

Crowe's questions

First and foremost, I have NEVER stated that HIV does not cause AIDS. I have maintained since early 1984 that HIV is the single cause of AIDS. There may be factors that promote progression to AIDS in some HIV-positive individuals and factors that slow progression to AIDS in others, but it is HIV that causes AIDS.

Do you agree that LTNPs exist (Long Term Non-Progressors)? Would you agree that the definition of these people is someone who is HIV-positive for many years, does not take AIDS drugs, and remains healthy. Do you know how many people like this there are around the world? Do you think it would be less likely for these people to visit doctors if they had decided not to take AIDS drugs?

Are you familiar with the condition called IRD (Immune Reconstitution Disorder) or IRIS (Immune Reconstitution Inflammatory Syndrome)? Is part of the definition of the condition that the symptoms occur after starting AIDS drugs (HAART)? Are some of the conditions found in people with IRD/IRIS diseases that are included in the list of diseases that, along with a positive HIV test, qualify for an AIDS diagnosis? Can you say for sure that HIV-negative people would not get these symptoms if they took HAART? Would it then be reasonable to say that AIDS drugs are a cause of AIDS?

Is it true that one of the first two diseases that were part of GRID (Gay Related Immune Deficiency), now known as AIDS, was Kaposi's Sarcoma (KS)? Is KS still an AIDS-defining condition, i.e. would an HIV+ test along with a diagnosis of KS result in a diagnosis of AIDS? Is it not also true that a diagnosis of KS without any reason for this disease to occur (such as immunosuppressive therapy) will result in an immediate diagnosis of AIDS before an HIV test is performed? Is it also true that the CDC does not allow a person with an AIDS diagnosis to be reclassified to pre-AIDS or asymptomatic HIV infection even if, for example, their symptoms resolve? Is it true that around 1994 you agreed that HIV did not cause KS? Is one of the reasons because HIV DNA was generally not found in KS lesions?

Is another of the reasons because some people with KS were HIV negative? Do you now believe that the virus known as KSHV or HHV8 is the cause of KS? Is it true to say then that AIDS (e.g. KS) can occur without HIV? Is it also true to say then that there is at least one other cause (KSHV/HHV8) for at least one AIDS-defining condition?

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Prior to 1984 did you believe that HTLV-I was the cause of AIDS? Was HTLV-I a virus that you claimed to have discovered? Was HIV as discovered by you called HTLV-III? Did the acronym HTLV originally stand for Human T-Cell **Leukemia** Virus? Did this indicate that it caused white blood (lymphocytes) cells to rapidly divide in a cancerous manner? Did the acronym HTLV later get renamed to Human T-Cell **Lymphotropic** Virus? Was this to indicate that this family of viruses could either cause death of these cells or cause them to multiply more rapidly? Do you believe that HTLV-III aka HIV infection of CD4+ lymphocytes directly causes cell death? Can you supply at least one scientific paper that backs up this statement?

From the early 1990s, I have maintained consistently that we have as much, if not more, evidence that HIV causes AIDS than we have evidence for the cause of any other known disease. Furthermore, to the best of my knowledge, Professor Luc Montagnier also has never said that HIV is not the cause of AIDS.

Every reputable organization that has investigated this matter has also concluded that HIV is the cause of AIDS. This would now appear, even as it did back in 1984, to the rational person as being something that is self-evident. To name a few of the organizations that have concluded that HIV is the cause of AIDS, I will mention only the United States Academy of Sciences, the U.S. National Institutes of Health, the Pasteur Institute, and the World Health Organization.

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Do you have a list of "every reputable organization"? How do you define "reputable"? Are there some reputable scientists who disagree that HIV is

the cause of AIDS? Is the reason that you do not consider them reputable because they disagree that HIV causes AIDS?

As for the timing of the knowledge of the cause of AIDS, in 1983 there were only the claims of a new retrovirus in some AIDS patients and overwhelming evidence accumulated over the years to say that this virus was the cause of AIDS. However, by April 1984, I said publicly at the press conference organized by the U.S. Health and Human Services Secretary that in my view we had established the cause of AIDS. This was based on our four Science papers (May 1984), Lancet paper (July 1984) and loads of unpublished results that would come out by late 1984 to 1985.

