

Professor Jack's Journal Multi-Drug Resistant Bacteria

How can Antibiotics be harmful?

Antibiotics on their own are very useful and very good at combating different types of bacteria, but over the last half-century (give or take a few years), they have been overused horribly, and even used to combat diseases that they are no good against. This would already be very bad, as doctors are basically wasting medicine on someone that doesn't really need it, and also that antibiotics can have nasty side effects on people, but now you have to factor in something called multi-drug resistant bacteria.

That sounds scary! What are multi-drug resistant bacteria?

You have every right to be scared. Multi-drug resistant bacteria, as the name implies, are bacteria that have become resistant to the drugs that are normally used against them. This means that doctors have to use nastier and more expensive antibiotics to counter them, or use cocktails of drugs to try and knock the bacteria out. The only problem is that these bacteria are constantly evolving to resist new types of antibiotics.

Wait a minute! You said they are constantly evolving. How do they do that?

I'm glad that you asked that question. When antibiotics are used against a type of bacteria, these are two possible outcomes...

1. The bacteria all die out. Erk!
2. Most of the bacteria die out, but some, which are mutated, are able to resist the drug.

When number 2 happens, the remaining bacteria can sometimes be destroyed by finishing your course of antibiotics. But sometimes the ones that survive remain resistant, and like bacteria do, they happily split in two, and then those two both split in two, and then those four both split in two, and pretty soon you've got to start over again with a different drug. But even then, if only one survives, it can multiply and multiply and eventually rise up from the deeps to ruin your life all over again. So you see why scientists are so scared. When people use antibiotics unnecessarily, there is a greater chance that the bacteria that infects you will become multi-drug resistant. When faced with multi-drug resistant strains, doctors have to prescribe nastier and less effective drugs, and if those don't work, well, that can ruin your whole day!
Life, whatever. Moving on...

Okay, now I'm really scared. What are scientists planning to do to stop these bacteria?

Well, they are working as hard as they can to counter this problem, by monitoring the situation within people who have multi-drug resistant illnesses or may be developing them, and by trying to contain the problem. When not doing that, they are running around like crazed beavers, thinking of new ways to combat the problem, designing new types of antibiotics, and attempting to improve the methods we already have.

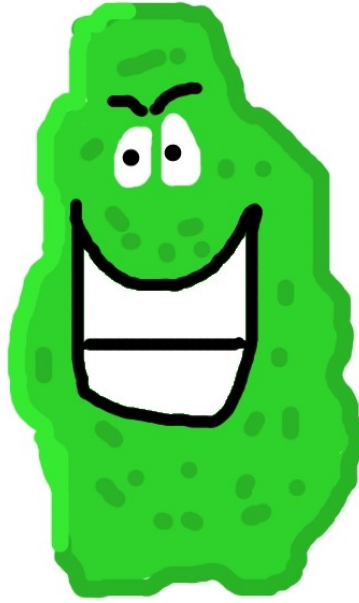
Despite the fact that they are obviously working as hard as they can to solve, or at least treat, the problem, so far they haven't been making many breakthroughs. This is mostly because a bunch of scientists sitting in a darkened room peering through microscopes at deceased bacteria is not going to be enough to solve the problem. It is going to take collaboration all of us, from you and your friends and neighbors, all the way up to the federal government. Speaking of you being able to help....

So what can I do to help myself and others with multi-drug resistant bacteria?

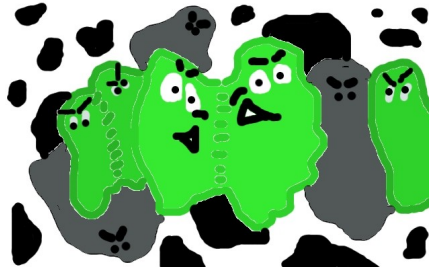
There are a few things you can do to help yourself and to prevent multi-drug resistant bacteria from forming. Just follow Professor Jack's handy tips list:

Professor Jack's Handy Tips

- Do not demand antibiotics from your doctor. If he says you don't need them, you are probably dealing with a virus, not bacteria. Listen to your doctor. He or she should know, that's a doctor's job!
- When given antibiotics by your doctor, finish your entire prescription. This will make sure that the bacteria are well and truly knocked out of your system, and will make getting multi-drug resistant bacteria less likely.
- Wash fruit and vegetables thoroughly, avoid touching raw eggs without washing your hands with soap afterwards, and avoid eating undercooked meat (actually, these three are just general good advice anyway!)
- When helping someone who has multi-drug resistant bacteria, be careful around them and always wash off afterwards.



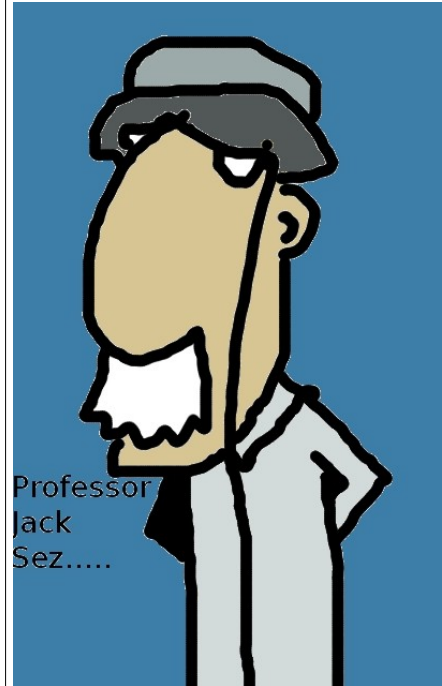
The Enemy!



Watch out!

Studies show that the enemy can evolve and mutate to become resistant to many treatments!

Professor Jack's Journal



Multi-Drug Resistant Bacteria

- **What it is.**
- **What it does.**
- **How to prevent it.**

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