

From Common to Complex, Part 1

Acute, Diagnostic, Systemic Clinical Pearls:
Pain, Urgent Care, UTIs, Food-Based Reactions

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Disclaimer

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All dosage recommendations are intended for adults. As with any therapeutic intervention, treatments should be undertaken only under the supervision of a licensed physician. We strongly advise against altering, reducing, or discontinuing any prescribed medication or nutritional therapy without first consulting the prescribing clinician.

Although we strive to present information accurately and in alignment with published data or clinical experience, we acknowledge that human error is possible. Therefore, we encourage independent confirmation of any details prior to application.

This material is provided for educational purposes only and is not intended to substitute for professional medical advice, diagnosis, or treatment.

Today's Presentation

clinical pearl (*'kli-ni-kəl pərl*) noun

- **Medicine.** A concise, experience-based insight that conveys practical clinical wisdom, often derived from repeated patient encounters rather than formal study. Clinical pearls emphasize pattern recognition, efficiency, and real-world applicability in diagnosis, treatment, or patient management.
- **Usage.** Typically shared in teaching rounds, lectures, or professional writing to distill complex concepts into memorable, actionable guidance.

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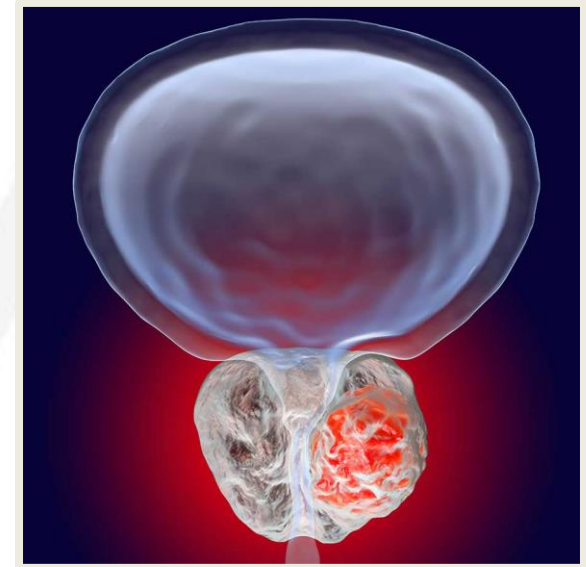
In the News: Prostate and Plastic

Research presented at the
ASCO Genitourinary Cancers Symposium 2026

n=10 men undergoing radical prostatectomy (median age 65yo)

Methods: analyzed tumor and benign samples visually and then used specialized equipment to determine the amount of microplastic particles, as well as their chemical composition and structure, in the tissue. They focused on 12 of the most common types of plastic molecules

Results: 90% of tumor samples and 70% of benign tissue samples contained plastic. The tumor samples contained on average 2.5 times the amount of plastic as the healthy prostate tissue samples, about 40 µg of plastic per gram of tissue compared with 16 µg/g.



Common Plastics Isolated

- Polyethylene
- Polyethylene terephthalate
- Polypropylene-polyethylene copolymers

In the News: Poor Oral Health in Childhood Linked to Later Heart Attack, Stroke, or Coronary Artery Disease

2026

Childhood oral health is associated with the incidence of atherosclerotic cardiovascular disease in adulthood



Nikoline Nygaard^{a,*}, Francesco D'Aiuto^b, Anne Kirstine Eriksen^c, Anja Olsen^c, Evelina Stankevic^d, Lars Ångquist^d, Torben Hansen^d, Daniel Belstrøm^a, Merete Markvart^a

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ARTICLE INFO

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Ischemic heart disease
Myocardial infarction
Ischemic stroke
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Oral disease

ABSTRACT

Background: While adult oral health has been consistently linked to cardiovascular disease, the long-term impact of childhood oral health remains underexplored. Thus, we investigated the association between dental caries and gingivitis in childhood and the incidence of atherosclerotic cardiovascular disease (ASCVD) in adulthood.

Methods: This nationwide Danish cohort study included 568,778 individuals born between 1963 and 1972, with oral health data from the National Child Odontology Registry (1972–1987) and ASCVD outcomes from the National Patient Register (1995–2018). Dental caries and gingivitis were categorized by severity and trajectory across childhood. Cox regression models stratified by sex, education level, and type 2 diabetes status were used to estimate hazard ratios (HRs) and 95 % confidence intervals (CI) for incident ischemic heart disease, myocardial infarction, and ischemic stroke.

Results: Severe childhood dental caries was associated with increased ASCVD incidence in both males (HR 1.32; 95 % CI: 1.18–1.50) and females (HR 1.45; 95 % CI: 1.25–1.68). High gingivitis scores also predicted elevated ASCVD risk (males: HR 1.21; 95 % CI: 1.10–1.32; females: HR 1.31; 95 % CI: 1.14–1.50). Disease trajectories with moderate to severe level oral disease and oral health deterioration were significantly associated with higher ASCVD incidence.

Conclusion: Within the limitations of this study, poor childhood oral health, particularly persistent or worsening dental caries and gingivitis, is associated with an increased risk of ASCVD in adulthood. These findings highlight the potential of early oral health interventions in reducing long-term cardiovascular risk.

Utilizing registry data from over 568,000 individuals spanning more than two decades.

Poor oral health in childhood is associated with increased risk of adulthood ischemic heart disease, myocardial infarction, and ischemic stroke.

Boys with the greatest number of cavities had a **32% higher incidence of atherosclerotic cardiovascular disease later in life** compared with those with cavities in 0-4 teeth. And **girls** had a **45% increase**.

Kids with the most severe gingivitis had an increased long-term risk for cardiovascular disease, by 21% in boys and 31% in girls.



01

CLINICAL PEARL: URGENT CARE

Infectious Disease, Primary Care Labs

Often there are subtle differences with symptoms and clinical presentation when it comes to viral vs. bacterial infections.

Traditional treatment

- Viral → supportive
- Bacterial → antibiotics

Natural treatment

- Viral- antivirals/immunomodulation-Immune “stimulants”
- Bacterial- anti-microbials (‘biotics’)

It is important to make every attempt to differentiate between the two when given the opportunity.

Urgent Care: Viral vs. Bacterial

Viruses create diffuse, systemic, immune-mediated symptoms
Bacteria create focal, localized, tissue-destructive findings

Viral

- **Low-grade** or **moderate** fever
- Often **waxing/waning**
- Systemic discomfort - associated with chills, malaise
- More commonly impact liver enzymes (ALT, AST)

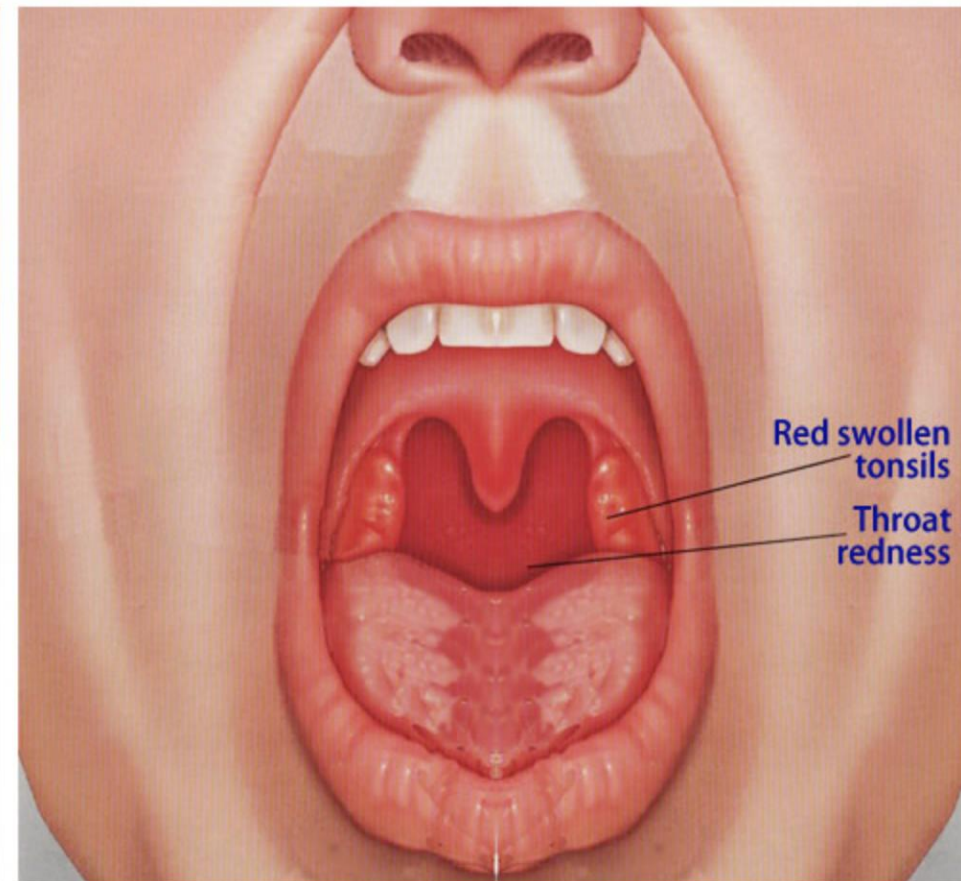
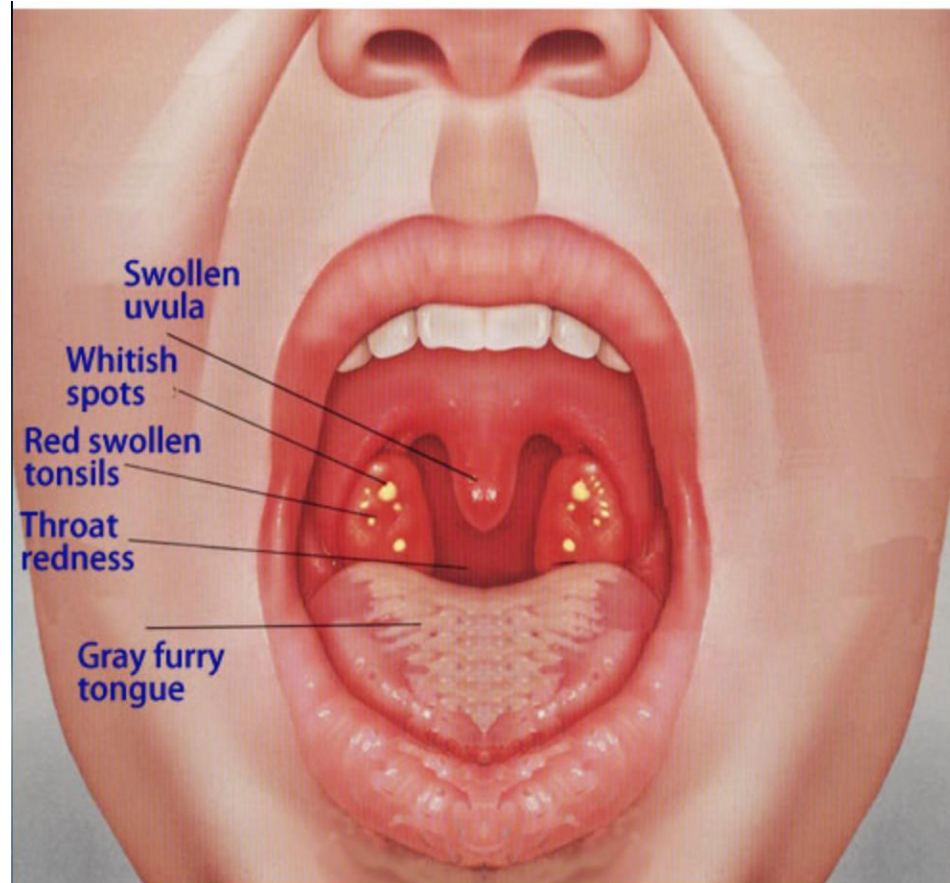
Viruses trigger **interferons** and **cytokines** → systemic immune signaling rather than localized pus formation.