See other document that refers to these papers.

As I said above and as I have often said, we have as much or more evidence that HIV causes AIDS as we have for the cause of any human disease. The evidence we had by early 1984 was already enough to establish that HIV is the cause of AIDS.

If you had isolated HIV first and proved it to cause AIDS as you state - Why did a joint committee of the National Academy and the NIH, the Office of Research Integrity, conclude in 1993 after a 3 year-investigation that you had "misappropriated" HIV from a colleague in France? (Cohen, J, Science 259, p168-170, 1993, HHS: Gallo guilty of misconduct).[PD]

This evidence included: (1) initial 48 isolates of HIV, mostly from AIDS patients and a few from people in high risk groups and negative results in healthy people in non-risk groups (Science, May 1984);

Are you referring to the Sarngadharan et al paper which had 49 samples of which 87.8% were antibody positive? Do you consider a positive antibody test to be "isolation"?

Or are you referring to the Gallo et al paper which showed "Detection and isolation of HTLV-III" from 79 samples, including 37.5% of samples of Juvenile AIDS, 30.2% from Adult AIDS with KS and 47.6% from Adult AIDS with opportunistic infections?

(2) isolation and purification of the virus, i.e., development of continuous production of the virus in cell line culture,

A dictionary definition of "purification" is "Freeing from dirt or defilement; cleansing; separation of dross, dregs, refuse, or other debasing or deteriorating matter, so as to obtain the substance in a pure condition." (OED). For a virus grown in cell culture would it be fair to say that purification means the separation of the virus particles from the underlying cell culture? Did any of your four original Science papers show this? Can you name later papers published by you that show this? By any authors? [if he claims there are] Can you supply citations to these papers?

which enabled the blood test (Science, May 1984). *n.b.* Montagnier did not achieve this and this is undoubtedly what he meant in 1997 when he reportedly said he did not achieve isolation of the virus. However, I doubt whether he said this at all; (3) results of the blood test in which in blood tests 88% of AIDS patients were positive (Science, May 1984);

NOTE: Here he is claiming that 88% were antibody positive. Above he was claiming 88% were isolated.

(4) in the separate study in Lancet, 100% AIDS positive while finding specific antibodies to HIV in healthy volunteers in only about 1 to 2 per 1000 (0.1 to 0.2%); (5) by 1985, I reported 105 isolates of HIV; (6) by mid – late 1984, we had a CDC collaboration which in blinded studies showed positivity in AIDS cases caused by blood transfusions, and found their HIV-positive blood donors who in turn went on to get AIDS; (7) by 1984, we knew the virus was a new infection in several places in the world where we conducted tests and we also knew that AIDS was a new disease. Wherever the virus appeared in the population, AIDS followed;

When you refer to HIV appearing in a population are you referring to the discovery of positive antibody tests? Do you know of any populations where all HIV tests were negative were several years followed by the sudden appearance of positive tests? Once HIV is found in a person are they generally treated differently, e.g. recommended to undergo corticosteroid treatment for PCP even before the availability of AIDS drugs in 1987? When people are found to be HIV+ are they generally told

this? Can a positive HIV diagnosis have a devastating impact on a person, e.g. causing them to give up hope or even commit suicide? Would you agree that the occurrence of HIV in the population meant three simultaneous things: 1) That HIV was present; 2) That some people believed that they had a fatal illness and 3) That potent medication was used in some of these people. Would you agree that when observing a population where three events occur simultaneously it is impossible to determine how much of the later changes are due to each of the three events?

(8) we demonstrated that HIV sensibly targeted cells of the immune system and mainly CD-4 positive cells, and we knew from clinicians that AIDS was a disease of the immune system that principally affected CD-4 cells;

When you say that HIV targets CD4+ cells do you mean that it directly kills them?

(9) we demonstrated in 1984-1985 for the first time that HIV infected some cells of the brain and, at the same time, AIDS-related dementia was appearing; (10) by mid-1984 and from ours and others' research, it was shown that, if a baby were born to an HIV-positive mother and if the baby also became infected, then that baby also got AIDS.

