SIECUS fact sheet

the truth about condoms

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Condoms are a barrier method of contraception that, when used consistently and correctly, can prevent pregnancy by blocking the passage of semen into the vaginal canal. Condoms can also prevent the exchange of blood, semen, and vaginal secretions, which are the primary routes of STD transmission.

In recent years, as a result of misinformation and insufficient research, the efficacy of condoms, especially in terms of STD prevention, has been debated in many forums.

Research continues to show that condoms are one of the best methods of preventing unwanted pregnancy and are one of the only methods for sexually active individuals to protect themselves against STDs, including HIV.

This updated Fact Sheet includes information on both the male and female condom; on their effectiveness in protecting against unplanned pregnancies and STDs, including HIV; and on condom breakage and slippage, regulations and tests, and consistent and correct use.

This Fact Sheet is designed to provide the most recent information about condoms and to clear up confusion and misunderstandings.

male condom

The male condom is a barrier method of contraception that is placed over the glans and shaft of the penis. Male condoms are available in latex, lambskin, and polyurethane.

Condoms manufactured from latex are the most popular, and studies conducted on the ability of condoms to prevent the transmission of STDs and HIV most often involve latex condoms.

Condoms manufactured from lambskin, also known as "natural skin," or "natural membrane," are made from the intestinal lining of lambs. While these condoms can prevent pregnancy, they contain small pores that may permit passage of some STDs, including HIV, the hepatitis B virus, and the herpes simplex virus.[1]

Condoms manufactured from polyurethane are thinner and stronger than latex condoms, provide a less constricting fit, are more resistant to deterioration, and may enhance sensitivity.[2]

Polyurethane condoms are also recommended for those who have latex allergies. Polyurethane condoms have not been studied for their effectiveness in the prevention of STD transmission.[3] In addition, condoms made of polyurethane are compatible with oil-based lubricants, unlike latex condoms which must be used with water-based lubricants.[4]

CONDOMS AND STDS: CDC PREVENTION MESSAGES

The following are prevention messages recently developed by the CDC:

- Latex condoms, when used consistently and correctly, are highly effective in preventing the transmission of HIV, the virus that causes AIDS. In addition, correct and consistent use of latex condoms can reduce the risk of other STDs.
- Latex condoms, when used consistently and correctly, can reduce the risk of transmission of gonorrhea, chlamydia, and trichomoniasis.
- Latex condoms, when used consistently and correctly, can reduce the risk of genital herpes, syphilis, chancroid, and HPV only when the infected areas are covered or protected by the condom.
- The use of latex condoms has been associated with a reduction in risk of HPV-associated diseases, such as cervical cancer.

REFERENCE

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KNOWLEDGE EMPOWER series

pregnancy prevention

Studies have shown that condoms are one of the most reliable methods for preventing unwanted pregnancy. In addition to being effective, condoms are also inexpensive and are available without a prescription.

FACTS IN BRIEF

- Condoms are 98 percent effective in preventing pregnancy when used consistently and correctly.[5]
- The first-year effectiveness rate in preventing pregnancy among typical condom users on average is 86 percent. This includes pregnancies resulting from errors in condom use.[6]

HIV prevention

Latex condoms, when used consistently and correctly, are highly effective in preventing transmission of HIV, the virus that causes AIDS.[7]

FACTS IN BRIEF

- Using a latex condom to prevent transmission of HIV is more than 10,000 times safer than not using a condom.[8]
- A study published in *The New England Journal of Medicine* observed heterosexual couples where one was HIV-positive and the other was HIV-negative, for an average of 20 months. (These couples are referred to as sero-discordant.)[9] Findings included:

  —No sero-conversion occurred among the 124 couples who used latex condoms consistently and correctly for vaginal or anal intercourse.[10]

  —Ten percent of the HIV-negative partners (12 of 121) of couples became infected when condoms were used inconsistently for vaginal or anal intercourse. In contrast, 15 percent of HIV-negative partners became infected when condoms were not used.[11]

CONDOMS & PREGNANCY
understanding condom effectiveness

To fully understand research on condom effectiveness, one must understand the difference between *method failure* and *user failure*. *Method failure* refers to failure that results from a defect in the product. *User failure* refers to failure that results from incorrect or inconsistent use.