Bacterial

- **Higher, sustained** fever
- Often **>101.5–102°F**
- Less fluctuation
- Patient often feels **locally miserable**

Bacterial toxins + neutrophil activation drive a stronger **pyrogenic response**

Urgent Care: Viral vs. Bacterial



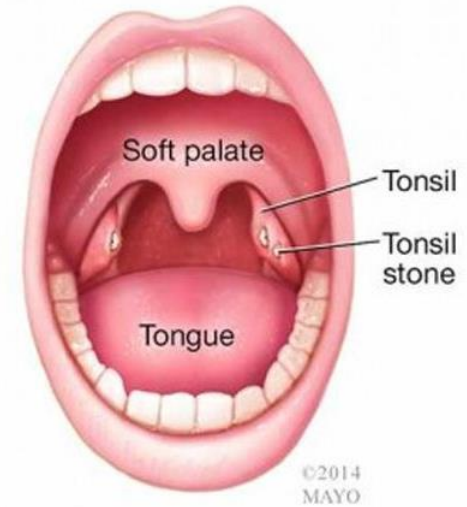
Tonsilloliths vs. Pharyngitis

The palatine tonsil contain “crypts” that can trap food debris along with pathogens

- This can mimic pharyngitis- treatment can be similar
- If possible, the tonsil stone should be removed

Tonsilloliths can lead to tonsilitis

- Tonsilitis is much more common in children than it is in adults
- You CAN have both tonsilitis and pharyngitis at the same time → **tonsillopharyngitis**



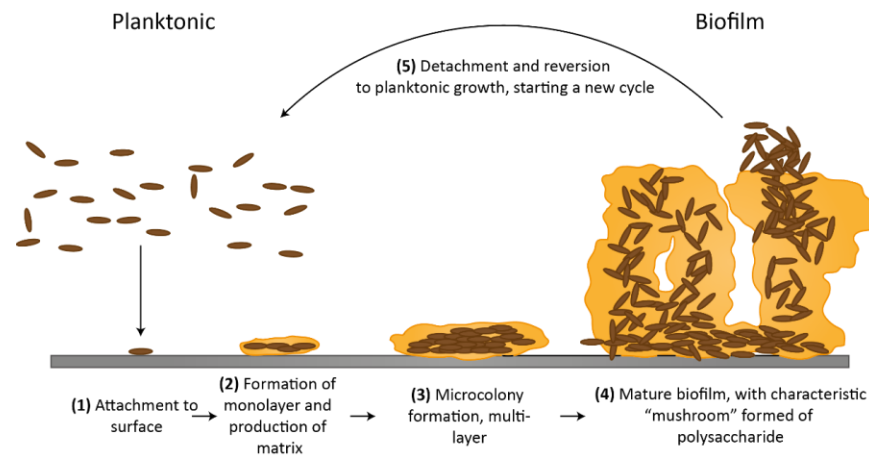
Tonsilloliths “Tonsil Stones”

Otolaryngology–Head and Neck Surgery (2009) 141, 316-321

ORIGINAL RESEARCH–GENERAL OTOLARYNGOLOGY

Tonsillolith: Not just a stone but a living biofilm

Paul Stoodley, PhD, Dirk deBeer, PhD, Mark Longwell, Laura Nistico, PhD, Luanne Hall-Stoodley, PhD, Bruce Wenig, MD, and Yosef P. Krespi, MD, Pittsburgh and Allegheny, PA; Bremen, Germany; and New York, NY

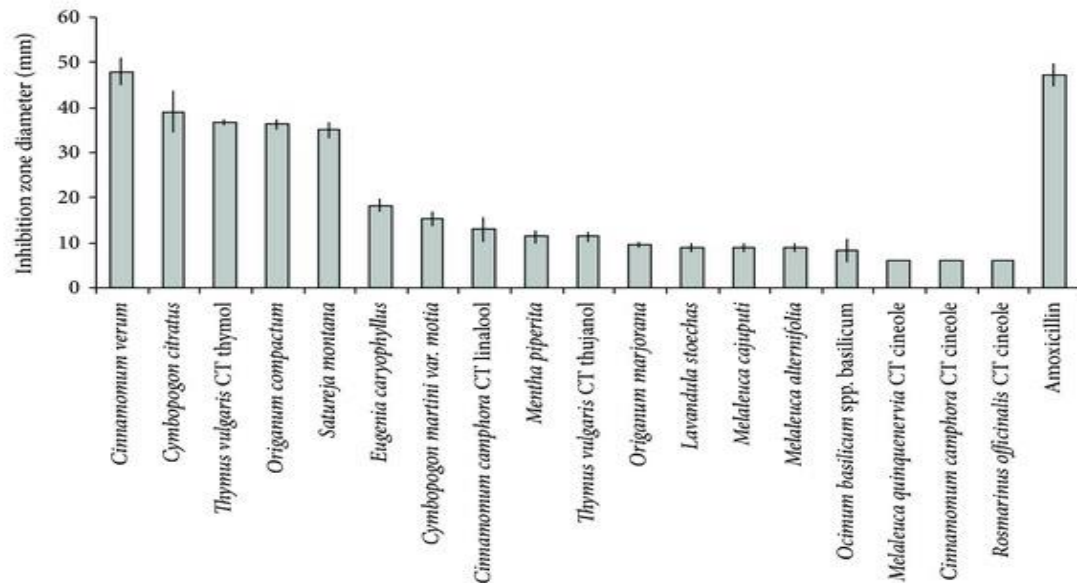


“Stone” is a misnomer

- Tonsilloliths are **biofilms** composed of living and dead bacteria
- Poly-microbial → combination of aerobic and anaerobic bacteria

Biofilm Treatment

Staphylococcus aureus and *Staphylococcus epidermidis* growth and biofilms inhibited by **oregano oil** *Journal of Medical Microbiology* (2007), 56, 519–523



Evid Based Complement Alternat Med. 2013; 2013: 269161.

Cinnamomum verum containing cinnamaldehyde (an aromatic aldehyde) showed the highest activity against staph



Pharyngitis / Cough / Tonsilloliths Tea

Drink warm or hot:

Most of the ingredients are to taste. We usually suggest making more of a concentrate and then dilute it with hot water when ready to consume. This just makes life easier.

- Lemon (wash the lemon and cut it into small pieces and boil with the skin on)
- Ginger (fresh)
- Thyme (fresh if possible)
- Cinnamin
- Local honey or Manuka Honey
- Garlic- smash with the skin on
- 1 tablet of **Emulsified Oregano** Dissolved

Boil all the above for 15-20min and then strain. Dilute as needed for taste and compliance.



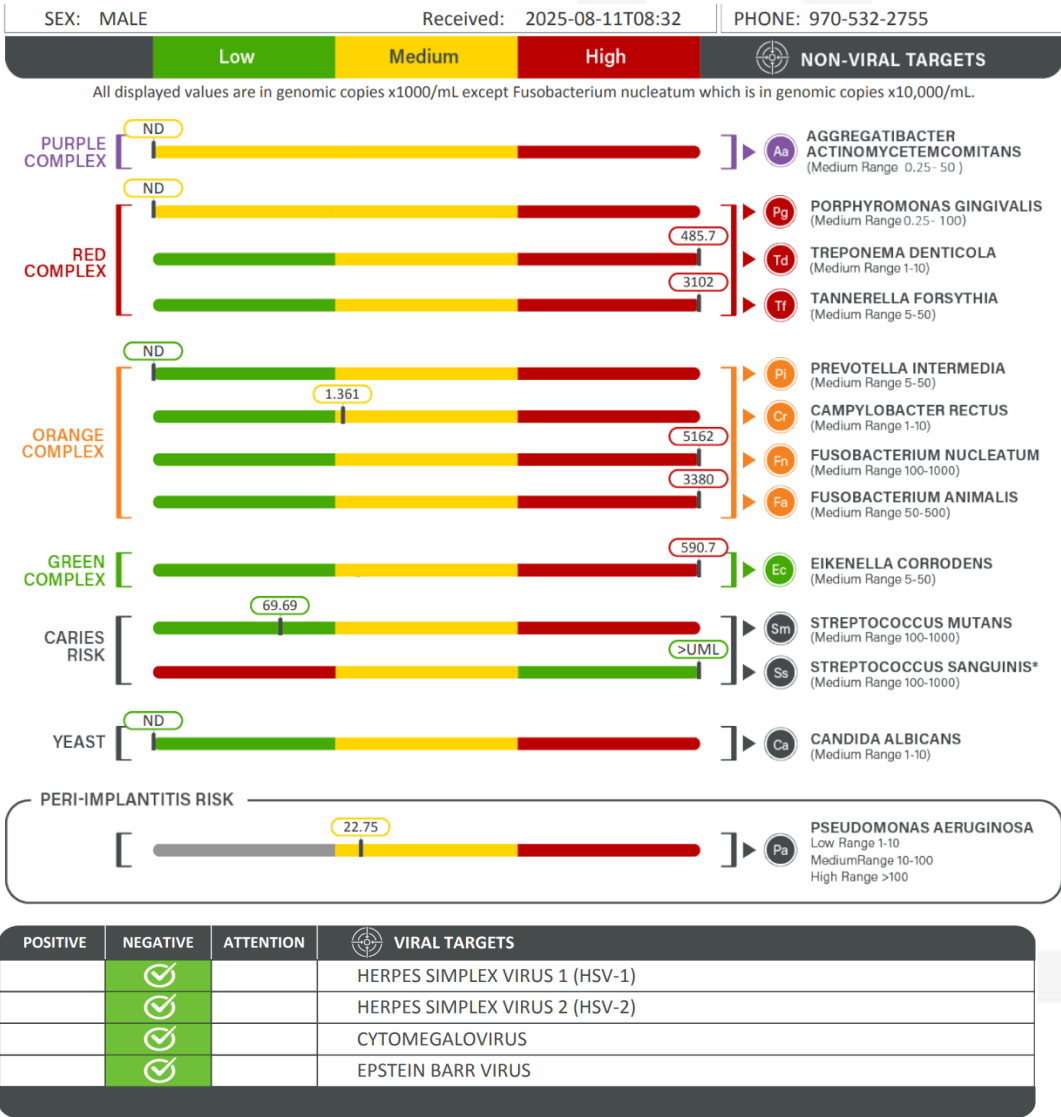
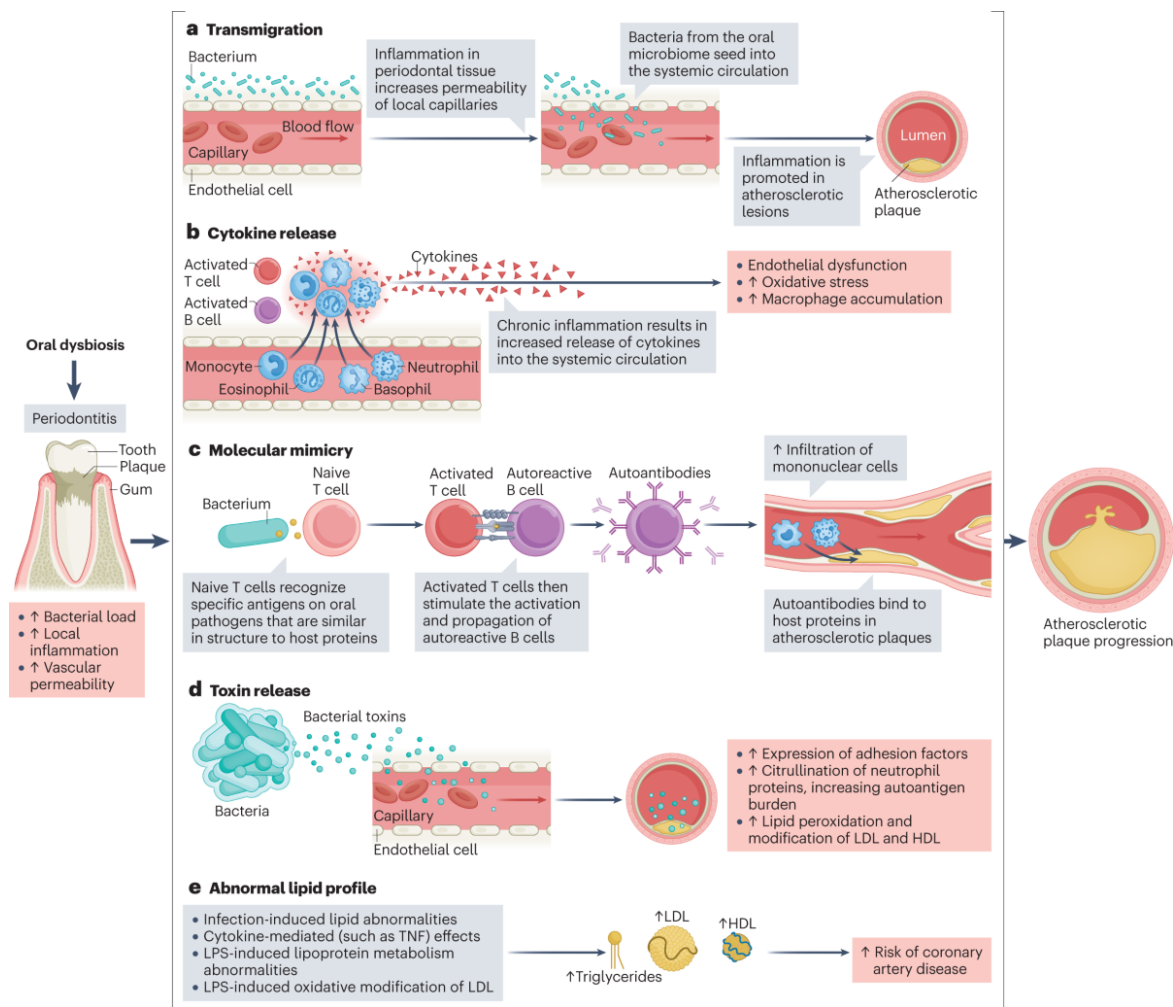
Biotics Oral Biofilm Nutrients

