

Lecture 2 Core Learning Objectives

1. Fungi are microbes
2. Fungal "bodies" are composed of hyphae
3. Fungi eat by excreting enzymes into food and absorbing released nutrients
4. Fungi reproduce by making spores

Fungi are microbes

Fungi are different from other microbes like :

Bacteria

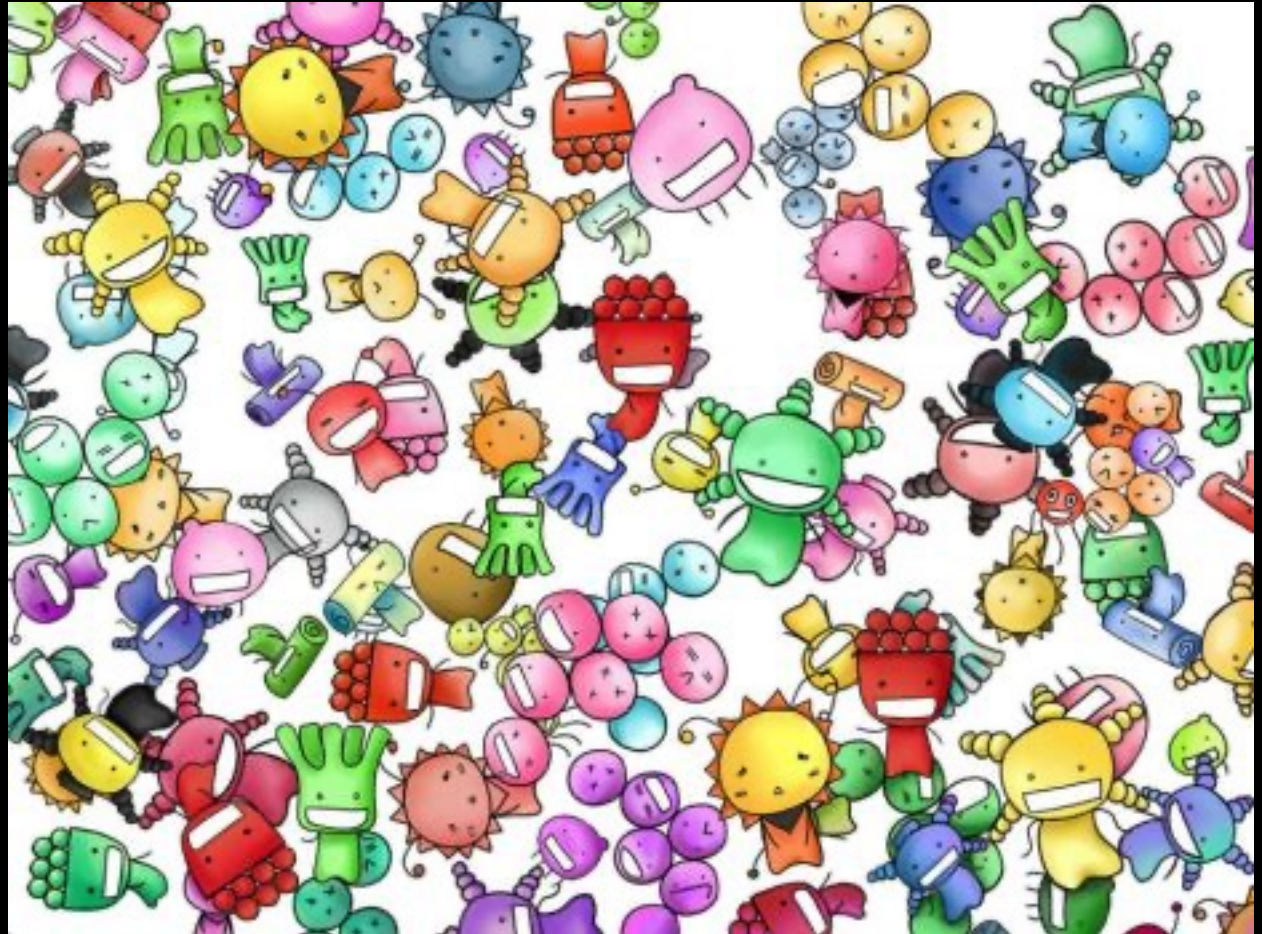
Archaea

Viruses

Protists

Microscopic
animals

Algae



Fungi are Microbes

- Molds, yeasts, mushrooms, conks, puffballs...
- Fungi are considered **microbes** even though some can get *very very large*
- **how small?** 1 micrometer
- **how large?** 1,000 hectares

} 10^{19}

Ingredients for a Fungus:

Hypha (plural: hyphae)
(for eating; growing;
making structures)

Spore
(for reproducing and
getting around)



That's it, really.

