

# We All Forgot the Condom

YOU MAY HAVE HEARD THAT HIV INFECTION IS ON THE RISE, OR THAT THE EFFORT TO DEVELOP A VACCINE HAS DEAD-ENDED. BUT IN RECENT YEARS, WITH EVERY NEW SETBACK AND BREAKTHROUGH—including sensational word of a new “MORNING AFTER” pill—GAY MEN HAVE BEEN CHANGING THEIR BEHAVIOR, ADOPTING INGENUOUS METHODS TO KEEP THE VIRUS AT BAY. AS A RESULT, THE ONE COMMANDMENT OF THE PAST TWENTY-FIVE YEARS—ALWAYS WEAR A CONDOM—IS FAST BECOMING A RELIC

📷 | DAVID FRANCE   📷 | TOM SCHIERLITZ

## WE PULL PAPER

slippers over our street shoes and stretch on surgical masks, limp hair caps, and two pairs of latex gloves before passing through a series of heavy doors and arriving finally at one marked with extensive warnings, which leads into the infectious-disease lab of J. Victor Garcia, Ph.D. I cannot disclose what the warning signs say, as I've been instructed by my chaperone, an administration official at the University of Texas, not to reveal anything that might allow the animal liberationists to pinpoint our location.

We pause outside the door and pull on a second pair of slippers, then more gloves, and step into white hazmat suits, fumbling our bloated fingers along the zipper. Paul Denton, one of Garcia's research scientists, pushes the door open, and inside we are immediately struck by the distinctive smell of mouse meal. One wall is lined with white lab mice, dozens of them, each in a clear plastic cage, twisting their pink noses toward the sterile scent of our presence. They wear wire ear tags but are otherwise unremarkable. It's not possible to tell by looking at them that they are not fully mouse, that they are, in fact, the rodent equivalent of Jeff Goldblum's character in *The Fly*, the product of a cross-species mash-up that has rendered them only half mouse.

The other half is pure human.

In the two years since they humanized their first mouse, Garcia and his colleagues have published several technical papers

on their creations. Each of the mice in this room carries a bit of human liver, a slice of human thymus, and a dose of human stem cells, all from the same donor. When implanted under the right circumstances, they combine to create a functioning, highly sophisticated human immune system. “Not *like* human,” Garcia explains. “*Human*. The thymus *is* human. The cells *are* human.”

Besides being profoundly unnerving, the significance of these mice to medical research is huge. For the first time, a broad range of experiments can be conducted on living human systems that ethically couldn't be performed on people. Inside this secret room, on an unknown floor in this undisclosed location, Garcia and his lab crew are taking AIDS research to a place it has never gone before. Till now, no other animal besides man was susceptible to HIV—*human* immunodeficiency virus—a fact that has slowed research immeasurably. But these humanized mice can catch HIV just like we do. In experiment after experiment, they have been infected through anal or vaginal deposits of the virus, or through needle sticks. And left untreated, the disease progresses in them just as it does in us.

Denton draws my attention to three rodent habitats resting on a stainless-steel table under a special anticontamination hood. The little guy on the left, who is currently upside down and patrolling the ceiling with deep curiosity, has full-blown



AIDS. “There is a lot of HIV in him,” Denton says. He couldn’t be more infectious than he is right this minute.

The other two mice have been exposed to massive amounts of HIV and are being monitored to see if they’ll become infected, too. “We’ve been watching this one for four weeks,” Denton says, lifting one of the cages toward me. I bend down and look into the mouse’s small brown eyes. “He is still negative,” Denton says. “And that one is, too.”

**WHAT GARCIA** and his colleagues are seeking—the medical strategy or combination of strategies that will provide “perfect protection,” as he puts it, against HIV—has been the holy grail of infectious-disease specialists for nearly thirty years. And yet the news from the research community has never been bleaker. The search for an AIDS vaccine has been a colossal global undertaking, with spending topping a billion dollars a year and clinical trials involving nearly 25,000 subjects. And yet scientists have little, if anything, to show for their efforts and have recently resigned themselves to failure. The last large-scale study was halted when people taking vaccines actually appeared *more* likely to catch HIV than a control group—a catastrophic realization that called all future efforts into question.