Prevention:

Lactobacillus rhamnosus LB3*, *Lactobacillus delbrueckii* LE*,
Lactobacillus plantarum LM*, *Bifidobacterium longum**, *Bifidobacterium bifidum**, Lysozyme, Fructooligosaccharides

- **Competes** with pathogenic bacteria for adhesion sites, limiting recolonization of tonsillar crypts after biofilm disruption
- Suppresses anaerobic and sulfur-producing organisms by **lowering local pH** and producing **bacteriocins**, reducing halitosis and stone formation
- Interferes with **quorum sensing** and early biofilm formation, decreasing microbial coordination and biofilm stability
- Supports tonsillar mucosal immunity and **barrier integrity**, including enhanced secretory IgA and reduced inflammatory signaling

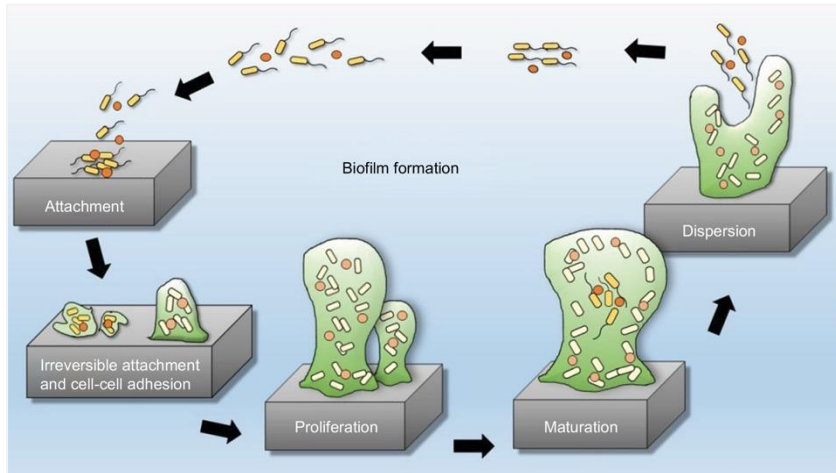
Oral Microbiome Test



Biotics Biofilm Nutrients: Biofilm Disruptors

- **Berberine HCL:** Disrupt quorum sensing, Break down EPS matrix
- **EGCG:** Disrupt quorum sensing
- **Thyme:** Thymol dissolves lipid membranes
- **NAC:** Breaks disulfide bonds in biofilm
- Combination formula: **myrrh, berberine, mastic gum:** Disrupt quorum sensing, Break down EPS/Lipid-rich matrix

Biotics Biofilm Nutrients: Enzyme Therapy



Best enzymes to break down biofilm:

- **Proteases** — serrapeptase, nattokinase, lumbrokinase (digest matrix proteins)
- **Glycoside hydrolases** — β -glucanase, cellulase, amylase (break EPS polysaccharides)
- **DNase** — digests extracellular DNA that stabilizes the matrix
- **Lysozyme** — lyses bacteria once the matrix is stripped

- **Degrade the biofilm extracellular matrix (EPS)** by breaking down protein, glycoprotein, lipid, and polysaccharide scaffolding that protects embedded bacteria
- Expose bacteria to immune defenses and antimicrobials by dismantling the physical barrier of mature biofilms
- Reduce biofilm viscosity and cohesion, making tonsillar debris and stones easier to dislodge mechanically
- Disrupt early biofilm formation by interfering with bacterial adhesion proteins and surface binding structures

Primary Care Labs - Infectious Disease: Viral v. Bacterial

Tier 1: Most Actionable Labs

Procalcitonin (PCT): strongest discriminator

- Elevated in bacterial infections
- Suppressed in viral infections

CBC with differential: pattern recognition

- Fast turnaround, high clinical utility
- Neutrophilia → bacterial
- Lymphocytosis → viral
- Normal WBC does not exclude infection
- Left shift = increased bacterial likelihood → “band cells” or ~ “Immature granulocytes present”

Tier 2: Inflammatory Markers

C-Reactive Protein (CRP)

- hs-CRP >100 mg/L favors bacterial infection
- Mild–moderate CRP elevations often viral

Erythrocyte Sedimentation Rate (ESR)

Tier 3: Supportive Labs

Lactate Dehydrogenase (LDH)

- Intracellular enzyme release due to damage/destruction
- Severity, not etiology

Ferritin

- Often higher in viral/immune activation

Cytokine patterns (advanced cases)

Direct Pathogen Detection

PCR panels (respiratory, GI, urine)
Cultures (blood, urine, sputum)

01

CLINICAL PEARL: URGENT CARE

38YO Female: Acute Widespread Pain

38YO Female: Acute Widespread Pain



Vitals: 97.5F 82BPM 97%O2 114/78

Got sick **last week** and was feeling better over the weekend. **Started with flu-like ache.**

Sunday, she started having higher level of tension in her **neck** and **spine** and **now having constant pain in her body.**

Currently her neck is now feeling better and has full ROM but still having pain throughout her body and constant. Last week she had night sweats but that has cleared. Last night she did get some sort of stomach bug from one of her kids and was up vomiting. No cough, no congestion. No skin rash. She said she feels bloating and looks bloated in her abdomen. No sore throat. She hasn't had a fever at home.

This AM around 6:30a she took 3 Advil and that helped the pain.

- No dizziness or vertigo.
- Throat- no redness
- No lymph node tenderness and no pain with palpation of the cervical spine
- During examination she said most of her pain is in her joints rather than the muscle belly. Knees, feet, shoulders, wrist and elbows.

DDX: Post viral polymyalgia rheumatica (PMR)

Will run CRP to look at inflammatory load. If this continues beyond urgent care, we will look at underlying AI joint disorder.

- She would like something for the pain so she can avoid Advil. She is also using red light at home.
- She is going for an IV today- electrolytes and B-vitamins.

38YO Female: Acute Widespread Pain

Specimen ID: 344-881-3576-0

Sex: Female

Ordering Physician: B WISNIEWSK

Date Collected: 12/10/2025

Comp. Metabolic Panel (14) (Cont.)

Protein, Total ⁰¹	6.7	g/dL	6.0-8.5
Albumin ⁰¹	4.3	g/dL	3.9-4.9
Globulin, Total	2.4	g/dL	1.5-4.5
Bilirubin, Total ⁰¹	0.7	mg/dL	0.0-1.2
Alkaline Phosphatase ⁰¹	58	IU/L	41-116
AST (SGOT) ⁰¹	21	IU/L	0-40
ALT (SGPT) ⁰¹	32	IU/L	0-32

C-Reactive Protein, Cardiac

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▲ C-Reactive Protein, Cardiac ⁰¹	84.26 High Results confirmed on dilution.		mg/L	0.00-3.00
Relative Risk for Future Cardiovascular Event				
Low <1.00				
Average 1.00 - 3.00				
High >3.00				

Previous Result

The Previous Result is listed for the most recent test performed by Labcorp in the past 5 years where there is sufficient patient demographic data to

Labs ordered:
CBC, CMP14, CRP-hs

- Results:
- CBC: WNL
 - CMP14: WNL
 - hs-CRP: 84.26

38YO Female: Acute Widespread Pain

Differential

Post-viral / reactive polyarthritits

Parvovirus B19 is classic in adults with young-child exposure.

Reactive arthritis

Post-GI onset fits the recent stomach bug and enteric trigger.

Early inflammatory arthritis

e.g., RA, consider if symptoms persist beyond 6 weeks.

Workup & Plan

- Serologies: parvovirus B19 IgM; consider RF / anti-CCP / ANA. Trend CRP to confirm the inflammatory load is falling.
- Symptom control + daily-email check-ins; escalate if it isn't resolving on its expected post-viral course.

Treatment

DHEA: 50mg b.i.d.

Pregnenolone 25: 50mg b.i.d.

Anti-inflammatory: 2 t.i.d.

Supplement Facts

Serving Size: 3 Capsules
Servings Per Container: 60

	Amount Per Serving
Proprietary Blend	1,150 mg
Curcuma Longa (emulsified root extract† and rhizome power)*	
Boswellia (Boswellia serrata) (resin oil) (extract) *	
Propolis *	
Green Tea (Camellia sinensis) (leaf) (extract) *	
Ginger (Zingiber officinale) (rhizome) (extract) *	
Rosemary (Rosmarinus officinalis) (aerial part) (extract) *	
Celery (Apium graveolens) (seed) (extract) *	
Alpha-Lipoic Acid *	
Trans-Resveratrol *	
Phytolens® (Lens esculenta) (extract) (husk) †† *	
Bioperine® (Piper nigrum) (extract) (fruit) ††† *	

* Daily Value not established

Other ingredients: Capsule shell (gelatin and water), cellulose, silica and magnesium stearate (vegetable source).

38YO Female: Acute Widespread Pain

PMR, by definition

- **Age ≥ 50**
- **Proximal girdle** pattern: shoulders + hips
- Peri-articular pathology (bursitis, tenosynovitis) — **not small-joint arthritis**
- Builds over **weeks**; AM stiffness
- **Rapid response to low-dose prednisone** — near-diagnostic
- Linked to GCA

What this patient shows

- **Age 38** — outside the PMR window
- **Distal joints**: knees, feet, wrists, elbows
- **Acute onset over days** — post-viral, with a GI bug
- Sick-child contact at home
- Night sweats (resolved) + **CRP 84**
- No steroid trial performed

38YO Female: Acute Widespread Pain

Urgent Care Inflammatory Pain

Dehydroepiandrosterone (DHEA) acts as an immune-regulatory and anti-inflammatory modulator, not a blunt immunosuppressant like prednisone.

- Inhibits NF-κB activation
- Reduces cortisol resistance in chronic inflammation → Improved cortisol signaling without adrenal suppression.

Pregnenolone is considered a neurosteroid, acting directly in the CNS:

- Positive modulation of GABA-A signaling
- Regulation of NMDA/glutamate activity
- Stabilization of the limbic system and hypothalamus
- Improves GR signaling efficiency
- Reduces cortisol resistance

DHEA and Prednisone with SLE

Arthritis Rheum. 2002 Jul;46(7):1820-9. doi: 10.1002/art.10364.

Double blind

n= 191 female SLE patients receiving prednisone (10-30 mg/day) were treated daily for 7-9 months with either:

- Placebo
- 100 mg of oral (DHEA)
- 200 mg of oral (DHEA) for 7-9-months.

At monthly intervals, corticosteroid dosages were reduced by algorithm in patients whose SLE Disease Activity Index (SLEDAI) score was stable or improved.

Conclusion: Among women with lupus disease activity, reducing the dosage of prednisone to $< \text{or } = 7.5 \text{ mg/day}$ for a sustained period of time while maintaining stabilization or a reduction of disease activity was possible in a significantly greater proportion of patients treated with oral (DHEA), 200 mg once daily, compared with patients treated with placebo.

DHEA and Pregnenolone Dosing

Protocol	DHEA (10 mg)	Pregnenolone (25 mg)
Acute Inflammation / High Stress (2–4 week bursts)	50–100 mg/day — best spread through the day; higher dose in AM, lower at night. Up to 200 mg tolerated for short periods.	50–100 mg/day — does not follow a circadian rhythm; dose through the day, or heavier at night for insomnia.
General Support	10–30 mg/day — lower dosages at night.	50–100 mg/day.

Note: Patients with high ACE scores normally require higher wellness dose

Autoimmune Disease: NAC in SLE

N-Acetylcysteine Reduces Disease Activity by Blocking Mammalian Target of Rapamycin in T Cells From Systemic Lupus Erythematosus Patients

A Randomized, Double-Blind, Placebo-Controlled Trial

Zhi-Wei Lai, Robert Hanczko, Eduardo Bonilla, Tiffany N. Caza, Brandon Clair, Adam Bartos, Gabriella Miklossy, John Jimah, Edward Doherty, Hajra Tily, Lisa Francis, Ricardo Garcia, Maha Dawood, Jianghong Yu, Irene Ramos, Ioana Coman, Stephen V. Faraone, Paul E. Phillips, and Andras Perl

ARTHRITIS & RHEUMATISM
Vol. 64, No. 9, September 2012, pp 2937–2946
DOI 10.1002/art.34502
© 2012, American College of Rheumatology

Results. NAC up to 2.4 gm/day was tolerated by all patients, while 33% of those receiving 4.8 gm/day had reversible nausea.

Placebo or NAC 1.2 gm/day did not influence disease activity. Considered together, **2.4 gm and 4.8 gm NAC** reduced the SLEDAI score after 1 month, 2 months, 3 months, and 4 months; the BILAG score after 1 month and 3 months; and the FAS score after 2 months and 3 months.

