

Serosorting

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Serosorting guides partner selection and may also inform choices about condom use. As public health and media attention increasingly focus on serosorting as a form of risk reduction for both HIV positive and HIV negative individuals, it has become increasingly important to understand this phenomenon.

Lately, serosorting has been thrust into the mainstream media because it is thought to be partly responsible for the recent decrease in new HIV infections in San Francisco. As part of its newfound celebrity, serosorting is being considered as one of the possible next steps in behavioral HIV prevention for both negative and positive individuals. Yet while some endorse the strategy as a safer way to have sex without condoms, the impact of serosorting on the lives and health of HIV positive individuals has yet to be fully explored.

What is Serosorting?

Serosorting is the process by which a person makes choices about sex partners based on HIV status. The practice has existed since the early years of the HIV/AIDS epidemic, when many HIV negative people chose not to have sex with HIV positive partners. As knowledge has increased and stigma has decreased over the intervening years, researchers have noted an upswing in HIV positive serosorting: growing numbers of HIV positive people are choosing to date, develop relationships, and have sex only with partners of the same serostatus.

Researchers have also begun to observe how HIV positive individuals are choosing specific roles and behaviors with their sexual partners based on serostatus, a practice known as strategic positioning. For example, some

studies report that HIV positive gay and bisexual men are more likely to take a receptive role with HIV negative partners during anal sex, as the virus is less likely to be transmitted from the receptive to the insertive partner.

Serosorting can be an active or passive strategy. For example, an HIV positive person who seeks a sex partner through online chat rooms or bulletin boards may actively select seropositive partners and/or disclose serostatus in a personal profile, allowing potential partners to serosort and thereby reducing the odds of connecting with individuals who may react unfavorably upon learning that a potential partner has HIV.

Data gathered over the past few years indicate that HIV positive individuals tend to engage in risk-reduction strategies when they have sex

with a partner they believed to be HIV negative. According to Perry Halkitis, PhD, of the Center for Health, Identity, Behavior and Prevention Studies at New York University, “research consistently documents that HIV positive [gay and bisexual] men deliberately partake in less risky transmission behaviors when their partners are known to be HIV negative.... [I]n my view it is indicative of the sense of responsibility many HIV positive men have toward their partners and the gay community at large.”

Recent Developments

“Serosorting” became a buzzword early in 2006, when San Francisco Department of Public Health (SFDPH) officials and researchers proposed that serosorting might help explain

a simultaneous increase in sexually transmitted infections (STIs) and decrease in new HIV infections. Researchers suggested that while the increase in STIs indicated either static or increasing rates of unprotected sex, rates of HIV infection were holding steady due to a shift in the way individuals were selecting partners: people were actively choosing to partner with others of the same serostatus.

Public health officials' reactions to such reports have been mixed. Some have praised serosorting as a way to prevent the spread of HIV between partners who choose not to use condoms, but others have been cautious about endorsing a practice that may encourage unprotected sex. Additionally, as Dr. Hong-Ha Truong of the Center for AIDS Prevention Studies at the University of California, San Francisco, and colleagues point out in a recent article in the journal *Sexually Transmitted Infections*, the decrease in HIV infection (unaccompanied by a drop in STIs) may be due in part to the success of HAART in reducing HIV infectivity (see "New Approaches to HIV Prevention," page 29).

Serosorting and Disclosure

In November 2006, SFDPH launched several advertisements as part of a new "Disclosure Initiative." The ads—which do not condone condomless sex, but emphasize the importance of HIV status disclosure among partners—have been interpreted as a nod toward serosorting.

And new methods of serostatus disclosure are popping up everywhere. Among these emerging services is the "STFree Card," a driver's license-sized card bearing the cardholder's photo and a code that allows potential partners to retrieve the cardholder's HIV test results from a hotline. Such services—while unable to guarantee accuracy—can be tools for serosorting in the sense that they facilitate HIV serostatus disclosure, especially for people who are uncomfortable having

a verbal conversation about their status. (STFree.com warns that its service is a "sexual credit check" rather than a substitute for disclosure conversations, and encourages condom use.)

Public health officials have been less outspoken about the continuing risk for STI transmission. Unprotected oral, anal, and vaginal sex still carry the risk of contracting or transmitting an STI, and this risk represents a significant public health concern. An increasing reliance on serosorting for unprotected sex may, in fact, exacerbate STI epidemics—a positive individual might not have to worry about contracting HIV, but other STIs are still a danger. On the other hand, the emphasis serosorting places on knowing one's own HIV status may prompt more people to seek regular sexual health screenings.

