Natural Solutions for Bladder Health (UTI's, Stones, Cystitis)

Dr. Bryan Ardis D.C.

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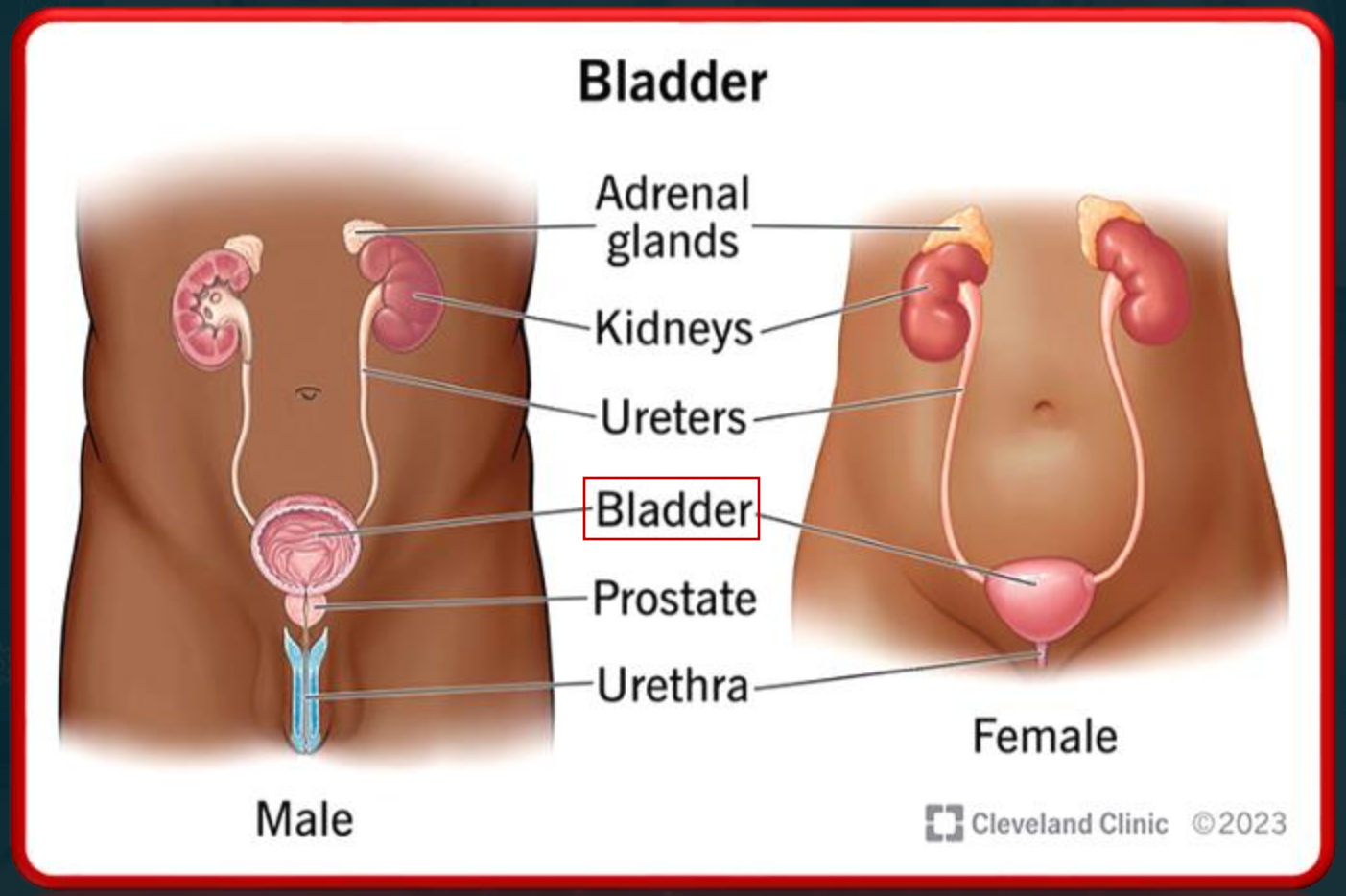
Bladder

The urinary bladder is a hollow, stretchy organ in the lower part of your abdomen that stores urine before it leaves your body through your urethra. Conditions that affect your bladder include incontinence, cystitis and bladder stones. They can make urinating painful, difficult or uncontrollable.

https://my.clevelandclinic.org/health/body/25010-bladder



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Home / Health Library / Diseases & Conditions / Urinary Tract Infections

Urinary Tract Infections

A urinary tract infection is a very common type of infection in your urinary system. It can involve any part of your urinary system. Bacteria — especially E. coli — are the most common cause of UTIs. Symptoms include needing to pee often, pain while peeing and pain in your side or lower back. Antibiotics can treat most UTIs.

https://my.clevelandclinic.org/health/diseases/9135-urinary-tract-infections

What is a urinary tract infection (UTI)?

A urinary tract infection (UTI) is an infection of your urinary system. This type of infection can involve your:

- Urethra (urethritis).
- Kidneys (pyelonephritis).
- Bladder (cystitis).

Urine (pee) is a byproduct of your blood-filtering system, which your kidneys perform. Your kidneys create pee when they remove waste products and excess water from your blood. Pee usually moves through your urinary system without any contamination. However, bacteria can get into your urinary system, which can cause UTIs.

https://my.clevelandclinic.org/health/diseases/9135-urinary-tract-infections

What are the signs of a urinary tract infection?

A UTI causes inflammation in the lining of your urinary tract. The inflammation may cause the following problems:

- Pain in your flank, abdomen, pelvic area or lower back.
- Pressure in the lower part of your pelvis.
- Cloudy, foul-smelling pee.
- Urinary incontinence.
- Frequent urination.
- Urge incontinence.
- Pain when you pee (dysuria).
- Blood in your pee (hematuria).

https://my.clevelandclinic.org/health/diseases/9135-urinary-tract-infections

What is the major cause of a urinary tract infection?

E. coli cause more than 90% of bladder infections. *E. coli* typically exist in your lower intestines (large intestine).

Who is at the greatest risk of getting a urinary tract infection?

Anyone can get a urinary tract infection, but you're more likely to get a UTI if you don't have a penis. This is because your urethra is shorter and closer to your anus, where *E. coli* bacteria are common.

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Home / Health Library / Diseases & Conditions / Bladder Inflammation (Cystitis)

Bladder Stones

Bladder stones are hardened mineral clumps that form in your bladder. They develop when pee remains in your bladder for a long time. The most common symptom is abdominal pain, but it can also cause problems peeing. If you can't pee out a bladder stone, a urologist can break it up or remove it.

https://my.clevelandclinic.org/health/diseases/16312-bladder-stones

What are bladder stones?

Bladder stones are hardened mineral clumps that form in your urinary bladder (the organ that holds your urine). They usually form when some urine (pee) stays in your bladder after you use the restroom.

You may not notice small bladder stones. They may leave your body when you pee without any symptoms. Larger bladder stones may be so painful that you may feel sick to your stomach, aren't able to pee and have other symptoms, such as bloody urine. Go to the nearest emergency room (ER) if you have bladder stone signs, including severe pain, difficulty peeing and other worsening symptoms.

Another name for bladder stones is bladder calculi.

https://my.clevelandclinic.org/health/diseases/16312-bladder-stones

What are the symptoms of bladder stones?

You may pee out smaller bladder stones without any obvious symptoms. Large bladder stones can irritate your bladder and cause intense pain, bleeding and problems peeing. Signs and symptoms of a larger bladder stone may include:

- **Changes in the color of your pee**. Your pee may look cloudy or dark. You may also see blood in your pee (hematuria).
- **Frequent urges to pee**. You may feel like you always need to pee, even if you just went.
- **Pain**. It's common to feel pain or a burning sensation when you pee (dysuria). You may also feel pain that comes and goes in the lower part of your abdomen (belly), penis or testicles.
- **Stopping and starting when you pee**. You may have a difficult time starting to pee and maintaining a strong flow, even if you really have to go. Sometimes your pee stream stops and starts (urinary intermittency).
- **Urinary tract infections (UTIs)**. Bladder stones often cause UTIs. UTI symptoms include frequent, painful urination. Your pee may also be cloudy and smelly.

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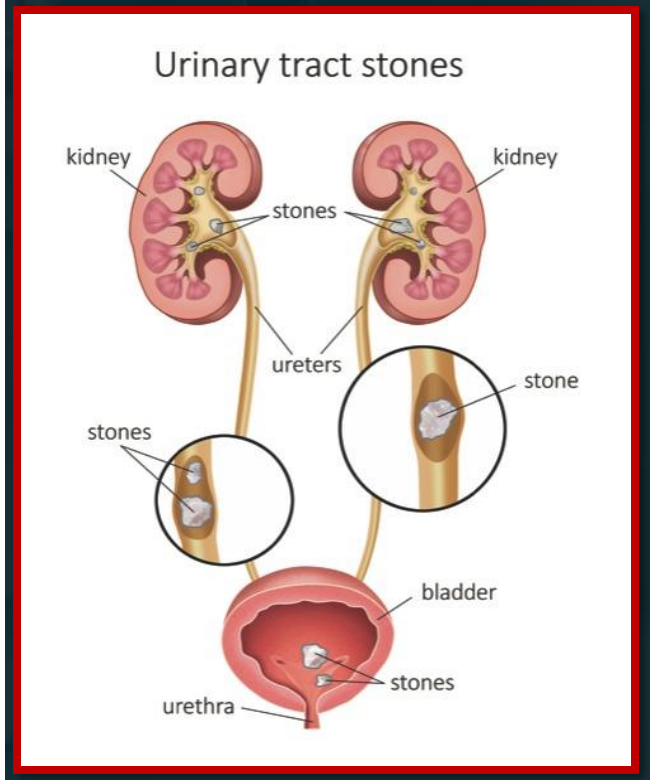

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Home / Health Library / Diseases & Conditions / Bladder Inflammation (Cystitis)

Bladder Inflammation (Cystitis)

Bladder infections can lead to inflammation of your bladder (cystitis). The most common cause of cystitis is an E. coli infection. The most common symptoms include pain or a burning feeling when you pee or peeing more than usual. Treatment includes antibiotics.

