

# Drinking and HIV/AIDS Risk

## The Issue in Brief

The nature of an association between alcohol consumption and the transmission of HIV has been the topic of considerable debate.

There is no evidence of a direct causal relationship between alcohol consumption and HIV transmission.

Increased risk for HIV transmission has been found to correlate with certain high-risk behaviors.

Particular patterns of drinking have also been associated with heightened risk for HIV transmission and coincide with other high-risk behaviors.

Certain groups have been identified as being at particular risk for HIV infection because of their lifestyle, age, behavior, or other relevant characteristics. These groups are also more likely than the general population to engage in harmful drinking patterns and multiple risk-taking behaviors.

Increased likelihood of sexual risk behavior and HIV transmission has been described in certain venues and settings where drinking takes place.

Several individual risk factors identified for HIV transmission also correlate with other high-risk behaviors, including harmful drinking patterns.

Personality traits such as impulsivity and sensation-seeking are key predictors of HIV risk.

Alcohol expectancies, particularly around sexual pleasure and drinking, play an important role in risk-taking and HIV transmission.

The relationship between risk-taking, drinking, and HIV/AIDS transmission is also strongly influenced by cultural and societal factors.

Heavy drinking may have an adverse outcome on the progression of HIV-related illness and can interfere with treatment.

ICAP's Health Briefings cover the effects of alcohol consumption on health. They offer an overview of the relationship between drinking patterns and health outcomes, compile the key literature, and provide the reader with an extensive bibliography that refers to original research on each topic. The Briefings attempt to present the balance of the available evidence. They have been peer reviewed by external experts and do not necessarily reflect the views of ICAP or its sponsoring companies.

## Relevant ICAP Publications:

International Center for Alcohol Policies (ICAP). (2005-present). Module 24: HIV/AIDS, high-risk behaviors, and drinking patterns. In *ICAP Blue Book: Practical guides for alcohol policy and prevention approaches*. Available: <http://www.icap.org/>.

## What Is the Evidence?

**The nature of an association between alcohol consumption and the transmission of HIV has been the topic of considerable debate.**

**There is no evidence of a direct causal relationship between alcohol consumption and HIV transmission (5, 6).**

However, research has shown that HIV-positive individuals are more likely to have potentially harmful<sup>1</sup> drinking patterns than to be non-drinkers. This relationship appears to hold across different groups and cultures (5, 7).

### Risk-taking, drinking, and HIV/AIDS

**Increased risk for HIV transmission has been found to correlate with certain high-risk behaviors.**

These include:

- harmful drinking patterns, including heavy drinking and intoxication (6, 8-11);
- high-risk sexual behavior (e.g., unprotected intercourse, multiple and concurrent sex partners, and casual sexual encounters with partners of unknown HIV status) (12-16);
- early initiation of sexual activity (13, 17);
- sex with injection drug users or sex workers (18, 19);
- transactional sex (the exchange of sex for money or drugs) (13, 17, 19);
- substance abuse (20).

**Particular patterns of drinking have been associated with heightened risk for HIV transmission; they also coincide with other high-risk behaviors identified as having a role in HIV transmission.**

- Compared to moderate drinkers and abstainers, individuals who engage in frequent heavy and harmful drinking and intoxication are more likely to also engage in behaviors associated with increased risk for HIV/AIDS (21-24).

- In studies conducted in Africa and North America, the risk of HIV infection was significantly higher for those with harmful drinking patterns than for other groups; this relationship was independent of sexual orientation (5, 7, 25).
- Research shows that heavy drinkers are more likely to engage in sexual risk behaviors, placing them at risk for HIV infection and transmission (7, 24, 26, 27).
- Similarly, intoxication has been correlated with increased likelihood of engaging in sexual risk behaviors (18).

**Certain groups have been identified as being at particular risk for HIV infection because of their lifestyle, age, behavior, or other relevant characteristics.** These groups are also more likely than the general population to engage in harmful drinking patterns and multiple risk-taking behaviors.

Such high-risk groups include:

- men who have sex with men (25, 28, 29);
- runaway and homeless youth (29);
- injection drug users (19, 29);
- sex workers and victims of sexual coercion (19, 29);
- truck drivers and other mobile populations (19).

There is evidence that young people are especially likely to engage in multiple behaviors associated with increased risk for HIV (1, 19, 21, 30-32).

- For example, in a study of female bar servers in Tanzania, younger women were less likely to report condom use than older women, particularly if younger women also consumed alcohol (17).

**Increased likelihood of sexual risk behavior and HIV transmission has been described in certain venues and settings where drinking takes place.**

Where sexual networking is combined with heavy alcohol consumption, risk for HIV transmission may be high (33-36).

- For example, in a South African study, HIV infection among respondents who reported meeting sexual partners in *shebeens* and other informal drinking venues was higher than in the general population (34).
- In a study from southern India, HIV prevalence in patrons of local alcohol venues ("wine shops") was higher than in the general population, as was the likelihood of having multiple partners and engaging in unprotected and transactional sex (33).