The same goes for the so-called “liquid condom,” a tantalizing theory that an effective microbicide might be added to a lubricating jelly to neutralize HIV on contact. In all of the large-scale microbicide trials to date, most medicated ointments showed no efficacy whatsoever, and two *increased* transmissions.

As a result of these failures, many large-scale trials have been called off, including a massive federal vaccine probe canceled in July. It was designed to involve 8,500 volunteers, but Anthony Fauci—the country’s leading AIDS authority, at the National Institutes of Health—pulled the plug, saying scientists lacked basic knowledge about what might work and how.

The problem is, this cease-fire is entirely unilateral. Although AIDS has gone from a mostly fatal disease that has killed more than a half-million Americans to a mostly treatable condition, the epidemic is claiming new people all the time. Globally, an additional 2.5 million fell ill last year alone—there are now 33 million people in the world living with HIV—and there are troubling signs the virus is picking up speed. For many years, 40,000 Americans annually contracted HIV (with young gay or bisexual men still making up the majority of new cases). But according to widely disseminated rumors of new surveillance data being held closely by the Centers for Disease Control and Prevention, annual infection rates have apparently surged, perhaps to 52,000 or higher.

Among gay men, the number of HIV diagnoses has been increasing steadily since

2001. In New York City, transmission rates have spiked in populations of young gay or bisexual men, who are driving what *The New York Times* has called “an alarming comeback” for the epidemic. Since 2001, the under-30 gay crowd has shown a 33 percent climb in HIV prevalence. Amazingly, the highest surge is among boys ages 13 to 19, who scored a 112 percent increase in infections. But it’s not just a relapse among the young. Men who remained vigilantly negative through their twenties, thirties, and forties are suddenly contracting HIV in their fifties.

And the reason for these increases? Gay men are no longer abiding by the one commandment that dominated gay life for decades: “Use a condom every time.” In survey after survey, gay men say they have stopped using condoms. “I think the last rubber gay guys used in this town was in 1985,” Michael Petrelis, an AIDS blogger in San Francisco, joked when I asked him about this trend. Most young men whom I spoke with said they have sex without condoms, though few would admit it on the record. A 20-year-old Korean student in New York told me he’s used condoms in the majority of the 150 or so sexual encounters he’s had, but he also makes exceptions “if I really like him or feel a kind of love or something.” He acknowledged this didn’t really make sense, but he isn’t HIV-positive yet, and he was sure he’d make exceptions in the future. A 26-year-old Bronx native, whom I spoke with one night as he lingered on Christopher Street in the West Village, spelled out an epidemiologist’s (and a girlfriend’s) nightmare. “If it’s my baby mama, I never use them,” he said. “But if it’s with a guy—sometimes in the heat of the moment you lose your focus.”

Gay men say they feel cheated out of the full pleasure and intimacy of sex, and many have come to perceive condoms as emblems of a still hostile world, imposed on them by a culture that continues to stigmatize gay sex. “To use a condom every time you have sex, for the rest of your life?” says Daniel Siconolfi, of New York University’s HIV-prevention think tank, the Center for Health, Identity, Behavior, and Prevention Studies. “That’s a very, very big burden. That’s a lot to ask of somebody. And it’s not being asked of anybody other than gay men.”