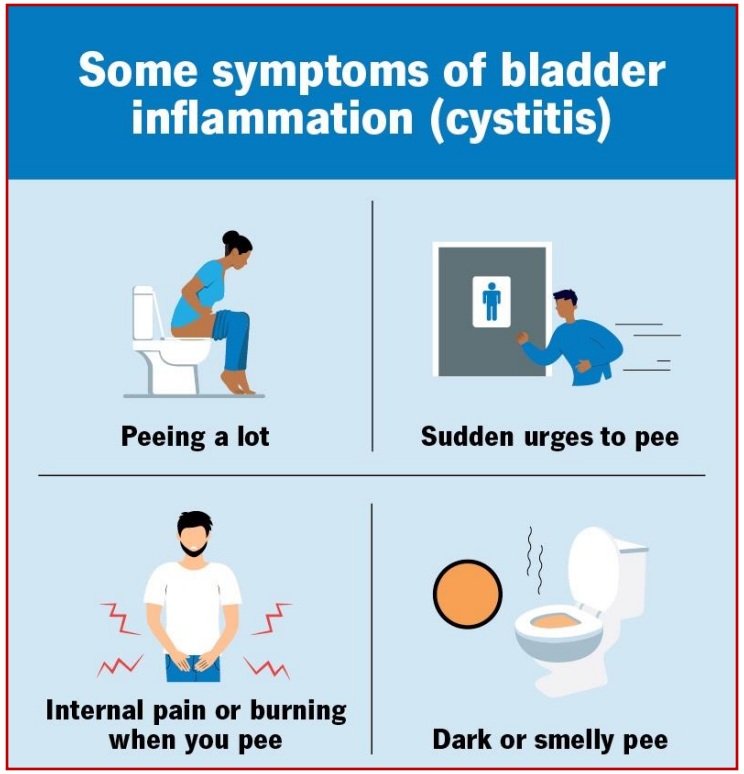
https://my.clevelandclinic.org/health/diseases/21203-bladder-inflammation-cystitis

What Is a Bladder Infection (Cystitis)?

Cystitis is inflammation of your urinary bladder, usually because of a bacterial infection. Bacteria from the area between your genitals and rectum (perineum) can get into your urethra and travel up to your bladder. That leads to symptoms that affect how you pee.

Bladder infections are very common, especially in females. About 50% to 60% of females will have cystitis at some point. And these infections may come back (recur) — between 30% and over 40% of females who get a bladder infection will have another one later on.

Males are less likely to get cystitis. That's because their urethras are longer — about 8 to 9 inches (about 20 centimeters). In females, they're much shorter — about 1.5 inches (3 to 4 centimeters) long. Because of that, it's harder for bacteria to reach the bladder in males.



Cystitis symptoms commonly affect your pee, including peeing more, discomfort when you pee and changes to the color or smell.

https://my.clevelandclinic.org/health/diseases/21203-bladder-inflammation-cystitis

What are the different types of cystitis?

There are two main types of cystitis:

- **Uncomplicated cystitis** is mild. It usually goes away easily and doesn't cause serious problems.
- **Complicated cystitis** is more serious. It can spread to your kidneys and may be harder to treat.

https://my.clevelandclinic.org/health/diseases/21203-bladder-inflammation-cystitis

What are symptoms of cystitis?

Cystitis symptoms commonly include:

- **Peeing more often than usual (frequent urination)**: You may feel like you have to pee all the time, even if not much comes out. Some people also feel a sudden, strong need to pee and can't hold it (urge incontinence).
- **Pain or burning when you pee (dysuria)**: It may burn or itch when you start or finish peeing.
- **Changes in your pee**: It might look darker or smell bad.

https://my.clevelandclinic.org/health/diseases/21203-bladder-inflammation-cystitis

What triggers cystitis?

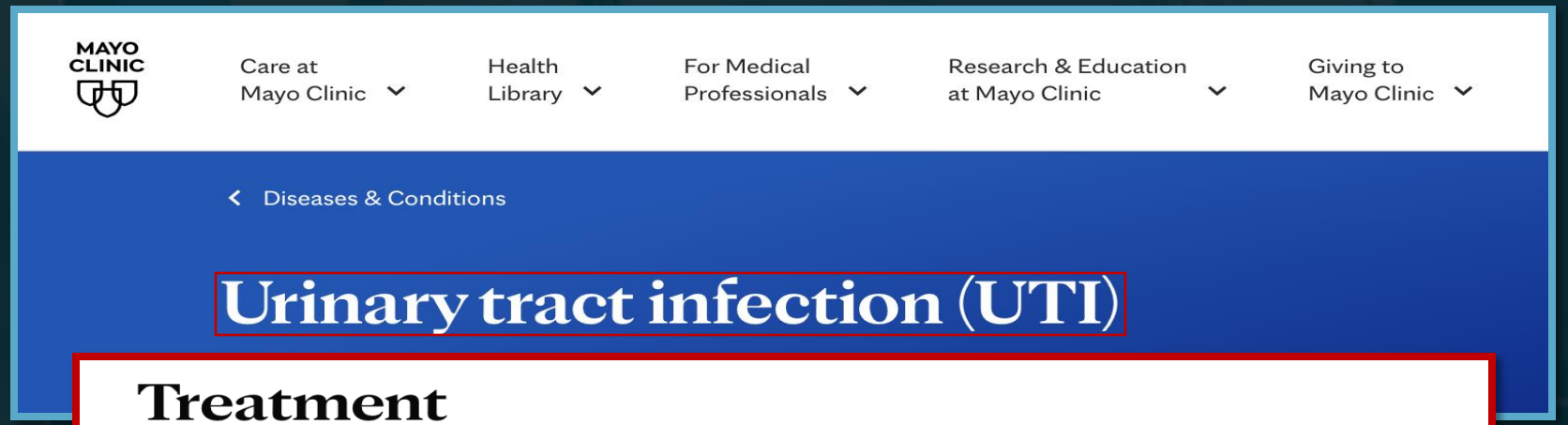
Bacteria cause most bladder infections. The most common one is *Escherichia coli* (*E. coli*). It gets into your urethra and multiplies in your bladder.

Other factors that may increase your risk of cystitis include:

- Urinary system problems you have at birth (congenital urinary abnormalities)
- Pregnancy
- Menopause
- Using a Foley catheter
- Using a vaginal diaphragm
- Using spermicides
- Having sexual intercourse with more than one partner
- Constipation
- Diabetes
- Multiple sclerosis (MS)

https://my.clevelandclinic.org/health/diseases/21203-bladder-inflammation-cystitis


What are the Treatments and their Side Effects?!



Treatment

Antibiotics often are the first treatment for an active urinary tract infection. Your health and the type of bacteria in your urine guide which medicine is used and how long you need to take it.

Simple infections

Antibiotics used to treat simple UTIs include:

- Trimethoprim and sulfamethoxazole (Bactrim, Bactrim DS).
- Fosfomycin.
- Nitrofurantoin (Macrodantin, Macrobid, Furadantin).
- Cephalexin.
- Ceftriaxone.

https://www.mayoclinic.org/diseases-conditions/urinary-tract-infection/diagnosis-treatment/drc-20353453

Home > Sulfamethoxazole/trimethoprim

Print Save

Sulfamethoxazole and trimethoprim

Generic name: sulfamethoxazole and trimethoprim (oral/injection) [*SUL-fa-meth-OX-a-zole-and-trye-METH-oh-prim*]

Brand names: Bactrim, Bactrim DS, Sulfatrim Pediatric, Septra, Sulfatrim, ... show all 18 brands

Dosage forms: intravenous solution (80 mg-16 mg/mL), oral suspension (200 mg-40 mg/5 mL), oral tablet (400 mg-80 mg; 800 mg-160 mg)

Drug class: Sulfonamides

Medically reviewed by Drugs.com on Jul 24, 2025. Written by Cerner Multum.

Uses | Side effects | Warnings | Before taking | Dosage | Interactions | FAQ

What is sulfamethoxazole and trimethoprim?

Sulfamethoxazole and trimethoprim is a combination antibiotic used to treat ear infections, urinary tract infections, bronchitis, traveler's diarrhea, shigellosis, and Pneumocystis jiroveci pneumonia.

https://www.drugs.com/mtm/sulfamethoxazole-and-trimethoprim.html

Sulfamethoxazole / Trimethoprim Side Effects

Medically reviewed by Drugs.com. Last updated on Aug 26, 2025.

Metabolic

- **Very common** (10% or more): Hyperkalemia
- **Frequency not reported**: Anorexia, hypoglycemia, hyponatremia, decreased appetite
- **Postmarketing reports**: Metabolic acidosis[Ref]

https://www.drugs.com/mtm/sulfamethoxazole-and-trimethoprim.html

Official Answer by Drugs.com 18 April 2024

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This type of data is not collected unless it has emerged that this is a side effect of concern and the medicine is being monitored by the FDA Adverse Event Reporting System (FAERS). Even then it will only be an estimate.

https://www.drugs.com/answers/what-mean-when-you-frequency-reported-under-side-3576854.html

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Gastrointestinal

- **Common** (1% to 10%): Nausea, diarrhea
- **Uncommon** (0.1% to 1%): Vomiting
- **Frequency not reported**: Glossitis, stomatitis, pseudomembranous enterocolitis, pancreatitis, emesis, abdominal pain, pseudomembranous colitis, Clostridium difficile-associated diarrhea, constipation, sore mouth[Ref]

Nervous system

- **Common** (1% to 10%): Headache
- **Frequency not reported**: Aseptic meningitis, convulsions/seizures, peripheral neuritis/neuropathy, ataxia, dizziness, vertigo, tinnitus, tremor, other neurological manifestations (e.g., ataxia, ankle clonus, apathy), lethargy, paresthesia, syncope[Ref]

https://www.drugs.com/mtm/sulfamethoxazole-and-trimethoprim.html

Sulfamethoxazole / Trimethoprim Side Effects

Medically reviewed by Drugs.com. Last updated on Aug 26, 2025.

Dermatologic

- **Common** (1% to 10%): Rash
- **Frequency not reported**: Diffuse rash, erythematous rash, maculopapular rash, morbilliform rash, pruritic rash, urticaria, photosensitivity, pruritus, exfoliative dermatitis, fixed drug eruption, erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis, Henoch-Schonlein purpura, drug reaction with eosinophilia and systemic symptoms (DRESS), generalized skin eruptions, purpura, angioedema, generalized pustular dermatosis, alopecia, allergic/hypersensitivity vasculitis resembling Henoch-Schonlein purpura, erythema nodosum, bullous dermatitis[Ref]

Other

- **Common** (1% to 10%): Fungal/monilial overgrowth
- **Frequency not reported**: Drug fever, chills, weakness, fatigue, abnormal elevations in alkaline phosphatase, positive lupus erythematous phenomenon, moniliasis[Ref]

Cardiovascular

- **Frequency not reported**: Thrombophlebitis, allergic myocarditis, polyarteritis/periarteritis nodosa
- **Postmarketing reports**: QT prolongation (resulting in ventricular tachycardia and torsade de pointes)

https://www.drugs.com/mtm/sulfamethoxazole-and-trimethoprim.html

Sulfamethoxazole / Trimethoprim Side Effects

Medically reviewed by Drugs.com. Last updated on Aug 26, 2025.

