

# Artificial Urinary Sphincter

## Introduction

The artificial urinary sphincter (AUS) is a surgically implantable device used to restore urinary control in men and women. Most commonly the device is implanted in men who have sphincter [SFINK-ter], or valve muscle, damage following prostate surgery. The entire device is implanted inside the body in a brief surgical procedure. With appropriate evaluation to properly select candidates for the AUS, the long-term results in experienced hands are excellent.

## Components and Function

The AUS consists of three components: the cuff which goes around the urethra, the pump which goes inside the scrotum (or labia of the female), and the balloon which holds the fluid for the device (see figure). The balloon is available in different pressure ranges and is filled with a fluid which is very safe even if it leaks out of the device. The device works hydraulically with the cuff around the urethra staying closed at all times. When the person wants to urinate, the pump is squeezed and the cuff opens. Automatically, in 3-5 minutes, the cuff closes again. The refilling of the cuff is controlled by a resistor mechanism inside the pump.

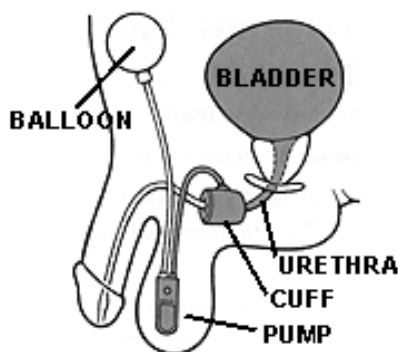
## Indications for Use

The most common indication for implanting the AUS is sphincter damage following prostate surgery (especially radical prostatectomy for prostate cancer). It is essential that the exact cause of the urine leakage be defined by special bladder and sphincter function tests called urodynamics before any surgery is performed. In order for the AUS to be successful, the bladder must be

able to store a normal amount of urine at low pressure and to empty normally. This ability of the bladder to function normally is examined during the urodynamic study.

## Technique of Implantation in the Male

The AUS insertion is performed in the hospital operating room with either a general or spinal anesthetic. Two small incisions are made: one in the groin area and the other between the scrotum and the rectum. The proper size cuff is placed around the urethra and the tubing from the cuff is passed up to the groin area.



The small pressure regulating balloon (which is about the size of a golf ball) is placed beneath the abdominal muscles and the pump which controls the device is tunneled down in to the scrotum just beneath the skin. All connections between the three components are made in the groin area and the incisions are closed. At the conclusion of the operation, the cuff is "locked open" for 4-6 weeks until complete healing.

## Recovery Period

Usually only an overnight hospital stay is required and there is minimal postoperative pain. Most men return to work 2-3 weeks after surgery. At about 4-6 weeks after surgery, the AUS is activated in the office to allow urinary control to be restored.

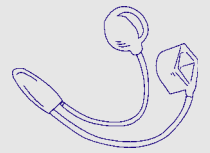
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## Results and Complications

We have just completed a long-term study which has demonstrated excellent long-term results with the AUS in men followed for a minimum of 3.5 years (mean follow-up of 7.2 years) after AUS insertion. Since 1987 there have been very few mechanical complications requiring surgical correction and the infection rate requiring removal of the device is close to 1%. Overall patient satisfaction is very high with a significant improvement in the quality of life after AUS placement.

## Sphincter in the Female

The artificial sphincter (AUS) has also been used in women with severe stress incontinence. One of the potential advantages of the AUS in this situation is the possibility that the woman can urinate after the cuff is opened without having to perform intermittent catheterization. The AUS can be placed with either an abdominal or vaginal approach. Other options for the woman with severe stress incontinence include periurethral injection therapy (with collagen from beef) or a pubo-vaginal sling procedure (a surgical procedure to restore continence which has an excellent long-term result). Concerns regarding the use of the AUS in the female include the risk of mechanical problems with the device as well as thinning of the urethra (called urethral atrophy) beneath the cuff.

The largest experience with the AUS in women has been reported from Europe. With a followup of about 3 years, 6% of women required AUS removal and the overall continence rate was 79%. Very few women required postoperative intermittent catheterization. The long-term mechanical failure rate remains to be defined. In summary, the AUS may be considered a treatment option by very experienced surgeons for carefully selected women with stress incontinence.

## For Further Information

For more information regarding the surgical procedure, you should consult a urologist. Brochures describing the device in more detail are available from the manufacturer. Write to the American Medical Systems at 10700 Bren Road West, Minnetonka, MN 55343, or call 1-800-328-3881, or visit their website at [www.visitams.com](http://www.visitams.com).

If your doctor has recommended an artificial sphincter, and you would like to speak with someone who has had one implanted, please send a long, self-addressed, stamped envelope to NAFC-AUSspeaker, POB 1019, Charleston, SC 29402-1019, and we will send you a list of people who have had this procedure.

To receive more information about your options, call **1-800-BLADDER** or visit [www.nafc.org](http://www.nafc.org). You can also sign up to become an NAFC subscriber, and you will receive our quarterly newsletter, *Quality Care*. Every issue includes helpful information about causes and treatments for incontinence. You will also receive the *Resource Guide* — *Products and Services for Incontinence*, a complete directory of incontinence products and services; access to our *Continence Resource Service* database of health care professionals; and free NAFC educational leaflets. As an added benefit to new subscribers, a copy of *Your Personal Guide for Bladder Health* is included. This is a 48-page booklet covering a wide variety of topics, including diet and daily habits, pelvic muscle exercises, and more (\$25 annually).

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## Consumer Education

National Association for Continence (NAFC) is a non-profit organization dedicated to improving the quality of life of people with incontinence. NAFC is a leading source of education, advocacy, and support to the public and to the health profession about the causes, prevention, diagnosis, treatments, and management alternatives for incontinence.

Always consult your doctor before trying anything recommended in this or any other publication that speaks to general health issues.

For more information about incontinence, write or call:

**NAFC**  
National Association For Continence

PO Box 1019  
Charleston, SC 29402-1019  
Ph: 843.377.0900  
Fx: 843.377.0905  
Toll-free: 800.BLADDER  
800.252.3337  
Web: [www.nafc.org](http://www.nafc.org)