NAC increased in all T cells, profoundly reduced mTOR activity, enhanced apoptosis, re-verses expansion of CD4-CD8- T cells, **stimulated FoxP3 expression in CD4+CD25+ T cells and reduced anti-DNA production.** Conclusion. **This pilot study suggests that NAC safely improves lupus disease activity by blocking mTOR in T lymphocytes.**

38YO Female: Acute Widespread Pain → 7 Days Later

Specimen ID: 344-881-3576-0 Sex: Female Ordering Physician: B WISNIEWSK Date Collected: 12/10/2025

Comp. Metabolic Panel (14) (Cont.)				
Protein, Total ⁰¹	6.7		g/dL	6.0-8.5
Albumin ⁰¹	4.3		g/dL	3.9-4.9
Globulin, Total	2.4		g/dL	1.5-4.5
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Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▲ C-Reactive Protein, Cardiac ⁰¹	84.26 High Results confirmed on dilution.		mg/L	0.00-3.00
Relative Risk for Future Cardiovascular Event				
Low <1.00				
Average 1.00 - 3.00				
High >3.00				

Previous Result
The Previous Result is listed for the most recent test performed where there is sufficient patient demographic data to

Specimen ID: 350-881-1927-0 Sex: Female Ordering Physician: B WISNIEWSK
Date Collected: 12/16/2025 Date Received: 12/17/2025 Date Reported: 12/17/2025 Fasting: No

Ordered Items: C-Reactive Protein, Cardiac
Date Collected: 12/16/202

C-Reactive Protein, Cardiac				
Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
C-Reactive Protein, Cardiac ⁰¹	2.53		mg/L	0.00-3.00
Relative Risk for Future Cardiovascular Event				
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Average 1.00 - 3.00				
High >3.00				

Treatment

DHEA: 50mg b.i.d.

Pregnenolone: 50mg b.i.d.

Combination Anti-inflammatory: 2 t.i.d.

01

CLINICAL PEARL: URGENT CARE

71 YO Male – Sudden Onset Poly Arthropathy

71yo Male; Sudden Onset Poly-arthropathy



Patient's regular doc was on vacation → Urgent Care Visit

Woke up **4-months ago** and suddenly had pain in his hips, knees and R shoulder. He has been taking a lot of **Advil and it seems to help some**. Hard time standing from the toilet and can't put his shoes on.

For a few years he has been having dental issues. Recently found a new doc who was able to take care of some of the old issues. This dental procedure, he thinks was **right before the pain started**.

He did go to the orthopedist at one point (in the last 4 months), and he had an intra-articular **prednisone shot** in his 1 shoulder he woke up the next day he was **pain-free. This lasted for about 7 days. Pt did not take any oral prednisone. He even noticed some increased blood flow to his penis temporarily after the injection** (he has been suffering from ED since his proctectomy).

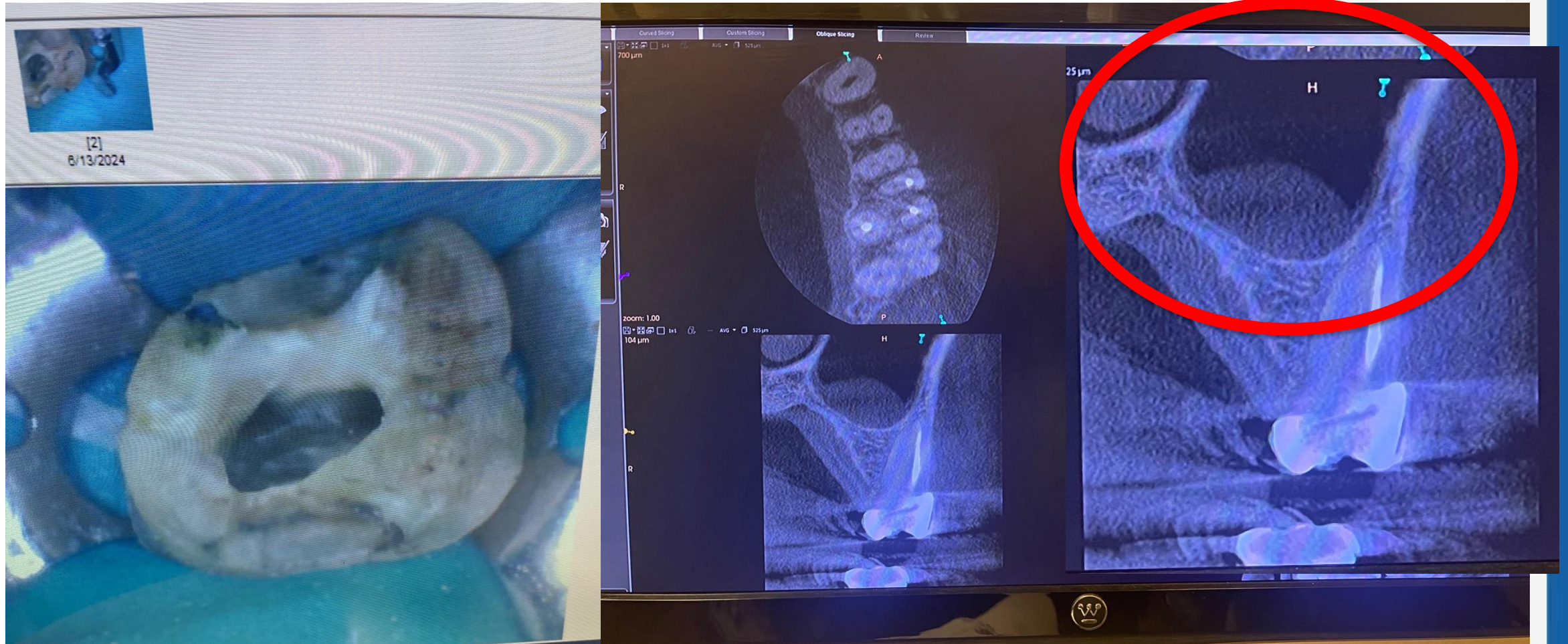
Every morning for years, he wakes up with his nose running- he must blow his nose for about 60-90min. This has been going on for 5 years. He was in **Mexico in December and March** and does think some of the sinus issues may have been "tad better" with the humidity. He did not get sick on either of these trips nor have any abnormal digestive distress experiences. The March trip was prior to his pain starting, thus our interest. He can't think of anything else that was unique prior to his pain starting other than the dental work.

Plan After Urgent Care Visit

Potentially bacteremia/endotoxemia post dental work triggered pain and can be compounded by sinus reservoir. Waiting to hear back from patient after cone beam CT scan we requested from dentist

- **Combination anti-inflammatory-** Turmeric, ginger, black pepper, rosemary, Boswellia, alpha lipoic acid, green tea
- **DHEA:** 100mg
- **Pregnenolone:** 100mg
- **Intenzyme Forte** 10 tablets @ night on empty stomach: Combination Enzyme Therapy- Trypsin, Chymotrypsin, Papain, Ficin

Cone Beam CT/Dental Photos (5.2024)



71yo Male; Sudden Onset Polyarthropathy

Continued Plan

Withing 72hrs patient was feeling improvements but was having blood in his urine

- Patient has a history of prostate cancer
- Why was this happening?
 - Patient was taking, on average, 7 Advil per day- instructed to discontinue and stay in touch. Within 24hr hematuria resolved and didn't return

Dentist then added **Amoxicillin** after reviewing images and wants him to come in for a revision

- We introduced a **silver based nasal spray with silver, sterile saline, iodine and vegetable glycerin**
- **ENT Probiotic**

Conclusion

Patient eventually had his dental revision procedure- took 3x longer than expected. Pain dropped to nearly 0/10 and remained so even after his procedure.

- Patient was referred to his primary care provider

Diagnosis: Poly-arthropathy triggered by subsequent bacteremia following a dental procedure + compounding chronic sinus infection

Final Treatment Protocol

Dental tooth revision

Amoxicillin (prescribed by dentist)

ENT Probiotic

Combination anti-inflammatory

DHEA and **Pregnenolone** as steroid hormone support

Silver Based Nasal Spray

01

CLINICAL PEARL: URGENT CARE

Female: Presented with a “Weird Rash After Shaving”

Strange Rash - Email from Patient



PATIENT'S EMAIL

I hope you're doing well.

I've got a rash all around my lower calves. It started because stupid me decided to grab a dry razor and dry shave them quickly before running out the door to play pickle ball. It didn't look bad until the second day. This happened last Monday. .. it's been about 5 days with each night getting itchier and itchier. The rash started with blisters and oozing with neosporin. Now it's bumpy and dark red. The red bumps are starting to spread out a little it seems but the itching is about to drive me crazy. I've been using the silver creme , hydrogen peroxide, epsom salt, baking soda and apple cider vinegar, hydrocortisone 1%. I'm not sure exactly what I'm dealing with here or how to treat it.

I can come in if I need to make an appointment for you to see it.

Thanks for all your help,

CLINICAL SUMMARY

Established patient reached out via email with a new complain after dry shaving (picture below).

Pertinent Info: She said it popped up 24hrs after dry shaving and is itchy, burning and inflamed feeling. It was a new razor and no one else in her family has anything similar. No change in diet, soaps, shampoos, lotions etc. She has a history of SLE and currently has been battling some hormonal imbalances (she is working with another practitioner on this). We see her 1-2x per year as a general primary care check in. Other than the skin issue, she said she has been feeling great.

Strange Rash - 2 Days Later

Plan: Discussed with patient that this is likely **Vascular Fragility** as part of the **Systemic Lupus Erythematosus**

TREATMENT

- Red and Blue LED — 15 min in office
- **Antioxidant blend/Quercetin**— 2–3× per day
- Message me in a couple of days

PATIENT FOLLOW-UP

It's feeling much better. I really think the red light treatment kicked it into gear quick. The burning itch is almost 100% gone. It looks a little better too. Not so inflamed looking



01

CLINICAL PEARL: URGENT CARE

54YO Male - pain and fatigue after being bit, by an insect, in the garden

54Yo Male: Fatigue, Pain and Rash

I was consulting (being seen by another physician “Dr. Bruce”) in a case of 54YO male

- Some symptoms started a month ago and then pain started after a weekend of landscaping (**he got bit by something**)
 - Symptoms: rash on hands, fatigue, fever
- Multiple doctors suggested this was likely microbial due to the timeline and the **insect bite**
- He worked with his traditional doctors without much resolve, but they were able to get him to infectious disease to run some labs prior to his visit with “Dr. Bruce”



Presented with the Following Labs

Labs ordered by infectious disease / rheumatology prior to visit

Cytomegalovirus IgG Quantitative

Normal range: below ≤ 0.8 AI

Value

>8.0

Cytomegalovirus Interpretation:

Antibody Index

≤ 0.8 AI Negative.

Suggests no previous exposure to virus through infection.

0.9-1.0 AI Equivocal.

Suggests repeat testing in 4 weeks if clinically indicated.

≥ 1.1 AI Positive.

Suggests current or past infection.

Parvovirus B19 IgG Antibody

Normal value: ≤ 0.90 IV

Value

4.59

INTERPRETIVE INFORMATION: Parvovirus B19 Antibody, IgG

0.90 IV or less Negative - No significant

level of detectable Parvovirus

B19 IgG antibody.

0.91 - 1.09 IV Equivocal - Repeat testing in

7-21 days may be helpful.

1.10 IV or greater Positive - IgG antibody to

Parvovirus B19 detected which

may indicate a current or

past infection.

KEY RESULTS

NORMAL / NEGATIVE

- ANA — negative
- B. burgdorferi (ELISA) — negative
- Rheumatoid factor — negative
- Anti-CCP — negative
- HLA-B27 — negative
- EBV — no reactivation

ABNORMAL / POSITIVE

▲ ESR — 37 (high)

▲ CRP — 34 (high)

▲ Parvovirus B19 IgG — High

▲ CMV IgG — High

Initial Visit Highlights

Dr. Bruce wanted to explore the possibility of a vector borne illness/extra cellular pathogen

- Put him on antimicrobials
- The insect bite happened a month after some of this fatigue and discomfort started
- Notice a **web like rash** on his body before the bite, after the bite he had a bumpy rash on his hands
- Energy is 3/10, at its best
- His wife must help him get dressed in the morning due to pain
- PCP gave him Rx for Meloxicam and Tylenol every 6 hours alternating with Advil



Annular/reticulate lesions are highly suggestive of parvovirus B19 infection
(not actual patient picture)

Labs Ordered after Initial Visit

Comp. Metabolic Panel (14) (Cont.)