Hematologic

- **Frequency not reported**: Leucopenia, neutropenia, thrombocytopenia, bone marrow depression, agranulocytosis, aplastic anemia, hemolytic anemia, megaloblastic anemia, methemoglobinemia, hypoprothrombinemia, eosinophilia, hematological toxicity, hemolysis, pancytopenia, granulocytopenia
- **Postmarketing reports**: Thrombotic thrombocytopenic purpura, idiopathic thrombocytopenic purpura[Ref]

Hepatic

- **Frequency not reported**: Hepatitis, cholestatic jaundice, hepatic necrosis, elevated serum transaminase, elevated bilirubin, hepatic changes, abnormal elevations in serum transaminase levels, jaundice, elevated liver enzymes, disturbance in liver enzymes[Ref]

Cases of cholestatic jaundice and hepatic necrosis have been fatal.

Hypersensitivity

- **Frequency not reported**: Hypersensitivity, allergic skin reactions, anaphylaxis, serum sickness-like syndrome, generalized allergic reactions, anaphylactic/anaphylactoid reactions, severe hypersensitivity reactions (including associated with P jirovecii pneumonia), serum sickness[Ref]

https://www.drugs.com/mtm/sulfamethoxazole-and-trimethoprim.html

Sulfamethoxazole / Trimethoprim Side Effects

Medically reviewed by Drugs.com. Last updated on Aug 26, 2025.

Local

- **Frequency not reported**: Local reaction, pain, slight/local irritation, inflammation[Ref]

Musculoskeletal

- **Frequency not reported**: Arthralgia, myalgia, rhabdomyolysis, systemic lupus erythematosus, muscle weakness[Ref]

Ocular

- **Frequency not reported**: Uveitis, conjunctival and scleral injection/redness/edema, periorbital edema, corneal ring infiltrates, vision problems[Ref]

Psychiatric

- **Frequency not reported**: Depression/mental depression, hallucinations, apathy, nervousness, insomnia, psychotic disorder, confusional state, agitation, anxiety, abnormal behavior, nightmares[Ref]

Renal

- **Frequency not reported**: Renal impairment/failure, interstitial nephritis, tubulointerstitial nephritis and uveitis syndrome, elevated BUN, elevated serum creatinine, toxic nephrosis, renal tubular acidosis, nephrotoxicity, functional kidney changes, abnormal elevations in serum urea, abnormal elevations in serum creatinine, stone formation, tubular necrosis, aggravation of renal disease, azotemia, hyperkalemic renal tubular acidosis, overestimations of normal creatinine values[Ref]

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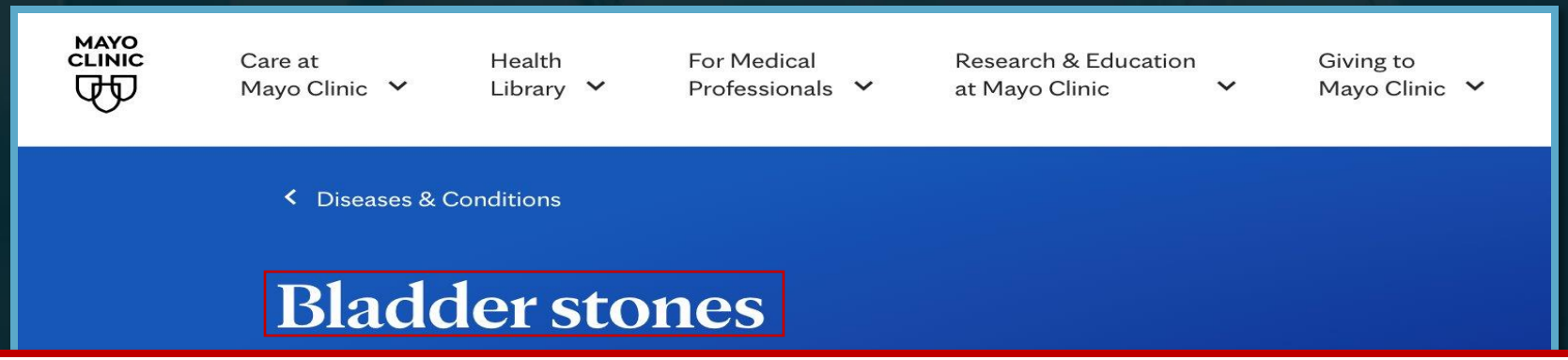

Breaking stones apart

One method involves getting a numbing medicine, called a local anesthetic, or being put in a sleep-like state, called general anesthesia. Then a small tube with a camera at the end goes into the bladder so that the stone can be seen. A laser, ultrasound or other device breaks the stone into small pieces and flushes them from the bladder.

Surgical removal

Sometimes, bladder stones are too large or too hard to break up. These need surgery to remove them.

When bladder stones are the result of a bladder blockage or an enlarged prostate, this condition needs treatment at the same time as the bladder stones. This most often involves surgery.

https://www.mayoclinic.org/diseases-conditions/bladder-stones/diagnosis-treatment/drc-20354345

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Cystolitholapaxy

A cystolitholapaxy is a procedure to remove bladder stones. Surgeons use an instrument called a cystoscope to locate the stone or stones. A laser crushes the stones into smaller pieces so your surgeon can remove them.

https://my.clevelandclinic.org/health/procedures/16497-cystolitholapaxy#risks-benefits

What are the complications of cystolitholapaxy?

Cystolitholapaxy is generally a safe and effective procedure. Urinary tract infections (UTIs) are the most common complication of a cystolitholapaxy. About 1 in 10 people develop urinary tract infections (UTIs) after bladder surgery. Antibiotics treat UTIs.

Other rare but possible complications include:

- Scar tissue formation in your urethra.
- Excess bleeding.
- Blood clots in your legs or lungs.
- Regrowth of bladder stones.
- Reaction to anesthesia.

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Interstitial cystitis

Oral medications

Certain medicines that you take by mouth (oral medications) may improve signs and symptoms of interstitial cystitis:

- **Nonsteroidal anti-inflammatory drugs,** such as ibuprofen (Advil, Motrin IB, others) or naproxen sodium (Aleve), to relieve pain.
- **Tricyclic antidepressants,** such as amitriptyline or imipramine (Tofranil), to help relax your bladder and block pain.
- **Antihistamines,** such as loratadine (Claritin, others), which may reduce urinary urgency and frequency and relieve other symptoms.
- **Pentosan polysulfate sodium (Elmiron),** which is approved by the Food and Drug Administration specifically for treating interstitial cystitis. How it works is unknown, but it may restore the inner surface of the bladder, which protects the bladder wall from substances in urine that could irritate it. It may take two to four months before you begin to feel pain relief and up to six months to experience a decrease in urinary frequency.

https://www.mayoclinic.org/diseases-conditions/interstitial-cystitis/diagnosis-treatment/drc-20354362

Home > Elmiron

Elmiron

Generic name: pentosan polysulfate sodium [*PEN-toe-san-POL-ee-SUL-fate-SOE-dee-um*]

Drug class: Miscellaneous genitourinary tract agents

Medically reviewed by Drugs.com on Sep 8, 2025. Written by Cerner Multum.

Uses | Side effects | Warnings | Before taking | Dosage | Interactions

What is Elmiron?

Elmiron is used to treat bladder pain and discomfort caused by cystitis (bladder inflammation or irritation).

Elmiron is for use in adults and children at least 16 years old.

https://www.drugs.com/mtm/elmiron.html

Official Answer by Drugs.com 18 April 2024

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https://www.drugs.com/answers/what-mean-when-you-frequency-reported-under-side-3576854.html

Elmiron Side Effects

Generic name: *pentosan polysulfate sodium*

Medically reviewed by Drugs.com. Last updated on Mar 15, 2025.

Dermatologic

- **Common** (1% to 10%): Alopecia, rash
- **Frequency not reported**: Ecchymosis, photosensitivity, pruritus, urticaria, sweating increased[Ref]

Hepatic

- **Common** (1% to 10%): Liver function abnormal
- **Frequency not reported**: Liver function test elevated[Ref]

Genitourinary

- **Common** (1% to 10%): Urinary frequency
- **Frequency not reported**: Vaginitis, pelvic pain[Ref]

Nervous system

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Dermatologic

- **Common** (1% to 10%): Alopecia, rash
- **Frequency not reported**: Ecchymosis, photosensitivity, pruritus, urticaria, sweating increased[Ref]

https://www.drugs.com/mtm/elmiron.html

Elmiron Side Effects

Generic name: *pentosan polysulfate sodium*

Medically reviewed by Drugs.com. Last updated on Mar 15, 2025.

Gastrointestinal

- **Common** (1% to 10%): Diarrhea, nausea, dyspepsia, abdominal pain
- **Frequency not reported**: Vomiting, mouth ulcer, colitis, esophagitis, gastritis, flatulence, constipation, gum hemorrhage, enlarged abdomen
- **Postmarketing reports**: Rectal hemorrhage[Ref]

Hematologic

- **Frequency not reported**: Anemia, prothrombin time increased, partial thromboplastin time increased, leukopenia, thrombocytopenia, coagulation disorder[Ref]

Respiratory

- **Frequency not reported**: Pharyngitis, rhinitis, epistaxis, dyspnea[Ref]

Ocular

- **Frequency not reported**: Conjunctivitis, optic neuritis, amblyopia, retinal hemorrhage, lacrimation, nystagmus[Ref]

https://www.drugs.com/mtm/elmiron.html

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Ocular

- **Frequency not reported**: Conjunctivitis, optic neuritis, amblyopia, retinal hemorrhage, lacrimation, nystagmus [Ref]

https://www.drugs.com/mtm/elmiron.html

Elmiron Side Effects

Generic name: *pentosan polysulfate sodium*

Medically reviewed by Drugs.com. Last updated on Mar 15, 2025.

Immunologic

- **Frequency not reported**: Allergic reaction[Ref]

Psychiatric

- **Frequency not reported**: Emotional lability/depression, insomnia, mood swings, suicidal ideation[Ref]

https://www.drugs.com/mtm/elmiron.html

Published Drugs that cause Bladder Problems..

Medications and their Potential to Cause Increase 'Urinary Tract Fungal Infection'

Developed by - Dr. M. Janani Priya, Pharm D

Reviewed by - Dr. M. Sree Mohana Preetha, Pharm D

Last Updated on Nov 16, 2023

This page lists all known medications that could potentially lead to **'Urinary Tract Fungal Infection'** as a side effect. It's important to note that mild side effects are quite common with medications. The medication(s) listed here may be used individually or as part of a broader combination therapy. The information provided is intended as a helpful resource; however, it should not replace professional medical advice. If you're concerned about 'Urinary Tract Fungal Infection', it is advisable to consult a healthcare professional.