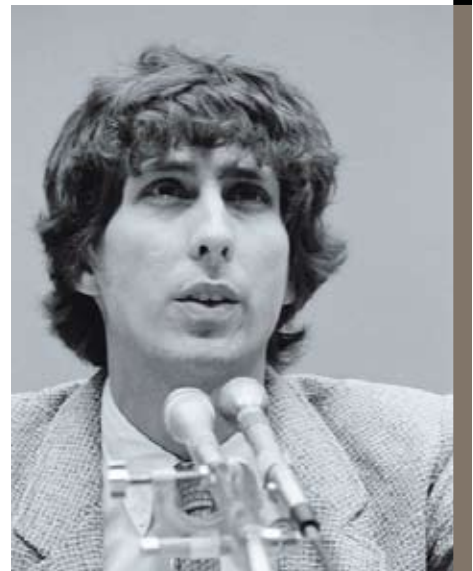
**HEARING YOUNG** gay men talk this way confuses and even angers, to say the least, gay men of my generation, who watched AIDS decimate the people we loved. It’s true that for the new patients who get diagnosed early and who faithfully take their medications, life with HIV can seem nearly normal now. But AIDS is still a killer. Around 15,000 Americans die every year of the disease, and every new death is a preventable tragedy, every new transmis-

sion an inexcusable failure, especially to those for whom the bad old days are not yet ancient history.

Back then, gay people had almost no role in public life. Elected leaders wouldn’t comment on the disease; papers didn’t report it. We learned about the epidemic through the unfolding human traumas. For me, that came in the long winter of 1983. After a cold front seized the boiler in my Lower East Side building and formed ice crystals in my toilet, Brian, my college roommate, took me in. But he immediately fell into bed with a spiking fever and multiple systemic infections. We thought it was the worst cold imaginable—so many of our friends were being knocked out with it that winter. Felix, whom Brian had been dating on and off, got a bad case of it a few weeks earlier. Much later, after both Brian and Felix were dead, AIDS experts would name this the “seroconversion flu.” Most people who get HIV have the same crushing symptoms early in their infection. But we didn’t know that then. We didn’t know a thing back then. Nobody yet suspected a virus. The ascendant hypothesis blamed “poppers,” the mildly hallucinogenic inhalants that gay men liked to use during sex; or the supposedly immunosuppressive effect of consuming too much sperm orally or anally; or a theory, proffered by various prominent researchers, called “immune overload,” based on the assumption that gays had so hammered their natural defenses with repeated bouts of syphilis and the clap, along with constant exposure to recreational drugs, that our bodies had simply worn out.

None of these things described Brian’s life or mine. I delivered egg-drop soup to his bedside for weeks before he had the strength to open a fortune cookie. On that day, in a celebration of sorts, we had sex—we used to do that from time to time. How I escaped infection I’ll never know. What I know is that it wasn’t my only close encounter.

••• Michael Callen, whose pamphlet marked the start of the condom code, testifying before Congress in 1983.



It wasn't until a few weeks later that anybody seriously proposed a theory that we were *giving* this thing to one another. The suggestion was contained in a stark pamphlet, forty pages folded and stapled and wrapped in a white, tombstone-like cover with the title "How to Have Sex in an Epidemic: One Approach." The pamphlet was written by Richard Berkowitz and Michael Callen. They weren't doctors or epidemiologists. Callen was a marginally well-known a cappella singer and songwriter, and Berkowitz was a street hustler of the cat-o'-nine-tails variety who would later be forced off the circuit by his own collapsing health.

It's difficult now to fathom how hard it was to disseminate information or raise an alarm before the Internet. Callen and Berkowitz could find no newspaper willing to report their theory, nor any community group able to publish it. So they paid for the publishing costs with donations from patients of their mutual doctor, Joseph Sonnabend—Callen threw in his own tax refund—and then delivered stacks of the booklet to gay venues in the city, including my local bar, where I watched them drop off a stack and then read through it in one sitting. (I wasn't the only patron absorbed in it. For a while that evening, the pool table was empty and the jukebox mute as a dozen or so of us tore through those pages, hoping to make sense of what was going on.)

Based on their observations, Callen and Berkowitz supposed the disease was present in body fluids and that it might behave like hepatitis B, which is spread sexually. How could it be avoided? Only one prudent way, according to the authors: Use a condom every time you have sex. "The key to this approach is modifying what you do—not how often you do it nor with how many partners," they wrote.

