Barrier methods are just that: physical barriers which attempt to block the sperm from meeting the ovum, so that conception cannot occur. Barriers usually work to prevent sperm from entering the cervix, located at the entrance to the uterus. Barrier methods include spermicide, the external condom, the internal condom, the diaphragm and the cervical cap.

**Spermicide**

Spermicides are non-prescription chemical products inserted into the vagina prior to vaginal sex to prevent pregnancy. Spermicide is available in different forms, including foams (O--Island Sexual Health Society), suppositories, creams, jellies and film (O--vcfcontraceptive.com). The spermicide should be placed within the vagina, near the cervix prior to intercourse, as demonstrated in an illustration through healthsquare.com (R). Spermicide is typically applied 15-60 minutes before intercourse occurs, and should also be applied for each act of intercourse. Spermicides may be used alone, or they may be used in conjunction with other barrier devices e.g. diaphragm and cervical cap. Instructions on the spermicide package should be read and followed, because directions may vary slightly from product to product.

**Effectiveness Against Pregnancy:** With perfect use, spermicides can be 94% effective. More typically, they are 74% effective, most commonly due to user error.

In the 1990's, the ingredient nonoxynol-9 was used in spermicides to decrease the risk of human immunodeficiency virus (HIV) transmission. In January 2003, however, the FDA released a warning describing non-oxynol-9 does not protect against HIV among at-risk individuals. The substance may increase vaginal irritation, which can make the cells vulnerable to disease transmission. Therefore, spermicides should not be considered effective against sexually transmitted infections. (FDA, see FAQ, “Should spermicides be used with condoms”)

Spermicides containing non-oxynol-9 are not recommended for anal sex.

For those interested in more information (O):

- The United States Government Accountability Office presents [Efforts to Research and Inform the Public about Nonoxynol-9](pdf)
- Reproductive Health Technologies Project: [What You Need to Know About Nonoxynol-9](pdf)
- In 2007 the [FDA](pdf) ruled all manufacturers of products containing nonoxynol-9 must warn consumers the ingredient does not protect against HIV or other sexually transmitted infections

The controversy surrounding nonoxynol-9 aside, spermicides are still used as a barrier contraceptive method. For more complete information on spermicide, visit [Palo Alto Medical Foundation](pdf), paying particular attention to the method's ability to protect against sexually transmitted infections (STI's), and advantages/disadvantages.

**External ("Male") Condom**

Packaged and available with or without spermicide or lubricant, the external condom is a barrier placed on an erect penis in order to prevent ejaculate from traveling outside the sheath. In the case of contraception, the device is meant to prevent sperm from entering the vagina. The external condom is also used to prevent contact between the erect penis and another person, so the method can also be useful for preventing infection transmission. Condoms are made in many colors, sizes and textures, and are also available in different
materials. The most common external condom material is latex. Condoms made of polyurethane can be helpful to those with latex allergies, as can another, more recently available material, polyisoprene. Some condoms are made of lamb intestine, usually promoted for their feeling against the skin. These types of condoms, however, are not effective at preventing infection transmission, due to viral particles being able to travel through the material. Travel to Healthopedia to see more images of male condoms (O).

**Effectiveness against pregnancy:** With perfect use, the condom can be upward of 95% effective, but typical effectiveness rates are around 85-90%.

Visit Palo Alto Medical Foundation for more information on the external condom, again focusing on the method's STI protection, advantages and disadvantages (R).


**Internal ("Female") Condom**

Made of nitrile, the internal condom (R--cervicalbarriers.org) resembles a traditional "male" condom, but it contains two plastic rings instead of one. One ring is closed and is inserted before vaginal intercourse, placed against the cervix. The other ring is open to allow for penetration, and when in place, hangs out of the vagina. Internal condoms are typically lubricated but more may be added prior to insertion.