In its fact sheet on condoms, the U.S. Centers for Disease Control and Prevention explains that the term *condom failure* often imprecisely refers to the precentage of women who become pregnant over the course of a year in which they reported using condoms as their primary method of birth control—even if they did not use condoms every time they had intecourse. The CDC concluded that "clearly these statistics don't report *condom failure* but *user failure*."[1]

Method failure of male condoms is uncommon. In fact, it is estimated to occur among only three percent of couples using condoms consistently and correctly during the first year of use. To help individuals understand this estimate, *Contraceptive Technology* explains that "only three of 100 couples who use condoms perfectly for one year will experience an unintended pregnancy."[2]

It goes on to say that "if each [of these 100 couples] had intercourse at the average coital frequencey of 83 acts per year, then 100 couples would have intercourse a combined 8,300 times a year. Three pregnancies resulting from 8,300 acts of condom use is a remarkably low pregnancy rate (.04 percent) when calculated on a per-condom basis."[3]

In truth, condom failures are most often caused by errors in use, "most notably the failure of couples to use condoms during every act of sexual intercourse."[4] It is therefore important to look at the data on typical condom use or *user failure*.

Among those couples using condoms as their primary method of contraception, approximately 14 percent will experience an unintended pregnancy during the first year. It is important to remember that they may not have used a condom or may have used one incorrectly during the act of intercourse that resulted in pregnancy.[5]

To put this in perspective, individuals need to understand that 85 percent of women using no method of birth control will become pregnant in the first year as will 25 percent of women using periodic abstinence.[6]

REFERENCES

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4. CDC Update, *Questions and Answers on Condom Effectiveness*, January 1997.
5. R. A. Hatcher, *Contraceptive Technology*, p. 329.
6. Ibid., p. 216.

UPDATE ON NONOXYNOL-9

In the past, public health experts recommended using condoms combined with Nonoxynol-9 (N-9), a spermicide, for increased protection against pregnancy, HIV, and STDs. Two recent studies, however, call into question the effectiveness and safety of N-9.

A study published by UNAIDS found that N-9 used without condoms was ineffective against HIV transmission. This study actually showed some evidence that N-9 increased the risk of HIV infection.

Researchers note that this study was conducted among commercial sex workers in Africa who are at increased risk and used a N-9 gel on a frequent basis. The adverse effects might not be seen at the same level among women who are using N-9 less frequently or in a different formulation.

As a result of this study, however, the CDC concluded that "given that N-9 has been proven ineffective against HIV transmission, the possibility of risk, with no benefit, indicates that *N-9 should not be recommended as an effective means of HIV-prevention*."[1]

A similar study published in the *Journal of the American Medical Association* found that N-9, when used with condoms, did not protect women from the bacteria that causes gonorrhea and chlamydial infection any better than condoms used alone.[2]

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- A study published in the *Journal of Acquired Immune Deficiency Syndrome*s observed sero-discordant heterosexual couples and showed that only three out of 171 who consistently and correctly used condoms became HIV infected; eight out of 55 who used condoms inconsistently became HIV infected; and eight out of 79 who never used condoms became HIV infected.[12]

STD prevention

Condoms can be expected to provide different levels of risk reduction for different STDs. There is no definitive study about condom effectiveness for all STDs. Definitive data are lacking on the degree of risk reduction that latex condoms provide for some STDs; for others, the evidence is considered inconclusive.