AST (SGOT) ⁰¹	36		IU/L
▲ ALT (SGPT) ⁰¹	59	High	IU/L

C-Reactive Protein, Cardiac

Test	Current Result and Flag	Previous Result and Date	Units
▲ C-Reactive Protein, Cardiac ⁰¹	82.63 High Results confirmed on dilution.		mg/L
Relative Risk for Future Cardiovascular Event			
Low <1.00			
Average 1.00 - 3.00			
High >3.00			

Sedimentation Rate-Westergren

Test	Current Result and Flag	Previous Result and Date	Units
▲ Sedimentation Rate-Westergren ⁰¹	56 High		mm/hr

Ferritin

Test	Current Result and Flag	Previous Result and Date	Units
▲ Ferritin ⁰¹	944 High		ng/mL

Antistreptolysin O Ab

Test	Current Result and Flag	Previous Result and Date	Units
Antistreptolysin O Ab ⁰¹	192.0		IU/mL

ADDITIONAL KEY FINDINGS

- Platelets — low ▼
- Basophils — high ▲
- ALT — elevated ▲

Follow Up 1 Week Later

After initial visit patient was put on combinations of antimicrobials, garlic, charcoal, and combination enzyme formula → No improvements

Dr. Bruce consulted with me. I suggested looked more into the viral portion of his history; reasoning:

- He wasn't feeling great before the bite so this could be a detractor
- High IgG titers of CMV and Parvo → suggested serial titers to determine acute vs. memory cells
- "web like rash"
- **Increase in ferritin and ALT + thrombocytopenia**
- Start anti-virals while we wait for labs

TREATMENT CHANGE

Enzyme formula switched to:

- **Proteolytic enzymes**— 5 t.i.d.

Antivirals added:

- **Combination Anti-viral**— 2 b.i.d.
- **Arabinogalactans** — 1 tsp b.i.d.

Follow-Up Appointments

48 HOURS LATER

- 25% improvement in pain & fatigue
- Parvovirus reactivation confirmed
- IgG titer: **4.5 → 6.3 ▲**

2 WEEKS LATER

- Energy: **6–7/10**
- Stiffness down ~40% — able to tie his shoes again
- **Anti-viral** increased to 6 per day

Parvovirus B19, Human, IgG/IgM

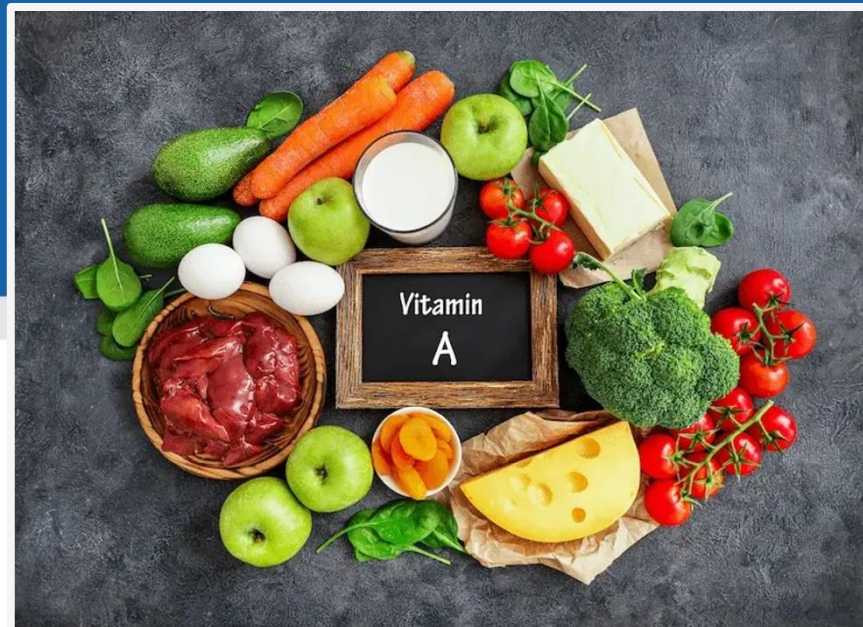
Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
▲ Parvovirus B19, IgG ⁰¹	6.3	High		index	0.0-0.8
			Negative	<0.9	
			Equivocal	0.9 - 1.1	
			Positive	>1.1	
Parvovirus B19, IgM ⁰¹	0.1			index	0.0-0.8
			Negative	<0.9	
			Equivocal	0.9 - 1.1	
			Positive	>1.1	

6 Week Follow-Up

- One minor backslide, but continues to improve — did more landscaping and tree trimming
- Only remaining issues: his normal level of fatigue and an old shoulder injury



URGENT CARE: VITAMIN A BURST THERAPY



Vitamin A Burst Therapy

The goal is to raise vitamin A rapidly without adverse symptoms. The dose is tailored to the patient, then scheduled in a cycle-on / cycle-off format.

THERAPEUTIC RANGE

100,000–500,000 IU/day (30,000–150,000 mcg)

EXAMPLE CYCLE

300,000 IU/day × 3 days, then 1 day off = **1 cycle**. Repeat several cycles, then taper to a lower, easier-to-monitor dose.

MAINTENANCE

10,000–15,000 IU/day — well-tolerated long-term; adjust to diet & overall status.

Vitamin A Burst Therapy

Mucosal barrier integrity

- Drives differentiation of epithelial cells in respiratory, GI, and genitourinary mucosa
- Maintains goblet cell populations and mucus production
- Upregulates tight junction proteins, the first line of defense before any immune cell is involved
- Deficiency causes **squamous metaplasia** of mucosal surfaces

Innate immune activation

- Enhances NK cell activity and cytotoxic function
- Activates macrophage phagocytic capacity
- Upregulates pattern recognition receptor expression (TLRs)
- Promotes neutrophil differentiation from bone marrow progenitors

Adaptive immune orchestration

- Required for **T-cell homing to mucosal tissues**
- Promotes **Th1 differentiation** for intracellular pathogens
- Critical for **regulatory T-cell (Treg) induction**
- Drives **IgA class switching** in B-cells — IgA being the dominant antibody at every mucosal surface in the body

Th1/Th2/Th17 balance

- Retinoic acid suppresses pathological **Th17 responses** while simultaneously promoting Foxp3⁺ regulatory T cell (Treg) differentiation

Vitamin A Burst – General Immune/Autoimmune

One of the best ways to increase T-lymphocytes and assist with immune tolerance (increase T-Reg cells) is introducing high dose vitamin A.

Introducing dosages of 100-300,000 IU/day in patients

- It is important to note that many of the studies on this topic have been performed with the pharmaceutical vitamin A analogue, trans retinoic acid and isotretinoin. Most full synthetic forms of vitamins have a higher potential for toxicity due to their altered interaction with host's receptors.
- **Lifestyle (diabetes/alcohol) or viral induced hepatitis/LV dysfunction increases patient's susceptibility to vitamin A toxicity**

A RANDOMIZED, CONTROLLED TRIAL OF VITAMIN A IN CHILDREN WITH SEVERE MEASLES

GREGORY D. HUSSEY, M.B., M.Sc.(LOND.), AND MAX KLEIN, M.B., F.C.P.(S.A.)

Abstract Background. Measles kills about 2 million children annually, and there is no specific therapy for the disease. It has been suggested that vitamin A may be of benefit in the treatment of measles.

Methods. We conducted a randomized, double-blind trial involving 189 children who were hospitalized at a regional center in South Africa because of measles complicated by pneumonia, diarrhea, or croup. The children (median age, 10 months) were assigned to receive either

centrations of retinol-binding protein (mean, 30.1 ± 2.0 mg per liter) and albumin (mean, 33.4 ± 0.5 g per liter) were also low. As compared with the placebo group, the children who received vitamin A recovered more rapidly from pneumonia (mean, 6.3 vs. 12.4 days, respectively; $P < 0.001$) and diarrhea (mean, 5.6 vs. 8.5 days; $P < 0.001$), had less croup (13 vs. 27 cases; $P = 0.03$), and spent fewer days in the hospital (mean, 10.6 vs. 14.8 days; $P = 0.01$). Of the 12 children who died, 10 were

The World Health Organization (WHO) recognizes vitamin A deficiency as a risk factor for some viruses such as measles.

A small study published in *The New England Journal of Medicine*, introduced 400,000IU of vitamin A (retinyl palmitate) to 96 pediatrics with an active measles infection (average age of 10 months). These children were compared to a control group who received a placebo. They concluded: "The children who received vitamin A had markedly diminished mortality and morbidity, with no clinically apparent adverse effects."

Vitamin A Burst Therapy

High dose vitamin A can, in fact, have undesired health consequences. So, first we must define 'high dose'.

- The RDA's current recommendations are about 2,000 IU or 700-900mcg for adults. Most clinicians consider high dose vitamin A therapy to be greater than 100,000IU (30,000 mcg) per day, for weeks at a time, without breaks.
- It is important to note that the forms of vitamin A preferred for this therapy are those that are emulsified or micellized preform vitamin A, **retinyl palmitate or vitamin A palmitate**. The Merck Manual indicates that greater than 100,000 IU/day (30,000 mcg) for **MONTHS** *may* cause toxicity in adults.

Vitamin A Toxicity

- Dryness- skin, cracked or dry lips and dry eyes
- Hair loss (generalized)
- Headache- normally described as “behind the eyes”
- Body pain

Laboratory findings in vitamin A intoxicated patients

- Many times, labs will be normal
 - GGT
 - Bilirubin
 - AST and ALT
 - Triglycerides

Patients with liver disease, hemochromatosis or viral hepatitis will be more prone to vitamin A toxicity

URINARY TRACT INFECTIONS



Chronic Asymptomatic UTI

Many woman, especially near menopause will begin to complain about:

- Lower abdominal bloating
- Urinary frequency
- Alternate odor to their urine

Even those patients who are familiar with UTI symptoms, will often misinterpret the above as an alterative cause

Urgent Care: Urinary Tract Infection

34yo Female

- Chronic issue- has been on over 30 rounds of antibiotics for these over the years
 - Many combinations of botanicals and natural remedies as well
- Rarely results in a kidney infection
- Feels like sitting for a long time, like on a plane or after intercourse are the two most common scenarios where she will experience symptoms or a “full-blown UTI”

34yo Female Chronic UTI: Lab Results

2-20-25 Urgent Care UA

Date Collected: 02/20/2025

Urinalysis, Complete

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Urinalysis Gross Exam ⁰¹				
Specific Gravity ⁰¹	1.013			1.005-1.030
pH ⁰¹	7.5			5.0-7.5
Urine-Color ⁰¹	Yellow			Yellow
Appearance ⁰¹	Clear			Clear
▶ WBC Esterase ⁰¹	1+ Abnormal			Negative
Protein ⁰¹	Negative			Negative/Trace
Glucose ⁰¹	Negative			Negative
Ketones ⁰¹	Negative			Negative
Occult Blood ⁰¹	Negative			Negative
Bilirubin ⁰¹	Negative			Negative
Urobilinogen,Semi-Qn ⁰¹	0.2		mg/dL	0.2-1.0
Nitrite, Urine ⁰¹	Negative			Negative
Microscopic Examination ⁰¹	See below: Microscopic was indicated and was performed.			
▶ WBC ⁰¹	6-10 Abnormal		/hpf	0-5
RBC ⁰¹	None seen		/hpf	0-2
Epithelial Cells (non renal) ⁰¹	0-10		/hpf	0-10
Casts ⁰¹	None seen		/lpf	None seen
Bacteria ⁰¹	None seen			None seen/Few

Urine Culture, Routine

Test	Current Result and Flag	Units	Reference Interval
Urine Culture, Routine ⁰¹	Final report		
Result 1 ⁰¹	No growth		

3-4-25 Take Home PCR Test

GENDER	Female	COLLECTED DATE	03/04/2025	ACCESSION	810569
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RESISTANCE GENES DETECTED

Beta-lactam SHV, Tetracycline tetM

LEVEL 1
PCR REPORT

THIS IS A **PRELIMINARY REPORT**.
NEXT GENERATION SEQUENCING
RESULTS ARE PENDING. THE
REPORT WILL BE AVAILABLE
TYPICALLY IN 3-5 BUSINESS DAYS.

ANTIMICROBIALS FOR CONSIDERATION

RAPID SCREENING (PCR RESULTS)		DNA copies per mL	Pathogenicity	Gram Stain	Respiration	Extended spectrum penicillins/Beta-lactamase inhibitors e.g. Augmentin	Fluoroquinolones e.g. Levofloxacin	Nitrofurantoin e.g. Macrobid	Carbapenems e.g. Merrem	Aminoglycosides e.g. Amikacin	Antifolates e.g. Bactrim	Cephalosporins Second Gen e.g. Cefotax	Cephalosporins Third Gen e.g. Suprax	Colistin	Linezolid (Zyvox)	Aminoglycosides+Aminopenicillins e.g. Ampicillin/Gentamicin	Fosfomycin	Glycopeptides e.g. Vancomycin	Lipopeptides e.g. Cubicin	Clindamycin
BACTERIAL LOAD	High	> 10 ⁷				PO	PO	PO		IV	PO	PO	PO		PO	IV	PO	IV	IV	PO
Klebsiella pneumoniae		2.84 x 10 ⁵		P	-	FAn	✓	✓	✓	✓	✓	✓	✓	✓						
Enterococcus faecalis		1.95 x 10 ⁵		P	+	FAn	✓	✓							✓	✓	✓	✓	✓	
Gardnerella vaginalis		7.84 x 10 ³		P	+	FAn	✓		✓						✓					✓
Ureaplasma parvum		2.22 x 10 ²		P	U	Unk		✓												

45YO Female: Recurring UTIs After Intimacy

11.2025: Patient complains about recurring UTI infections after sex. She has had the same partner for 20+ years.

