

Circumcision

Circumcision is defined as the removal of the foreskin from the glans (head) of the penis.

Cultural considerations

Jewish and Muslim communities often perform circumcision for religious reasons. Circumcision for non-religious reasons became popular beginning in the 1930's.

In the US, circumcision rates vary by region, with the fewest boys circumcised in the West and the most in the Midwest. An average of 56% of boys are circumcised in the entire US. Worldwide, 20% of boys are circumcised. In Washington State, between 25-30% of boys are circumcised.

What is the purpose of the foreskin?

The foreskin serves many functions:

- Protects the glans (head of the penis) from urine, feces and mechanical irritation – it keeps the penis safe, warm, clean and moist. The glans itself has no ability to produce lubricating oil and relies on the foreskin to provide lubrication.
- Covers the opening of the urethra (tube that carries urine) and protects against urethral infection. The foreskin directs sterile urine back around the head of the penis to flush out microbes.
- Provides skin for the penis to expand during erection, as well as provide some slack to reduce friction. Without the foreskin, skin is pulled up from the scrotum to accommodate the erection. The foreskin is the equivalent of a postcard's worth of skin in an adult.
- Made of highly sensitive tissue, with dense concentrations of highly specialized nerve endings, including the ridged band. During erection, the foreskin turns inside out, exposing the inside lining of the foreskin, enhancing pleasure.
- Lined with immune cells that fight infection. These cells produce antimicrobial and antiviral substances (similar to those found in breast milk), along with immunoglobulins.

At birth, the foreskin is still fused to the head of the penis, because the genitals are not fully developed, and the opening of the skin is narrow. With increasing sexual maturity, repeated erections, and self-exploration, the foreskin gradually separates, and the opening widens, so the foreskin is usually able to be retracted by the time the boy reaches puberty. As the foreskin separates, these cells make their way to the opening in the skin, creating white "pearls" that are called infant smegma. There can be some redness or irritation when this is happening. Adults produce a different type of smegma that acts as a protective, lubricating substance. Adult smegma should be rinsed off regularly during bathing.

What are the pros of circumcision?

- Risk of urinary tract infection (UTI) in the first year of life is decreased significantly. Depending on the study, circumcision reduces the overall risk of urinary tract infection from about 1-4% to about 0.2%.
 - Urinary tract infections are treated with antibiotics, though some may become complicated and require hospital admission. Repeated urinary tract infections can scar the kidneys.
 - The difference in risk is highest in the first month and goes down over time. The most benefit is realized in the first six months of life.
 - Boys who are at high risk of recurrent UTI (for example, vesicoureteral reflux, where there is abnormal backflow of urine from the bladder to the kidneys) may benefit from circumcision.
- Circumcision may affect the risk of contracting and/or passing on some sexually transmitted infections.
 - Some African studies have found circumcised men who have sex with women to be at lower risk of contracting HIV from infected female partners. Some American studies have found this as well, but only in certain populations.
 - It is unclear whether circumcision reduces the risk of circumcision in men who have sex with men. Some studies find higher rates of HIV in uncircumcised men, but a large meta-analysis including more than 53,000 men who have sex with men did not find an effect.
 - Circumcised men seem to have slightly lower rates of HPV infection and clear HPV more quickly. The HPV vaccine (Gardasil) also significantly reduces the risk of HPV infection.
 - Circumcision may slightly reduce the risk of genital herpes, but studies are mixed.
 - Circumcision does not seem to affect the rates of sexually transmitted gonorrhea, chlamydia, or trichomonas in men. Some studies do show less risk of transmitting some of these infections to women if the men were circumcised.
 - It is unclear whether circumcision reduces the risk of syphilis.
 - Consistent condom use, appropriate immunizations, mutual monogamy and abstinence are the most effective ways to reduce transmission of sexually transmitted infections.
- Circumcision eliminates the risk of infection of the foreskin (balanitis).
- Circumcision reduces the risk of penile cancer. There are around 1500 total cases of penile cancer per year in the US (0.7 per 100,000). Nearly all of them are in uncircumcised men. Being circumcised reduces a man's chance of having penile cancer by 0.2%. An estimated 900-300,000 circumcisions would have to be performed to prevent one case of penile cancer. HPV is thought to be responsible for around 40% of penile cancers. Good hygiene and not smoking are very important in preventing penile cancer. HPV immunization may also help – aggressive penile cancer is associated with HPV types 16 and 18, which are included in all of the available HPV vaccines. Because penile cancer is so rare, it's not yet clear based on existing