Hyphae are tubular. They have a crunchy cell wall made of **chitin**

Inside is the cell itself

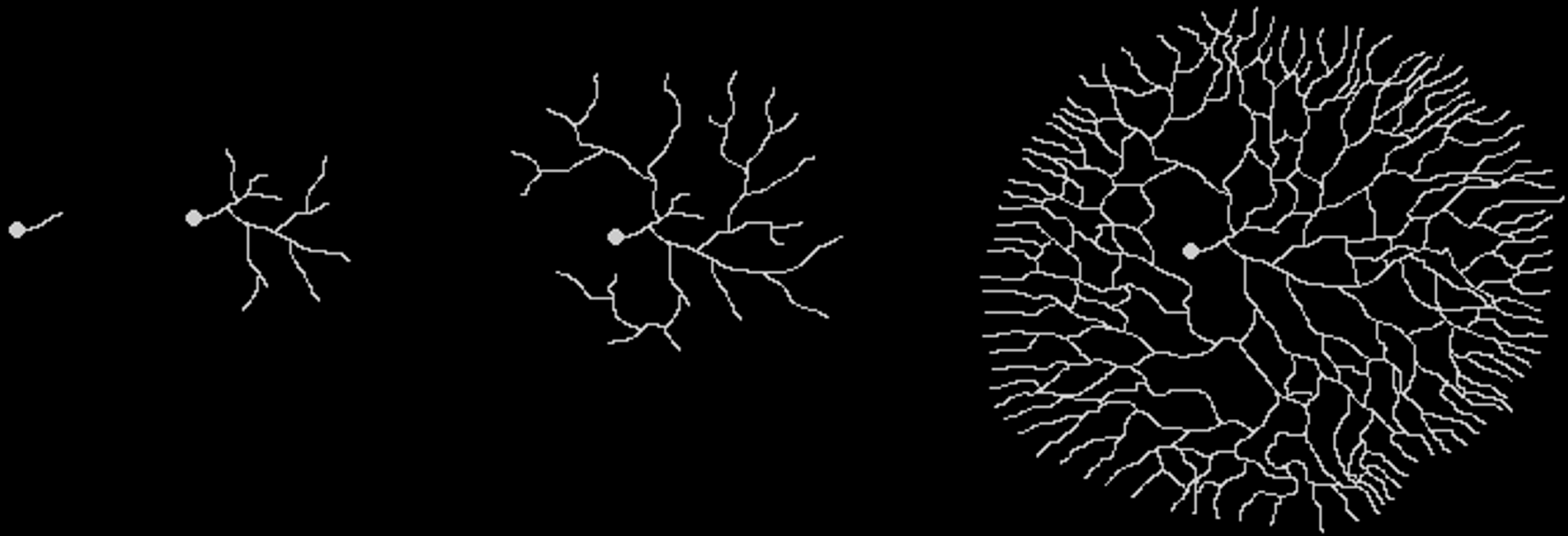


Chitin is put together like a string of pearls,

except each pearl is a molecule of sugar



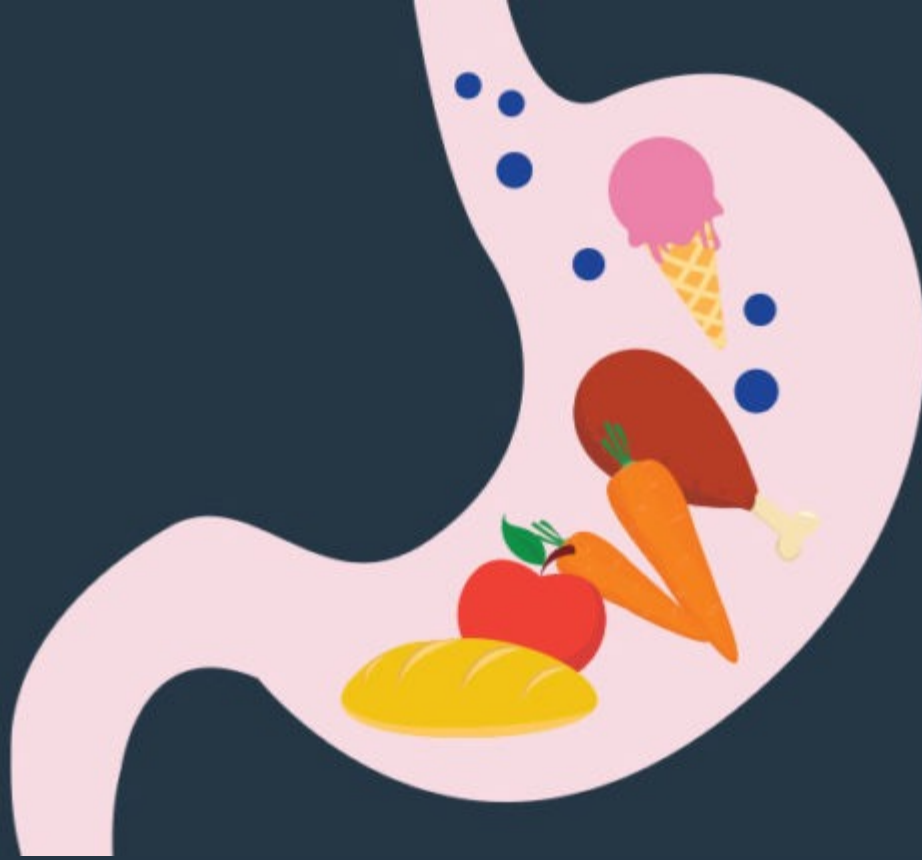
Hyphae branch as they grow



Hyphae eat by absorbing stuff,

but how?



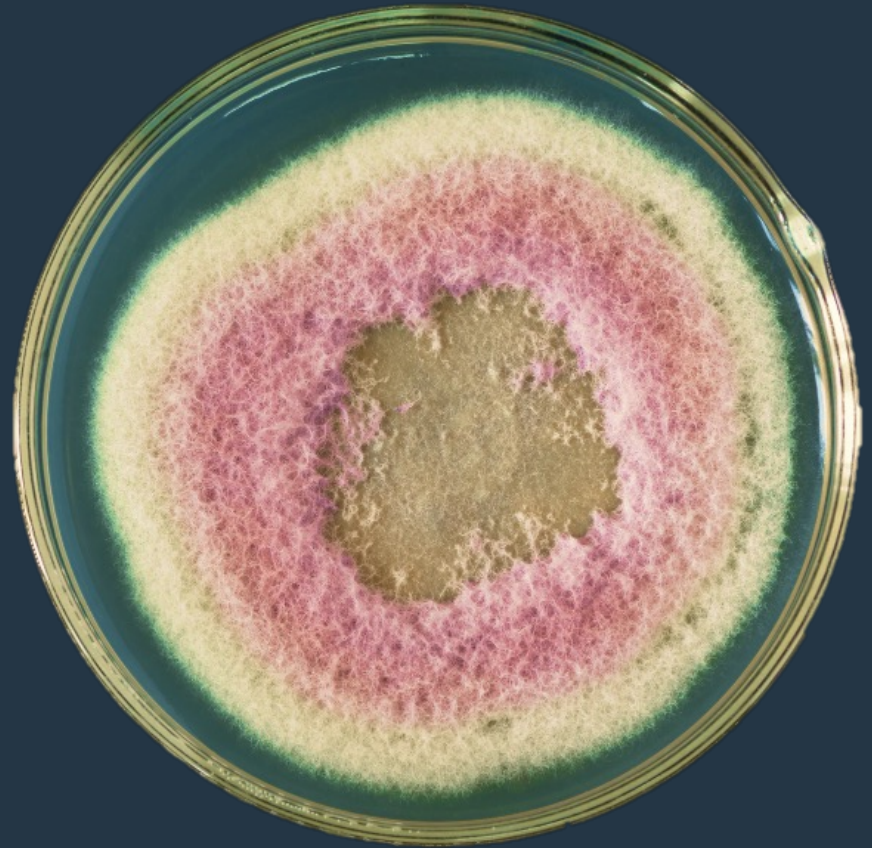


how do YOU digest stuff?

- chew it up and swallow it
- stomach **enzymes** break it down, releasing nutrients
- more nutrients are released in your gut...
- you absorb them

How do **Fungi** digest stuff?

- hyphae find food
- excrete **enzymes** to break it down, releasing nutrients
- absorb the released nutrients, yum



Ingredients for a Fungus:

Hypha (plural: hyphae)
(for eating; growing;
making structures)

Spore
(for reproducing and
getting around)

That's it, really.



Puffballs releasing spores!



Hyphae can grow and branch, but they don't go far.

Spores are much like hyphae, but in a size and shape
for getting around