Before that moment, gay men had as much use for condoms as we did for Midol. But very quickly, safe sex became the cornerstone of HIV prevention, and rubbers were suddenly everywhere. Jars full of them proliferated at every gay bar and bathhouse in the country. I remember seeing a truck full of lesbian "outreach workers" hurling the things into the air like rose petals one night on Christopher Street. The condoms came in different colors, in different flavors and different textures, in foils that looked like chocolates or doubled as rings, or carried slogans like **NO GLOVE, NO LOVE**.

Condoms are about 90 percent effective as HIV barriers, and they did more than anything else to slow the epidemic. The

number of HIV diagnoses among gays dramatically declined in the '80s and '90s, but it never stopped. It's infuriating to imagine how things might have been if the government had not, in acts of blatant political pandering, undermined the condom code by advocating abstinence-only education, especially during the past eight years.

But AIDS agencies are even more to blame. Even the Bush administration set a goal for cutting transmissions in half, yet the AIDS establishment watched passively as those goals were missed year after year, but offered no effective alternative solution and saying little about the staggering consequences. The summer following Brian's odd illness, the N.Y.C. health department estimated that one-tenth of one percent of gay men were infected. Today, at least in some major cities, that number now is one out of every four, and half a million Americans are dead. And condoms are as rare today as they once were ubiquitous—no longer abundant in gay spaces, barely visible in gay porn, and almost never mentioned in online hookup ads. I don't mean to suggest that safe sex is dead. Just that the code that so many of us lived by, literally, has become a thing of the past, replaced by what Julie Davids, who heads the Community HIV/AIDS Mobilization Project, calls "the new toolkit approach" to preventing infections. It's a varied, largely untested hodgepodge of a tool kit that ranges from behavior strategies popularized over the Internet to inventive—possibly dangerous, possibly prescient—adaptations of drug regimens, taking the applications of AIDS medicines beyond the scientific community's ability or willingness to test them.

The most common of these strategies is a growing movement by gay men to restrict their sexual experiences to people who share their HIV status. They call it "sero-sorting"—the theory being that if HIV-positive people sleep only with other infected individuals, and negatives only with negatives, then the epidemic will vanish. Nobody at the Centers for Disease Control and Prevention promotes sero-sorting, no social-marketing campaign has given it a boost, and AIDS organizations tend to ignore or even oppose it. It is truly a grassroots innovation (in San Francisco, 40 percent or more of gay men between the ages 18 to 29 practice it, according to one survey), made possible as much by developments on the Internet as by anything else. As Jeff Sheehy from the AIDS Research Institute at

the University of California, San Francisco, explains, it is much easier to disclose being HIV-positive in online hookup communities, where most sexual connections are made now, than in the bars or bathhouses of the past. "If you disclose in the bar and they walk away, you can feel stigmatized," he says. "But your online profile can reveal your status right out front."

*Poz* magazine, for example, runs an online dating community for 61,000 subscribers, virtually all of them HIV-positive. On Manhunt.net, another leading dating site, HIV status is one of the searchable fields, as it is on the outlandishly named Web site Bareback.com, whose 33,000 members are devotees of condom-free sex. "When I have sex with somebody who is HIV-positive, I feel a lot more free," says J. R. Billings, 29, an L.A.-based activist who contracted the virus three years ago. "I just prefer sex without a condom on. They feel so *clinical*."

But does it work? Some researchers think so, citing data from San Francisco showing that syphilis rates have soared while HIV rates have decreased. Typically, HIV and other sexually transmitted diseases track closely. This anomaly suggests that more people are having sex without condoms (increasing syphilis rates) but avoiding people with opposing HIV status.

Still, many doctors ardently oppose sero-sorting, arguing that men who are already HIV-positive risk the possibility of super-infections with more exotic strains of the virus. But this has not proved to be a big problem. A greater risk is exposure to other serious infections such as hepatitis or chlamydia, which might complicate an underlying HIV infection.