Personal Benefits of Serosorting

For many, condoms have significant shortcomings: they can be awkward and cumbersome to use, may dull the physical sensations of sex, often carry cultural stigma, and may create an emotional barrier between partners. Furthermore, 26 years into the HIV/AIDS epidemic, there is a sense of burn-out and fatigue with "use a condom every time" safer-sex messages.

HIV positive men and women who prefer to have sex without condoms may find that serosorting decreases their anxiety about transmitting HIV, allowing them to enjoy sex more fully, both physically and emotionally. Even for individuals who practice safer sex, serosorting can reduce anxiety about possible condom failure. Serosorting can also be a way for HIV positive people to more readily find partners for a long-term relationship, as some seropositive individuals prefer to date others who understand the experience of living with HIV.

It is also possible that through serosorting or using information about a potential partner's serostatus to inform sexual decision-making

(e.g., strategic positioning), an HIV positive person may forestall legal repercussions in cases of inadvertent transmission. Currently, states with laws criminalizing transmission of HIV require "proof of intent" in spreading HIV in order to prosecute.

While HIV is rarely intentionally spread, and there is a plethora of evidence that most HIV positive individuals take great care to avoid transmitting the virus, it is important to consider the concerns positive people may have about the cultural implications—and in this case the possible legal penalties—of transmission. Those bent on prosecution could argue that by having sex with someone who is known to be HIV negative, the HIV positive partner assumes greater liability for transmitting the virus, despite mutual consent and measures taken to reduce risk. Gay men in particular, who may be more aware of the policing of sex (e.g., the history of sodomy laws), may use serosorting as a way to reduce the possibility of legal repercussions due to accidental transmission.

Serosorting and Stigma

Some HIV positive individuals find that serosorting helps to alleviate the discomfort and potential rejection sometimes associated with disclosure, and seeking sexual partners through venues (such as Web sites) specifically designed for finding HIV positive peers dramatically decreases the likelihood of meeting partners who turn out to be HIV negative. However, relying on passive serosorting—providing information that allows potential partners to serosort—puts positive individuals at greater risk for the possible repercussions associated with being open about one's HIV status, such as loss of medical confidentiality and possible discrimination.

In addition, while some people find that serosorting reinforces a sense of community and connectedness by helping them to meet others who intimately understand life with

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HIV, critics point out that fostering community through serosorting may widen rifts between positive and negative people. Choosing to develop relationships or have sex exclusively with same-status people may dramatically limit an individual's pool of prospective partners and social contacts. The divisive potential of serosorting has been of particular concern within the gay community.

Risks for HIV Positive Individuals

While some HIV positive individuals may feel that unprotected sex with positive partners is "safe," STIs and dual infection are two potential concerns.

Sexually Transmitted Infections

Any increase in unprotected sex raises the odds of contracting STIs, which can have particularly grave implications for individuals with compromised immune systems. For example, bacterial STIs (such as gonorrhea, chlamydia, and syphilis) and viral STIs (including hepatitis A, B, or C, herpes simplex 2, and human papillomavirus), all transmissible through unprotected sex, can produce more severe symptoms in HIV positive people. In a positive individual, for example, untreated syphilis has a greater potential to spread to the nervous system and cause significant damage or death.

Additionally, HIV positive women are at increased risk for pelvic inflammatory disease (PID) and other serious complications related to gonor-

rhea or chlamydia infections; PID can lead to infertility or complications with pregnancy.

Miriam Alter, MD, of the Centers for Disease Control and Prevention (CDC) estimates that among HIV positive people worldwide, two million to four million are chronically infected with hepatitis B (HBV) and an estimated four million to five million are chronically infected with hepatitis C (HCV). Viral hepatitis is of particular concern for HIV positive individuals because of the threat of liver inflammation. Antiretroviral therapy can be hard on the liver, and hepatitis co-infection increases the likelihood of liver damage. For HIV positive individuals who consume large amounts of alcohol, this becomes a triple burden on the liver, as heavy alcohol consumption can cause fibrosis and cirrhosis.

Hepatitis A (HAV) is transmitted through contact with feces, which in a sexual context may occur during oral sex or rimming (oral-anal sex), or through putting hands or sex toys near the mouth after they have come in contact with even a small amount of fecal matter. HBV is transmitted through contact with blood, semen, and vaginal fluid, which may occur during unprotected oral, vaginal, or anal sex. Even if a partner does not ejaculate during unprotected sex, HBV may be transmitted via microscopic tears in the rectal or vaginal lining.

