

**“I’m feeling much better now,
thanks.”**

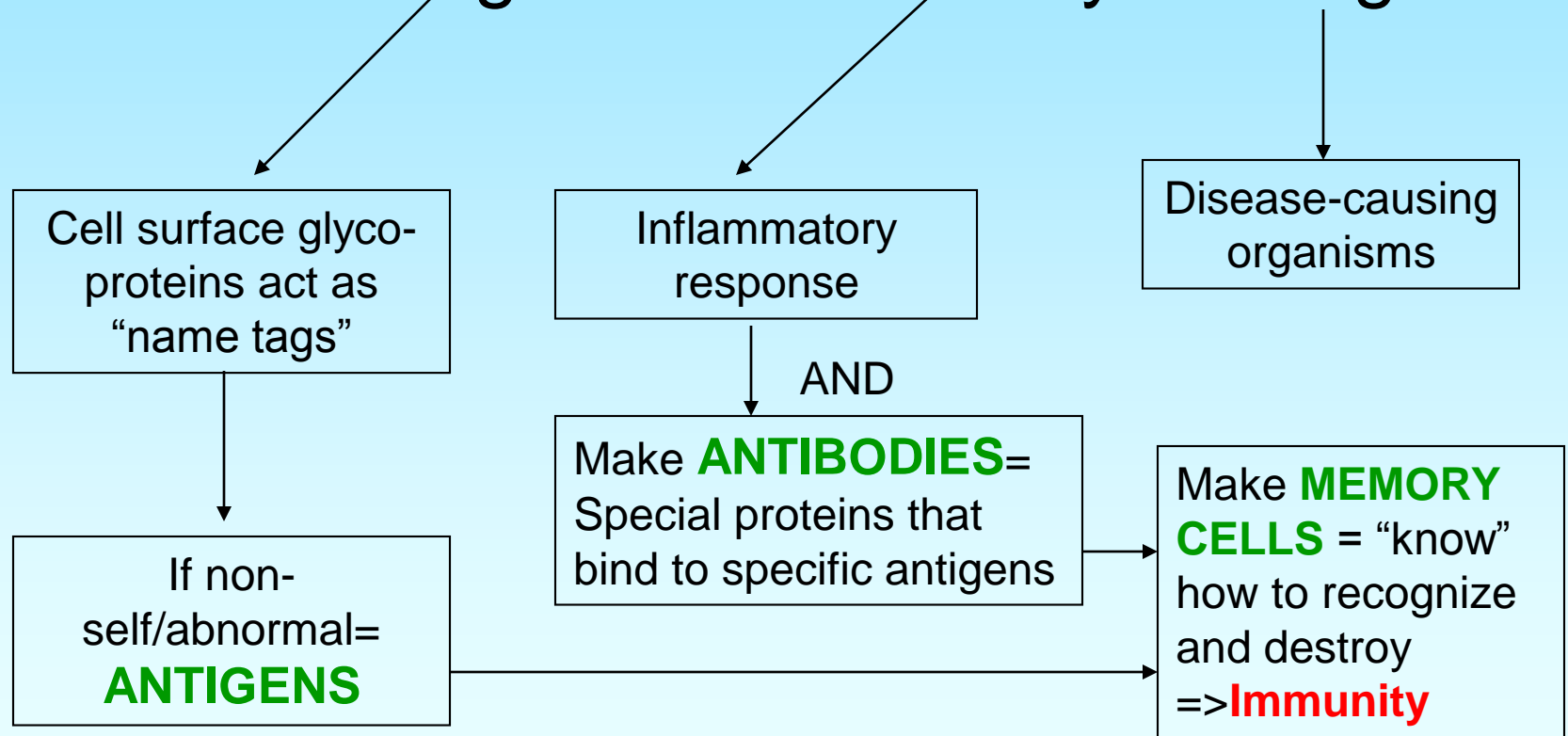
Immunology II

AKA

Why we aren’t sick ALL of the time

Immune System Basics

Function = Recognize and Destroy Pathogens



Developing Immunity:

A How-To Guide

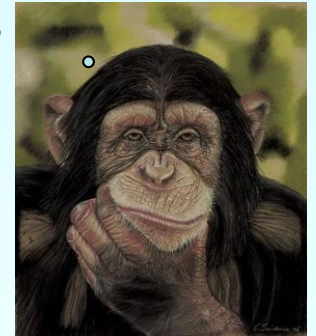
-Basically, you must make memory cells



EXPOSURE TO ANTIGENS

This way, you make antibodies for yourself =
ACTIVE IMMUNITY

But, how do I do
that?



Vaccinations

AKA Immunizations or Innoculations

- Antigen exposure → skip the getting sick part (inflammatory response).
- Weakened or dead pathogens.
- Have antigens but no infected cells.
- No cellular damage, no inflammatory response but **antibodies** and **memory cells** produced = **IMMUNITY**

A chimpanzee is shown in a thoughtful pose, resting its chin on its hand. A thought bubble originates from its head, containing text about immunity.

If that's **ACTIVE** immunity, what about **PASSIVE** immunity?

Passive Immunity =
Borrowing someone else's
antibodies

Do this by:

- Breast feeding
- Transfusion

Speaking of transfusions, what about:

Tissue/Organ Transplanting?

- One person's cell surface glyco-proteins (receptor molecules/"name tags") are another person's antigens
- Matching of "name tags" critical to transplanting
- Blood-typing is one method of matching name tags

ABO Blood-typing

Here's the problem: You always make antibodies against the antigens you **DON'T** have.

Which ANTIGENS?

Which ANTIBODIES?

Type A blood has **A antigens** and **anti-B antibodies**

Type B blood has **B antigens** and **anti-A antibodies**

Type AB blood has both A and B
antigens and neither anti-A nor
anti-B antibodies

Type O blood has neither A nor B
antigens and both anti-A and
anti-B antibodies

**Draw some pictures of red
blood cells in your notes**

Who can donate to whom?

Who can donate to anyone?

Why?

Who can receive from anyone?

Why?

Thanks for tuning in...

- Supporting material is available at www.mrulrichslandofbiology.com
- kulrich@newpaltz.k12.ny.us
- These videos are works in progress. Students who create material for the website would certainly be awarded credit on the site and extra credit in the grade book.