Say that there is a disease which only about $5 \%$ of the population has and that there is a test for this disease which is roughly $95 \%$ accurate (that is someone who has the disease will test positive $95 \%$ of the time and negative $5 \%$ of the time, while someone who does not have the disease will test negative $95 \%$ of the time and positive $5 \%$ of the time).

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Given that a patient tests positive for the disease, what is the probability that he or she actually has it?

Is the answer?
A) $95 \%$
B) $90 \%$
C) $75 \%$
D) $50 \%$

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Given that a patient tests positive for the disease, what is the probability that he or she actually has it?

The answer is....
D) $50 \%$





The IFA can be used instead of the WB to confirm ELISA results. Like the WB, it uses a blood sample. Because it is faster than a WB, some labs that use it can get results to the client more quickly.

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## "Accuracy" Of Antibody Tests

The accuracy of a medical test is a combination of two factors: sensitivity and specificity. The ELISA is extremely sensitive (about 99.5\%), which means it will detect very small quantities of HIV antibody. This high sensitivity reduces the odds of reporting a "false negative" when HIV antibodies are present. Assuming you are being tested beyond the six month "window period," discussed above, if the ELISA is "negative," there is virtually no chance you have HIV.

The high sensitivity of the test creates a slightly lower specificity. This means the result could (infrequently) be "false positive." To compensate for this, confirmatory tests are automatically performed after a positive ELISA. The WB and IFA are highly specific for HIV antibodies, so they rule out false positive ELISAs nearly every time.

## The CDC states that the combined accuracy of the ELISA plus either the WB or IFA is greater

 than $99 \%$.The CDC recommends retesting any positive ELISA twice; if either retest is positive, then a confirmatory test is performed. Only when the confirmatory test is also positive is the result reported as HIV positive. Again, reputable test sites automatically follow this procedure, so results reported to you can be relied upon completely.

## What does this mean for you?

- If you are beyond the window period and were reported HIV negative by an ELISA, and you are not subsequently at risk for HIV, you should consider yourself HIV negative. You may have a great deal of anxiety about the remote chance that you may be infected, yet test HIV negative. Although this is technically possible, and has in fact been documented in several people, the probability is so small that it stretches the imagination. Think about the tens of millions of HIV tests that have been administered, and only a handful of people with HIV have not had detectable antibodies.

If that tiny probabilty is still bothering you, think about whether there may be other issues you're facing. Are you feeling guilt over an experience that may have placed you at risk -- or one that you feel put you at risk, even though it did not? Or are there other sources of anxiety that cannot be alleviated by further HIV testing?

If you want to discuss these issues further -- for example, you want to find out if a certain activity put you at risk for getting HIV -- call an AIDS hotline. Within California, call the San Francisco AIDS Foundation's California AIDS Hotline toll free at 800/367-AIDS. Outside California, call the CDC National AIDS Hotline toll free at 800/342-AIDS.

- Some individuals, seizing on this tiny probability of a "false negative" antibody test, or perhaps wanting results without waiting for the window period, may be curious about PCR or other types of viral testing, but viral testing is not appropriate in this situation because it was designed for other purposes. Viral testing allows physicians to track with greater accuracy than ever before the progression of HIV in the body -- thus helping their HIVinfected patients make choices about appropriate treatment strategies. Most people concerned about HIV do not need viral load testing. The antibody test is still the cheapest, easiest, and overall most reliable way for individuals to learn their HIV status.


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## Anonymous HIV Testing