HCV is known to be transmitted through blood-to-blood contact (e.g., sharing needles or other equipment for injecting drugs). At this point, it is unclear how frequently HCV is sexu-

ally transmitted. Studies indicate that the likelihood of transmission between monogamous heterosexual partners is very low (less than 5%); the risk is higher among men who have sex with men and individuals with multiple sex partners, as illustrated by recent outbreaks of apparently sexually transmitted HCV among HIV positive gay and bisexual men in the United Kingdom and Europe. In these cases, HCV infection was associated with unprotected anal intercourse, fisting, rimming, and the presence of other STIs. In fact, HIV infection itself appears to increase the risk of HCV transmission. Individuals infected with HCV and HAV or HBV are at greater risk for severe liver damage, and current CDC guidelines recommend that people with HCV and/or HIV—as well as all men who have sex with men—be vaccinated against HAV and HBV (there is currently no vaccine for HCV).

Research has shown that HIV positive women and men are more likely to be infected with human papillomavirus (HPV) than their HIV negative counterparts and are more likely to develop precancerous cervical or anal cell changes caused by certain strains of HPV (other strains cause genital and anal warts). According to Joel Palefsky, MD, an HPV researcher at the University of California at San Francisco, the prevalence of oral, anal, or vaginal HPV infection in HIV positive individuals increases progressively with declining CD4 cell counts.

The risk of cervical, anal, genital, or oral cancer due to HPV is a major concern for HIV positive persons, in particular those with more serious immunosuppression. HIV positive individuals—especially those who have sex without condoms—should have regular sexual health check-ups, including Pap smears, which can detect precancerous cell changes at a treatable stage. Cervical Pap smears are part of routine health care for HIV positive and negative women alike;

anal Pap smears are not yet considered routine for HIV positive individuals, but some experts believe they should be.

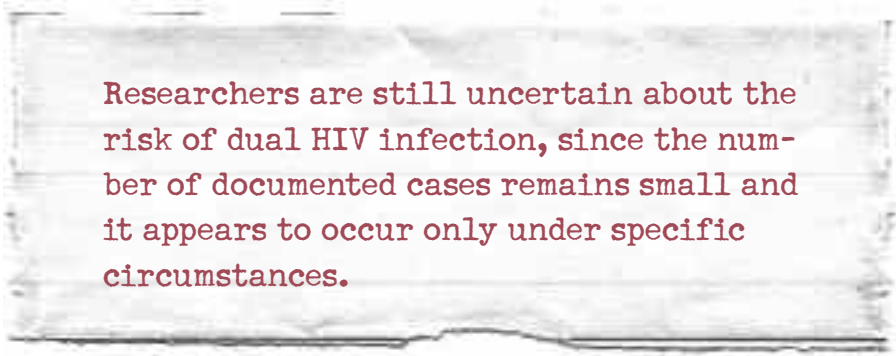
Along with their other damaging consequences, certain STIs (e.g., herpes simplex 2) can also increase the likelihood of contracting or transmitting HIV, and STI treatment therefore can serve as a strategy for preventing new HIV infections (see “New Approaches to HIV Prevention,” page 29).

HIV Dual Infection

HIV dual infection, or superinfection, has emerged as a concern for HIV positive people who practice serosorting in order to have unprotected sex. It is a common perception that once a person has become HIV positive, he or she no longer needs to worry about HIV infection and is essentially free of major risks from unprotected sex with other HIV positive individuals. Health officials have cautioned that reinfection may occur with new, possibly drug-resistant strains of HIV, which can further weaken the immune system, hasten disease progression, and potentially limit treatment options.

The scenario is as follows: An individual has HIV Strain A, which is resistant to Drug 1, and becomes infected with his partner’s Strain B, which is resistant to Drugs 2 and 3. At this point, some researchers suggest, a recombinant Strain C may emerge that is resistant to all three drugs. Hence, dual infection can drastically limit antiretroviral treatment options—potentially rendering multiple drug classes less potent or even ineffective for reinfected individuals.

There were widespread reports in 2005 about a gay man in New York City who progressed to AIDS in a matter of months and was unresponsive to most antiretroviral drugs (see “News Briefs,” *BETA*, Summer 2005). While some health officials and community members initially speculated that the man might have an aggressive “superstrain” of HIV, Geoffrey



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Gottlieb, MD, and David Nickle, MD, of the University of Washington School of Medicine suggested in a letter to *The Lancet* that it might actually be a case of dual infection.

