

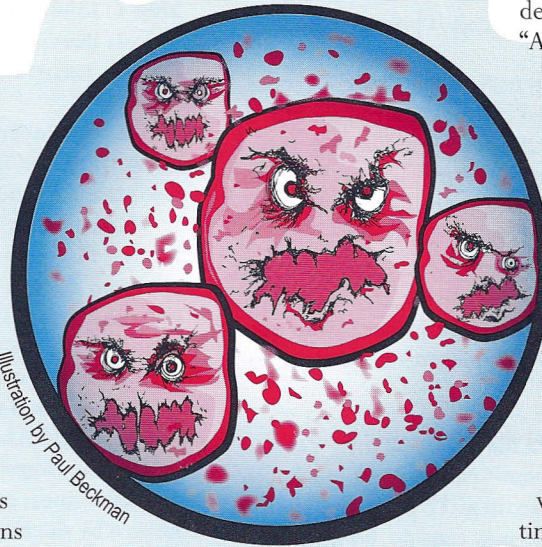
## It's a bacteria! It's a virus! It's superbug! Antibiotic overuse creates mutant drug-resistant staph germs

By Dave Schafer

It's a surprisingly common occurrence. Patients come into Dr. Patrick Carter's Kelsey-Seybold office with a runny nose, cough and scratchy throat, the classic symptoms of a cold. Yet they demand high-cost, broad-spectrum antibiotics.

Carter explains why an antibiotic won't cure what ails them. Antibiotics only work against infections caused by bacteria, fungus and certain parasites. They don't work against infections caused by viruses, such as colds, the flu and most coughs and sore throats.

There's also the risk of dangerous side effects. And, over time, taking unneeded antibiotics creates superbugs that rampage through a community and render



first-line antibiotics impotent.

Many of the antibiotics he prescribed when he was starting out as a doctor 23 years ago are no longer effective, Carter said.

"Out of habit or fear, patients who come in for acute viral illnesses often request or even

demand antibiotics," Carter said. "And doctors, frankly, are too prone to just going ahead and prescribing them without really explaining to the patient that they're unlikely to benefit.

"At the minimum, as a physician, it's my obligation to explain that I don't think this is a bacteria and that antibiotics aren't going to help. But, even after all that explanation, if the patient absolutely insists, I go ahead and give it with the hope that, if they continue seeing me, eventually I'll wear them down."

Perhaps because of his experience, he has a pretty good success rate convincing patients not to use antibiotics to treat upper respiratory illnesses, Carter said.

See **SUPERBUGS** on page 5.



**A quick fix?**

The first antibiotics, sulfonamides, became commercially available in the 1930s. Since penicillin was introduced in the 1940s, scientists have developed more than 150 antibiotics to stop the spread of infectious disease, according to the Mayo Clinic. Because they were such a revolutionary advance in treatment, doctors slipped into the habit of prescribing them for minor illnesses, even viral infections.

**The World Health Organization estimates about 14,000 people die each year due to drug-resistant microbes picked up in U.S. hospitals.**

And pharmaceutical companies are incessantly advertising new, better and more powerful antibiotics that may not be needed.

“And so, as time goes on, we’ve needed newer antibiotics that kill more bugs to treat the simple things that we used to treat with just plain penicillin,” Carter said.

**The cost of overuse**

When people take antibiotics that aren’t needed, they’re introducing that antibiotic to healthy bacteria that can then bulk up against it.

When bacteria become resistant to first-line treatments, treatment costs more, illnesses last longer, and the risk of complications and death increases.

**How to take antibiotics safely**

- Use them only to treat bacterial infections.
- Trust your doctor if he or she says an antibiotic isn’t necessary.
- Use antibiotics as prescribed.
- Finish the prescribed dose.
- Never use another person’s prescription.

“Up until now, we’ve been pretty lucky in that every time a bacteria becomes resistant to a certain antibiotic, almost always there’s been another one we’ve been able to try,” Carter said. “But we’re starting to get to the point now where certain bacteria are so resistant that it’s becoming very difficult to find anything to even treat them.”

The World Health Organization estimates about 14,000 people die each year due to drug-resistant microbes picked up in U.S. hospitals. More than 2 million Americans are infected each year, and more than half of those infections resist at least one antibiotic.

It often takes months of therapy to recover from methicillin-resistant Staphylococcus aureus, or MRSA, a type of staph infection resistant to the usual treatment. Using methicillin, patients usually recover from staph in days, two weeks at the most, Carter said.

“MRSA is here in the community in Houston probably more than in other areas of the country,” he said.

When someone comes in with a skin or soft-tissue infection, like a bug bite or a pimple that has turned into a big, red, swollen, infected area, doctors treat for MRSA, Carter said.

And it’s likely we’ll see the rise of more superbugs as time goes on, he predicts.

**The rules of proper use**

Underusing antibiotics can also lead to resistant strains, Carter cautioned. If you’re told to take an antibiotic for 10 days, take it for the full 10 days.

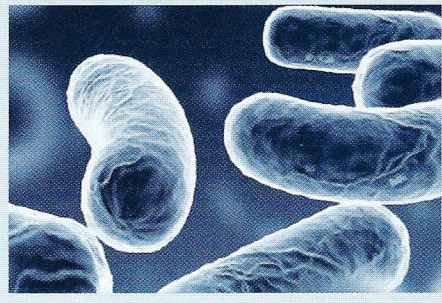
“If you partially treat it, chances are there are still bacteria there, and once you stop the antibiotic, those bacteria will start to grow again,” he said. “That’s how you select for resistant bacteria.”

The best way to avoid creating a superbug inside you is to use antibiotics wisely, he said. When you’re sick, research your illness. If it persists, visit your doctor, but bring an open mind.

“Not all infections require antibiotics,” he said. “If you have a cough that’s bad or a bad sinus infection, don’t assume it needs an antibiotic.

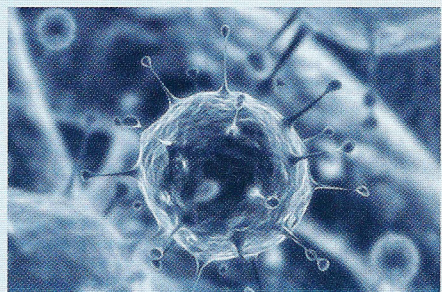
“Obviously, if you see the doctor and he or she thinks it’s a bacteria, then it’s perfectly fine to use an antibiotic, and that’s good. But have an open mind. Try to realize that doctors usually know what we’re doing. If it doesn’t get better, or if something changes, come on back.”

**Bacteria vs. viruses**



**Bacteria** are single-cell living organisms. They’re everywhere, and most don’t cause harm. In some cases, they might be beneficial, but some can cause illness by invading the body, multiplying and interfering with normal body functions.

- Bacterial infections cause:
- Some ear infections.
  - Severe sinus infections.
  - Strep throat.
  - Urinary tract infections.
  - Many wound and skin infections.



**Viruses** are not alive and cannot exist on their own. They are particles containing genetic material wrapped in a protein coat. Viruses “live,” grow and reproduce only after they’ve invaded other living cells. Some may be fought off by the body’s immune system before they cause illness; but others, such as colds, flu and chicken pox, must simply run their course. Viruses do not respond to antibiotics.

- Viral infections cause:
- Most ear infections.
  - Colds.
  - Influenza.
  - Most coughs.
  - Most sore throats.
  - Most bronchitis.
  - Stomach flu.

— Sources: Mayo Clinic and www.kidshealth.org.