



[Home](#) → [Health Topics](#) → Urine and Urination

URL of this page: <https://medlineplus.gov/urineandurination.html>

## Urine and Urination

Your kidneys make urine by filtering wastes and extra water from your blood. The waste is called urea. Your blood carries it to the kidneys. From the kidneys, urine travels down two thin tubes called ureters to the bladder. The bladder stores urine until you are ready to urinate. It swells into a round shape when it is full and gets smaller when empty. If your urinary system is healthy, your bladder can hold up to 16 ounces (2 cups) of urine comfortably for 2 to 5 hours.


You may have problems with urination if you have:

- Kidney failure [<https://medlineplus.gov/kidneyfailure.html>]
- Urinary tract infections [<https://medlineplus.gov/urinarytractinfections.html>]
- An enlarged prostate [<https://medlineplus.gov/enlargedprostatebph.html>]
- Bladder control problems like incontinence [<https://medlineplus.gov/urinaryincontinence.html>] , overactive bladder [<https://medlineplus.gov/overactivebladder.html>] , or interstitial cystitis [<https://medlineplus.gov/interstitialcystitis.html>]
- A blockage that prevents you from emptying your bladder


Some conditions may also cause you to have blood or protein in your urine. If you have a urinary problem, see your health care provider. Urinalysis [<https://medlineplus.gov/urinalysis.html>] and other urine tests can help to diagnose the problem. Treatment depends on the cause.

*NIH: National Institute of Diabetes and Digestive and Kidney Diseases*

### Start Here

- Urinary Tract and How It Works [<https://www.niddk.nih.gov/health-information/urollogic-diseases/urinary-tract-how-it-works>]  
 (National Institute of Diabetes and Digestive and Kidney Diseases)  
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-urolgicas/aparato-urinario-funciona>]
- Urination Problems [<https://familydoctor.org/symptom/urination-problems/?adfree=true>] (American Academy of Family Physicians)  
Also in Spanish [<https://es.familydoctor.org/sintoma/problemas-al-orinar/?adfree=true>]
- Urine Color [<https://www.mayoclinic.org/diseases-conditions/urine-color/symptoms-causes/syc-20367333?p=1>]  
(Mayo Foundation for Medical Education and Research)  
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/urine-color/symptoms-causes/syc-20367333?p=1>]
- Urine Odor [<https://www.mayoclinic.org/symptoms/urine-odor/basics/definition/SYM-20050704?p=1>]  
(Mayo Foundation for Medical Education and Research)

### Diagnosis and Tests


- Urodynamic Testing [<https://www.niddk.nih.gov/health-information/diagnostic-tests/urodynamic-testing>]  
 (National Institute of Diabetes and Digestive and Kidney Diseases)  
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/pruebas-diagnosticas/pruebas-urodinamicas>]

### Treatments and Therapies

- Urinalysis: MedlinePlus Health Topic [<https://medlineplus.gov/urinalysis.html>]  (National Library of Medicine)

Also in Spanish [<https://medlineplus.gov/spanish/urinalysis.html>]

- Urinary Diversion [<https://www.niddk.nih.gov/health-information/urologic-diseases/urinary-diversion>]

 (National Institute of Diabetes and Digestive and Kidney Diseases)

Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-urologicas/derivacion-urinaria>]

## Specifics

- Fainting during Urination (Micturition Syncope): What Causes It? [<https://www.mayoclinic.org/diseases-conditions/vasovagal-syncope/expert-answers/micturition-syncope/FAQ-20058084?p=1>]

(Mayo Foundation for Medical Education and Research)

Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/vasovagal-syncope/expert-answers/micturition-syncope/faq-20058084?p=1>]

- Foamy Urine: What Does It Mean? [<https://www.mayoclinic.org/healthy-lifestyle/adult-health/expert-answers/foamy-urine/faq-20057871?p=1>] (Mayo Foundation for Medical Education and Research)

Also in Spanish [<https://www.mayoclinic.org/es/foamy-urine/expert-answers/faq-20057871?p=1>]

- Frequent Urination [<https://www.mayoclinic.org/symptoms/frequent-urination/basics/definition/SYM-20050712?p=1>]

(Mayo Foundation for Medical Education and Research)

Also in Spanish [<https://www.mayoclinic.org/es/symptoms/frequent-urination/basics/definition/sym-20050712?p=1>]

- Urinary Retention [<https://www.niddk.nih.gov/health-information/urologic-diseases/urinary-retention>]

 (National Institute of Diabetes and Digestive and Kidney Diseases)


Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-urologicas/retencion-urinaria>]