More costly than the external condom, the internal condom is slightly less effective against pregnancy than the external condom. The contraceptive does, however, add protection against sexually transmitted infections, although the user should be mindful of any condom slippage during intercourse, in order to avoid any skin-to-skin, skin-to-membrane contact. Although the internal condom can and has been used as a way to prevent disease transmission during anal sex, the device has not been approved by the FDA for this purpose. Aidsmap.com (O) provides tips on how to use an internal condom for anal sex, and also describes results of a published 2003 study comparing issues among 56 monogamous male gay couples.

The external and internal condoms should not be used simultaneously, as friction during sex can damage the barriers. Avert.org provides additional information about the internal condom, as well as a video clip showing how to use the contraceptive (R for video, other information is optional).

**Effectiveness against pregnancy:** With perfect use, the internal condom may be 95% effective, but typical effectiveness is approximately 80%, according to Planned Parenthood.


**Diaphragm**

The diaphragm is a dome-shaped latex contraceptive device which is inserted into the vagina and placed against the cervix to block sperm from entering the uterus. Medical evaluation and gynecological fitting are required in
order to obtain a diaphragm. When used, spermicide is also applied inside of the diaphragm to improve contraceptive effects.

The diaphragm should remain in place for approximately six hours following vaginal intercourse, and then be removed as soon as possible after that time period. Keeping the diaphragm in for extended time periods can encourage the growth of bacteria and subsequently lead to infection. In extreme circumstances, such a situation can lead to toxic shock syndrome, a bacterial infection causing severe illness and sometimes death. A diaphragm should be cleaned with a mild detergent after each use, and should be inspected on a regular basis for holes, tears or cracks. For optimal protection against pregnancy, the diaphragm should be replaced approximately every two years.

Travel to Palo Alto Medical Foundation for STI, advantages and disadvantages information regarding the diaphragm (R), as well as the AAFP website to view an illustration of a diaphragm (R) held in place.

**Effectiveness against pregnancy:** When used perfectly, the diaphragm has a 94% success rate, but more typically has an 80% success rate.

### Cervical Cap

Currently, the only cervical cap available in the United States is the FemCap. The FemCap is made of silicone and is available by prescription in sizes small (usually for women who have not been pregnant), medium (usually for women who have been pregnant but did not have a vaginal birth), or large (usually for women who have given birth vaginally).

Like the diaphragm, the FemCap first requires an application of spermicide. The cap is then inserted prior to vaginal intercourse and placed against the cervix in order to prevent sperm from moving into the uterus, while the spermicide is used to immobilize the sperm. Following vaginal intercourse, the cap should be left in place so that the spermicide can kill sperm, reducing pregnancy risk. Because the FemCap does not prevent skin-to-skin or skin-to-membrane contact, there is very little to no prevention against sexually transmitted infections. The cap should be cleaned with water and mild soap after each use, allowed to air dry, and regularly inspected for holes, tears or cracks.

Travel to FemCap International to view a short animation of the contraceptive (R).

FemCap International also has a Frequently Answered Questions link for more details about using this barrier contraceptive (O).

**Effectiveness against pregnancy:** According to Planned Parenthood, the $60-75 FemCap works better among women who have never given birth vaginally, with an approximate 86% effectiveness rate. Those who have delivered vaginally can expect an effectiveness rate of approximately 71%.


### The Sponge

The "Sponge" was removed from the market in 1994 after the Whitehall-Robbins manufacturing plant in New Jersey was cited for problems relating to equipment sanitization and microbiological testing methods. Because
improvements would have been cost prohibitive, the company chose to stop making the device. Allendale Pharmaceuticals purchased patents for the Today Sponge around the turn of the century, and in 2007 Allendale was acquired by Synova Healthcare, Inc. In 2008 the Allendale company was acquired by Alvogen, so the product was again taken off the shelves. Alvogen has stated the Today Sponge will again be marketed, but product availability appears to be very sporadic across the United States.

EDK Images offers a photo of the sponge (R), and Planned Parenthood illustrates how to use the sponge (R)

**Effectiveness against pregnancy:** With perfect use, the Sponge has 89-91% effectiveness, though the typical rate is 80-85% (a couple percentage points more effective among women who have not given birth).