

# nature medicine

## Denying science

There are non-HIV causes for every AIDS disease; HIV has never been properly isolated; AIDS can be treated effectively without anti-HIV drugs. Such views, typical of AIDS denialists and taken from one of their websites, may have exited the scientific press by the mid-1990s, but they persist to the detriment of millions of HIV-infected people.

These ideas have clearly had a big impact, particularly in South Africa, home to the largest number of HIV-positive people in the world. AIDS denialists there continue to spread conspiracy theories and misinformation to a susceptible public wary of antiretroviral drugs. Even more dangerously, government support of such views—tacit and, in some cases, open—hinders the task of getting drugs to the people who need them.

Activists, voters and politicians must continue to exert pressure to counter this onerous trend. Scientists also have a role to play in explaining the science behind AIDS and showing that antiretroviral drugs can effectively treat the disease. One group of scientists has done just that, launching a website ([www.aidstruth.org](http://www.aidstruth.org)) in response to a recent article in *Harper's Magazine* that gives credence to denialist viewpoints.

People with ill-conceived ideas calling themselves mavericks (or in this case, 'rethinkers') will always be among us. Still, it's difficult to gauge what motivates AIDS denialists to champion their views in the face of overwhelming evidence to the contrary. The denialists almost universally invoke distrust of what they call "pharma-corporate vested interests" and they exploit fears arising from controversies over drug pricing or safety. Some even claim that antiretroviral drugs actually cause the symptoms of AIDS.

Despite their deep distrust of science, people who promote these views seek scientific credibility, repeating the tired theories of a tiny minority of scientists who say they are unconvinced that HIV causes AIDS. To support their ideas, some AIDS denialists have also misappropriated a scientific review in *Nature Medicine* which opens with this reasonable statement, "Despite considerable advances in HIV science in the past 20 years, the reason why HIV-1 infection is pathogenic is still debated" (*Nat. Med.* 9, 853–860; 2003). For the record, we think that the scientific evidence that HIV causes AIDS is conclusive and that antiretroviral drugs save lives.

Unfortunately that knowledge—informed by years of research—has failed to reach many in the African-American community, a group with disproportionately high rates of HIV infection. According to a 2005 survey by the RAND Corporation and Oregon State University, 53% of African-Americans say that a cure for AIDS is being withheld from the poor, and 44% believe that the people who take HIV drugs are being used as government guinea pigs. Men who agree with such myths report that they are less likely to use condoms regularly.

In South Africa, extreme ideas on antiretroviral treatment have made it to the top. President Thabo Mbeki is well known for recruiting 'dissident' scientists as HIV advisors and for his vocal distrust of antiretroviral therapy. In 1999, he urged government ministers to examine whether AZT is toxic and dangerous to health by "accessing the huge volume of information on this matter over the internet." Fortunately, Mbeki's overt early embrace of AIDS denialism has been quelled in public, partly through persuasion by scientists. Six years ago, 5,000 scientists signed the 'Durban Declaration,' published in *Nature*, affirming the link between HIV and AIDS.

But the health minister of South Africa, Manto Tshabalala-Msimang, carries on. She publicly praises nostrums such as garlic and beetroot, while emphasizing the side effects of HIV drugs. She has failed to energize the rollout of antiretroviral drugs and has fostered an environment where hucksters thrive (*Nat. Med.* 11, 581; 2005 and *Nat. Med.* 12, 6; 2006).

Chief among these is the German salesman Matthias Rath. He blankets communities heavily affected by AIDS with pamphlets proclaiming that his vitamin treatment reverses the course of AIDS and that antiretroviral drugs exacerbate the disease. Msimang has not publicly refuted Rath's views—instead, Rath's employees were reportedly invited to address health officials last September. The famed activist group Treatment Action Campaign (TAC) and the South African Medical Association have together filed a lawsuit against Rath and the South African government. These groups aim to stop Rath from running human trials with his pills, which he has detailed on his website. TAC has already won a case against Rath, ruling that he cannot defame them as a front for the pharmaceutical industry.

Rath's vitamins are just one of many unproven AIDS treatments gaining hold in South Africa. The country, one of the wealthiest in Africa, could serve as a model for how to combat HIV. But as of December, only about 112,000 people were receiving treatment through state facilities—far behind the government's own targets. An estimated 500,000 of the 5.3 million HIV-infected people in the country need treatment.

Efforts by scientists to counteract AIDS misinformation take time away from the very real scientific, political and economic challenges of the epidemic. But these efforts are necessary.

In South Africa, overworked doctors and nurses must often coax HIV patients into taking their drugs. They gently explain to them that antiretroviral therapy itself is not poisonous, that in fact the drugs will save their lives. For providers and patients in South Africa and elsewhere, AIDS denialism is not a product of academic argument or an oddity on the internet. For them, it's reality.