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Drugs with the Side Effect - Urinary Tract Infection

Abiraterone Acetate ← Drug name- Zytiga and Yonsa

Most other Common Side Effects: Joint swelling, fracture, liver impairment, decrease in blood potassium level, fluid retention, muscle discomfort, hot flush, diarrhea, cough, high blood pressure, abnormal heart rhythm, urinary frequency, night time urination, indigestion and upper respiratory tract infection

Acamprosate ← Drug name- Aotal and Campral

Most other Common Side Effects: Joint swelling, fracture, liver impairment, decrease in blood potassium level, fluid retention, muscle discomfort, hot flush, diarrhea, cough, high blood pressure, abnormal heart rhythm, urinary frequency, night time urination, indigestion and upper respiratory tract infection

Adalimumab ← Drug name- Humira

Most other Common Side Effects: Joint swelling, fracture, liver impairment, decrease in blood potassium level, fluid retention, muscle discomfort, hot flush, diarrhea, cough, high blood pressure, abnormal heart rhythm, urinary frequency, night time urination, indigestion and upper respiratory tract infection

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Afatinib ← Drug name- Gilotrif, Giotrif, Afanix

Most other Common Side Effects: Joint swelling, fracture, liver impairment, decrease in blood potassium level, fluid retention, muscle discomfort, hot flush, diarrhea, cough, high blood pressure, abnormal heart rhythm, urinary frequency, night time urination, indigestion and upper respiratory tract infection

Albuterol and Ipratropium ← Drug name- ProAir HFA and Atrovent HFA

Most other Common Side Effects: Joint swelling, fracture, liver impairment, decrease in blood potassium level, fluid retention, muscle discomfort, hot flush, diarrhea, cough, high blood pressure, abnormal heart rhythm, urinary frequency, night time urination, indigestion and upper respiratory tract infection

Alogliptin ← Drug name- Humira

Most other Common Side Effects: Upper respiratory tract infection, heart attack, throat inflammation, diarrhea, high blood pressure, headache

Alogliptin and Metformin ← Drug name- Nesina

Most other Common Side Effects: Upper respiratory tract infection, nasopharyngitis, diarrhea, hypertension, headache

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Alpelisib ← Drug name- Piqray and Vijoice

Most other Common Side Effects: Upper respiratory tract infection, nasopharyngitis, diarrhea, hypertension, headache

Amlodipine Hydrochlorothiazide and Olmesartan ← Drug name- Tribenzor

Most other Common Side Effects: Dizziness, lightheadedness, swelling in the extremities, headache, fatigue, inflammation of the nasopharynx, muscle spasms, nausea, upper respiratory tract infection, diarrhea, joint swelling

Anakinra ← Drug name- Kineret

Most other Common Side Effects: Injection site reactions such as redness, bruising, swelling, and pain, low white blood cell count, chest infection, worsening of condition, headache, nausea, diarrhea, sinusitis, joint pain, flu like-symptoms, and abdominal pain

Anastrozole ← Drug name- Arimidex®

Most other Common Side Effects: Injection site reactions such as redness, bruising, swelling, and pain, low white blood cell count, chest infection, worsening of condition, headache, nausea, diarrhea, sinusitis, joint pain, flu like-symptoms, and abdominal pain

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Atorvastatin ← Drug name- Lipitor

Most other Common Side Effects: Nose inflammation, joint pain, diarrhea, pain in extremity, indigestion, nausea, muscle and bone pain, muscle spasms, sleeplessness and throat pain

Baricitinib ← Drug name- Olumiant

Most other Common Side Effects: Nose inflammation, joint pain, diarrhea, pain in extremity, indigestion, nausea, muscle and bone pain, muscle spasms, sleeplessness and throat pain

Canagliflozin ← Drug name- Invokana

Most other Common Side Effects: Female genital mycotic infections

Candesartan Cilexetil and Hydrochlorothiazide ← Drug name- Atacand HCT

Most other Common Side Effects: Female genital mycotic infections

Caplacizumab-yhdp ← Drug name- Cablivi

Most other Common Side Effects: Female genital mycotic infections

Carbidopa-Levodopa ← Drug name- Sinemet

Most other Common Side Effects: Female genital mycotic infections

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Cilostazol ← Drug name- Pletal

Most other Common Side Effects: Weakness, high blood pressure, vomiting, leg cramps, sensory loss, tingling, difficulty in breathing, rash, blood in urine, flu syndrome, chest pain, joint inflammation, and lung inflammation

Cisapride ← Drug name- Propulsid

Most other Common Side Effects: Weakness, high blood pressure, vomiting, leg cramps, sensory loss, tingling, difficulty in breathing, rash, blood in urine, flu syndrome, chest pain, joint inflammation, and lung inflammation

Clomipramine ← Drug name- Anafranil

Most other Common Side Effects: Weakness, high blood pressure, vomiting, leg cramps, sensory loss, tingling, difficulty in breathing, rash, blood in urine, flu syndrome, chest pain, joint inflammation, and lung inflammation

Clopidogrel ← Drug name- Plavix®

Most other Common Side Effects: Weakness, high blood pressure, vomiting, leg cramps, sensory loss, tingling, difficulty in breathing, rash, blood in urine, flu syndrome, chest pain, joint inflammation, and lung inflammation

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Conivaptan ← Drug name- Vaprisol

Most other Common Side Effects: Weakness, high blood pressure, vomiting, leg cramps, sensory loss, tingling, difficulty in breathing, rash, blood in urine, flu syndrome, chest pain, joint inflammation, and lung inflammation

Desloratadine ← Drug name- Clarinex

Most other Common Side Effects:

Deutetrabenazine ← Drug name- Austedo®

Most other Common Side Effects:

Eltrombopag ← Drug name- Promacta, Revolade, and Alvaiz

Most other Common Side Effects: Nausea, diarrhea, upper respiratory tract infection, vomiting, increased level of liver enzyme, muscle pain, throat pain, back pain, tingling and rash

Enalapril ← Drug name- Vasotec and Epaned

Most other Common Side Effects: Nausea, diarrhea, upper respiratory tract infection, vomiting, increased level of liver enzyme, muscle pain, throat pain, back pain, tingling and rash

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Enalapril and Hydrochlorothiazide ← Drug name- Vaseretic

Most other Common Side Effects: Nausea, diarrhea, upper respiratory tract infection, vomiting, increased level of liver enzyme, muscle pain, throat pain, back pain, tingling and rash

Epoetin Beta-methoxy Polyethylene Glycol ← Drug name- Mircera

Most other Common Side Effects: Nausea, diarrhea, upper respiratory tract infection, vomiting, increased level of liver enzyme, muscle pain, throat pain, back pain, tingling and rash

Mirabegron ← Drug name- Myrbetriq

Most other Common Side Effects: Constipation, headache, dizziness, high blood pressure, dry eyes, nausea

Mirtazapine ← Drug name- Remeron, Avanza

Most other Common Side Effects: Constipation, headache, dizziness, high blood pressure, dry eyes, nausea

Mitoxantrone ← Drug name- Novantrone

Most other Common Side Effects: Nausea, hair loss, menstrual disorder, absence of menstrual period, upper respiratory tract infection, mouth ulcer, abnormal heart rhythm, diarrhea, ECG abnormal, constipation, back pain and headache

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Natalizumab ← Drug name- Tysabri and Tyruko.

Most other Common Side Effects: Headache, fatigue, joint pain, lower respiratory tract infection, stomach inflammation, vaginal inflammation, depression, pain in extremity, abdominal discomfort, diarrhea, and rash

Norethindrone Acetate and Ethinyl Estradiol ← Drug name- Loestrin & Aurovela

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Olopatadine ← Drug name- Pataday, Patanol, and Paze

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Omeprazole ← Drug name- Prilosec and Prilosec OTC

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Omeprazole and Sodium Bicarbonate ← Drug name- Zegerid and Konvomep

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Oxybutynin Hydrochloride ← Drug name- Ditropan

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Pantoprazole ← Drug name- Protonix

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Paricalcitol ← Drug name- Zemplar

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Pegaptanib ← Drug name- Macugen

Most other Common Side Effects - Headache, vaginal candidiasis, upper respiratory infection, nausea, menstrual cramps, breast tenderness, sinusitis, vaginitis (bacterial), abnormal cervical smear, acne, mood swings, weight gain, vomiting, abnormal bleeding from the uterus, hypertension

Saxagliptin and Metformin ← Drug name- Kombiglyze XR

Most other Common Side Effects: Upper respiratory tract infection, headache

Segesterone Acetate and Ethinyl Estradiol ← Drug name- Annovera

Most other Common Side Effects: Upper respiratory tract infection, headache

Sibutramine ← Drug name- Meridia & Reductil

Most other Common Side Effects: Upper respiratory tract infection, headache

Sildenafil ← Drug name- Viagra

Most other Common Side Effects: Upper respiratory tract infection, headache

Simvastatin and Sitagliptin ← Drug name- Zocor, FloLipid, & Simvador

Most other Common Side Effects: Upper respiratory tract infection, headache

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Sirolimus ← Drug name- Rapamune, Fyarro, & Hyftor

Most other Common Side Effects: Swelling in the extremities, high blood pressure, increased cholesterol level, constipation, abdominal pain, diarrhea, headache, fever, anemia, nausea, joint pain, and decrease in platelet counts

Tolcapone ← Drug name- Tasmar

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

Tolmetin ← Drug name- Tolectin

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Topiramate ← Drug name- Topamax & Qsymia®

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

Trastuzumab ← Drug name- Herceptin

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

Travoprost ← Drug name- Travatan Z & iDose TR

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

Triptorelin ← Drug name- Trelstar & Triptodur

Most other Common Side Effects: Movement disorder, nausea, sleep disorder, involuntary movements, excessive dreaming, loss of appetite, muscular cramps, orthostatic complaints, drowsiness, diarrhea, confusion, dizziness, headache, hallucinations, vomiting, constipation, fatigue, upper respiratory tract infection, falling, increased sweating, dry mouth, abdominal pain and urine discoloration

https://www.medindia.net/drugs/side-effects/urinary-tract-infection.htm

frontiers in Pharmacology

Front Pharmacol. 2024 Dec 18;15:1377679. doi: 10.3389/fphar.2024.1377679

An exploratory study evaluated the 30 most commonly reported medications in the United States food and drug administration's adverse event reporting system that are associated with the occurrence of kidney stones

Erhao Bao [1,2,†], Yang Yang [3,†], Binglei Jiang [4,†], Ben Wang [2,†], Ying Liu [2], Lin Yang [2], Long Xia [2], Pingyu Zhu [2,*]

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PMCID: PMC11701592 PMID: 39764463

https://pmc.ncbi.nlm.nih.gov/articles/PMC11701592/

Ranking	Medication	a	b	c	d	ROR	ROR lower bound, 95% CI	ROR upper bound, 95% CI	PRR
1	HUMIRA	2,429	1,722,659	35,352	50,398,881	2.01	1.93	2.09	2.01
2	ENBREL	1,279	1,312,960	36,502	50,808,580	1.36	1.28	1.43	1.36
3	REMICADE	794	338,134	36,987	51,783,406	3.29	3.06	3.53	3.28
4	ATAZANAVIR	702	21,282	37,079	52,100,258	46.35	43	50	44.9
5	FORTEO	697	327,873	37,084	51,793,667	2.97	2.75	3.2	2.96
6	XYREM	686	205,027	37,095	51,916,513	4.68	4.34	5.05	4.67
7	TERIPARATIDE	589	221,807	37,192	51,899,733	3.71	3.42	4.02	3.7
8	AVONEX	557	335,159	37,224	51,786,381	2.31	2.13	2.51	2.31
9	PREVACID	525	57,903	37,256	52,063,637	12.67	11.62	13.82	12.57
10	REVLIMID	524	627,869	37,257	51,493,671	1.15	1.06	1.26	1.15
11	COSENTYX	523	385,961	37,258	51,735,579	1.88	1.73	2.05	1.88
12	VEDOLIZUMAB	446	191,855	37,335	51,929,685	3.23	2.94	3.55	3.23
13	TOPAMAX	425	30,482	37,356	52,091,058	19.44	17.66	21.4	19.19
14	REBIF	361	139,379	37,420	51,982,161	3.6	3.24	3.99	3.59
15	STELARA	255	146,816	37,526	51,974,724	2.41	2.13	2.72	2.4

https://pmc.ncbi.nlm.nih.gov/articles/PMC11701592/

Ranking	Medication	a	b	c	d	ROR	ROR lower bound, 95% CI	ROR upper bound, 95% CI	PRR
16	SANDOSTATIN LAR DEPOT	247	105,871	37,534	52,015,669	3.23	2.85	3.66	3.23
17	NEXIUM	239	231,857	37,542	51,889,683	1.42	1.25	1.62	1.42
18	RINVOQ	223	104,313	37,558	52,017,227	2.96	2.6	3.38	2.96
19	XELJANZ XR	222	189,565	37,559	51,931,975	1.62	1.42	1.85	1.62
20	ELIQUIS	187	173,134	37,594	51,948,406	1.49	1.29	1.72	1.49
21	CIPROFLOXACIN	176	160,601	37,605	51,960,939	1.51	1.3	1.76	1.51
22	TRUVADA	168	75,833	37,613	52,045,707	3.07	2.63	3.57	3.06
23	VIREAD	148	103,580	37,633	52,017,960	1.98	1.68	2.32	1.97
24	AUBAGIO	128	112,094	37,653	52,009,446	1.58	1.33	1.88	1.58
25	TRULICITY	124	137,806	37,657	51,983,734	1.24	1.04	1.48	1.24
26	XYWAV	118	21,481	37,663	52,100,059	7.6	6.34	9.11	7.56
27	ALLI	96	45,753	37,685	52,075,787	2.9	2.37	3.54	2.9
28	NATPARA	81	9,709	37,700	52,111,831	11.53	9.26	14.35	11.44
29	ATRIPLA	74	41,754	37,707	52,079,786	2.45	1.95	3.08	2.45
30	GLIVEC	73	47,590	37,708	52,073,950	2.12	1.68	2.67	2.12

https://pmc.ncbi.nlm.nih.gov/articles/PMC11701592/

OPEN ACCESS PEER-REVIEWED CHAPTER

Drug-Related Cystitis: An Overview

WRITTEN BY

Seçkin Engin

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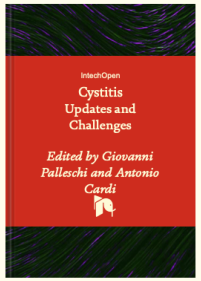

FROM THE EDITED VOLUME

Cystitis - Updates and Challenges

Edited by Giovanni Palleschi and Antonio Cardi

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- Cyclophoshamide
- Ifosfamide
- Ketamine
- Tiaprofenic acid
- Penicillins
  - Pencillin G
  - Methicillin
  - Carbenicillin
  - Ticarcillin
  - Piperacillin
- Immune checkpoint inhibitors
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  - Cisplatin
  - Mitoxantrone
  - Docetaxel
  - Paclitaxel
  - Cabazitaxel
  - Gefitinib
  - Indomethacin
- Diclofenac
  - Ketoprofen
  - Naproxen
  - Piroxicam
  - Atorvastatin
  - Empagliflozin
  - Acetylsalicylic acid
  - Dabigatran
  - Allopurinol
  - Danazol
  - Methaqualone
  - Methenamine mandelate

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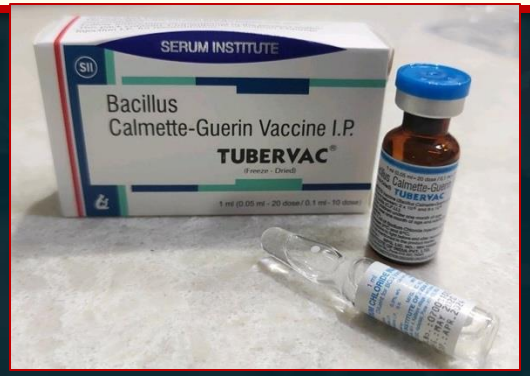
2. Cyclophosphamide and Ifosfamide

5. Mitomycin C

3. Ketamine

8. Bacillus Calmette Guerin



6. Penicillins

4. Tiaprofenic acid

7. Immune checkpoint inhibitors

https://www.intechopen.com/chapters/86970

Medications and their Potential to Cause Increase 'Cystitis'

Developed by - Dr. M. Janani Priya, Pharm D

Reviewed by - Dr. M. Sree Mohana Preetha, Pharm D

Last Updated on Nov 16, 2023

This page lists all known medications that could potentially lead to **'Cystitis'** as a side effect. It's important to note that mild side effects are quite common with medications. The medication(s) listed here may be used individually or as part of a broader combination therapy. The information provided is intended as a helpful resource; however, it should not replace professional medical advice. If you're concerned about 'Cystitis', it is advisable to consult a healthcare professional.

https://www.medindia.net/drugs/side-effects/cystitis.htm

Drugs with the Side Effect - Cystitis

5-Asa , A77 , Afatinib , Alosetron , Aripiprazole , Atorvastatin , Betaxolol , Bimatoprost , Bisoprolol , Bleomycin , Bosentan , Bromcresol , Bupropion , Busulfan , Cabazitaxel , Canagliflozin , Candesartan , Celecoxib , Cetirizine , Cevimeline , Chlorambucil , Cilostazol , Ciprofloxacin , Citalopram , Clindamycin , Clofazimine , Clomipramine , Clonazepam , Clopidogrel , Clotrimazole , Conjugated , Copolymer , Cyclophosphamide , Deprenyl , Diclofenac , Dihydroergotamine , Diltiazem , Donepezil , Doxazosin , Doxorubicin , Empagliflozin , Eprosartan , Esomeprazole , Estradiol , Etodolac , Etoricoxib , Fenofibrate , Fenoprofen , Fluoxetine , Flurbiprofen , Flutamide , Fluvoxamine , Formoterol , Gabapentin , Galantamine , Gefitinib , Gliclazide , Glycopyrrolate , Goserelin , Hexaminolevulinate , Hydroxybutyrate , Ibandronate , Ibuprofen , Indapamide , Insulin , Itraconazole , K779 , Ketamine , Ketorolac , Ketotifen , L-Dmp , Lamotrigine , Leflunomide , Lenalidomide , Levonorgestrel , Lisinopril , Lorazepam ,

https://www.medindia.net/drugs/side-effects/cystitis.htm

Drugs with the Side Effect - Cystitis

5-Asa , A77 , Afatinib , Alosetron , Aripiprazole , Atorvastatin , Betaxolol , Bimatoprost , Bisoprolol , Bleomycin , Bosentan , Bromcresol , Bupropion , Busulfan , Cabazitaxel , Canagliflozin , Candesartan , Celecoxib , Cetirizine , Cevimeline , Chlorambucil , Cilostazol , Ciprofloxacin , Citalopram , Clindamycin , Clofazimine , Clomipramine , Clonazepam , Clopidogrel , Clotrimazole , Conjugated , Copolymer , Cyclophosphamide , Deprenyl , Diclofenac , Dihydroergotamine , Diltiazem , Donepezil , Doxazosin , Doxorubicin , Empagliflozin , Eprosartan , Esomeprazole , Estradiol , Etodolac , Etoricoxib , Fenofibrate , Fenoprofen , Fluoxetine , Flurbiprofen , Flutamide , Fluvoxamine , Formoterol , Gabapentin , Galantamine , Gefitinib , Gliclazide , Glycopyrrolate , Goserelin , Hexaminolevulinate , Hydroxybutyrate , Ibandronate , Ibuprofen , ndapamide , Insulin , Itraconazole , K779 , Ketamine , Ketorolac , Ketotifen , L-Dmp , Lamotrigine , Leflunomide , Lenalidomide , Levonorgestrel , Lisinopril , Lorazepam ,

https://www.medindia.net/drugs/side-effects/cystitis.htm

Medroxyprogesterone , Mefenamic , Melphalan , Memantine , Methotrexate , Metrodin , Metronidazole , Milnacipran , Mirabegron , Mirtazapine , Modafinil , Moxifloxacin , Mycophenolate , Nafarelin , Naproxen , Naratriptan , Nefazodone , Nicotine , NuvaRing , Octreotide , Ofloxacin , Ogen , Olanzapine , Omeprazole , Oxaprozin , Oxybutynin , Paliperidone , Pantoprazole , Paroxetine , Pergolide , Piroxicam , Pramipexole , Pregabalin , Progesterone , Quetiapine , Rabeprazole , Raloxifene , Retinoic , Revasc , Rifapentine , Risedronate , Risperidone , Ritonavir , Rivastigmine , Rofecoxib , Ropinirole , Salmon , Sertraline , Sibutramine , Sildenafil , Solifenacin , Sumatriptan , Tacrolimus , Telmisartan , Temsirolimus , Thiotepa , Tiagabine , Tiaprofenic , Tizanidine , Topiramate , Tramadol , Triamcinolone , UDCA , Valdecoxib , Valproate , Valrubicin , Vandetanib , Venlafaxine , Vinflunine , Zaleplon , Zidovudine , Zolmitriptan , Zolpidem , Zopiclone

https://www.medindia.net/drugs/side-effects/cystitis.htm

Medroxyprogesterone , Mefenamic , Melphalan , Memantine , Methotrexate , Metrodin , Metronidazole , Milnacipran , Mirabegron , Mirtazapine , Modafinil , Moxifloxacin , Mycophenolate , Nafarelin , Naproxen , Naratriptan , Nefazodone , Nicotine , NuvaRing , Octreotide , Ofloxacin , Ogen , Olanzapine , Omeprazole , Oxaprozin , Oxybutynin , Paliperidone , Pantoprazole , Paroxetine , Pergolide , Piroxicam , Pramipexole , Pregabalin , Progesterone , Quetiapine , Rabeprazole , Raloxifene , Retinoic , Revasc , Rifapentine , Risedronate , Risperidone , Ritonavir , Rivastigmine , Rofecoxib , Ropinirole , Salmon , Sertraline , Sibutramine , Sildenafil , Solifenacin , Sumatriptan , Tacrolimus , Telmisartan , Temsirolimus , Thiotepa , Tiagabine , Tiaprofenic , Tizanidine , Topiramate , Tramadol , Triamcinolone , UDCA , Valdecoxib , Valproate , Valrubicin , Vandetanib , Venlafaxine , Vinflunine , Zaleplon , Zidovudine , Zolmitriptan , Zolpidem , Zopiclone

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Natural Solutions Dr. Ardis Recommends for Bladder Issues.

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In vitro Antibacterial Activities of Selected Medicinal Plants Used by Traditional Healers for Treating Urinary Tract Infection in Haramaya District, Eastern Ethiopia

Jemal Ahmed [1], Ahmedmenewer Abdu [2,✉], Habtamu Mitiku [2], Zerihun Ataro [2]

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https://pmc.ncbi.nlm.nih.gov/articles/PMC10008376/

Based on the findings of the current study, the second most active plant extract in inhibiting the growth of tested bacteria was ethanol and methanol extracts of *N. sativa*. The result of the present investigation revealed the strong antibacterial activity of *N. sativa* seeds ethanol extracts against all studied bacteria at all concentrations. Present data were similar to previous reports of[27] who reported that ethanol extract of *N. sativa* effectiveness against *S. aureus, E. coli*, and *K. pneumoniae* with 18mm of inhibition zone. These results are also comparable to the previous findings of (Ali et al, 2020) and[28] where the antibacterial activity of ethanol extract *N. sativa* against *S. aureus* and, *E. coli* at a concentration of 25, 50 and 100mg/mL, and against *K. pneumoniae* and *P. aeruginosa* was 14mm and 11mm respectively at concentrations 50 mg/mL.

https://pmc.ncbi.nlm.nih.gov/articles/PMC10008376/

Similarly, it was also observed that methanolic seed extract of *N. sativa* exhibited higher antibacterial activity towards all the strains of studied bacteria than ethanol extract for all used concentrations. This result was in agreement with previous reports by[29] who reported that the antibacterial activity of the methanol extract of this plant was most effective against tested bacteria. But this result disagreed with the report of[30] who reported that *P. aeruginosa* and *S. aureus* were inhibited with 1% concentration which was the smallest concentration when compared with the present concentration. Variations in the results may be due to the variation in the method of antibacterial activity, extraction method, and the difference between environment and soil.

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Conclusion

This study demonstrated the antibacterial activity of methanol and ethanol extract of *Punica granatum, Nigella sativa* and *Echinops kebericho* against *E. coli, P. aeruginosa, S. aureus, K. pneumoniae*, and *P. mirabilis* of uropathogenic bacteria. The result showed that all three tested plant extracts inhibited the in-vitro growth of at least one or more tested organisms. The *P. granatum* fruit peels extract displayed the maximum inhibitions zone against tested bacteria among tested plants then followed by *N. sativa* extract. The mean diameter of inhibition zones of tested bacteria increased proportionally when the concentration tested medicinal plant was raised. The *P. granatum* extracts had the lowest MIC value against tested bacteria. These tested traditional plants can be the best candidate for further studies in the development of a new antimicrobial agent against uropathogenic bacteria after the isolation and characterization of their active compounds.

https://pmc.ncbi.nlm.nih.gov/articles/PMC10008376/

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(REVIEW ARTICLE)

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Kidney stone risk reduction and size reduction utilizing medical plants

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Nutritional Neuroscience, Maui Memory Clinic, Wailuku, Hawaii, USA.

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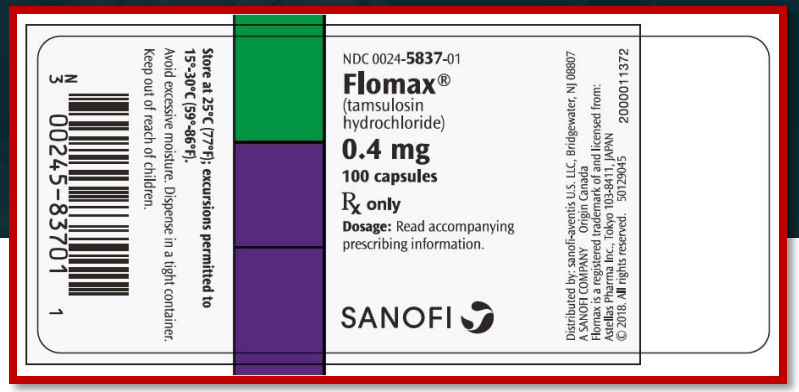

2.1. *Nigella sativa* (black cumin seed)

Nigella sativa was tested on 80 participants with 4 to 10 mm kidney stones in a randomized clinical trial. One gram every 12 hours for 2 weeks of *Nigella sativa* was compared with .4 mg of tamsulosin (Flomax®). Stone sizes decreased from 10 mm to 5 mm with either *Nigella sativa* or tamsulosin. *Nigella sativa* reduced pain and increased stone passage more than tamsulosin [2].

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Clinical studies have shown beneficial effects of *Nigella sativa* in the prevention and treatment of renal stones. Sixty patients with renal stones were randomly enrolled in two arms of a randomized, triple-blind, placebo-controlled, clinical trial. The patients were treated with *Nigella sativa* capsules (500 mg) or placebo two times per day for 10 weeks. Patients were assessed in terms of size of renal stones by using sonography before and after the intervention. In the *Nigella sativa* seed group, 44.4% of patients excreted their stones completely, and the size of the stones remained unchanged in 3.7%, and decreased in 51.8% of patients. In contrast, in the placebo group, 15.3% of the patients excreted their stones completely, 11.5% had reduction in stone size, 15.3% had increase in stone size, and 57.6% had no change in their stone size. The difference in the mean size of renal stones after the study was significant between the two groups ($p < 0.05$). *Nigella sativa*, as compared with placebo, has been demonstrated to have significant positive effects on the disappearance or reduction of size of kidney stones [3,4].

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Less formation of calcium oxalate and kidney stones was found with the use of *Nigella sativa* in two animal models [5]. In animal studies, the use of *Nigella sativa* seed significantly protected test animals against experimentally induced formation of calcium oxalate stones [6]. *Nigella sativa* significantly decreased the number of kidney stone accumulations and calcium oxalate deposition in rats [7].

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Nigella sativa shows antioxidant, anti-inflammatory, antiapoptotic, and immune regulating properties. Active phytochemicals include thymoquinone, thymohydroquinone, thymol, and carvacrol. *Nigella sativa* has been used widely for centuries as a food spice. *Nigella sativa* showed limited/no toxicity; however; this information was mostly based on preclinical studies [8].

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4. Conclusion

Many of the medical plants used historically for kidney stones have now been found to be effective in reducing risk and reducing kidney stone size in modern clinical trials. Reducing recurrence of stones after removal is important. Certain medical plants have been shown to slow the formation of calcium oxalate crystals and significantly reduce stone size. Several of these medical plants have nephroprotective, antioxidant, and antimicrobial effects. The plants with the best clinical trials and supporting preclinical data showing effectiveness in reducing kidney stone formation and recurrence are *Nigella sativa* (black cumin seed), *Dolichos biflorus* (horse gram), *Crataeva nurvala* (varuna bark), and *Tribulus terrestris* (Gokshura). Some of these medical plants may be more effective and safer than tamsulosin and potassium citrate. Our goal is to provide busy clinicians with accurate information about the use of medical plants to reduce risk and recurrence of kidney stones.

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Vitamin D deficiency as a risk factor for urinary tract infection in women at reproductive age

Shahnaz Burhan Ali [a,*], Dedan Perdawood [b], RabarMohsin Abdulrahman [c], Dunia A Al Farraj [d], Noorah A Alkubaisi [d]

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https://pmc.ncbi.nlm.nih.gov/articles/PMC7569126/

Urinary tract infection (UTI) is a severe health disease with high complication because it is related to antibiotic resistance and threatening to health throughout lifetime (Ananthanarayan and Paniker, 2013). According to the World Health Organization (WHO), urinary diseases cause death of almost 85,000 people in the world per year (Flores-Mireles et al., 2015). In a hospitalized population, one of the prevalent contracted bacterial infection is Urinary tract infection (UTI) and especially in 11% of all women of ages between 18 and 24 years (Arellano, 2011) and nearly 1 in 3 women will have had at least 1 episode of UTI requiring antimicrobial therapy during their reproductive age (Ananthanarayan and Paniker, 2013). In this infection, most parts of the urinary system like urethra, kidneys, bladder and ureters gets affected. The urethra and bladder, parts of the lower part of the urinary tract are involved in most of the infections (Salvatore et al., 2011). In comparison with men, women are often found to be at a higher risk of UTI development. This is because of anatomical difference of female Urinary tract and changes that happen at it, for example at sexual intercourse and at child birth (Salvatore et al., 2011).

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The urinary tract is frequently attacked by many pathogens; therefore rapid defense mechanisms are required. Bladder epithelial cells secrete and express a human antimicrobial peptide names as cathelicidin which protects the lower urinary tract. Vitamin D induces cathelicidin of the urinary bladder epithelium. As it provide protection against both gram negative and positive bacteria, we can conclude that this compound has a broad spectrum of action. Moreover it also show actions against some protozoa and fungi. Considering these viewpoints, this study's main purpose was to determine the relation between serum vitamin D3 deficiency and UTI in women at reproductive age.

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3.1. Urine analysis in patients

When checking indicators of infection, while evaluating urine analysis, there are several factors to consider. The presence of bacteria per high power field is the most common indicator of bacterial infection. Although some amounts of bacteria in urine may be present for any patient with symptoms, according to the definition, 5+ is considered as the standard for bacteriuria. Sometimes 2+ is also considered positive in some selective populations which are hospitalized and catheterized patients (Alqasim et al., 2019) The bacterial invasion determined by general urine examination and culturing (urinalysis) revealed that out of 75 urine specimens collected from patients (case group) complaining of signs and symptoms of UTIs, Fifty two samples (69.33%) were positive for bacterial infection whereas 30.66% negative. From positive cultures different bacterial type isolated, most cases were due to *Escherichia coli* (Figs. 1 and 2).

