

Antibiotic Resistance

Module 2

ANSWER KEY

- (1) _____ spectrum antibiotics work on only one or a few types of bacteria.
_____ spectrum antibiotics work on several types.
- (2) Which of the following explain how bacteria are selected for resistance?
- Bacteria either have gene or do not have gene for antibiotic resistance
 - Bacteria are exposed to drug; susceptible bacteria (no resistance gene) die, while resistant bacteria (the ones with a resistance gene) survive
 - Over time, resistant bacteria multiply, and the infection becomes resistant to that drug
 - All of the above
 - b and c only
- (3) Which of the following statements about spectrum of activity is true?
- Broad spectrum antibiotics should be used all the time.
 - Narrow spectrum drugs are best because they can be used to treat a wide range of serious infections
 - Narrow spectrum drugs are preferable because they are less likely to harm beneficial bacteria
- (4) How do bacteria acquire mutations that make them resistant to antibiotics?
- Novel mutations in the DNA of a bacterial cell that lead to mechanism that counteracts effects of drug, OR
 - Acquisition of new genes via sharing of DNA from other bacteria
 - Both A and B
 - None of the above
- (5) List 2 reasons to be concerned about antibiotic resistance

(6) Which of the following are effects of mutations in the bacteria that allow the bacteria to develop resistance to antibiotics?

- a. Pump the drug into the bacterial cell
- b. Alter the target site where the drug usually binds to the bacteria, so it can't bind anymore
- c. Produce enzymes that inactivate the antibiotic
- d. A and B only
- e. B and C only

(7) List the two ways that antibiotics are used in agriculture that has contributed to the increased rates of resistance in bacteria.

(8) What are the consequences of resistance?

- a. Limited number of drugs available for use
- b. Viral infections are more difficult to treat
- c. Drugs with greater cost, toxicity and side effects must be used
- d. Resistant infections increasingly difficult to treat.
- e. All of the above
- f. a, c and d only

(9) What are 4 things you can do to prevent infection?

(10) Which strategies below can be effective in preventing antibiotic resistance?

- a. When prescribed antibiotics, only take it until you feel better, so that you limit the number of doses you take
- b. Only take 1 pill a day instead of two or three times a day, so that your body is exposed to fewer doses of antibiotics
- c. If you get a prescription for antibiotics and your friends or family members develop similar symptoms, share your medication with them right away so that they can be treated early
- d. None of the above