

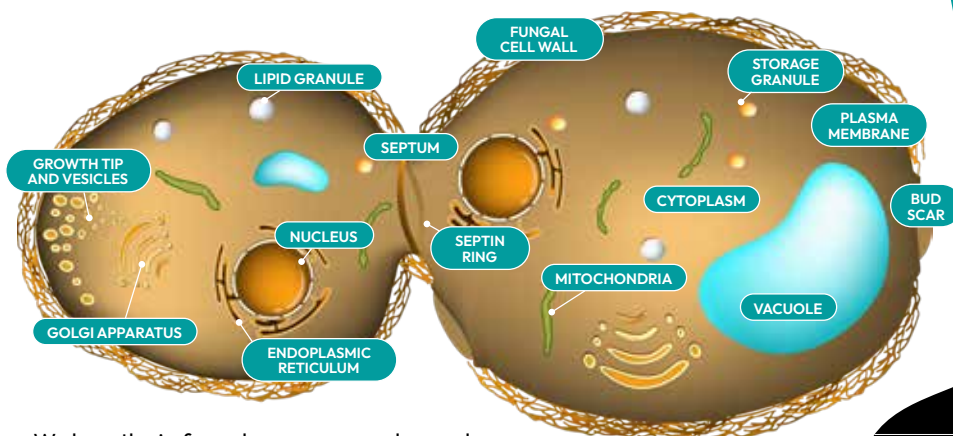
Did you know that across the world almost
**3 million people die
 of fungal infections
 every year?**

**KILLER
 fungus**

At any time **25%**
 of the world
 will have a fungal infection.

The fungal cell

Here you can see the inside of a fungal cell
 (a yeast), and all of it's most important parts!



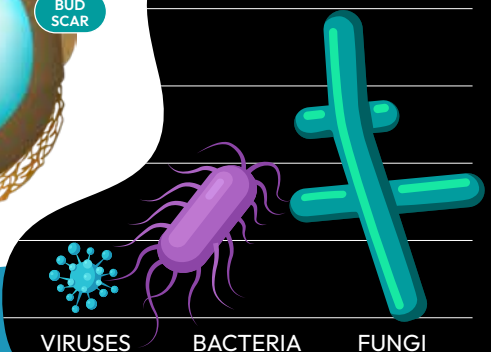
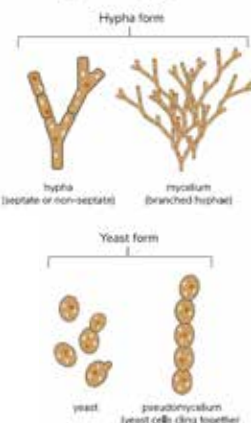
We breathe in fungal spores every day and some fungi happily live in and on our body without causing any problems. But if we are ill or have certain other conditions then fungal infections can become a problem.

Fungal microbes are much bigger than bacteria or viruses, but you can't see them with the naked eye – in our lab we use powerful microscopes to look at fungal cells.

Fungi also do lots of interesting jobs for us – they are used in brewing beer and wine, baking bread and making cheese and sausage. Fungal compounds are even used to make dyes for your clothes.

There are different types of fungi, the moulds and the yeasts. Moulds grow out in long filaments, so-called hyphae, while yeasts reproduce by 'budding'.

Morphology of Fungi



Fungi have massive underground networks of hyphae that link up to share information about food sources and threats.

These networks are the largest living organisms on the planet – stretching for many miles below our feet.



MRC Centre
 for Medical
 Mycology



University
 of Exeter

Did you know that fungi DNA is more like human DNA than plant DNA?

This makes fungal infections very hard to treat, as any medicines that kill off the fungus, will also affect human cells.

We do not have very many medicines that treat fungal infections and some of these have stopped working. This is due to us using them too much and fungal infections evolving to become resistant to these treatments.

Fungal Infections

Candida is a fungus that lives on our skin and in our bodies, usually without causing problems. *Candida albicans* is a common type of *Candida* which causes thrush.

Candida auris is a new type of *Candida*. Some strains of this infection are resistant to all medicines. This is worrying for scientists and doctors. Healthy people do not usually become infected with *Candida auris*.

Aspergillus is a common fungus that is widespread in the environment and air. You'll be breathing it in right now! Most of us breathe it in without getting poorly, but people with weakened immune systems can develop *aspergillosis*, a disease that usually affects the lungs and causes breathing difficulties.

Cryptococcus is a type of yeast. It can cause serious problems in people who very weak immune systems due to other illnesses. This infection can get into the brain and cause meningitis.

**Mycology comes
from the Greek
'fungus study'**

**KILLER
fungus**



**The antibiotic
Penicillin is
made from
fungus.**

In 1945, Alexander Fleming discovered that growth of the mould *Penicillium* on one of his bacterial samples had stopped the bacteria from growing.

What we do at the MRC Centre for Medical Mycology

The MRC Centre for Medical Mycology is based at the University of Exeter and is one of the biggest medical mycology research centres in the world.

We have scientists that work on projects across the globe to help improve how we diagnose fungal infections and inventing new treatments and medicines. All the work that we do increases our understanding of these incredible, but deadly organisms.



MRC Centre
for Medical
Mycology



University
of Exeter