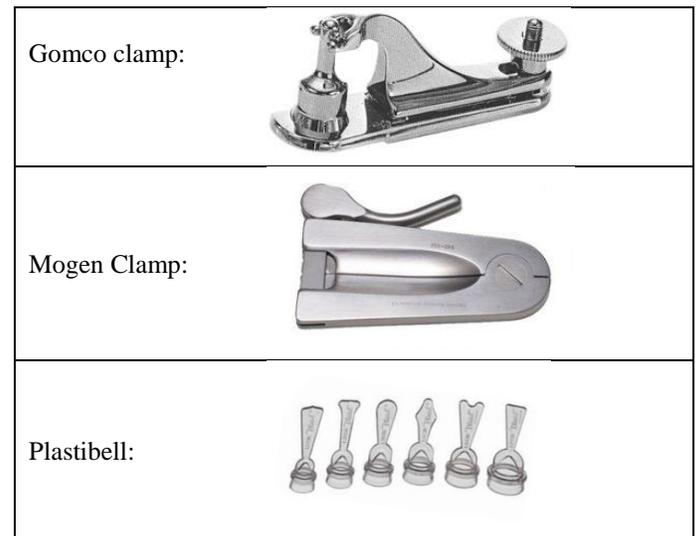
studies whether the rate of penile cancer goes down with immunization.

The Stanford Newborn Nursery has videos depicting each of the three following circumcision techniques:

<https://med.stanford.edu/newborns/professional-education/circumcision.html>

What are the cons of circumcision?

- Decreased sensation of the penis due to removal of highly sensitive tissue.
- Dryness of the head of the penis (glans) due to removal of the lubricating organ, requiring artificial lubricants. Once the glans is exposed, the skin changes from 'inside' skin to 'outside' skin, becoming thicker (keratinized).
- Tight circumcisions can restrict the erection or cause skin to be pulled up from the scrotum. This scrotal skin is likely to have hair, which can be irritating to the partner. Penile skin does not usually have hair.
- Complications occur in approximately 0.1-35% of babies undergoing the procedure. The most common complications are infection, bleeding and incomplete circumcision.
- More serious but rare complications include necrotizing fasciitis (dying connective tissue), urethral fistula, partial penile amputation, penile necrosis and concealed penis. These are also uncommon complications of anesthesia, including bruising.
- Death is very rare as a result of circumcision, and risk has been estimated to be 1/500,000 procedures.
- Meatitis (infection of the urethra, the tube that carries urine) and scarring of the urethral opening have been reported in 8-21% of circumcised infants.
- Circumcision should not be performed on infants who are not stable, who have clotting disorders, or who have any abnormalities of the reproductive/urinary tract, including hypospadias.
- Circumcision should not be performed on infants who have not received appropriate vitamin K.
- Circumcision is a painful procedure.



Caring for the penis

An uncircumcised (intact) penis requires no special care. Clean the penis with warm water from base to tip, and only clean what can be seen. Once a boy has retracted his own foreskin at some point in childhood, he can be taught to wash his penis and foreskin while bathing. The foreskin should never be forcibly retracted, as infection, adhesions and scarring can occur.

The circumcised penis will be bright red and raw for a few days and will need some special care, involving lubricated dressings to prevent the site from sticking to the diaper or clothes and to prevent infection. After the skin has thickened and the surgical site has healed, only routine bathing will be required. If you circumcise, you should follow the aftercare instructions carefully.

Position statements

American Academy of Pediatrics

[1999 Policy Statement, reaffirmed in 2005](#): Existing scientific evidence demonstrates potential medical benefits of newborn male circumcision; however, these data are not sufficient to recommend routine neonatal circumcision. In the case of circumcision, in which there are potential benefits and risks, yet the procedure is not essential to the child's current well-being, parents should determine what is in the best interest of the child. To make an informed choice, parents of all male infants should be given accurate and unbiased information and be provided the opportunity to discuss this decision. It is legitimate for parents to take into account cultural, religious, and ethnic traditions, in addition to the medical factors, when making this decision. Analgesia is safe and effective in reducing the procedural pain associated with circumcision; therefore, if a decision for circumcision is made, procedural analgesia should be provided. If circumcision is performed in

The Procedure

To prepare the baby for the procedure, he is laid on a table or specialized tray, and his arms and legs restrained so he is unable to squirm during the procedure. The genital area is cleaned with surgical cleanser and dried.