Although investigators have to date been unable to determine whether the New York man was simultaneously infected with multiple strains or did indeed represent a case of reinfection, other research groups have reported on cases with clearer evidence. In the August 12, 2005, issue of *Acquired Immune Deficiency Syndromes*, Davey Smith, MD, of the University of California at San Diego and colleagues reported that a man with wild-type (drug-sensitive) HIV had apparently been reinfected with a strain resistant to protease inhibitors, which he had never taken. In an earlier case reported by the same researchers, an individual was first diagnosed with a drug-resistant strain and was found some months later to also have wild-type HIV despite not having taken antiretroviral drugs before the transmission event that presumably caused the reinfection.

Researchers are still uncertain about the risk of dual HIV infection, since the number of documented cases remains small (fewer than 20) and it appears to occur only under specific circumstances (e.g., during acute or early infection). However, the possibility of reinfection with a drug-resistant strain means that HIV positive individuals who practice condomless sex with positive partners may not be entirely free of risk. (For more

information on reinfection, see “Dual HIV Infection” in the Winter 2006 issue of *BETA*.)

Risks for HIV Negative Individuals

In addition to the risk posed by STIs, serosorting for the purpose of condomless sex involves a very serious danger: the possibility that a presumed negative partner may actually have acute HIV infection. The standard HIV antibody screening test checks for antibodies against HIV, which are naturally produced by the body. However, the immune system typically takes one to three months—and in rare cases as long as six months—to develop detectable quantities of antibodies (the hallmark of seroconversion).

As people who have had an HIV test may recall hearing from a doctor or counselor, the antibody test will not detect HIV infection during this “window period.” A supposedly HIV negative person who has, in fact, been recently infected with HIV may receive a negative test result but still be capable of transmitting the virus. Indeed, HIV viral load skyrockets during acute infection, as the body has yet to produce enough antibodies to keep the virus (relatively) in check, and researchers believe that newly infected individuals are more infectious during this period than they will be during long-term, chronic infection.

This presents a significant problem for HIV negative people who rely on serosorting in order to have unpro-

tected sex. While the polymerase chain reaction (PCR) test, which detects actual HIV genetic material, is better at detecting acute infection, this test is expensive and its use is limited in most health-care settings. As critics have pointed out, the effectiveness of serosorting as a risk-reduction strategy relies on the accuracy of an individual's disclosure of his or her HIV status. A prospective partner may, in all good faith, claim to be negative, yet unknowingly be capable of passing the virus on to others.

A significant proportion of people practicing serosorting who think they are HIV negative or do not truly know their status may, in fact, be HIV positive. In the vast majority of studies in which investigators have asked participants for self-reported HIV status and then conducted follow-up blood screening, those who were unsure of their HIV status overwhelmingly tended to be positive.

As serosorting becomes more commonplace, conversations in which a person discloses his or her HIV status before sex may become the norm. Perhaps individuals unsure of their status will be more likely to seek out HIV testing as peers and partners emphasize the need to know HIV status for certain.

Conclusion: Public Health and Personal Responsibility

Serosorting has implicitly been a major component of prevention strategies over the past ten years to reduce the spread of HIV. The "Knowing is Beautiful" campaign—which stressed the importance of testing and asking partners about their HIV status—is an example of an implicit message about serosorting. While this campaign and others like it do not suggest that individuals should only have relationships with people of the same serostatus, they do assume that if HIV positive people are aware of a partner's negative status, they will take steps to ensure that the virus is not transmitted. Another example can be seen in

recent advertisements that show two men with the captions, "He'd tell me if he's positive" and "He'd tell me if he's negative."

Public health efforts that implicitly encourage serosorting, or suggest that HIV positive people can reduce the risk of spreading the virus by engaging in strategic sexual positioning, reflect what appears to be a shift in responsibility for HIV prevention. The prevention messages of the 1980s and 1990s—which encouraged all individuals to "use a condom every time"—proved to be less realistic and effective than initially expected. Such efforts were followed by a focus on "secondary prevention," attempting to prevent new infections by empowering and shifting responsibility to HIV positive people; this approach, too, may not have been as effective as originally anticipated.

Serosorting distributes responsibility among HIV positive and negative individuals alike. Any move toward encouragement of serosorting appears to suggest that both partners are responsible in a way that "use a condom every time" and secondary prevention did not.

However, serosorting for unprotected sex can still be a risky endeavor for both HIV positive and HIV negative people. Individuals who serosort specifically in order to enjoy unprotected sex should be aware that serosorting, while potentially offering public health benefits, does not guarantee personal safety for either partner.

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