1 Definitions of alcohol consumption levels considered "harmful," "heavy," "abusive," "problematic," and "risky" vary in the scientific literature. No consensus exists on the exact threshold for each of these drinking patterns. World Health Organization's *Lexicon of Alcohol and Drug Terms* offers some definitions: [http://www.who.int/substance\\_abuse/terminology/who\\_lexicon/en/](http://www.who.int/substance_abuse/terminology/who_lexicon/en/). In addition, governments of numerous countries around the world have issued guidelines that aim to establish levels of drinking thought to be "moderate," "safe," or "low-risk." These can be found on the ICAP website at: <http://www.icap.org/PolicyIssues/DrinkingGuidelines/GuidelinesTable/tabid/204/Default.aspx>.

Among the facilitating factors for unsafe sexual practices in these venues are low lighting, seductive music, unisex toilets, and lack of easy access to condoms (35, 36).

- For example, according to a survey in Mexico, drinking venues that offered dark rooms intended for anonymous sex encouraged high-risk behaviors (19).

### Individual risk factors

**Several individual risk factors that have been identified for HIV transmission also correlate with other high-risk behaviors, including harmful drinking patterns.**

Personality traits such as impulsivity and sensation-seeking are key predictors of HIV risk (37).

- These traits have been also associated with high-risk drinking and sexual risk-taking and have similar predictive value in men and women (1).
- Sensation-seeking has been found to predict HIV risk behavior, which in turn predicts drinking in sexual contexts (38).
- Sensation-seeking correlates with alcohol consumption in proximity to sex—i.e., drinking just prior to sexual encounters—among high-risk groups (1, 39).

Alcohol expectancies, particularly around sexual pleasure and drinking, also play an important role in risk-taking and HIV transmission (1-4).

- Sensation-seeking is associated with stronger expectancies that alcohol consumption will enhance sexual pleasure—although the nature of the association is unclear (37, 40-42).
- Alcohol consumption may also lower inhibitions around sexual behavior and risk-taking (43, 44).
- In some individuals, drinking before sex increases the likelihood and number of subsequent unprotected sexual encounters (45).
- Experimental studies have found that higher levels of alcohol intake and stronger alcohol expectancies are associated with greater motivation to engage in sexual risk-taking (46).

### Cultural and societal risk factors

**The relationship between risk-taking, drinking, and HIV/AIDS transmission is also strongly influenced by cultural and societal factors.**

Cultural views on gender roles and gender relations play an important part in shaping behaviors that contribute to HIV transmission, and also help shape drinking patterns.

- For example, culturally determined notions of masculinity are associated with male dominance over women and sexual conquest, as well as with sexual risk-taking and increased levels of alcohol abuse (47).
- Gender inequality may influence women's ability or willingness to negotiate condom use and other safe sex practices (48).
- Perceptions that associate alcohol and sex with aggressive (or "manly") behaviors may help excuse acts of violence and/or sexual coercion, contributing to HIV risk (19, 49).
- Women's acceptance of drinks from men may be viewed as signifying consent to sex; refusal might similarly be used to "justify" resorting to sexual coercion (50).

Expectancies around alcohol are also largely culturally defined (19).

Poverty, inequality, discrimination, social exclusion, limited opportunities, and poor social or institutional support contribute to high-risk behaviors, including harmful drinking patterns.

- These factors may expose individuals to co-occurring risks such as sexual coercion and violence and/or contribute to the incidence of transactional sex for drugs, money, or shelter (19).

### Drinking and disease progression

**Heavy drinking may have an adverse outcome on the progression of HIV-related illness (29).**

According to experimental research in animal models, alcohol consumption, particularly heavy drinking, may compromise the immune response, increasing risk for HIV infection, the progression of HIV to AIDS, and subsequent opportunistic infections (29, 51-54).

Some studies have shown that individuals with HIV/AIDS are more likely to abuse alcohol at some point in their lives.

- HIV-positive individuals who are also heavy drinkers are at heightened risk for various medical and psychiatric complications (55).

**Heavy drinking can interfere with treatment for HIV/AIDS.**

Individuals with harmful drinking patterns may be less likely to seek treatment for HIV/AIDS (26, 29) and have been reported to have poor compliance with treatment regimens (56).

- A number of social factors (e.g., lack of housing, illicit drug use, social stigma, and lack of support for infected individuals) are known to deter compliance with HIV/AIDS treatment among problem drinkers (57).

Heavy alcohol consumption is also associated with reduced therapeutic efficacy of antiretroviral (ARV) drugs, used in the treatment of HIV/AIDS (29).

- This relationship may be related to compromised liver function resulting from heavy drinking, and a reduced ability to metabolize certain ARVs, resulting in poorer HIV treatment outcomes (58).
- HIV-positive individuals who are also heavy drinkers are at increased risk for non-compliance with prescribed therapy and for developing ARV drug resistance (58-60).

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