## Genetics

- Ochoa syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/ochoa-syndrome>]

 (National Library of Medicine)

## Statistics and Research

- Study Discovers Gene that Helps Us Know when It's Time to Urinate [<https://www.nih.gov/news-events/news-releases/study-discovers-gene-helps-us-know-when-its-time-urinate>]  (National Institutes of Health, Clinical Center)

## Clinical Trials


- ClinicalTrials.gov: Dysuria [<https://clinicaltrials.gov/search?cond=%22Dysuria%22&aggFilters=status:not%20rec>]

 (National Institutes of Health)

- ClinicalTrials.gov: Lower Urinary Tract Symptoms [<https://clinicaltrials.gov/search?cond=%22Lower+Urinary+Tract+Symptoms%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

- ClinicalTrials.gov: Urination [<https://clinicaltrials.gov/search?cond=%22Urination%22&aggFilters=status:not%20rec>]

 (National Institutes of Health)

- ClinicalTrials.gov: Urination Disorders [<https://clinicaltrials.gov/search?cond=%22Urination+Disorders%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

- ClinicalTrials.gov: Urine [<https://clinicaltrials.gov/search?cond=%22Urine%22&aggFilters=status:not%20rec>]

 (National Institutes of Health)


## Journal Articles

### References and abstracts from MEDLINE/PubMed (National Library of Medicine)


- Article: Flow cytometry for screening and prioritisation of urine samples: a retrospective... [<https://www.ncbi.nlm.nih.gov/pubmed/40739551>]
- Article: Quantification of the Role of Teupol(®) 25P and Graminex(®) G96 Compared... [<https://www.ncbi.nlm.nih.gov/pubmed/40731854>]
- Article: Association and Prevalence of Lower Urinary Tract Symptoms in Individuals with... [<https://www.ncbi.nlm.nih.gov/pubmed/40731843>]

Urine and Urination -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Urine%22%5Bmajr%3Anoexp%5D+OR+%22Urination+Disorders%22%5Bmajr%3Anoexp%5D+OR+%22Urination%22%5Bmajr%3Anoexp%5D+OR+%22Lower+Urinary+Tract+Symptoms%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

## Find an Expert

- National Institute of Diabetes and Digestive and Kidney Diseases [<https://www.niddk.nih.gov>] 


## Children

- Chyluria (For Parents) [<https://kidshealth.org/en/parents/chyluria.html>] (Nemours Foundation)  
Also in Spanish [<https://kidshealth.org/es/parents/chyluria.html>]
- Hydronephrosis in Newborns [<https://www.niddk.nih.gov/health-information/urologic-diseases/hydronephrosis-newborns>]  (National Kidney and Urologic Diseases Information Clearinghouse)  
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-urologicas/hidronefrosis-recien-nacidos>]
- Urine Test: Dipstick (For Parents) [<https://kidshealth.org/en/parents/dipstick.html>] (Nemours Foundation)  
Also in Spanish [<https://kidshealth.org/es/parents/dipstick.html>]

## Men

- Urinary Dysfunction After Prostate Cancer Treatment [<https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/urinary-dysfunction-after-prostate-cancer-treatment>] (Johns Hopkins Medicine)

## Older Adults

- 15 Tips to Keep Your Bladder Healthy [<https://www.nia.nih.gov/health/bladder-health-and-incontinence/15-tips-keep-your-bladder-healthy>]  (National Institute on Aging)

## Patient Handouts

- Clean catch urine sample [<https://medlineplus.gov/ency/article/007487.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007487.htm>]
- Frequent or urgent urination [<https://medlineplus.gov/ency/article/003140.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003140.htm>]
- RBC urine test [<https://medlineplus.gov/ency/article/003582.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003582.htm>]
- Urinalysis [<https://medlineplus.gov/ency/article/003579.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003579.htm>]
- Urinary catheters [<https://medlineplus.gov/ency/article/003981.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003981.htm>]
- Urinating more at night [<https://medlineplus.gov/ency/article/003141.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003141.htm>]
- Urination - difficulty with flow [<https://medlineplus.gov/ency/article/003143.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003143.htm>]
- Urination - painful [<https://medlineplus.gov/ency/article/003145.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003145.htm>]
- Urine - bloody [<https://medlineplus.gov/ency/article/003138.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003138.htm>]
- Urine 24-hour volume [<https://medlineplus.gov/ency/article/003425.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003425.htm>]
- Urine odor [<https://medlineplus.gov/ency/article/007298.htm>] (Medical Encyclopedia)



