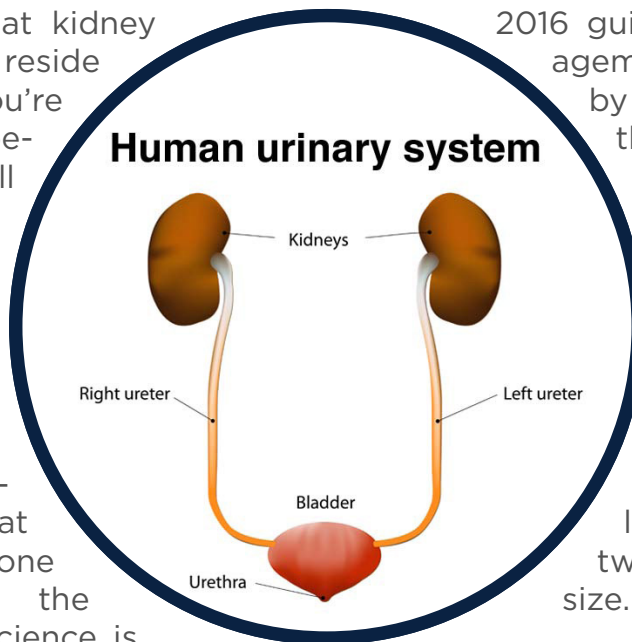


It may surprise you that kidney stones do not always reside in the kidneys, and if you're reading this, it may be because you have a small stone in your ureters, the "tubes" between the bladder and the kidneys. These stones pose special challenges but there are promising advances in drug therapy—backed by several research studies—that may help you pass the stone spontaneously, without the need for surgery. The science is known as Medical Expulsive Therapy (MET).



2016 guidelines on surgical management of stones published by the AUA recommended the use of MET with alpha blockers in patients who were free of any complications and had a stone less than 10 mm, about less than half an inch, in size and which were located in the lower ureter. The EAU recommends offering MET to lower ureteral stones between 5 mm and 10 mm in size.

MET is focused on using oral drugs/medication to help eliminate, or pass, the stones from the ureters with less pain and complications for the patient, and with a better success rate. This is particularly true for those stones that are located near the bladder. By using drugs to help pass ureteral stones, there is a better chance to avoid surgery, so a careful examination of the science and research is worthwhile.



## Recommendations from international urology associations

Many different drugs have been tried in the past, including alpha blockers, calcium channel blockers, corticosteroids and phosphodiesterase-5 (PDE-5) inhibitors. However, only the use of alpha blockers is recommended because there is reliable evidence with this therapy only. This recommendation comes from two of the largest and most respected urologist bodies in the world: the American Urological Association (AUA) and the European Association of Urology (EAU). The

## The science behind MET

The contractility (the ability to contract) of the ureteral muscles is regulated by two receptor types - alpha and beta. Alpha-1, a subtype of alpha receptor, when activated, results in wave-like contractions of ureteral smooth muscles. It is these contractions that cause intense and severe pain. Therefore, blocking these Alpha-1 receptors with an alpha blocker can inhibit the spasm and uncontrolled contraction, which then theoretically reduces pain and facilitates spontaneous stone elimination.

Many alpha blockers have been used as MET, but the most commonly used alpha blocker is a drug called tamsulosin (you may have heard of the brand name, Flomax). Simply, tamsulosin relaxes the ureter, making it easier to pass the stone.

Several research studies have examined the effectiveness of MET and specifically tamsulosin and the results can be confusing. However, what we know is that MET can be beneficial for ureteral stones that are smaller than 10 mm, and that are present in the lower ureter.



**Disclaimer:** It should be noted that medicines used for MET are prescribed for an off label use, meaning that the medication is not approved by the FDA/EMA for use in this condition, but is still prescribed for its potential benefits.

### **What you should know about tamsulosin**

Tamsulosin is a well-tolerated drug. It is inexpensive and available generically. The cost of prescribing tamsulosin for four weeks has a potential to save on health care costs by reducing the need for surgery. Perhaps most important, it will also improve the quality of life for patients by avoiding surgery.

**Ask your doctor about MET and tamsulosin when you are discussing possible treatment plans for your ureter stones.**

### **References**

1. Medical Expulsive Therapy for Ureterolithiasis: The EAU Recommendations in 2016. *Eur Urol*. 2017;71:504-507
2. Update on medical expulsive therapy for distal ureteral stones: Beyond alpha-blockers. *Can Urol Assoc J* 2014;8:442-5
3. Surgical Management Of Stones: American Urological Association/Endourological Society Guideline 2016 [http://www.auanet.org/guidelines/surgical-management-of-stones-\(aua/endourological-society-guideline-2016\)](http://www.auanet.org/guidelines/surgical-management-of-stones-(aua/endourological-society-guideline-2016)) As accessed on July 7, 2017
4. Medical expulsive therapy in adults with ureteric colic: a multicentre, randomised, placebo-controlled trial. *Lancet* 2015; 386: 341-49
5. Distal Ureteric Stones and Tamsulosin: A Double-Blind, Placebo-Controlled, Randomized, Multi-center Trial. *Ann Emerg Med*. 2016;67:86-95
6. Alpha blockers for treatment of ureteric stones: systematic review and meta-analysis. *BMJ* 2016;355:i6112
7. Tamsulosin: Real Life Clinical Experience in 19,365 Patients. *Eur Urol* 1998;34 (suppl 2):37-45

