



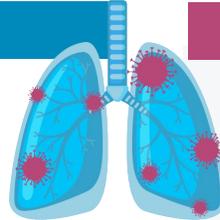
CHAP Weekly Update

June 5, 2020

Viruses and the Immune System

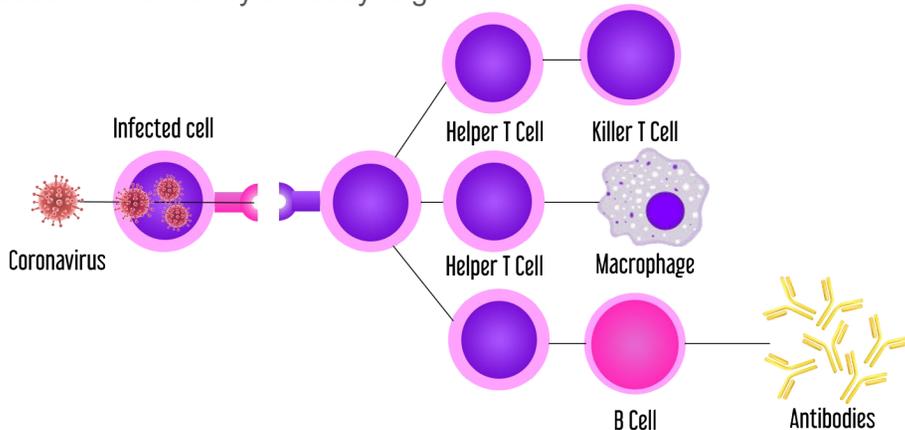
Virus Arrives and Enters Body

The virus invades the cells of the body.
The cells signal they need help!
At this stage, testing for the virus particles (i.e. PCR test) is positive.



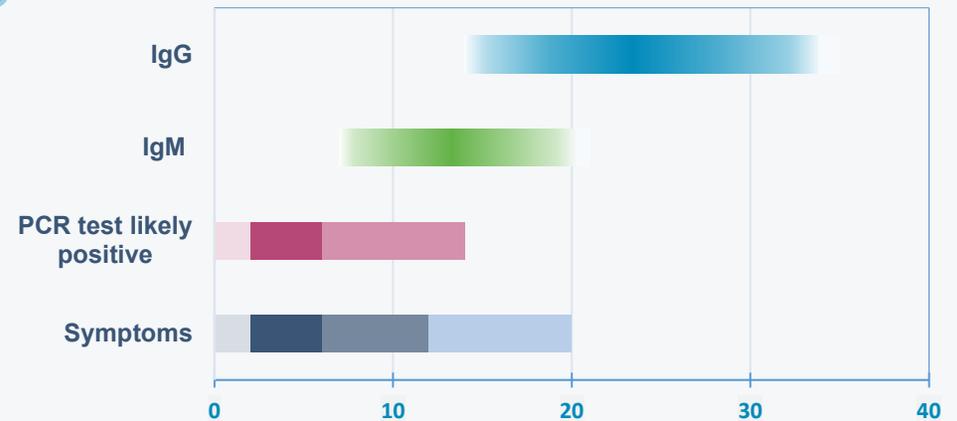
The Immune System Comes to the Rescue

- Killer T cells kill the infected cells. They recruit more T cells and macrophages to help.
- Macrophages eat the virus. Then they show it off to all the other immune cells and get them interested in helping.
- A different kind of T cell takes a look and runs off to activate B cells. The Helper T cells activate B cells who make antibodies. This can take 1-2 weeks. (Antibody tests are not usually positive until 2-4 weeks after the start of infection)
- Antibodies destroy the virus. After the infection is over, the B cells rest quietly. But if the infection comes again, they are ready to jump back into action with antibody all ready to go.



Symptoms, Testing and Immunity

COVID-19 Infection Symptoms, Testing and Immune Response



Days from Infection (Day "0" is the day infection started)
The darker the color, the more symptoms or virus or antibody

CHAP on Facebook



NEW! Community Health Aide/Practitioner Facebook page:

<https://www.facebook.com/groups/AlaskaCommunityHealthAidesPractitioners>



Thank you to Dr. Clifford Schneider from ANMC for his presentation on COVID-19 testing and treatment.

Let us know what you think! aka-CHAPCOVID-19weeklyupdates@anthc.org
Send questions for presenters and each other, and suggest topics for discussion.



Worldwide Infections: 6.42 million
 US Infections: 1.91 million
 Alaska Resident Infections: 513



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How Much Can We Rely On Tests?



Tests are not always right or always wrong. Every test sometimes gives the wrong answer. For instance, a test might say the disease is present, but it really isn't OR the test might say the disease is NOT present., but it really is.

You may hear these words in the news and on ECHO calls:

- **Sensitivity:** Being able to detect a disease when it is really there.
- **Specificity:** Being able to say it really is the disease and not something. The test specifically detects only the disease and not something else.

Other words you may hear:

- **False Positive:**
This means the test said it was positive, but it isn't correct.
- **False Negative:**
This means the test said it was negative, but it isn't correct.

Why does this matter?

- Even with very good sensitivity and specificity, the test may give you a false negative or false positive, depending on how much disease there is in a community. It's a math thing.
- If there is lots of disease, such as COVID-19 in the community – there will likely be more false Negatives in any test you do.
- If there is very little disease, such as we have currently in Alaska, there will likely be more false Positives in any test you do.

Learn More

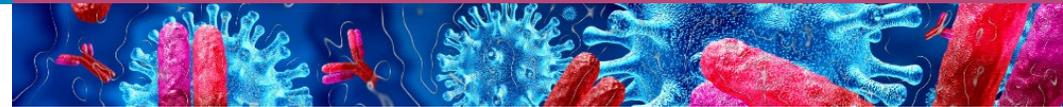


[Positive Predictive Value – The role of prevalence](#) (4:51)

[Sensitivity and Specificity Part 1](#) (4:43)

[Health News review – Sensitivity and specificity used in the news](#)

PCR Viral Testing and COVID-19 Antibody Testing



What does all this mean for PCR Viral testing and COVID-19 Antibody testing?

Follow your regional guidelines.

- PCR testing that is negative has either been done too late in the disease (see graph) or the person doesn't have COVID-19.
- PCR testing that is positive should always be treated as a true positive to protect the patient and the community.
- Antibody testing that is negative is either done too early or the person has never been infected.
- Antibody testing that is positive is not likely correct and the person cannot be considered immune. A positive test may be correct, however, if there was an earlier positive test and symptoms of COVID-19.

Always talk to your doctor before giving test results to anyone.

Continuing Education



Check out all of the CE options available at AKCHAP.org

Save the Date

Remember! You can get CEs for the weekly teleconferences.

Next Session: June 10 at 12:10; Dr. Leigh Wright and team talking about PPE and Transport Issues; UAA – Contact Tracing Training Opportunities

New CE Courses

- ❖ Emergencies in Pregnancy
- ❖ Respiratory Problems
- ❖ Clinical Breast Exam and Hormone Medicines
- ❖ Serious Injuries, Stroke, Seizure Awareness and Medicines
- ❖ Newborn
- ❖ Emergency Preparedness

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