For many decades, physicians insisted that babies did not feel pain. There is clear evidence, however, that they do. Anesthesia (pain control) is becoming routine during circumcision, though it is not always used. Anesthesia may consist of injected local anesthetic, topical anesthetic, sugar water given by mouth (reduces pain response), oral acetaminophen (Tylenol), or a combination.

Depending on the type of procedure, the foreskin may be separated from the glans with probes. A plastic bell or metal clamp may be placed over the head of the penis to protect it, or the foreskin may be pulled past the head of the penis and a clamp applied beyond the tip. The skin may be crushed to reduce bleeding before cutting. Removing the foreskin may be done with a scalpel or special cutting tool. Dressing and gauze are applied and the baby is diapered again.

the newborn period, it should only be done on infants who are stable and healthy. [http://pediatrics.aappublications.org/content/103/3/686]

2012 Policy Statement: Systematic evaluation of English-language peer-reviewed literature from 1995 through 2010 indicates that preventive health benefits of elective circumcision of male newborns outweigh the risks of the procedure. Benefits include significant reductions in the risk of urinary tract infection in the first year of life and, subsequently, in the risk of heterosexual acquisition of HIV and the transmission of other sexually transmitted infections.

The procedure is well tolerated when performed by trained professionals under sterile conditions with appropriate pain management. Complications are infrequent; most are minor, and severe complications are rare. Male circumcision performed during the newborn period has considerably lower complication rates than when performed later in life.

Although health benefits are not great enough to recommend routine circumcision for all male newborns, the benefits of circumcision are sufficient to justify access to this procedure for families choosing it and to warrant third-party payment for circumcision of male newborns. It is important that clinicians routinely inform parents of the health benefits and risks of male newborn circumcision in an unbiased and accurate manner.

Parents ultimately should decide whether circumcision is in the best interests of their male child. They will need to weigh medical information in the context of their own religious, ethical, and cultural beliefs and practices. The medical benefits alone may not outweigh these other considerations for individual families. [http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b103/3/686]

To summarize, the AAP found that:

- The benefits outweigh the risks
- The benefits are not sufficient to recommend circumcision for all newborns
- For those families who choose it, they should have access, meaning insurance should pay for it

American Academy of Family Physicians

2013 Policy Statement: There are potential health benefits from neonatal circumcision. The evidence is strongest for the prevention of UTI in newborn males. The number needed to treat to prevent one UTI is about 140 and to prevent one hospitalization for UTI is 195. Circumcision also prevents penile cancer, but this is a rare disease (0.6/100,000), and the number needed to treat to prevent one case is approximately 300,000. In addition, about 1/3 of penile cancers are caused by human papilloma virus and may be prevented by HPV vaccine. There is also evidence that circumcision can prevent some other STDs, including the acquisition of HIV, but the evidence for this comes from studies of adult circumcision in Africa and may not be generalizable to neonatal circumcision in the U.S.

Circumcision can also result in complications. Acute complications can include bleeding (0.8-1.8/1,000), infection (6/10,000), and injury to the penis (4/10,000). Late complications can include incomplete circumcision, excessive skin removal, adhesions, meatal stenosis, phimosis, inclusion cysts. The rate at which these late complications occur is not well defined.

The potential health benefits from circumcision justify it being a covered medical service by third-party payers, and it should be an available service for those who desire it.

The decision whether to circumcise a newborn male is affected by parents' values and beliefs and should be made by parents after a discussion of the benefits and harms. Family physicians should provide this information in an unbiased manner, and the parents' decision should be respected.

Circumcision is preferably performed in the newborn period. When circumcision is performed, topical or local anesthesia techniques should be used to minimize newborn discomfort. (2013 COD) [http://www.aafp.org/online/en/home/clinical/clinicalrecs/children/circumcision.html]

American Cancer Society

Can Penile Cancer Be Prevented?: In the past, circumcision has been suggested as a way to prevent penile cancer. This was based on studies that reported much lower penile cancer rates among circumcised men than among uncircumcised men. But in many of those studies, the protective effect of circumcision was no longer seen after factors like smegma and phimosis were taken into account.

Most public health researchers believe that the risk of penile cancer is low among uncircumcised men without known risk factors living in the United States. Men who wish to lower their risk of penile cancer can do so by avoiding HPV infection and not smoking. Those who aren't circumcised can also lower their risk of penile cancer by practicing good hygiene. Most experts agree that circumcision should not be recommended solely as a way to prevent penile cancer. [https://www.cancer.org/cancer/penile-cancer/causes-risks-prevention/prevention.html]

Questions for your provider:
