

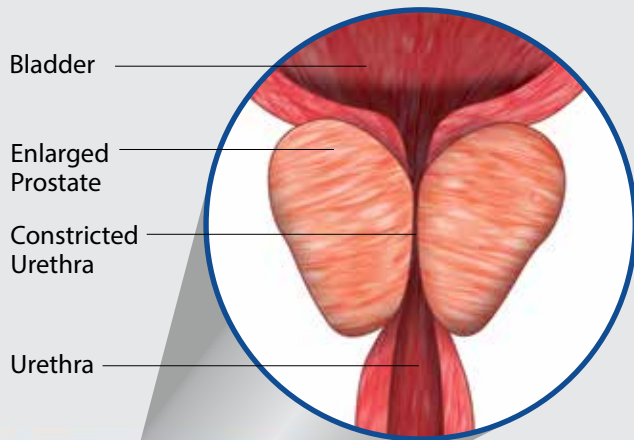
## What is BPH?

Benign prostatic hyperplasia (BPH) is an enlargement of the prostate gland. The likelihood of developing an enlarged prostate increases with age. More than half of all men in their 60s and as many as 90% aged 70-89 years have some symptoms of BPH.

As the prostate gets bigger, it may constrict or partly block the urethra, causing lower urinary tract symptoms (LUTS) such as:

- Urinary frequency
- Dribbling at the end of urinating
- Inability to urinate
- Incomplete emptying of bladder
- Incontinence
- Difficulty starting urination
- Straining to urinate or weak urine stream

For some patients, these symptoms interfere with sleep, further reducing their quality of life.



*An enlarged prostate can constrict or block the urethra, possibly causing urinary symptoms.*

## Are You a Candidate?

Prostatic artery embolization (PAE) is a proven minimally invasive procedure for men who are not satisfied with their current medications or treatment or do not wish to undergo or are ineligible for surgery. An interventional radiologist (IR) can determine if you are a candidate for PAE. Physical exams may include a urine test (urinalysis) and a digital rectal exam to help assess the size of your prostate. In some cases, a prostate-specific antigen (PSA) test is done to help rule out prostate cancer. (Prostate cancer and BPH are not related, but they can cause some of the same symptoms.)



Your Interventional Radiologist may ask you how often you have urinary symptoms of BPH, how severe they are, and how much they affect your quality of life.

For more information about PAE, including patient testimonials, visit our website.



### References:

McWilliams, J. P., Kuo, M. D., Rose, S.C., Bagla, S., Caplin, D. M., Cohen, E. I., Faintuch, S., Spies, J. B., Saad, W. E., Nikolic, B. (2014). Society of Interventional Radiology position statement: prostate artery embolization for treatment of benign disease of the prostate. *Journal of Vascular and Interventional Radiology*, 25: 1349-1351. <http://dx.doi.org/10.1016/j.jvir.2014.05.005> [http://www.scvir.org/clinical/cpg/SIR\\_Pos\\_Statmt\\_PAE\\_Benign\\_dis\\_Prostate.pdf](http://www.scvir.org/clinical/cpg/SIR_Pos_Statmt_PAE_Benign_dis_Prostate.pdf)

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## Prostatic Artery Embolization

### for the Treatment of Lower Urinary Tract Symptoms from Benign Prostatic Hyperplasia

A patient's guide to a minimally invasive treatment

## What is PAE?

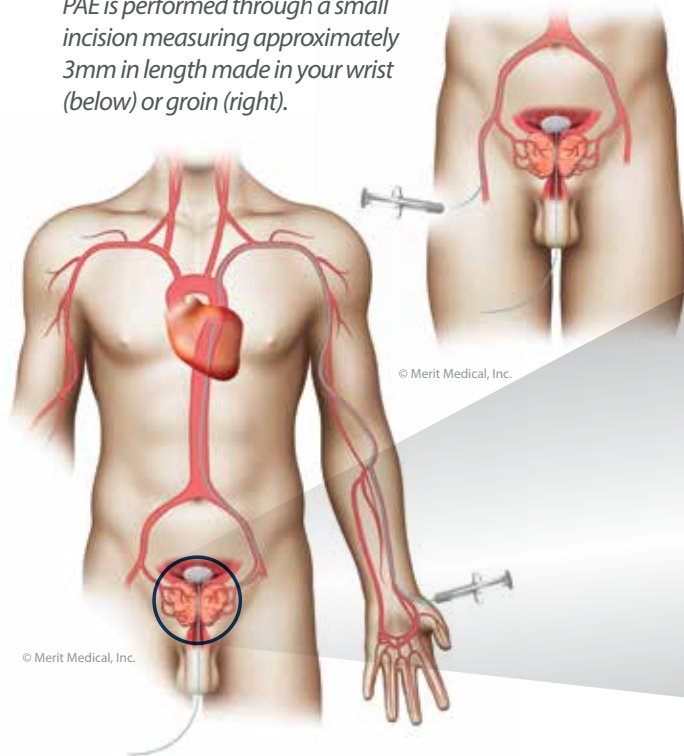
Prostatic artery embolization (PAE) is a minimally invasive treatment that helps improve lower urinary tract symptoms caused by an enlarged prostate, with lower risk of the sexual side effects such as retrograde ejaculation or erectile dysfunction, which can occur from surgery.

PAE is performed by an interventional radiologist (IR), a doctor who uses X-rays and other advanced imaging to see inside the body and treat conditions without surgery.

## Before the PAE Procedure

Depending on your IR's procedural protocol, a Foley catheter (a thin, hollow tube held in place with a balloon at the end) may be inserted into your urethra and positioned in your bladder to provide a reference point for the surrounding anatomy.

*PAE is performed through a small incision measuring approximately 3mm in length made in your wrist (below) or groin (right).*



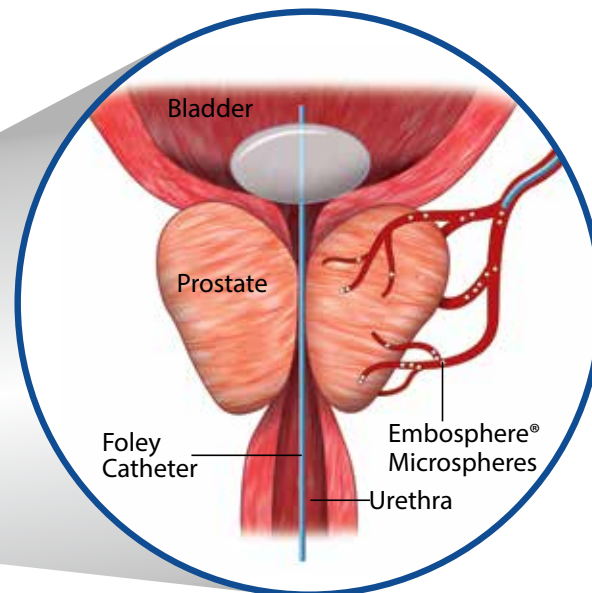
## During the PAE Procedure

During PAE, you are given a local anesthetic and mild sedation medication, but remain awake.

The PAE procedure begins with a tiny incision in your upper thigh or wrist. The IR uses this incision to insert a catheter into your arteries and guide it near your prostate. Once the catheter is in position, an arteriogram (an X-ray in which dye is injected into the blood vessels) is done to map the blood vessels feeding the prostate. Next, Embosphere® Microspheres, tiny round particles each about the size of a grain of sand, are injected through the catheter and into the blood vessels that feed your prostate, reducing its blood supply. The IR then repositions the catheter in order to treat the other side of your prostate, the same way as previously described.

## After the PAE Procedure

In most cases relief begins to occur within days as the prostate shrinks, relieving pressure on the urethra and improving symptoms.



## PAE Benefits

PAE offers many benefits compared to surgical procedures:

- Shorter hospital stay and recovery time
- Low risk of sexual side effects
- Low risk of urinary incontinence
- Shorter urinary catheterization time (may be avoided completely)
- Decreased discomfort

Both transurethral resection of the prostate (TURP) and open prostatectomy are invasive surgeries that can result in higher rates of retrograde ejaculation (ejaculation into the bladder rather than out through the urethra), impotence, and urinary incontinence. There have been few reports of these side effects caused by PAE.

## Possible Risks

The greatest risk comes from non-targeted embolization, the injection of microspheres into arteries not supplying the prostate, potentially causing severe complications. PAE is a challenging procedure that should only be performed by experienced and properly trained interventional radiologists possessing a strong understanding of pelvic vascular anatomy.

Patients may experience "post-PAE syndrome" for days following the procedure, which can include nausea, vomiting, fever, pelvic pain, or painful or frequent urination.

Other risks include hematoma at the incision site, blood in the urine, semen, or stool; bladder spasm; or infection of the puncture site or prostate.

## About Embosphere® Microspheres

Embosphere® Microspheres are the first and only embolic to be cleared for prostatic artery embolization (PAE) by the U.S. Food & Drug Administration.