What she has tried/important info

- Uses coconut oil for lubrication
- Switched to non-bleached feminine products
- Couple showers before and after sex
- Urinates immediately following
- Vaginal Estrogen

Date Collected: 11/01/2024

Date Received: 11/01/2024

Date Reported: 11/02/2024

Fasting: No

Ordered Items: Urinalysis, Complete

Urinalysis, Complete

Date Collected: 11/01/2024

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Urinalysis Gross Exam ⁰¹				
▶ Specific Gravity ⁰¹	>=1.030 Abnormal			1.005-1.030
pH ⁰¹	5.5			5.0-7.5
Urine-Color ⁰¹	Yellow			Yellow
Appearance ⁰¹	Clear			Clear
WBC Esterase ⁰¹	Negative			Negative
Protein ⁰¹	Negative			Negative/Trace
Glucose ⁰¹	Negative			Negative
Ketones ⁰¹	Negative			Negative
Occult Blood ⁰¹	Negative			Negative
Bilirubin ⁰¹	Negative			Negative
Urobilinogen,Semi-Qn ⁰¹	0.2		mg/dL	0.2-1.0
Nitrite, Urine ⁰¹	Negative			Negative
Microscopic Examination ⁰¹	Microscopic follows if indicated.			
Microscopic Examination ⁰¹	See below: Microscopic was indicated and was performed.			
WBC ⁰¹	0-5		/hpf	0 - 5
RBC ⁰¹	None seen		/hpf	0 - 2
Epithelial Cells (non renal) ⁰¹	0-10		/hpf	0 - 10
Casts ⁰¹	None seen		/lpf	None seen
▶ Bacteria ⁰¹	Moderate Abnormal			None seen/Few

45YO Female: Recurring UTIs After Intimacy

Patient’s husband PCR semen analysis
Treatment for husband (60 days):

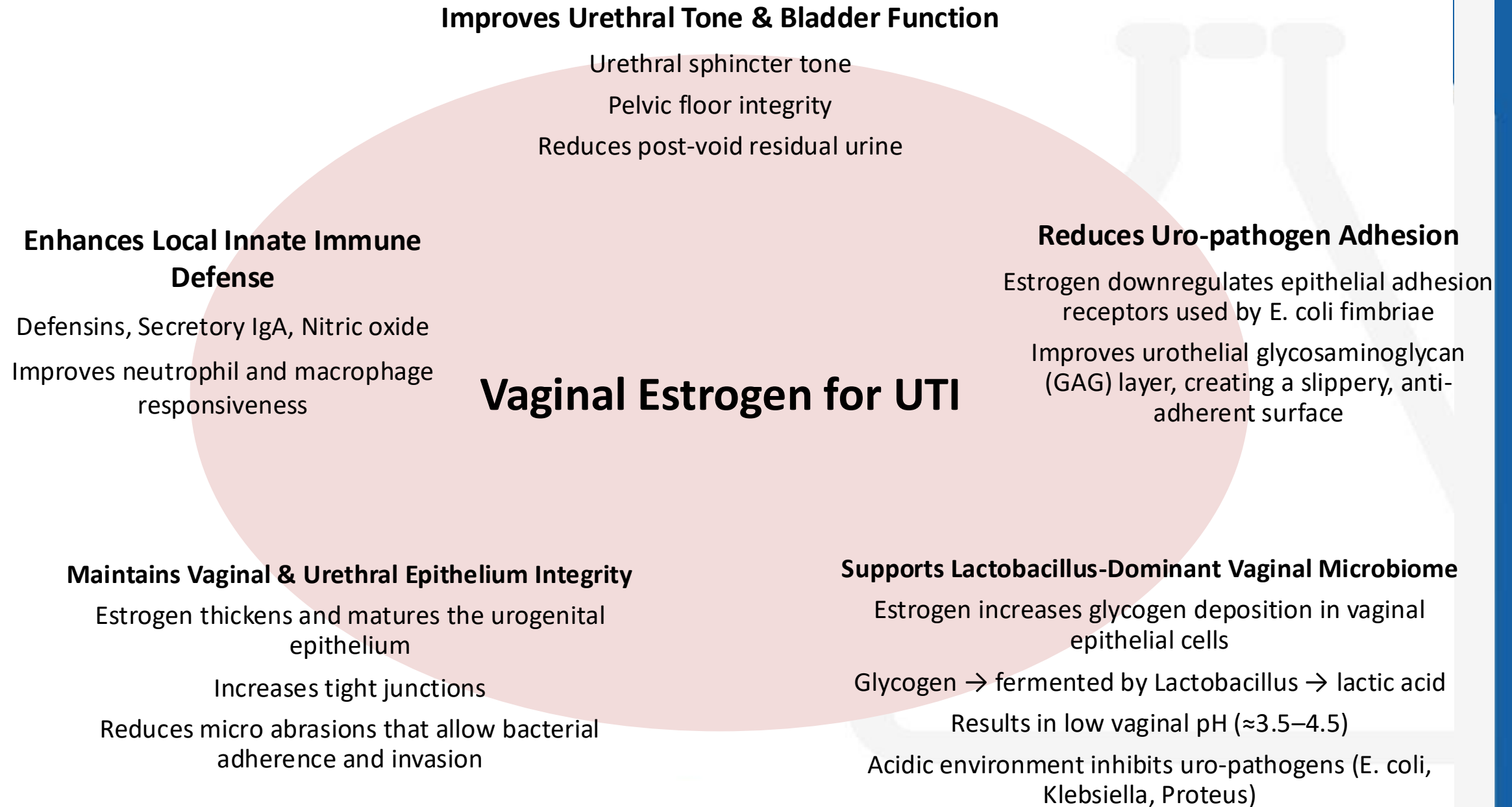
- Berberine HCL: 1 t.i.d
- A.D.P.: 3 t.i.d.
- Palmetto Plus: 2 b.i.d.

Treatment for patient:

- Renal Plus: 2 per day (additional 2 after intimacy), Long term
- Biodoph Fem: 1 before bed
- Nightly vaginal estrogen suppositories for 1 month; then 1-2x per week

Results (updated 4.12.2026): No clinical findings of UTI nor symptoms

GENDER		Male		COLLECTED DATE		05/29/2025		ACCESSION		825817	
RESISTANCE GENES DETECTED											
Methicillin mecA, Aminoglycoside antla											
LEVEL 2 NGS REPORT				ANTIMICROBIALS FOR CONSIDERATION							
				COMPREHENSIVE IDENTIFICATION NEXT-GEN DNA SEQUENCING RESULTS with PRIOR PCR RESULTS.							
COMPLETE (NGS & PCR RESULTS)		DNA copies per mL		NGS		Gram Stain		Respiration			
BACTERIAL LOAD		Medium	10 ⁵ -10 ⁷	%				Glycopeptides e.g Vancomycin			
								Linezolid (Zyvox)			
								Lipopeptides e.g. Cubicin			
								Anti-tuberculosis e.g Isoniazid			
								Antifolates e.g Bactrim			
								Metronidazole (Flagyl)			
								Clindamycin			
								Anti-Pseudomonal Penicillins e.g. Mezlin		R	
								Cephalosporins First Gen e.g. Keflex		R	
								Cephalosporins Second Gen e.g. Cefotax		R	
								Extended spectrum penicillins/Beta-lactamase inhibitors e.g. Augmentin		R	
								Penicillins e.g. Penicillin		R	
Staphylococcus haemolyticus			NGS	49%		+	FAn	√	√	√	√
Staphylococcus epidermidis			NGS	40%		+	FAn	√	√	√	√
Streptococcus downii			NGS	9%		+	FAn	√			
			</								



9YO Female; Chronic UTI Symptoms

Date Collected: 02/16/2026		Date Received: 02/16/2026		Date Reported: 02/20/2026		Fasting: No	
Ordered Items: UA/M w/rflx Culture, Routine; Please note; Sensitivity Organism #1; Presumptive ID							
				Date Collected: 02/16/2026			
UA/M w/rflx Culture, Routine							
Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval	
Urinalysis Gross Exam ⁰¹							
Specific Gravity ⁰¹	1.019		1.023 01/31/2026			1.005-1.030	
pH ⁰¹	6.0		6.5 01/31/2026			5.0-7.5	
Urine-Color ⁰¹	Yellow		Yellow 01/31/2026			Yellow	
Appearance ⁰¹	Clear		Clear 01/31/2026			Clear	
▶ WBC Esterase ⁰¹	2+	Abnormal	2+	01/31/2026		Negative	
Protein ⁰¹	Negative		Negative 01/31/2026			Negative/Trace	
Glucose ⁰¹	Negative		Negative 01/31/2026			Negative	
Ketones ⁰¹	Negative		Negative 01/31/2026			Negative	
▶ Occult Blood ⁰¹	Trace	Abnormal	Negative	01/31/2026		Negative	
Bilirubin ⁰¹	Negative		Negative 01/31/2026			Negative	
Urobilinogen,Semi-Qn ⁰¹	0.2		0.2 01/31/2026		mg/dL	0.2-1.0	
Nitrite, Urine ⁰¹	Negative		Negative 01/31/2026			Negative	
Microscopic Examination ⁰¹	See below: Microscopic was indicated and was performed.		See below: 01/31/2026				
WBC ⁰¹	0-5		6-10 01/31/2026		/hpf	0-5	
RBC ⁰¹	0-2		None seen 01/31/2026		/hpf	0-2	
Epithelial Cells (non renal) ⁰¹	None seen		None seen 01/31/2026		/hpf	0-10	
Casts ⁰¹	None seen		None seen 01/31/2026		/lpf	None seen	
Bacteria ⁰¹	None seen		None seen 01/31/2026			None seen/Few	
Urinalysis Reflex ⁰¹	This specimen has reflexed to a Urine Culture.						
▶ Urine Culture, Routine ⁰¹	Final report	Abnormal					
▶ Result 1 ⁰¹	Staphylococcus aureus	Abnormal					

Has been dealing with recurring UTI for years
Many labs have come back normal or minor findings that her other doctors have justify as a normal "for her age".

Bacteria via microscopy reports as "None seen"

Consulting with another practitioner on this case – encouraged her to at least push for a culture during next occurrence

** S = Susceptible; I = Intermediate; R = Resistant **				
P = Positive; N = Negative				
MICS are expressed in micrograms per mL				
Antibiotic	RSLT#1	RSLT#2	RSLT#3	RSLT#4
Ciprofloxacin	S			
Clindamycin	S			
Erythromycin	S			
Gentamicin	S			
Levofloxacin	S			
Linezolid	S			
Moxifloxacin	S			
Nitrofurantoin	S			
Oxacillin	S			
Rifampin	S			
Tetracycline	S			
Trimethoprim/Sulfa	S			
Vancomycin	S			

9YO Female; Chronic UTI Symptoms

Synthetic medicine:

- **Cephalexin**- Blocks Peptidoglycan Cross-Linking; Prevents formation of the rigid bacterial cell wall structure.
- **Ciprofloxacin** inhibits bacterial DNA gyrase (topoisomerase II) and topoisomerase IV, blocking DNA replication and transcription, resulting in bactericidal activity.
- **Clindamycin** binds to the 50S ribosomal subunit, inhibiting protein synthesis by blocking peptide chain elongation.
- **Erythromycin** binds to the 50S ribosomal subunit, preventing translocation during protein synthesis and thereby inhibiting bacterial growth.

Natural Botanical Options

- **Berberine**- Interferes with peptidoglycan assembly, Also inhibits DNA replication and quorum sensing
- **Allicin**- Damages bacterial membranes
- **Oregano Oil**- Disrupts cytoplasmic membrane → leaks intracellular contents

Anti-Adhesion

D-mannose

Cranberry

November 2025 – 65YO Female

Urinalysis, Complete

Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
Urinalysis Gross Exam ⁰¹					
▶ Specific Gravity ⁰¹	<=1.005	Abnormal			1.005-1.030
pH ⁰¹	7.0				5.0-7.5
Urine-Color ⁰¹	Yellow				Yellow
Appearance ⁰¹	Clear				Clear
▶ WBC Esterase ⁰¹	3+	Abnormal			Negative
Protein ⁰¹	Negative				Negative/Trace
Glucose ⁰¹	Negative				Negative
Ketones ⁰¹	Negative				Negative
Occult Blood ⁰¹	Negative				Negative
Bilirubin ⁰¹	Negative				Negative
Urobilinogen, Semi-Qn ⁰¹	0.2			mg/dL	0.2-1.0
Nitrite, Urine ⁰¹	Negative				Negative
Microscopic Examination ⁰¹	See below: Microscopic was indicated and was performed.				
▶ WBC ⁰¹	6-10	Abnormal		/hpf	0-5
RBC ⁰¹	None seen			/hpf	0-2
Epithelial Cells (non renal) ⁰¹	None seen			/hpf	0-10
Casts ⁰¹	None seen			/lpf	None seen
Bacteria ⁰¹	None seen				None seen/Few

Patient assumed her **nocturia** was age related.