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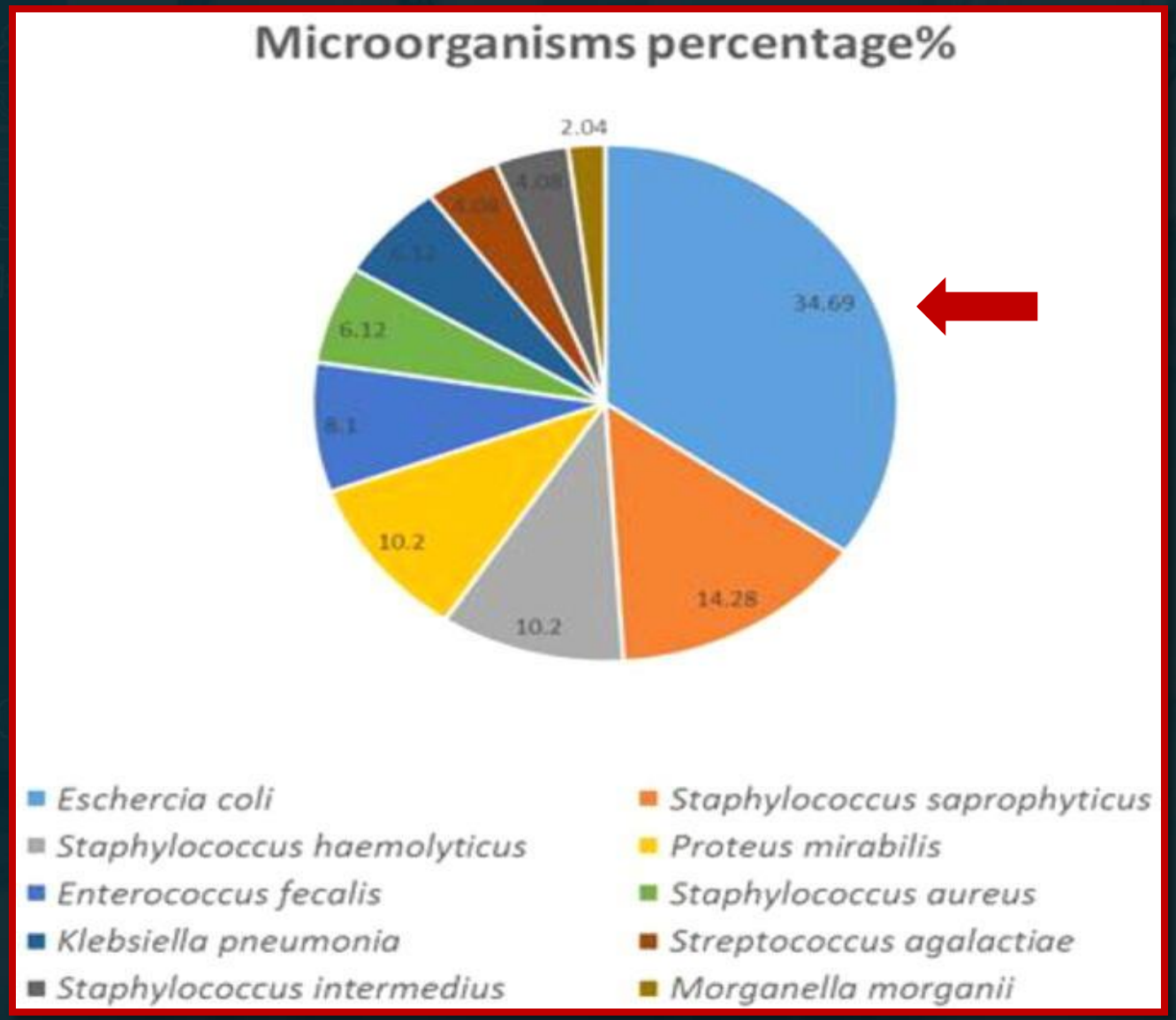

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3.3. Patients with lower amount of blood vitamin D showed higher microbial load in urine sample

We tried to examine if there was any correlation between the deficiency of vitamin D and severity of the urinary tract infection in the analyzed patient group. As it can be seen from the data in the (Table 1, Table 2) there were significantly higher number of bacteria present in the patients' urine having vitamin D deficiency. The highest number of bacteria that was found is in the urine sample of the vitamin D deficient patient.

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According to our cultural results, there is a clear correlation between the severity of deficiency of this vitamin and positive culture for bacteria and microbes the more deficient the patient in vitamin D level the more occurrence of bacterial UTI and mixed bacterial positive culture, Indicating vitamin D as a risk factor for UTI as shown in (Table 1).

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5. Conclusion

Our research on women of reproductive age with low vitamin D levels reveals that they are more at risk of contracting UTI than the healthy ones. This show a significant association of vitamin D deficiency and urinary tract infections especially in moderate and severe infections, which is an important aspect of infection control. Furthermore, with the increasing development of antimicrobial resistance in gram-positive and -negative bacteria being a worldwide concern, vitamin D supplement could be used in combination with antimicrobials to improve the management and therapy of UTI, especially in cases of multi-drug-resistant infections. Concluding that to treat women, at reproductive age, with the urinary tract infections (whether acute or recurrent), it is better to search for vitamin D deficiency and treat it simultaneously. This will be more convenient for both the health care system and patients.

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Inhibition of *E. coli* and *S. aureus* with selenium nanoparticles synthesized by pulsed laser ablation in deionized water

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https://pmc.ncbi.nlm.nih.gov/articles/PMC4982524/

Various concentrations of selenium nanoparticles were subjected into *E. coli* and *S. aureus* bacteria plated and incubated for either 4, 8, or 24 hours. The most concentrated selenium sample (50 ppm) exhibited the highest inhibition rate with 46% and 63% of *E. coli* and *S. aureus* growth inhibition after 24 hours, respectively (Figure 3). To survive, bacteria have evolved a sophisticated and complex cell envelope that protects them, but allows for the selective passage of nutrients from the outside and waste products from the inside. A possible mechanism toward inhibiting *E. coli* bacteria is that selenium nanoparticles attach by chemisorption[18] and penetrate the outer membrane that contains lipopolysaccharides, linked by a covalent bond to the cell's peptidoglycan by Braun's lipoprotein.[19] The canonical

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the cell interior. Indeed, from Figure 3A, the total inhibition of *E. coli* and *S. aureus* is expected to occur at 107±12 and 79±4 ppm, respectively. It is confirmed that selenium nanoparticles can inhibit both gram-negative and gram-positive bacteria with a higher efficiency against gram-positive bacteria (slope$_{E.\ coli}$ =0.92±0.08 and slope$_{S.\ aureus}$ =1.23±0.04). Finally, the minimal concentration required to ~50% bacterial inhibition (*E. coli* or *S. aureus*) after 24 hours should be at a minimum 50 ppm (Figure 3B and 3C).

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N-acetylcysteine prevents bladder tissue fibrosis in a lipopolysaccharide-induced cystitis rat model

Chae-Min Ryu, Jung Hyun Shin, Hwan Yeul Yu, Hyein Ju, Sujin Kim, Jisun Lim, Jinbeom Heo, Seungun Lee, Dong-Myung Shin ✉ & Myung-Soo Choo ✉

Scientific Reports **9**, Article number: 8134 (2019) | Cite this article

https://www.nature.com/articles/s41598-019-44631-3

In the present study, we developed a cystitis rat model with chronic inflammation and prominent fibrosis by increasing the frequency of intravesical LPS instillation. This LPS-induced cystitis rat model exhibited urothelial denudation, mast cell infiltration, and fibrosis histologically and bladder dysfunction which were similar to IC. In addition, intraperitoneal injection of NAC improved inflammation, fibrosis, and voiding parameters in LPS-induced cystitis rats.

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https://www.nature.com/articles/s41598-019-44631-3

In IC/BPS, clinical symptoms related to fibrosis are relatively uncommon, but histologically intra- and inter-fascicular fibrosis is common in Hunner-type IC[30]. Although debatable, bladder tissue of non-Hunner type IC patients presented predominant fibrosis and mast cell infiltration in our previous study[12]. Patients with different histology require different endoscopic treatment. In patients with Hunner lesions in the bladder (IC), transurethral resection and cauterization of the lesion proved effective in ameliorating symptoms[31]. In patients without Hunner lesions in the bladder (BPS), the most common treatment is hydrodistension of the bladder[31]. During hydrodistension, the bladder is filled with normal saline to the maximum capacity at a fixed pressure that is maintained for a set period of time. However, hydrodistension has a short efficacy duration[32,33]. Currently, treatment modalities for bladder fibrosis (regardless of severity) are limited, and NAC, proven to have therapeutic effects by reducing inflammation and reversing fibrosis, could be a possible breakthrough.

https://www.nature.com/articles/s41598-019-44631-3

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Investigation of the Effects of N-acetylcysteine and Selenium on Vesicoureteral Reflux Nephropathy: An Experimental Study

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Vesicoureteral reflux (VUR) is defined as reflux of urine from the bladder into the upper urinary tract. VUR alone does not cause urinary tract infections (UTI); however, it leads to development of an infection in case of bacteriuria. VUR is observed in approximately 40–50% of cases of culture proven UTI [1].

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N-acetylcysteine (NAC) is a synthetic derivative of the endogenous amino acid L-cysteine and a precursor of sulfhydryl-containing tripeptide glutathione (GSH), which serves as one of the self-defense mechanisms of cells against oxidative stress. NAC has been used for the treatment of numerous diseases characterized by oxidative stress due to its antioxidant properties [4]. Selenium (Se) is a trace element which is a component of the glutathione peroxidase system. Se is also an antioxidant and plays an essential role in the activity of several enzymes and proteins, involved in regulating the immune response and cellular antioxidant defense [5,6].

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> Transplantation. 1997 Mar 15;63(5):679-85. doi: 10.1097/00007890-199703150-00012.

