on the use of condoms as a highly effective strategy to prevent the sexual transmission of HIV

The consistent and correct use of internal (sometimes referred to as female) or external (sometimes referred to as male) condoms are highly effective strategies to help prevent the sexual transmission of HIV. When this highly effective strategy is used consistently and correctly the risk for HIV transmission is very low.

SEPTEMBER 2019
Over the past several years the HIV prevention toolbox has expanded significantly. This is due to a rapid growth in our knowledge of effective approaches that help prevent the transmission of HIV. However, to maximize the impact of these approaches on the HIV epidemic, we must effectively increase awareness, uptake and proper use of them.

The CATIE statements summarize the best available evidence on the effectiveness of three approaches to help prevent the sexual transmission of HIV. These statements were developed to help service providers in Canada adapt their programs and incorporate this evidence into their messaging.

There are three highly effective strategies to help prevent the sexual transmission of HIV:

- The consistent and correct use of condoms
- The consistent and correct use of antiretroviral treatment (ART) by people living with HIV to maintain an undetectable viral load
- The consistent and correct use of oral pre-exposure prophylaxis (PrEP)

When any highly effective strategy is used consistently and correctly, the risk for sexual HIV transmission ranges from zero to very low.

The following statement focuses on condoms. It begins with a simple key message, followed by recommendations for service providers and a list of available tools and resources. It also provides a review of the evidence that service providers can use for more specific discussions with clients. Please consult the companion statements for more information on the other two highly effective strategies.

**KEY MESSAGE**

The consistent and correct use of internal (sometimes referred to as female) or external (sometimes referred to as male) condoms are highly effective strategies to help prevent the sexual transmission of HIV. When this highly effective strategy is used consistently and correctly the risk for HIV transmission is very low.

For more information, please see the evidence review at the end of this statement.

**RECOMMENDATIONS FOR SERVICE PROVIDERS**

Internal (sometimes referred to as female) condoms and external (sometimes referred to as male) condoms are an essential component of HIV prevention efforts and continue to have an important role to play in the prevention of HIV and sexually transmitted infections (STIs). People working with communities at risk for or living with HIV have an important role to play in promoting this approach as a highly effective prevention strategy.

Below are recommendations on how you might improve the uptake and use of condoms among your clients.

1. **Improve awareness of condoms as a highly effective HIV prevention strategy, including the factors important for maximizing their effectiveness.** Any educational and counselling activities provided for HIV-negative and HIV-positive clients should include information on the HIV and STI prevention benefits of condoms and on how to use them consistently and correctly.

   Education and counselling activities should also include discussion of other prevention strategies such as, but not limited to, pre-exposure prophylaxis (PrEP) and the use of antiretroviral treatment (ART) to maintain an undetectable viral load. Encourage clients to choose the combination of strategies that will work most effectively for them.

   Internal condoms can be promoted to your clients as an effective alternative to external condoms for both vaginal and anal sex.

   It is important to remind clients of the correct use of condoms so they can prevent breakage, slippage and leakage during sex, and maximize condom effectiveness. The correct use of condoms means:

   - finding an external condom with the right fit and feel
   - storing condoms at room temperature and regularly replacing condoms that are kept in a wallet, purse or pocket
   - checking the expiry date and making sure the packaging isn’t damaged
   - using a new condom for every act of vaginal or anal sex and considering using a condom for oral sex
   - using a new condom with every sex partner or when sharing sex toys
   - putting the condom on and taking it off correctly
   - applying sufficient and appropriate lubrication – only water- or silicone-based lubricants should be used with latex condoms; saliva should not be used as lubrication
CATIE STATEMENT on the use of condoms as a highly effective strategy to prevent the sexual transmission of HIV

- using a condom for the entire act of sex (no delayed application or early removal)

The correct way to put on and take off an external condom is to:
- carefully open the packaging so the condom does not tear
- ensure the condom is put on the right way round
- pull back the foreskin of an uncircumcised penis
- squeeze the tip of the condom and roll it over the erect penis (to remove air and leave space for semen to collect) and ensure it is unrolled to the base of the penis
- immediately after sex, hold on to the condom while pulling the penis out of the vagina or anus
- carefully pull the condom from the penis only when there is no contact with the partner’s body and take care that no semen spills out
- safely dispose of the condom

The correct way to put on and remove an internal condom is to:
- carefully open the packaging so the condom does not tear
- put lubricant on the outside of the closed end
- squeeze together the sides of the inner ring at the closed end of the condom and insert into the vagina or anus
- push the inner ring into the vagina or anus as far as it will go, with the outer ring lying outside the vagina or anus
- if the outer ring is pushed inside the vagina or anus, stop and put it back in the right place
- make sure the penis enters the condom and does not go between the condom and the wall of the vagina or rectum
- immediately after sex, slightly twist and pull the end of the condom to remove it, taking care not to spill any semen in the vagina or rectum
- safely dispose of the condom

Unlike most HIV prevention strategies, condoms can help to prevent other STIs such as gonorrhea, chlamydia, herpes and syphilis, as well as unintended pregnancy. It is important to encourage condom use when there is an STI present or when there is a risk for STI transmission.