The risks are much greater for men who are HIV-negative, since it is nearly impossible to know for sure if your partner is truly negative, and you may even wrongly assume your own sero status. In one recent national study, 77 percent of young gay male subjects who thought they were negative were shocked to learn they were wrong. In New York City, sero-sorting might even be responsible for the steady rise in new infections among men under 30. Many report they were infected in monogamous, though short-lasting, relationships. "These young men are deciding to not use condoms together without taking the time to really guarantee that both people are HIV-negative," says Bill Stackhouse, Ph.D., of the Gay Men's Health Crisis in New York. "Remember, the sense of time in that age category is different. When you're 16 or 18, three months is a long time, or so it seems."

But there is another possible explanation for the lower rates in San Francisco despite a return to unsafe sexual practices. Successful antiretroviral therapy renders an HIV-positive person less infectious, and people whose viral load has been undetectable for a minimum of six months have no active

**"PEOPLE WHO AREN'T INFECTED," SAYS SALLY BLOWER, PH.D., WHOSE MODELS SHOW A DROP IN INFECTIONS WITH PREP, "IF THEY CAN JUST TAKE A PILL AND PROTECT THEMSELVES, I WOULD THINK EVERYBODY WOULD JUMP UP AND DOWN AND DO THAT."**



virus in semen or circulating blood. "I tell patients that if you've been undetectable for two years, I don't think you could infect someone if you tried," says Douglas Ward, M.D., a well-known Washington, D.C., AIDS specialist. Last January no less an authority than the Swiss National AIDS Commission actually advocated unprotected sex for some patients with repeated undetectable results and no other sexually transmitted diseases, saying they posed zero risk of infection. This is a startling finding, one that certainly would change life for couples in which one is positive and the other negative. But it could also have a far-reaching impact on the epidemic's march. If every cent spent on prevention—free condoms, global research, glossy campaigns, etc.—were redirected toward getting everyone tested and educated, there might be no need whatsoever for "safe sex."

Did this good news touch off celebrations here in the United States? Hardly. The Swiss study went largely ignored in the media. What's more, powerful AIDS groups rushed to condemn it. Project Inform, a national HIV clearinghouse, decried the findings as a threat to the condom code. So did a number of other groups, many of which issued stark warnings, calling the Swiss report "dangerous" and "misleading." The World

Health Organization issued a joint statement with the United Nations AIDS office reiterating the need for "correct and consistent use of condoms." They share a concern that ordinary people will misinterpret the recommendation and put themselves at further risk. "Scientifically, it makes sense," Ward says. "Sociologically, it doesn't."

But these responses seem to miss the point. The problem isn't condom knowledge. The problem is condom burnout. After a quarter century, people are demanding a new approach.

**WHILE SCIENTISTS** were conducting their failed experiments with vaccines and microbical "liquid condoms," a lot of R&D was also taking place in the trenches. Most gay men know, for instance, that it is standard practice to prescribe a monthlong course of AIDS pills to health care workers who suffer an occupational exposure to HIV—say, being pricked by an infected needle. The data confirm that this morning-after approach—called post-exposure prophylaxis, or PEP—is extremely effective: It reduces infections by 81 percent. If administered within hours of exposure, PEP appears to block all but a few transmissions. What's more, the drugs are regularly prescribed to rape victims in emergency rooms.



## DOES THE MORNING-AFTER PILL WORK?

Women in this country can mitigate the consequences of poor judgment or a broken condom with a trip to the pharmacy, where the Plan B morning-after pill is available over the counter. Gay men now have an analog at their disposal to minimize the chance of contracting HIV: Post-exposure prophylaxis treatment (PEP), the same antiretroviral cocktail taken by HIV-positive patients, may block the virus if taken within seventy-two hours of exposure.

**THE HISTORY:** Medical professionals have long been cautiously optimistic about PEP, and for more than a decade the treatment has been recommended for rape victims by New York City emergency rooms and for health care workers exposed to the virus through needle sticks or other occupational hazards.