She remembers her PCP saying that the WBC Esterases were common in post menopausal women.

After 2 weeks of treatment, patient sent the following email



Sun, Nov 23, 2025, 8:28 AM ☆ 😊 ↩ ⋮

Sent from my iPhone so you will not believe this!!!! I stopped having to get up during the night to pee!!!! Very recently I realized that I'm not getting up!!! I think my irritated bladder is better!!!

Waste Removal: Renal Excretion

- Highly dependent on alkalinity
 - *Ideal* urine pH: 7.0-7.5
- Increase hydration
- Clear infections

Urine alkalization increases toxic excretion

- Research indicated IV bicarbonate as a method to raise pH
 - Oral potassium citrate shown to be as effective as sodium bicarbonate

Urol Res. 2001 Oct;29(5):295-302

Potassium Citrate and Kidney Stones

Citrate is one of the body's most powerful endogenous inhibitors of calcium stone formation.

Mechanism:

- Citrate binds free calcium in the urine
- Forms soluble calcium–citrate complexes
- Reduces free ionized calcium available to bind oxalate or phosphate

Low urinary citrate (hypocitraturia) is extremely common in:

- Chronic low-grade metabolic acidosis
- High animal protein diets
- Chronic diarrhea
- High sodium intake

Potassium Citrate and Kidney Stones

Potassium citrate is metabolized to bicarbonate in the liver.

That bicarbonate:

- Raises systemic pH slightly (low serum CO)
- Increases urinary pH

PATIENT CASE- FATIGUE AFTER RETURNING FROM VACATION

Urgent care cases need to be accompanied by a proper examination.
If patient is virtual, request pictures or set up video consultations.

Patient Case: Mid 40s Male – Feeling Poorly After Vacation

Patient presentation was urgent care complaining of sore throat and fatigue

Vacationed with his wife and kid (daughter) in Mexico about a week ago. Neither of them have displayed any acute symptoms

- No GI symptoms
- Afebrile

Current symptoms:

- Sore throat
- High Level Fatigue
- Rash on his hands



Patient Case: Mid 40s Male – Feeling Poorly After Vacation

During examination lesions were also found in the mouth and feet. Upon questioning, he said these popped up this weekend but thought the ones on his feet were insect bites from vacation.

Diagnosis: Hand Foot and Mouth

More common in children but can affect adults



Hand Foot and Mouth Disease (HFMD)

Coxsackievirus A (16,5,7,9,10) and B (2, 5) viral strains

- Non-enveloped RNA virus with an incubation of about 1 week (patient traveled to Mexico a little over a week ago)
- Rarely serious at any age and often self limiting with just supportive treatment
- Commonly spread **oral-to-oral** or **fecal-to-oral**
- Males tend to have more symptoms
- Labs are available but a clinical work-up is normally sufficient unless you're trying to rule out other more serious conditions

Hand Foot and Mouth Disease (HFMD): ~~Classic Presentation~~

Subjective:

- Sore mouth or throat
- Malaise
- Rarely, vomiting occurs in HFMD cases caused by Enterovirus 71 (EV-A71)

Physical findings include the following:

- Initially, macular lesions appear on the buccal mucosa, tongue, and/or hard palate
- These mucosal lesions rapidly progress to vesicles that erode and become surrounded by an erythematous halo
- Lesions may also be found on the hands, feet, buttocks, and genitalia
- A fever of 100-101°F may be present for 24-48 hours

Patient Case: Mid 40s Male – Feeling Poorly After Vacation

Vitamin A: burst therapy (dosage varies)

Anti-viral: 2 t.i.d.

Topical: Apply Silver and glutathione gel to effected area

Patient is to call or email me in 1 week with an update

68-YEAR-OLD MALE- "GOUT FLARE"

Urgent care cases need to be accompanied by a proper examination.
If patient is virtual, request pictures or set up video consultations.

68 yo Male: Urgent Care for Foot Pain

Patient called because of a “gout flare”

Subjective: Started having pain last Thursday in his L large toe. He hasn't had gout before, nor does he know anyone blood related that has gout.

- Diet has been rather stable. Beef consumption is down a bit. No changes in physical activity. He has been wearing the same shoes and no changes there.
- No physical trauma and no insect bites to his knowledge
- 56-year smoker- down to 1/4-1/2 pack per day.

Patient Case: Objective Findings

Vitals: 98.3F 81BPM 94 O 143/89 158.6lbs



- Pitting edema- bilateral
- Diabetes related dermopathy
 - Hyperpigmentation- brownish red tone to the skin
- Extremely dry skin

Notes from chart:

Legs are absent of hair and have a stasis dermatitis like appearance. Pitting edema more on the L side leg. Redness proximal to the large toe rather than the toe itself. Palpating and moving the toes does **not** create pain. Edema goes from proximal joints to right above the ankle- picture in file.

Patient Case: Objective Findings

Vitals: 98.3F 81BPM 94 O 143/89 158.6lbs



Assessment: At this time, it appears that the patient has cellulitis rather than gout.
Will run labs today to confirm.
If labs come back elevated will likely refer for Abx therapy due to patient's vascular compromise.
Will follow patient closely. Discussed, in detail, status with patient's daughter, -----.

We did discuss his blood pressure- patient has not had a medical work-up in over 20 years.
He also does not drink water because “fish f*ck in water”.

Patient Case Continued

Patient left that evening with the following:

Emulsified Oregano- 2 t.i.d.
Anti-inflammatory – 2 t.i.d.
B-complex- 2 in AM
+ min. 80fl oz of fish free water

Lab results came through the next day

- No WBC elevation- no referral for now
- Uric acid normal- likely not gout
- CRP-hs- 19.70- inflammation (current or chronic?)

Date Collected: 05/02/2023		Date Received: 05/03/2023		Date Reported: 05/03/2023		Fasting: No		
Ordered Items: CBC With Differential/Platelet; C-Reactive Protein, Cardiac; Uric Acid								
Date Collected: 05/02/2023								
CBC With Differential/Platelet								
Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval		
WBC ⁰¹	8.8				x10E3/uL	3.4-10.8		
RBC ⁰¹	4.91				x10E6/uL	4.14-5.80		
Hemoglobin ⁰¹	16.9				g/dL	13.0-17.7		
Hematocrit ⁰¹	50.4				%	37.5-51.0		
▲ MCV ⁰¹	103	High			fL	79-97		
▲ MCH ⁰¹	34.4	High			pg	26.6-33.0		
MCHC ⁰¹	33.5				g/dL	31.5-35.7		
RDW ⁰¹	11.8				%	11.6-15.4		
Platelets ⁰¹	265				x10E3/uL	150-450		
Neutrophils ⁰¹	66				%	Not Estab.		
Lymphs ⁰¹	20				%	Not Estab.		
Monocytes ⁰¹	10				%	Not Estab.		
Eos ⁰¹	3				%	Not Estab.		
Basos ⁰¹	1				%	Not Estab.		
Neutrophils (Absolute) ⁰¹	5.9				x10E3/uL	1.4-7.0		
Lymphs (Absolute) ⁰¹	1.8				x10E3/uL	0.7-3.1		
Monocytes(Absolute) ⁰¹	0.9				x10E3/uL	0.1-0.9		
Eos (Absolute) ⁰¹	0.2				x10E3/uL	0.0-0.4		
Baso (Absolute) ⁰¹	0.1				x10E3/uL	0.0-0.2		
Immature Granulocytes ⁰¹	0				%	Not Estab.		
Immature Grans (Abs) ⁰¹	0.0				x10E3/uL	0.0-0.1		
C-Reactive Protein, Cardiac								
Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval		
▲ C-Reactive Protein, Cardiac ⁰¹	19.70	High			mg/L	0.00-3.00		
Relative Risk for Future Cardiovascular Event								
Low					<1.00			
Average					1.00 - 3.00			
High					>3.00			
Uric Acid								
Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval		
Uric Acid ⁰¹	5.6				mg/dL	3.8-8.4		
Therapeutic target for gout patients: <6.0								

Patient Case Plan

Wanted to follow the patient closely over the next few days. He continued to improve – decreased redness, swelling and pain.

Date Collected: 05/02/2023

Date Received: 05/03/2023

Date Reported: 05/03/2023

Fasting: No

Ordered Items: CBC With Differential/Platelet; C-Reactive Protein, Cardiac; Uric Acid

Date Collected: 05/02/2023

CBC With Differential/Platelet

Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
WBC ⁰¹	8.8			x10E3/uL	3.4-10.8
RBC ⁰¹	4.91			x10E6/uL	4.14-5.80
Hemoglobin ⁰¹	16.9			g/dL	13.0-17.7
Hematocrit ⁰¹	50.4			%	37.5-51.0
▲ MCV ⁰¹	103	High		fL	79-97
▲ MCH ⁰¹	34.4	High		pg	26.6-33.0
MCHC ⁰¹	33.5			g/dL	31.5-35.7
RDW ⁰¹	11.8			%	11.6-15.4
Platelets ⁰¹	265			x10E3/uL	150-450
Neutrophils ⁰¹	66			%	Not Estab.
Lymphs ⁰¹	20			%	Not Estab.
Monocytes ⁰¹	10			%	Not Estab.
Eos ⁰¹	3			%	Not Estab.
Basos ⁰¹	1			%	Not Estab.
Neutrophils (Absolute) ⁰¹	5.9			x10E3/uL	1.4-7.0
Lymphs (Absolute) ⁰¹	1.8			x10E3/uL	0.7-3.1
Monocytes(Absolute) ⁰¹	0.9			x10E3/uL	0.1-0.9
Eos (Absolute) ⁰¹	0.2			x10E3/uL	0.0-0.4
Baso (Absolute) ⁰¹	0.1			x10E3/uL	0.0-0.2
Immature Granulocytes ⁰¹	0			%	Not Estab.
Immature Grans (Abs) ⁰¹	0.0			x10E3/uL	0.0-0.1

C-Reactive Protein, Cardiac

Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
▲ C-Reactive Protein, Cardiac ⁰¹	19.70	High		mg/L	0.00-3.00
			Relative Risk for Future Cardiovascular Event		
			Low	<1.00	
			Average	1.00 - 3.00	
			High	>3.00	

Uric Acid

Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
Uric Acid ⁰¹	5.6			mg/dL	3.8-8.4
Therapeutic target for gout patients: <6.0					

5/2/23

Date Collected: 05/11/2023		Date Received: 05/12/2023		Date Reported: 05/12/2023		Fasting: No	
Ordered Items: C-Reactive Protein, Cardiac							
							Date Collected: 05/11/2023
C-Reactive Protein, Cardiac							
Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval	
▲ C-Reactive Protein, Cardiac ⁰¹	3.75	High	19.70	05/02/2023	mg/L	0.00-3.00	
					Relative Risk for Future Cardiovascular Event		
					Low	<1.00	
					Average	1.00 - 3.00	
					High	>3.00	

5/11/23

FOODBORNE ILLNESS



Overdue products



Medicine



Dizziness



Intestinal colic



Diarrhea



Headache



Gastrointestinal: Foodborne Illness

In an urgent care setting, the number of respiratory complaints far outweighs gastrointestinal complaints by 3-4x according to most sources.

BUT the **variety of microbes** that infect or affect the gastrointestinal tract are far greater than the pulmonary tract

The CDC estimates ~48 million cases of foodborne illness each year in the United States, equivalent to about **1 in 6 Americans** annually

Foodborne Illness Acquired in the United States—Major Pathogens, 2019

Elaine J. Scallan Walter Comments to Author , Zhaohui Cui, Reese Tierney, Patricia M. Griffin, Robert M. Hoekstra, Daniel C. Payne, Erica B. Rose, Carey Devine, Angella Sandra Namwase, Sara A. Mirza, Anita K. Kambhampati, Anne Straily, and Beau B. Bruce
Author affiliation: Colorado School of Public Health, Aurora, Colorado, USA (E.J. Scallan Walter); Centers for Disease Control and Prevention, Atlanta, Georgia, USA (Z. Cui, R. Tierney, P.M. Griffin, R.M. Hoekstra, D.C. Payne, E.B. Rose, C. Devine, A.S. Namwase, S.A. Mirza, A.K. Kambhampati, A. Straily, B.B. Bruce); Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, USA (D.C. Payne); University of Cincinnati College of Medicine, Cincinnati (D.C. Payne)

Abstract

Estimating the number of illnesses caused by foodborne pathogens is critical for allocating resources and prioritizing interventions. We estimated the number of **illnesses, hospitalizations, and deaths in the United States caused by 7 major foodborne pathogens** by using surveillance data and other sources, adjusted for underreporting and underdiagnosis. *Campylobacter* spp., *Clostridium perfringens*, invasive *Listeria monocytogenes*, norovirus, nontyphoidal *Salmonella* serotypes, and Shiga toxin-producing *Escherichia coli* caused ≈9.9 million (90% credible interval [CrI] 5.9–15.4 million) domestically acquired foodborne illnesses in 2019. Together with *Toxoplasma gondii*, those pathogens caused 53,300 (90% CrI 35,700–74,500) hospitalizations and 931 (90% CrI 530–1,460) deaths. Norovirus caused most illnesses (≈5.5 million illnesses, 22,400 hospitalizations), followed by *Campylobacter* spp. (1.9 million illnesses, 13,000 hospitalizations) and nontyphoidal *Salmonella* serotypes (1.3 million illnesses, 12,500 hospitalizations). *Salmonella* infection was the leading cause of death (n = 238). Foodborne illness estimates can inform policy and direct food safety interventions that reduce those illnesses.