Dietary selenium increases cellular glutathione peroxidase activity and reduces the enhanced susceptibility to lipid peroxidation of plasma and low-density lipoprotein in kidney transplant recipients

O Hussein [1], M Rosenblat, G Refael, M Aviram

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Abstract

The glutathione system plays a major role in the protection of cells against oxidative stress in humans. The aim of the present study was to find out the relationship between the glutathione system and plasma lipid peroxidation in six renal transplant recipients (who are under oxidative stress and thus at high risk for atherosclerosis), by using dietary selenium to activate the glutathione system. 2,2'-Azobis-2-amidinopropane hydrochloride (AAPH)-induced plasma lipid peroxidation was increased (by 60%) in all six patients in comparison to normal subjects. A similar pattern of increased plasma lipid peroxidation was found even in the basal state (in the absence of added AAPH). CuSO4-induced low-density lipoprotein (LDL) oxidation measured by peroxide formation was also significantly increased by 2.3-fold in the patients' LDL in comparison to normal

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LDL. Even in the absence of CuSO4, the LDL oxidation state was also increased in the patients' LDL in comparison to normal LDL. We thus analyzed the effect of dietary selenium (0.2 mg/day for a period of 3 months, followed by an additional 3 months on placebo) on plasma and on LDL lipid peroxidation. Selenium treatment resulted in a 50% reduction in AAPH-induced plasma lipid peroxidation. The susceptibility of the patients' plasma to lipid peroxidation returned toward baseline values 3 months after termination of the selenium treatment. Similar results, although less pronounced (only 15% reduction), were obtained for CuSO4-induced LDL oxidation. Analyses of the patients' red blood cell (RBC) glutathione system revealed low levels of reduced glutathione and decreased activities of RBC glutathione peroxidase and glutathione reductase by 23%, 18%, and 20%, respectively, in comparison to normal RBC. Selenium treatment resulted in a significant

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and 20%, respectively, in comparison to normal RBC. Selenium treatment resulted in a significant elevation of RBC glutathione peroxidase and glutathione reductase activities and in reduced glutathione content by 64%, 57%, and 11%, respectively; this effect was also paralleled by a 39% reduction in the RBC oxidized glutathione content. On termination of the selenium treatment, and after 3 months on placebo, all of these values of the glutathione system elements returned toward baseline levels. We thus conclude that dietary selenium, which activates the glutathione system, is a potent antioxidant against plasma and LDL lipid peroxidation in renal transplant recipients, and may thus be considered antiatherogenic.

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Vitamin K2 ameliorates osteoarthritis by suppressing ferroptosis and extracellular matrix degradation through activation GPX4's dual functions

Qi He [a b c], Yuewei Lin [a b], Baihao Chen [a b], Chuyi Chen [a b], Jiaxu Zeng [a b], Xiangyun Dou [a b], Dongling Cai [f], Chi Zhou [d e], Haibin Wang [d]

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VK2 can increase bone mass and cartilage thickness in the subchondral bone of the tibia, and reduce pain and the OARSI score induced by OA. Immunohistochemistry results indicate that VK2 exerts its anti-OA effects by regulating GPX4 to delay ECM degradation. VK2 can inhibit the activation of the MAPK/NFκB signaling pathway caused by reduced expression of intracellular GPX4, thereby decreasing ECM degradation. Additionally, VK2 can reverse the inhibitory effect of RSL3 on GPX4, increase intracellular GSH content and the GSH/GSSG ratio, reduce MDA content, and rescue chondrocyte ferroptosis. The protective mechanism of VK2 may involve its dual-target regulation of GPX4, reducing chondrocyte ferroptosis and inhibiting the MAPK/NFκB signaling pathway to decelerate the degradation of the chondrocyte extracellular matrix.

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To elucidate the therapeutic mechanisms of VK2, our in vitro experiments revealed that VK2 could promote chondrocyte proliferation and delay the degradation of the ECM. This includes regulation of the MAPK/NFκB signaling pathway through the activation of GPX4 in chondrocytes, leading to the inhibition of MMP13 and MMP3 expression and an increase in type II collagen accumulation. As GPX4 becomes inactivated, fluorescence results reveal a substantial accumulation of Fe^{2+} within chondrocytes, leading to ferroptotic cell death. The occurrence of ferroptosis leads to the accumulation of ROS and lipid-ROS, along with a significant increase in mitochondrial membrane potential [46]. GPX4 is the key to blocking lipid peroxidation in ferroptosis [47]. Consequently, through flow cytometry and fluorescence assays, we confirmed that VK2, by activating the expression of GPX4 in chondrocytes, significantly reduces mitochondrial membrane potential and decreases the content of ROS and lipid peroxidation.

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5. Conclusions

Vitamin K, as the most ancient type of naturally occurring anti-ferroptotic quinones, it serves a crucial function in the management of OA and other chronic diseases associated with aging. Ferroptosis is involved in the pathogenesis and progression of OA. Our in vivo and in vitro experiments have for the first time demonstrated that VK2, through its dual targeting regulation of GPX4, reveals its tremendous potential in treating OA by modulating chondrocyte ferroptosis and inhibiting the MAPK/NFκB signaling pathway to slow down the degradation of cartilage ECM. To sum up, the findings of the research we undertook suggest that VK2 treats the progression of OA by regulating GPX4, paving the way for new therapeutic avenues in the management of OA.

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BioDefense is a proprietary blend manufactured from 100% plant extracts. The main ingredient is a salt based protein modifier. The primary raw materials utilized in this formula are: Negella Sativa (Black Cumin), Mentha Spicata (Spearmint), Mentha Piperita (Peppermint), and Cyatheales Dicksoniaceae Cyatheaceae (Firn).

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Serving Size: 0.5ml (17 drops)
Servings Per Container: 30

Amount Per Serving		% Daily Value
Vitamin D (as Vitamin D3) 5000IU	125mcg	625%
Vitamin K (as Vitamin K2)	50mcg	42%

Ingredients: Vitamin K2 (menaquione-7 (all-trans)) Vitamin D3-Cholecalciferol, 100% organic MCT oil.

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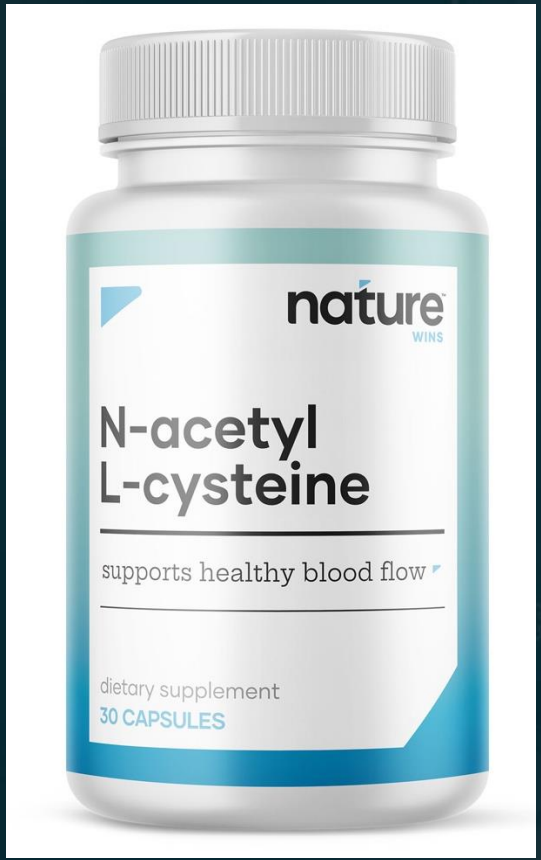

Supplement Facts

Serving Size: 1 Capsule Servings Per Container: 30

Amount Per Serving		% Daily Value
N-Acetyl-L-Cysteine	750mg	†

*Percent Daily Value (DV) are based on a 2000 calorie diet.
†Daily Value (DV) not established.

OTHER INGREDIENTS: Hydroxypropyl Methylcellulose (Vegetable Capsule).

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$101.82

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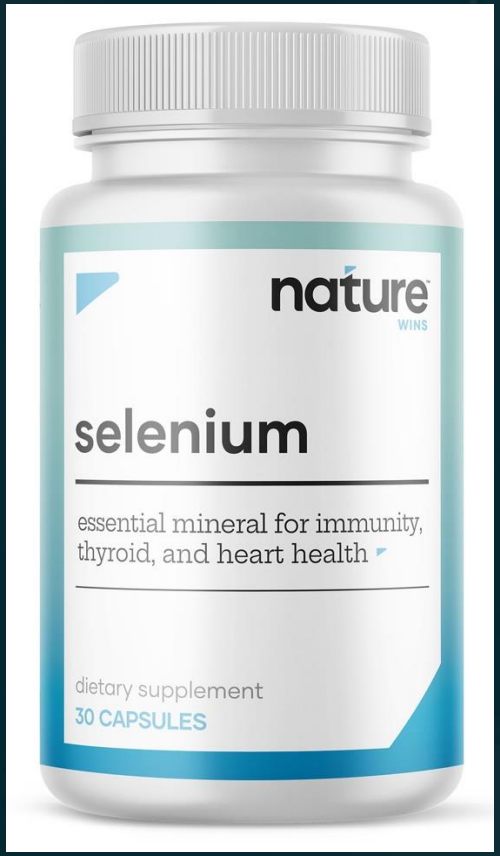

Supplement Facts

Serving Size: 1 Capsule Servings Per Container: 30

Amount Per Serving		% Daily Value
Selenium (as selenomethionine)	200mcg	365%*
Green Pea Powder	200mg	†
Lentil Powder	100mg	†
Millet Flour	100mg	†
Chlorophyll (as sodium copper chlorophyllin)	2mg	†

*Percent Daily Value (DV) are based on a 2000 calorie diet.
†Daily Value (DV) not established.

OTHER INGREDIENTS: Vegetable cellulose (vegetable capsule), rice flour, vegetable stearate.

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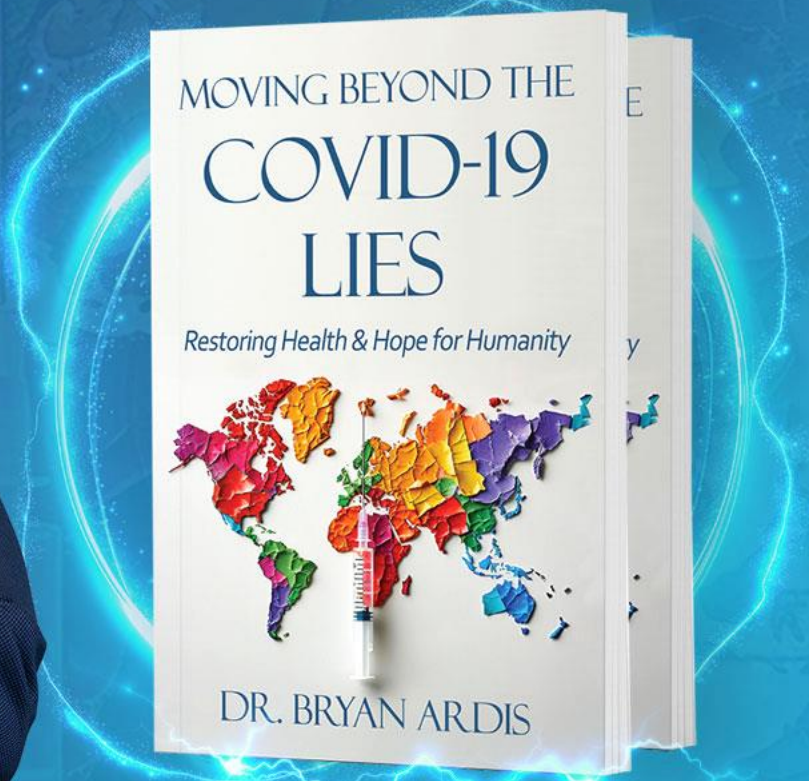

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