2. Facilitate and support the use of condoms as a prevention strategy. Condoms and lubricant should be made available (free, if possible) and offered to your clients during interactions with them. Encourage clients to find a condom that has the right fit and feel for them and a lubricant that is compatible with the condom they have chosen. Explore barriers to the consistent and correct use of condoms and support clients to overcome them. Common barriers to consistent condom use may include difficulty negotiating their use, lack of availability at the time of sex, erectile dysfunction, reduced pleasure or intimacy, poor comfort, and latex allergies. Possible solutions to these barriers include planning ahead to ensure condoms are available, using lubricant, and finding a brand of external condom that works best for the person. The solution to latex allergies may be to use non-latex external condoms, or opt for an internal condom instead of an external condom. You may also want to encourage clients to seek medical advice for erectile dysfunction, especially if condoms interfere with their ability to get or maintain an erection during sex. Exploring barriers to condom use with clients (such as the relationship between condoms and intimacy or difficulties with condom negotiation) can facilitate a discussion about highly effective HIV prevention strategies other than condoms, such as the use of PrEP, for example.

3. Encourage a comprehensive plan for sexual health. Discuss how condoms fit into a comprehensive plan for sexual health, including regular STI testing and other safer sex strategies.

When used consistently and correctly, condoms are a highly effective strategy to help prevent the sexual transmission of HIV.

There are circumstances in which condoms can fail to prevent HIV transmission. Condoms can fail to prevent HIV infection if they break, slip or leak, which can happen even if they are used correctly. Condoms also need to be used consistently in order to maximize effectiveness. It is important that clients understand the limitations of condoms, and the other options available to them so they can make an informed decision about how condoms fit into their own comprehensive sexual health plan.

If a condom is not used or breaks, then post-exposure prophylaxis (PEP) is a possible option for clients to help prevent HIV from that exposure. For clients who rely on non-condom HIV prevention strategies (such as PrEP or the use of ART as prevention), encourage condom use during periods of heightened HIV transmission risk, such as when
PrEP medications are missed. Using condoms as part of a combination HIV prevention strategy can also help prevent STIs, which other highly effective strategies do not.

4. **Address underlying risk of HIV transmission.**
HIV prevention counselling offers an opportunity to engage individuals in additional services. You can help your clients address the underlying factors that may increase their HIV risk, such as depression or alcohol and other substance use; reinforce safer sex strategies; and facilitate the increased use of all appropriate prevention strategies. You may find that counselling alone is not enough. You may need to provide – or link clients to – appropriate and relevant support services.

5. **Offer comprehensive couples-based counselling.**
For couples, you may want to offer to counsel both partners in the relationship at the same time (couples-based counselling) as this may be more effective than counselling partners individually. Couples-based counselling can create a supportive space where clients can come to a consensual agreement on how to reduce their risk of HIV transmission, develop ways to support each other in using HIV prevention strategies consistently and correctly, and discuss potentially sensitive issues relevant to HIV prevention and condom use. Be prepared to discuss issues such as what a couple wants from sex and the type of sex they enjoy most; the desire for pleasure, intimacy, conception, and monogamy or non-monogamy; and disclosure of sex outside the relationship. This counselling can also support non-monogamous clients to develop strategies or agreements to help prevent HIV or STIs from outside partners, such as the consistent and correct use of condoms when having sex outside the relationship.

6. **Incorporate information about condoms into all prevention programming to increase its impact.**
In-person counselling is one way to convey information about condoms as a highly effective prevention strategy. However, this information can be integrated into a variety of other communication channels such as print publications, websites and campaigns to increase its reach and impact.

7. **Be prepared to discuss the legal issues around HIV disclosure.**
Canadian law requires that people tell their sex partners that they have HIV in certain circumstances. However, the law and its application are evolving. For the most up-to-date information on when people with HIV have a legal duty to disclose their HIV status, contact the Canadian HIV/AIDS Legal Network.

### TOOLS AND RESOURCES

#### CATIE resources

- Condoms for the prevention of HIV transmission – Fact sheet
- Couples HIV testing and counselling – Prevention in Focus
- HIV disclosure

#### EVIDENCE

Laboratory testing shows that condoms made of latex, polyurethane, nitrile and polyisoprene are impermeable to HIV, meaning that HIV cannot pass through condoms made of these materials. Condoms made of lambskin are not impermeable to HIV and should not be used as an HIV prevention strategy.