## MEDICAL ENCYCLOPEDIA

Chloride - urine test [<https://medlineplus.gov/ency/article/003601.htm>]

Clean catch urine sample [<https://medlineplus.gov/ency/article/007487.htm>]

Cystoscopy [<https://medlineplus.gov/ency/article/003903.htm>]

Cytology exam of urine [<https://medlineplus.gov/ency/article/003905.htm>]

Fractional excretion of sodium [<https://medlineplus.gov/ency/article/003602.htm>]

Frequent or urgent urination [<https://medlineplus.gov/ency/article/003140.htm>]

Indwelling catheter care [<https://medlineplus.gov/ency/patientinstructions/000140.htm>]

Osmolality urine test [<https://medlineplus.gov/ency/article/003609.htm>]

Osmotic diuresis [<https://medlineplus.gov/ency/article/001266.htm>]

RBC urine test [<https://medlineplus.gov/ency/article/003582.htm>]

Self catheterization - female [<https://medlineplus.gov/ency/patientinstructions/000144.htm>]

Self catheterization - male [<https://medlineplus.gov/ency/patientinstructions/000143.htm>]

Sodium urine test [<https://medlineplus.gov/ency/article/003599.htm>]

Suprapubic catheter care [<https://medlineplus.gov/ency/patientinstructions/000145.htm>]

Urea nitrogen urine test [<https://medlineplus.gov/ency/article/003605.htm>]

Urinalysis [<https://medlineplus.gov/ency/article/003579.htm>]

Urinary catheters [<https://medlineplus.gov/ency/article/003981.htm>]

Urinary catheters - what to ask your doctor [<https://medlineplus.gov/ency/patientinstructions/000230.htm>]

Urinary incontinence products - self-care [<https://medlineplus.gov/ency/patientinstructions/000146.htm>]

Urinating more at night [<https://medlineplus.gov/ency/article/003141.htm>]

Urination - difficulty with flow [<https://medlineplus.gov/ency/article/003143.htm>]

Urination - excessive amount [<https://medlineplus.gov/ency/article/003146.htm>]

Urination - painful [<https://medlineplus.gov/ency/article/003145.htm>]

Urine - abnormal color [<https://medlineplus.gov/ency/article/003139.htm>]

Urine - bloody [<https://medlineplus.gov/ency/article/003138.htm>]

Urine 24-hour volume [<https://medlineplus.gov/ency/article/003425.htm>]

Urine chemistry [<https://medlineplus.gov/ency/article/003342.htm>]

Urine collection - infants [<https://medlineplus.gov/ency/article/003417.htm>]

Urine concentration test [<https://medlineplus.gov/ency/article/003608.htm>]

Urine culture [<https://medlineplus.gov/ency/article/003751.htm>]

Urine culture - catheterized specimen [<https://medlineplus.gov/ency/article/003752.htm>]

Urine drainage bags [<https://medlineplus.gov/ency/patientinstructions/000142.htm>]

Urine drug screen [<https://medlineplus.gov/ency/article/003364.htm>]

Urine odor [<https://medlineplus.gov/ency/article/007298.htm>]

Urine output - decreased [<https://medlineplus.gov/ency/article/003147.htm>]

Urine protein electrophoresis test [<https://medlineplus.gov/ency/article/003589.htm>]

Uroflowmetry [<https://medlineplus.gov/ency/article/003325.htm>]

## Related Health Topics

Bladder Diseases [<https://medlineplus.gov/bladderdiseases.html>]

Enlarged Prostate (BPH) [<https://medlineplus.gov/enlargedprostatebph.html>]

Interstitial Cystitis [<https://medlineplus.gov/interstitialcystitis.html>]

Kidney Diseases [<https://medlineplus.gov/kidneydiseases.html>]

Overactive Bladder [<https://medlineplus.gov/overactivebladder.html>]

Ureteral Disorders [<https://medlineplus.gov/ureteraldisorders.html>]

Urethral Disorders [<https://medlineplus.gov/urethraldisorders.html>]

Urinalysis [<https://medlineplus.gov/urinalysis.html>]

Urinary Incontinence [<https://medlineplus.gov/urinaryincontinence.html>]

Urinary Tract Infections [<https://medlineplus.gov/urinarytractinfections.html>]

## National Institutes of Health

The primary NIH organization for research on *Urine and Urination* is the National Institute of Diabetes and Digestive and Kidney Diseases [<https://www.niddk.nih.gov>]

## Other Languages

Find health information in languages other than English [<https://medlineplus.gov/languages/urineandurination.html>] on *Urine and Urination*

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