and ceftriaxone, which targets Gram-negative bacteria.

d) Sulfamethoxazole & trimethoprim, which block different steps of the same bacterial metabolic pathway.