

Doctor, do I really need an antibiotic?

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What is antimicrobial resistance and why is it important?

When antibiotics no longer work to kill bacteria, this is called antibiotic or antimicrobial resistance. This means that infections caused by certain types of bacteria can become difficult or impossible to treat with the antibiotics we have now. For example, there is growing evidence that urinary tract infections are becoming increasingly resistant to the antibiotics that, for generations, easily and quickly cured them. As another example, some types of tuberculosis have become resistant to antibiotics and are becoming deadlier, just like they were before antibiotics were discovered.

In Canada, over a quarter of bacterial infections are now resistant to antibiotics that once cured them¹. In 2018, experts estimated that 15 Canadians died every day as a direct result of antimicrobial resistance¹. According to the World Health Organization, antimicrobial resistance is one of the ten most serious public health problems of our time². Antimicrobial resistance has been made worse because of a decline in the development of new antibiotics over the past decades, especially those that target the most resistant bacteria.

What are antibiotics?

Antibiotics are drugs that kill bacteria and stop them from spreading in our bodies. Examples of bacterial infections that often require antibiotics are wound, skin and dental infections, strep throat, urinary tract infections, and diseases like tuberculosis. Antibiotics do not work on illnesses caused by viruses, such as the common cold, the flu, or COVID-19. Nor do they work on fungi, such as athlete's foot.

Why should older Canadians be concerned about antibiotic resistance?

Canadians aged 60 and over are prescribed antibiotics 1.5 times more often than any other age group³. Older people may have weaker immune systems, making them more vulnerable to bacterial infections. Furthermore, older Canadians living in long-term care or assisted living facilities or who are admitted to hospitals may be more at risk of being exposed to “superbugs” like *C. difficile*. *C. difficile* can cause a life threatening diarrheal illness, especially among those who have compromised immune systems or who have recently used antibiotics. *C. difficile* is now resistant to most antibiotics.

What causes antibiotic resistance?

- **Using antibiotics when they are not needed or don't work**

Antibiotics are often prescribed to treat illnesses not caused by bacteria. Colds and flu are caused by viruses and cannot be cured by antibiotics. Another example is when a lab test shows bacteria in the urine but there are no physical symptoms of a urinary tract infection, which is common in older adults. Giving antibiotics in this case can lead to overuse and antibiotic resistance.

- **Overusing broad spectrum antibiotics**

Broad-spectrum antibiotics are a type of antibiotic that kill many types of bacteria as opposed to only the specific bacteria causing the illness. For example, the overuse of broad-spectrum fluoroquinolone antibiotics (drugs whose names end in “floxacin”, such as ciprofloxacin or Cipro®) contributes to antimicrobial resistance. Not to mention, fluoroquinolones have a history of harmful side effects⁴. Narrow-spectrum antibiotics, which focus on the specific bacteria causing the infection, should be used where possible. Sometimes, tests are needed to determine the type of bacteria involved.

- **Not using antibiotics as prescribed**

It is important to only use antibiotics that are prescribed for you and to take the dose as prescribed, even if the infection seems to be gone before the treatment is finished.

- **Global, poorly regulated antibiotic use**

Antibiotics are overused in agriculture as well as seafood and meat production. In some countries, they are available without a prescription, leading to overuse and contributing to resistance. Residue from human and animal antibiotic use contaminates our soil and water, another cause of antibiotic resistance.



What can you do to help reduce antibiotic resistance?

DON'T

- ✗ Do not share or use leftover antibiotics.
- ✗ Do not demand an antibiotic if your doctor, nurse, dentist or pharmacist says you don't need one.

DO

- ✓ Ask your doctor, nurse, dentist or pharmacist, “Do I really need an antibiotic?”
- ✓ Follow your doctor, nurse, dentist or pharmacist's advice if you are prescribed antibiotics.
- ✓ Take all of the antibiotics your doctor has prescribed even if you feel better before you are finished.
- ✓ Avoid infections from bacteria:
 - Wash your hands regularly, especially after you use the bathroom and before eating.
 - Avoid close contact with sick people.
- ✓ Keep your vaccines up to date.
- ✓ Spread the word about the dangers of antibiotic resistance and how we must use antibiotics more wisely.

Find more medication safety resources at [DeprescribingNetwork.ca](https://www.deprescribingnetwork.ca)

¹ Council of Canadian Academies. (2019). When Antibiotics Fail. Ottawa (ON): The Expert Panel on the Potential Socio-Economic Impacts of Antimicrobial Resistance in Canada, Council of Canadian Academies. <https://cca-reports.ca/wp-content/uploads/2018/10/When-Antibiotics-Fail-1.pdf>

² World Health Organization. (2021, November 17). Antimicrobial resistance. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>

³ Public Health Agency of Canada. (2018, April 3). Prescribe antibiotics wisely (Clinical points). Government of Canada. <https://www.canada.ca/en/public-health/services/publications/drugs-health-products/prescribe-antibiotics-wisely.html>

⁴ Health Canada. (2017, January 23). Summary Safety Review - Fluoroquinolones - Assessing the potential risk of persistent and disabling side effects. Government of Canada. <https://www.canada.ca/en/health-canada/services/drugs-health-products/medeffect-canada/safety-reviews/summary-safety-review-fluoroquinolones-assessing-potential-risk-persistent-disabling-effects.html>