**THE RESEARCH:** There's little scientific evidence that it works, says veteran HIV/AIDS specialist Douglas Ward, M.D., and a serious clinical trial isn't feasible. Since PEP is thought to be effective, he says, "it'd be unethical to randomly assign someone to receive it or not."

**THE SIDE EFFECTS:** At first the regimen was highly toxic. Daily doses of antiretrovirals now considered primitive caused nausea, vomiting, diarrhea, and even hallucinations over the course of treatment, which lasts a month. Newer drugs are much less punishing, with nausea the main side effect.

**THE COST:** Between \$2,000 and \$2,500, including drugs, blood tests, and clinic visits. These costs are usually covered by insurance.

**THE OBSTACLES:** Since the first appearance of PEP, doctors have worried about sending the wrong message, concerned that gay men will engage in riskier behavior if they see PEP as a safety net. Because PEP is not widely publicized, many gay men and health care providers, especially in less urban areas, are unaware that it can be prescribed to the public.

**THE NEXT BREAKTHROUGH:** Some gay men are already experimenting with another, potentially more effective (though similarly unproven) approach called pre-exposure prophylaxis (PrEP), in which antiretrovirals are taken *before* sex. The Bill and Melinda Gates Foundation is spearheading a \$90 million controlled study of people in high-risk groups throughout North and South America and Africa. "PrEP definitely holds promise," says Ward. But, he points out, "if the trials show it to be 99 percent effective, that could really open a can of worms—safe sex is going to go out the window."—ALEXANDER PROVAN

But PEP is not routinely available to the most common targets of HIV in America today: gay men exposed through either a broken condom or a night spent carelessly. Without ad campaigns and other promotional pushes, most don't even know it is available. Why the silence? Many public-health experts have said it would be a mistake to promote PEP to gays—because they might drop their guard further, substituting a magic pill for self-restraint and increasing their chance of infection. "They used to say putting air bags in cars would

make people drive faster,” says Kenneth Mayer, M.D., the director of the Brown University AIDS Program. But one careful study done on PEP among gay men in Rio de Janeiro found just the opposite, he says. Once a patient has spent a month on the very strong AIDS medications, he is considerably less likely to put himself in that situation again, the study showed. “PEP can be the educable moment,” Mayer says, but “the community—the people who are at risk—are less aware than they should be.”

AIDS activists find this indefensible. Sean Strub, who founded *Poz*, calls this “practically criminal negligence. We on the front line know what works. It’s incredibly irresponsible that we’re not making it much more widely available.” Gay men could seek help in hospitals, but only recently has PEP been made readily available to the general public. Private doctors can prescribe it—if they know about it, and if their patient gets to them within the all-important seventy-two-hour window. Any later and the virus will already have begun its integration into the patient’s DNA on its journey to the lymphatic system.

But HIV is a weekend peril; most transmissions likely happen late Friday night, as far from a doctor’s appointment as possible. So some gay men keep a starter set of morning-after pills on hand, just in case. Strub, who is HIV-positive, doles his own pills out to HIV-negative friends. “It’s probably illegal, but that’s what I do,” he says. That allows them to begin self-medicating immediately and gives them time to find a doctor who can prescribe more pills and monitor adherence—or, if it is determined the exposure was not significant, counsel the patient to stop the medication.

Gay men, meanwhile, have extrapolated from another body of data to conclude that taking the same drugs *before* exposure might block a potential infection. Does it work? Maybe. But it’s difficult to test in humans. Ethically, you can’t ask somebody to take an experimental pill before sexual exposure to a seriously debilitating virus. So instead, a half-dozen studies around the world have given various drug combinations to people at high risk for infection to take every day while also using other precautions to protect against transmission. If after several years there are fewer new HIV cases on the experimental arm of the trial compared to the placebo group, this will be an indication the drugs are working. Results aren’t expected for some time, and researchers aren’t supposed to talk about findings until they’re reviewed by peers, but the excitement around pre-exposure prophylaxis, or PrEP, is palpable.