The U.S. Centers for Disease Control and Prevention (CDC) states, "It is important to note that the lack of data about the level of condom effectiveness indicates that more research is needed—not that latex condoms do not work."[13]

FACTS IN BRIEF

- Several studies have demonstrated that condoms can protect against the transmission of chlamydia, gonorrhea, and trichomoniasis, and may protect against genital herpes and syphilis.[14]

condom breakage and slippage

Although people fear that condoms may break or fall off during use, studies indicate this rarely occurs when condoms are properly used.[15] It is also important to note that not all condom breaks are equally risky. As many as 24 to 65 percent occur before intercourse and pose no biological risk of pregnancy or infection if a new condom is used for intercourse.[16]

FACTS IN BRIEF

- A study published in the *American Journal of Public Health* observed female sex workers in Nevada brothels, where condom use is required by law, and found that of 353 condoms used by the sex workers during the study, none broke or fell off during intercourse, and only two (0.6 percent) slipped off during withdrawal.[17]
- Studies have reported breakage rates during vaginal intercourse ranging from zero percent to 6.7 percent. Most studies report that condoms break less than two percent of the time during intercourse or withdrawal.[18]
- Condoms fall off the penis in 0.6 percent to 5.4 percent of acts of vaginal intercourse and may slip down the penis without falling off in 3.4 percent to 13.1 percent of acts of vaginal intercourse.[19]
- Breakage rates during anal sex for gay men in four prospective studies ranged from 0.5 percent to 12 percent, with rates less than two percent in three of the studies.[20]

condom use

Research shows that consistent condom use among sexually active individuals has increased.

FACTS IN BRIEF

- In 2001, the Centers for Disease Control and Prevention's *Youth Risk Behavior Surveillance Summaries* found that among currently sexually active students in grades nine through 12 nationwide, 57.9 percent reported that either they or their partner had used a condom during last sexual intercourse compared to 58.0 percent in 1999, 56.8 percent in 1997, 54.4 percent in 1995, and 52.8 percent in 1993.[21]
- The *National Survey of Family Growth* reported that 20 percent of American women 15 to 44 years of age reported using a condom in 1995 compared to 15 percent in 1988 and 12 percent in 1982.[22]

consistent and correct condom use

In order to benefit from the protection that condoms provide, individuals must use them *consistently* and *correctly*. This means they must use a condom with every act of sexual intercourse, from start to finish, including penile-vaginal intercourse as well as oral and anal intercourse. In addition, individuals must understand how to properly use a condom. Studies of hundreds of couples show that consistent condom use is possible when sexual partners have the skills and motivation to use them.[23]

CORRECT USE OF THE MALE CONDOM[24]

- Store condoms in a cool place out of direct sunlight (not in wallets or glove compartments). Latex will become brittle from changes in temperature, rough handling, or age. Don't use damaged, discolored, brittle, or sticky condoms.
- Check the expiration date.
- Carefully open the condom package—teeth or fingernails can tear the condom.
- Use a new condom for each act of sexual intercourse.
- Put on the condom before it touches any part of a partner's body.
- Hold the condom over an erect penis.
- If a penis is uncircumcised, pull back the foreskin before putting on the condom.
- Put on the condom by pinching the reservoir tip and unrolling it all the way down the shaft of the penis from head to base. If the condom does not have a reservoir tip, pinch it to leave a half-inch space at the head of the penis for semen to collect after ejaculation.
- In the event that the condom breaks, withdraw the penis immediately and put on a new condom before resuming intercourse.
- Use only water-based lubrication. Do not use oil-based lubricants such as cooking/vegetable oil, baby oil, hand lotion, or petroleum jelly—these will cause the condom to deteriorate and break.

REGULATIONS AND TESTS

The U.S. Food and Drug Administration (FDA) regulates manufacturers who sell condoms in the United States.

As a quality assurance step, condom manufacturers sample each lot of finished packaged condoms and examine them for holes using a water leak test. The FDA recognizes domestic and international standards that specify that the rate of sampled condoms failing the water leak test, for each manufactured lot of condoms, must be less than one in 400.

Manufacturers also test lots for physical properties using the air burst test and the tensile (strength) property test.

In order to test condoms' ability to prevent the passage of viruses, FDA researchers developed a test using high concentrations of a laboratory created "virus" that is the same size as STD pathogens.