Condoms are impermeable to HIV, but can fail to prevent exposure to HIV if they break, slip or leak during use. A break, slip or leak during condom use is known as condom failure. This can reduce the ability of condoms to prevent HIV transmission and can happen even when used correctly.

Breakage refers to a condom tearing during sex. In studies enrolling mostly heterosexual couples, breakage rates for external condoms ranged between 0.4% and 3.4%. The breakage rate for internal condoms in one study was 0.1%.

Slippage occurs when an external condom does not remain on the penis during sex or when an internal condom does not remain in the vagina or rectum during sex. Slippage rates for...
CATIE STATEMENT on the use of condoms as a highly effective strategy to prevent the sexual transmission of HIV

external condoms range from 0.63% to 1.1%. The slippage rate for internal condoms in one study was 5.6%. Leakage occurs when seminal fluid seeps out of the condom during or after sex. Leakage rates for external condoms range from 0.4% to 6.5%.

Correct use of condoms means they are used with sufficient (and appropriate) lubricant, as this can decrease friction that can cause condom failure. Water- and silicone-based lubricants are safe to use with all condoms. Oil-based lubricants should not be used as they can compromise the integrity of latex and polyisoprene condoms and increase the risk of condom breakage.

In studies of condom breakage, slippage and leakage, it was not possible to know how many participants were actually using condoms correctly. However, research suggests that rates of condom failure decrease with more frequent condom use and the number of previous failure experiences. This evidence all points to the conclusion that over time people learn to use condoms correctly and this reduces failure rates. However, a risk of failure is always possible, even for experienced condom users who do so consistently and correctly.

Condoms have not been evaluated for reducing HIV transmission risk in randomized-controlled trials, which are generally considered to produce the highest quality evidence. However, observational studies of external condoms have been conducted among serodiscordant couples (in which one partner is HIV positive and the other is HIV negative). Subsequent analyses (meta-analyses) of many studies in heterosexual couples have estimated that the effectiveness of consistent condom use ranges between 69% and 94%. Similar results (70% to 91% effectiveness) have been observed in studies of gay, bisexual and other men who have sex with men (gbMSM). This wide range of estimates may have to do with the limitations of observational research and the different ways in which researchers have conducted the analyses.

Observational studies and the meta-analyses of these studies have inherent problems that don’t allow us to know how effective condoms are when used consistently and correctly. There are three key factors that limit our ability to know how effective condoms are when used consistently and correctly:

- The available studies also relied on self-reported condom use to determine if participants were consistent condom users. We know that participant self-reports in studies are an unreliable way of measuring certain types of behaviours, particularly those that are considered socially undesirable such as sex without a condom. If enough people over-reported consistent condom use this will result in a lower estimate of condom effectiveness than if condoms had actually been used consistently.

- Finally, all of these studies were observational, which means that people were not randomized to use condoms or not. Without randomization, the two groups (those that used condoms consistently and those that did not) may be different on some very important factors, other than condom use, that might better account for the low level of effectiveness found in these studies.

Based on the most recent meta-analyses and studies that assessed the mechanical properties of condoms (permeability, breakage, slippage and leakage) we conclude that condoms are a highly effective strategy to help prevent the sexual transmission of HIV when used consistently and correctly. However, observational studies suggest that a high level of effectiveness may be difficult to achieve for some people.

REFERENCES


CATIE STATEMENT on the use of condoms as a highly effective strategy to prevent the sexual transmission of HIV

**DISCLAIMER**

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

CATIE provides information resources to help people living with HIV and/or hepatitis C who wish to manage their own health care in partnership with their care providers. Information accessed through or published or provided by CATIE, however, is not to be considered medical advice. We do not recommend or advocate particular treatments and we urge users to consult as broad a range of sources as possible. We strongly urge users to consult with a qualified medical practitioner prior to undertaking any decision, use or action of a medical nature.

CATIE endeavours to provide the most up-to-date and accurate information at the time of publication. However, information changes and users are encouraged to consult as broad a range of sources as possible. Users relying on this information do so entirely at their own risk. Neither CATIE, nor any of its partners, funders, employees, directors, officers or volunteers may be held liable for damages of any kind that may result from the use or misuse of any such information. The views expressed herein or in any article or publication accessed or published or provided by CATIE do not necessarily reflect the policies or opinions of CATIE nor the views of its partners and funders.

**PERMISSION TO REPRODUCE**

This document is copyrighted. It may be reprinted and distributed in its entirety for non-commercial purposes without prior permission, but permission must be obtained to edit its content. The following credit must appear on any reprint: This information was provided by the Canadian AIDS Treatment Information Exchange (CATIE). For more information, contact CATIE at 1-800-263-1638 or info@catie.ca.

Funding has been provided by the Public Health Agency of Canada.

CATIE statements are available for free at [www.catie.ca](http://www.catie.ca)

CATIE Ordering Centre No: ATI-40245
(aussi disponible en français, ATI-40246)