“PrEP right now is probably the hottest and most immediate approach available to us,” says Myron S. Cohen, M.D., of the University of North Carolina. “I’m very optimistic about it.” Sally Blower, Ph.D., a

biomathematician at UCLA, has created a computer model that shows that if it were just partially effective, it would still lower infection rates considerably. “People who aren’t infected, if they can just take a pill and have sex and protect themselves—like women do with oral contraceptives—I would think everybody would jump up and down and do that,” she says.

That’s why some in the gay community are deciding not to wait and taking purloined pills in advance of unsafe sex. They’re doing this in “party packs” mixing tenofovir, a powerful antiretroviral, with methamphetamines and Viagra—sometimes called MTV. “For years in New York it’s been known as ‘taking a T,’” says Jeffrey Laurence, M.D., an AIDS expert at Cornell’s Weill Medical College. “Soldiers in World War II used to pop a penicillin and go out to have a good time. Back then, it seemed to work.” But he says there’s no evidence one dose of tenofovir is a reliable safety shield.

On the contrary, it turns out there are results showing it does nothing at all. That data comes not from a human study but from the half-human mice in Dallas.

**RESEARCHERS HAVE** been trying to humanize mice since the ’70s, when scientists discovered a way to breed a strain of lab mice that lacked their own immune systems. Early experiments successfully implanted them with human thymuses—the tiny chest-cavity organ that serves as the command center for immune defenses, producing disease-fighting T cells and dispatching them around the body. In those experiments, the transplanted mice did produce human T cells, as expected, but the cells never migrated out of the implanted thymus to take up posts throughout the body. Consequently, few sophisticated experiments could be done on the early hybrids. One of Garcia’s students surmised that the animal’s bone marrow was keeping the T cells bottled up in the thymus. He tried a thymus transplant followed by a bone-marrow transplant, using stem cells from the same human donor.

“Amazingly,” Garcia says, “he got the whole enchilada”—a fully functioning, fully human immune system coexisting inside the tiny rodent. Highly specialized human blood cells started generating and actually moving to the part of the mouse’s body where they would typically be found in humans.

“These cells can’t tell where they are. They’re human cells moving around inside a mouse, but they’re following the mouse road signs and getting where they need to be,” says Paul Denton.

Garcia immediately saw the promise for finally testing PEP and PrEP. In fact, the first thought that came to Garcia’s



••• J. Victor Garcia, Ph.D., creator of the human-mouse hybrid, with a research assistant at his lab.

mind was about the party packs that he’d read about in the papers. So he tried it on the mice. “Well, I didn’t give them party drugs,” he says. “But I did give them a dose of tenofovir, then exposed them to HIV between four and six hours later.” He did this by depositing live virus in their anuses and vaginas in a dose 10,000 times as strong as a real-world exposure. All the mice came down with AIDS. “It didn’t work,” he says. “I frankly didn’t think it would.”

But then he tried a more sophisticated approach. For two days, his mice were given doses of tenofovir and emtricitabine, one of the most powerful drug cocktails available. On the third day, along with the medication, they received a massive inoculation with HIV, followed by four more days of tenofovir and emtricitabine. Not one mouse contracted HIV. “It actually works 100 percent of the time,” he says, “with a very high degree of statistical significance.” The results thrilled his young staff, who then turned to a study of the microbicides. Most were failures, as other researchers had already found. But one or two had equally stunning outcomes—a squirt of lube in the vagina minutes before exposure appears to confer total protection (his results are being peer-reviewed now). This is the finding, and the hope for perfect protection, that researchers have been dreaming of for years.

It is still possible that these mice are nothing more than “furry test tubes,” as Brown’s Kenneth Mayer, whose responses may have no bearing on a fully human patient, says. But at least they can tell us which drugs to move into human trials. And if they work there, those pills and gels will change life for everybody, not just here but throughout the world. The mandatory use of condoms will be finally consigned to history, a relic from an era whose shadow grows shorter each year.

DAVID FRANCE *last wrote for GQ about the plight of gay Iraqis.*