The FDA tested many different types of male condoms and showed that they are highly effective barriers to virus passage with a very small chance of leakage. Intact condoms (those that pass the water leak test) are essentially impermeable to particles the size of STD pathogens. Moreover, these studies show that fluid flow, not virus size, is the most important determinant of viral passage through a hole.

REFERENCE

National Institute of Allergy and Infectious Diseases, National Institutes of Health, U.S. Department of Health and Human Services, *Workshop Summary: Scientific Evidence on Condom Effectiveness for Sexually Transmitted Disease (STD) Prevention*, July 12-13, 2000, Hyatt Dulles Airport Herndon, VA. (Released July 20, 2001)

FEMALE CONDOM

Available under the brand name *Reality*®, the female condom is made of polyurethane and provides protection against pregnancy and STDs, including HIV.[22] It consists of a tube-like sheath with one flexible polyurethane ring at each end. One ring is placed inside the vaginal canal and is closed off by polyurethane, collecting the ejaculate. The other ring remains outside the vagina and the penis enters the vagina through this ring. The female condom is coated with a silicone-based lubricant. Additional lubricant can be added as necessary. The female and male condom should not be used together as they can adhere to each other, causing slippage or displacement.

FACTS IN BRIEF

- The first-year effectiveness rate of preventing pregnancy among typical condom users averages about 79 percent for female (*Reality*®) condoms. This includes pregnancies resulting from errors in condom use.
- The female condom *Reality*® is estimated to reduce the risk of HIV infection for each act of intercourse by 97.1 percent when used consistently and correctly.
- Laboratory studies have shown *Reality*® to be an effective barrier to microorganisms including HIV and including a bacteriophage smaller than hepatitis B, the smallest virus known to cause an STD.

REFERENCES

1. www.femalehealth.com/yourquests.html.
2. R. A. Hatcher, et al., (1998), p. 328.
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4. Ibid.

- Withdraw the penis immediately after ejaculation. While the penis is still erect, grasp the rim of the condom between the fingers and slowly withdraw the penis (with the condom still on) so that no semen is spilled.
- Remove the condom, making certain that no semen is spilled.
- Carefully dispose of the condom. Do not reuse it.
- *Do not* use a male condom along with a female condom. If the two condoms rub together, the friction between them can cause the male condom to be pulled off or the female condom to be pushed in.

CORRECT USE OF THE FEMALE CONDOM[25]

- Do not use damaged, discolored, brittle, or sticky condoms.
- Check the expiration date.
- Carefully open the condom package—teeth or fingernails can tear the condom.
- Use a new condom for each act of sexual intercourse.
- First, inspect the condom and make certain it is completely lubricated on the outside and the inside.
- The female condom is inserted into the vagina with fingers, much like a tampon that has no applicator. To do so:

  —Hold the condom at the closed end and squeeze the flexible inner ring with thumb and middle finger so it becomes long and narrow. With the other hand, separate the outer lips of the vagina.

  —Gently insert the inner ring end as far into the vagina as possible, using the index finger to push up the inner ring until the finger reaches the cervix (similar to how a diaphragm would be inserted).

  —Before having intercourse, make certain the condom is in place. When in place, it will cover the opening of the cervix and line the vaginal walls. A general indicator of correct insertion is that the individual will no longer feel the ring. The open end of the condom must always remain outside the vaginal opening. Before having intercourse, make certain that the condom is straight and not twisted.

  —Add water-based lubricant onto the penis and/or the inside of the female condom to increase comfort and decrease noise. It is important to use enough lubricant so that the condom stays in place during sex. If the condom is pulled out or pushed in, that is an indicator that there is not enough lubricant.

  —Be sure that the penis is not entering the vaginal canal outside of the condom before intercourse.
- To remove the condom, twist the outer ring and gently pull the condom out to avoid any spillage.
- Carefully dispose of the condom. Do not reuse it.
- *Do not* use a male condom along with a female condom. If the two condoms rub together, the friction between them can cause the male condom to be pulled off or the female condom to be pushed in.

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11. Ibid, p. 343.
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