



## Vasectomy

### Key Points

#### Policymakers:

- Vasectomy is a safe, effective, low-cost form of permanent contraception, and is an important part of a balanced method mix.

#### Providers:

- Techniques such as cautery and fascial interposition further increase vasectomy effectiveness.
- Effectiveness of vasectomy is dependent on the technique used and on clients' adherence to backup contraception for a full 12 weeks after the procedure.

#### Clients:

- The vasectomy procedure is brief and almost painless, and is simpler and safer than female sterilization.

# Vasectomy: evidence on the effectiveness of different techniques

**Summary:** Techniques such as cautery and fascial interposition may further improve the effectiveness of vasectomy, making it one of the safest, least invasive, and most effective forms of permanent contraception. However, clients should always be counseled on the small possibility of vasectomy failure and the importance of using another method of contraception for the entire 12 weeks following surgery.

**Overview:** All vasectomy methods involve first accessing each *vas* and then using special techniques to occlude, or block it. Worldwide, the most common occlusion technique is ligation and excision, which involves tying the *vas* closed in two places and removing the short segment between the two ties. Cautery is an alternative, highly effective occlusion technique (see Figure 1). When performing cautery, a surgeon uses either an electrode or a hot wire to block about 1 cm of the inside of each end of the *vas*, producing scars that prevent the transport of sperm through the tube. Thermal cautery, in which a hot wire is used, may be an appropriate occlusion technique in many parts of the world, although more research is needed to confirm its effectiveness in low-resource settings.

search from seven countries in Latin America, Asia, and North America has shown that adding fascial interposition to ligation and excision significantly improves vasectomy effectiveness.<sup>1</sup> Although fewer data are available on the benefits of adding fascial interposition to cautery, combining the two techniques could further maximize their effectiveness.

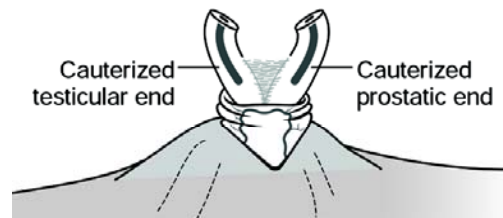


Figure 1: Cautery. Reprinted from: EngenderHealth. 2003. *No-Scalpel Vasectomy: An Illustrated Guide for Surgeons, Third Edition*. New York. Used with permission.



Figure 2: Fascial Interposition. Reprinted from: EngenderHealth. 2003. *No-Scalpel Vasectomy: An Illustrated Guide for Surgeons, Third Edition*. New York. Used with permission.

### A second contraceptive method should be used for 12 weeks following vasectomy:

Because it takes time for the *vas* to become completely clear of sperm, men should be counseled to use a second contraceptive method for 12 weeks (3 months) following vasectomy. Although guidelines have typically recommended a waiting period of 12 weeks or 20 ejaculations, recent research has shown that the 12-week waiting period is significantly more reliable.<sup>2</sup> The best approach for determining vasectomy success is semen analysis. Where semen analysis is not available, it is especially critical that men and their partners be counseled to use a

Most occlusion techniques can also be performed with *fascial interposition*, a technique in which the sheath covering the *vas* is pulled over one of the cut ends of the *vas* and the end is sewn shut, creating a natural tissue barrier (see Figure 2). Re-

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second contraceptive method for the first 12 weeks after surgery.

### **Although uncommon, recanalization may cause vasectomy failure in a small percentage of cases:**

Surgical error, infidelity, and not using a back-up method of contraception for at least 12 weeks following a vasectomy are all possible reasons for pregnancy after the procedure. But most of the few vasectomy failures that happen are caused by recanalization, a spontaneous reconnection of the two ends of the *vas*, most often occurring within a month or two of a vasectomy. The risk of recanalization appears to be related to the surgical techniques used during the procedure. Fascial interposition can reduce the risk of failure, as defined by semen analysis, by about 50 percent when performed with ligation and excision.<sup>3</sup> Using cautery instead of ligation and excision may further reduce the risk of failure, making vasectomy an even more effective contraceptive method.<sup>4</sup> Still, couples should be counseled about the possibility of vasectomy failure so that an unexpected pregnancy is not automatically assumed to be the result of infidelity.

### **Vasectomy continues to be a safe, effective, low-cost, and permanent method of contraception:**

Vasectomy is very safe. Complications associated with the procedure are infrequent, and serious complications are rare. Possible side effects include minor pain, swelling, and bruising, but they generally disappear quickly. A few men experience longer lasting pain in the scrotal area, but it is generally mild and can usually be successfully treated with over-the-counter pain medicine. Because vasectomy is a surgical procedure, men with certain local and systemic infections should delay having the procedure until their conditions are resolved. Otherwise, there are no reasons to deny any man a vasectomy.

The vasectomy procedure is brief and almost painless, and is simpler and safer than female sterilization. The entire procedure generally takes 15 minutes or less when performed by a trained surgeon. Men

usually feel only the injection of the local anesthetic and may feel a pulling sensation as the surgeon performs the vasectomy. The no-scalpel approach in particular requires a shorter operating time and is associated with even fewer complications than is the incisional approach to the *vas*.

Although vasectomy failure may be more common than previously thought, recent evidence from Nepal,<sup>5</sup> where ligation and excision vasectomy is common, still shows pregnancy rates of only 2 percent in the first year and 4 percent in the three years following the procedure.

Vasectomy is also an extremely low-cost contraceptive option. Depending on the setting, vasectomy can be one of the most economical contraceptives over time, for both the client and the health system.<sup>6</sup>

<sup>1</sup> Chen-Mok M, Bangdiwala SI, Dominik R, et al. Termination of a randomized controlled trial of two vasectomy techniques. *Control Clin Trials* 2003;24(1):78-84; Sokal D, Irsula B, Hays M, et al. Vasectomy with fascial interposition vs. ligation and excision alone: a randomized controlled trial. Manuscript in preparation.

<sup>2</sup> Barone MA, Nazerali H, Cortez M, et al. A prospective study of time and number of ejaculations to azoospermia after vasectomy by ligation and excision. *J Urol* 2003;170(3):892-96.

<sup>3</sup> Sokal D, Irsula B, Hays M, et al.

<sup>4</sup> Sokal D, Irsula B, Chen M, et al. A comparison of vas occlusion techniques: cautery vs. ligation and excision with fascial interposition. Manuscript in preparation.

<sup>5</sup> Nazerali H, Thapa S, Hays M, et al. Vasectomy effectiveness in Nepal: a retrospective study. *Contraception* 2003; 67(6):397-401.

<sup>6</sup> Trussell J, Leveque J, Koenig J, et al. The economic value of contraception: a comparison of 15 methods. *Am J Public Health* 1995;85(4):494-503.

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