Were many of the HIV-positive mothers IV drug addicts? Do IV drug addicts have significantly less healthy infants? If a baby was known to be HIV-positive would their diseases be classified as AIDS?

If the baby born to an HIV-positive mother did not become infected (which happens in perhaps as many as two-thirds of such births), then the baby did not get AIDS; (11) we demonstrated the presence of HIV in semen (Science, 1985) and, in collaboration with Dr. Robert Redfield, also documented for the first time the heterosexual transmission of the virus (Journal of the American Medical Association, 1985);

You published two studies in JAMA in 1985 with Dr. Redfield related to heterosexual transmission. Was the evidence that you consider proof that these HIV-positive people had had heterosexual intercourse in the past

and had not had homosexual intercourse and that, in five cases, their sexual partner was also HTLV-III antibody positive? Did you have HIV tests from these partners prior to their sexual partnership to show that one of them was negative at this time? Did any of the five sexual partners have AIDS? What non-infectious explanations for the AIDS diseases in the index cases did you examine? Would it be fair to say that you showed in these cases that heterosexual transmission was a plausible explanation but not proven?

(12) by 1985 (and on) came the SIV monkey model from groups in Boston; (13) by January 1985, our blood test was in the hands of the big companies and was used to screen blood and blood donors around the world, thereby leading within a few years to the virtual elimination of AIDS transmission through blood transfusion; (14) anti-HIV therapy became available in 1986 and showed that, with a decline of HIV, there was an associated lessening of AIDS-related phenomena (Border's AZT work).

Did you mean Sam Broder, not "Border"?

What do you mean by "decline of HIV"?

Is it true that Broder showed that "after starting antiretroviral treatment...the estimated probability of developing lymphoma ...by 36 months, [was] 46.4% (CI, 19.6% to 75.5%)...a direct role of therapy itself cannot be totally discounted...Zidovudine [AZT] can act as a mutagen"

Is lymphoma an AIDS defining condition?

Pluda JM, Yarchoan R, Jaffe ES, Feuerstein IM, Solomon D, Steinberg SM, Wyvill KM, Raubitschek A, Katz D, Broder S. Development of non-Hodgkin lymphoma in a cohort of patients with severe human immunodeficiency virus (HIV) infection on long-term antiretroviral therapy. *Ann Intern Med.* 1990 Aug 15; 113(4): 276-82.

Yes, AZT alone had problems because of side effects and incomplete suppression of HIV. (15) By 1995 – 1996, triple drug therapy clearly showed HIV decrease led to a marked

expansion of life and reduction in morbidity. (16) therapies to prevent mother to child transmission of HIV led to the virtual end of pediatric AIDS in the developed world by around 2000.

For anyone to now propose multiple viruses as the possible cause of AIDS is frightening. Why not ask the same for every disease we know? What is the evidence for “multiple” viruses causing AIDS? What more evidence is needed to demonstrate the cause of AIDS? This is truly preposterous!

It should also be noted that, although there is overwhelming evidence and proof that HIV can be heterosexually transmitted as documented by epidemiological and molecular HIV studies in concordant couples, it must be recognized that HIV is not efficiently transmitted heterosexually and this fact could be contributing to the fantasies of those who incorrectly maintain that HIV cannot be transmitted sexually. Furthermore, statements that HIV has never been transmitted and/or isolated are absurd. It is nearly impossible to understand the thinking here, but it is akin to arguing that light does not exist because we cannot catch it.

Are you familiar with the Nancy Padian study of HIV transmission between serodiscordant couples? Do you agree that this study showed zero seroconversions over a 10 year study period, even among couples that did not always practice safe sex? What do you believe the risk of heterosexual HIV transmission to be? If you had two HIV positive people who had been sexual partners would you think that it was important to look for alternative explanations other than heterosexual transmission?

Lastly, in response to the “promiscuous antibody” defense, I would say that the only thing promiscuous might possibly be the people employing the antibody test incorrectly. When done correctly, the antibody test is precise and accurate. We my colleagues and I first developed the test, we carried out blind studies (i.e., we did not have knowledge of the person’s HIV status) and found and isolated HIV in those cases that were antibody positive.

Refer to the other document where Gallo was allowed to change the results after unblinding to turn "+/-" results into positive.

Bob Gallo