Gastrointestinal: Foodborne Illness

Viral (Most Common Overall)

- Norovirus (most common cause of food poisoning in the U.S.)
- Hepatitis A (foodborne, but uncommon; outbreak-related)

Bacterial (Common)

- Salmonella
- Campylobacter
- Clostridium perfringens
- Shiga toxin-producing E. coli (STEC)

Bacterial (Toxin-Mediated / Rapid Onset)

- Staphylococcus aureus
- Clostridium botulinum (rare but severe; included for completeness)

High-Risk / Severe but Less Common

- Listeria monocytogenes
- Vibrio species (seafood-related; regional/seasonal)



When to Avoid Antimicrobials

Suspected Viral Gastroenteritis

- Acute onset **vomiting + diarrhea**
- Multiple sick contacts
- Short course (24–72 hrs)
- Minimal fever

Toxin-Mediated Food Poisoning

Do **not** use antibiotics when onset is rapid:

- Symptoms within **1–6 hours**
- Prominent vomiting
- Minimal fever

Suspected STEC / E. coli O157:H7

- Bloody diarrhea
- Severe cramping
- Little or no fever

Why:

Antibiotics ↑ **Shiga toxin release**

↑ Risk of **hemolytic uremic syndrome (HUS)**

Mild, Self-Limited Diarrhea

No fever

No blood

Stable vitals

Improving symptoms

Enterohemorrhagic *E. coli* (EHEC)

Symptoms: bloody diarrhea, hemolytic-uremic syndrome

- O157:H7 serotype

Encounter

- contaminated food from animals, mainly beef, also apple cider (and swimming pools)
- bovine fecal contamination

Entry

- resistant to stomach acid (low infectious dose)
- adherence through specialized mechanism
- attaching-effacing lesion (virulence property)- destruction of brush border in small intestines

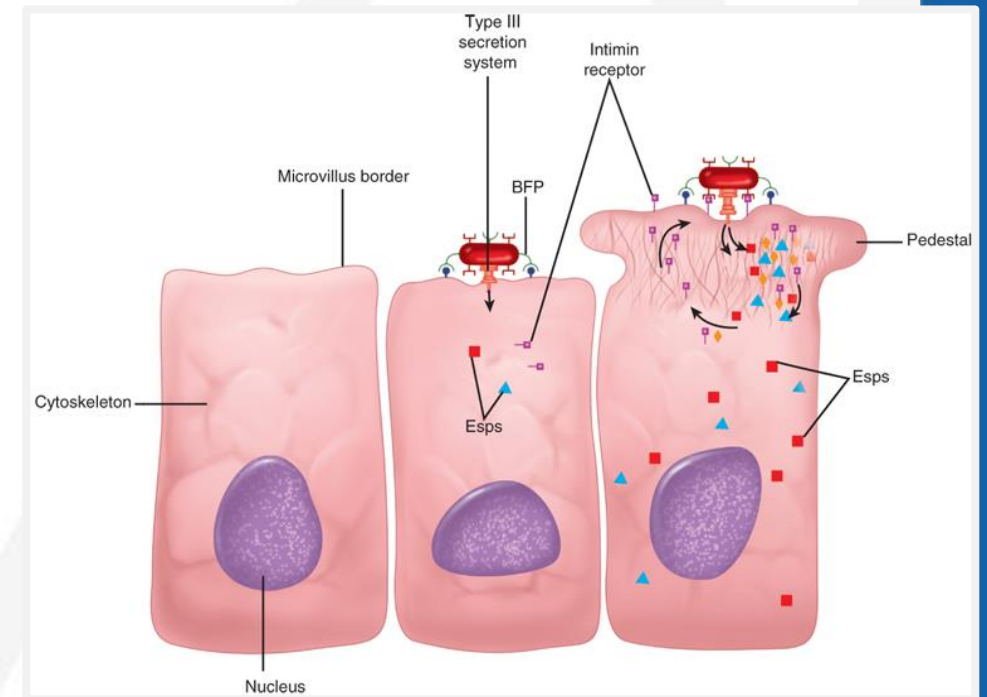
Enterohemorrhagic *E. coli* (EHEC)

Damage

Although bloody diarrhea appears like invasive dysentery (e.g., *Shigella*), the bacteria do not invade the epithelium, therefore little fever or pus in stool

Secretes a Shiga-like toxin (SLT/Stx)

- causes severe tissue damage in the large intestine, distal ileum because of capillary thrombosis



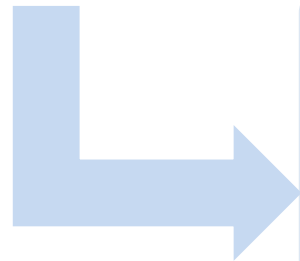
Enterohemorrhagic *E. coli* (EHEC)

Hemolytic Uremic Syndrome (HUS)

Mainly occurs in very young

- **Children <5 years** account for the **majority of HUS cases**

Toxin transported into the blood



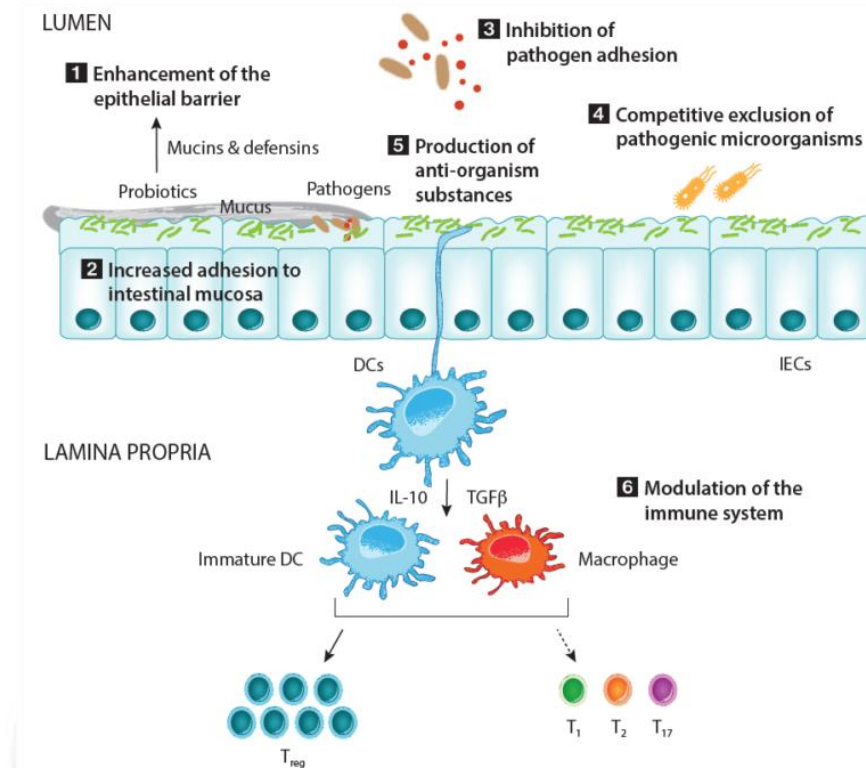
- Damage to endothelial cells of the vasculature or kidneys and brain
- Renal endothelial damage
- Hemolytic anemia
- Thrombocytopenia
- Thrombosis of glomerular capillaries

Enterohemorrhagic *E. coli* (EHEC)

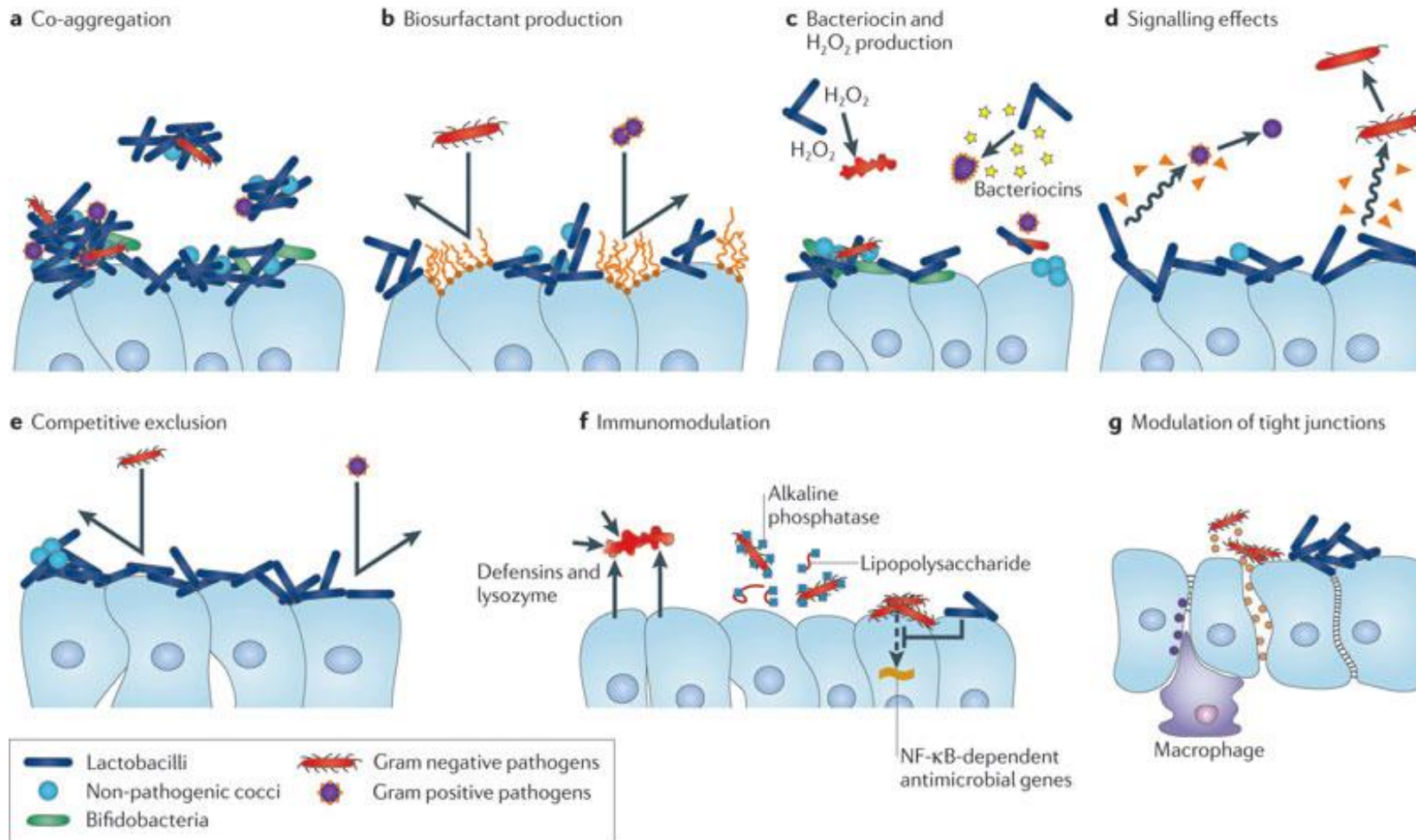
Competitive Inhibition- *Reduce adhesion, toxin binding, and epithelial injury; not bacterial lysis*

- Competes with STEC for epithelial binding sites
- Produces proteases that degrade Shiga toxin
- Increases secretory IgA, reducing toxin penetration
- Strengthens tight junctions → ↓ toxin translocation

***Saccharomyces boulardii*: 2-6 per day**



Restoration of the Microbiota



Serum Based Immunoglobulins

Immunoglobulins can bind Shiga toxin and other bacterial antigens in the gut lumen- Reduces interaction between toxins and the intestinal epithelium

- Immunoglobulins bind microbial antigens and endotoxins
- May reduce prolonged post-infectious inflammation

Can cause bloating in some patients



Antimicrobials for Foodborne Illness

Emulsified Oregano Oil- broad spectrum antimicrobial

- Best used for *Salmonella*, *E. coli* (non-*STEC*), *Campylobacter*, *Staphylococcus aureus* (does not neutralize pre-formed toxins)
- May not be the best choice if case includes **upper gastritis**

Berberine HCL- similar organism sensitivity profile to oregano but better choice for *Shigella*

- Improve stools consistency

Garlic- *Salmonella*, *E. coli* (non-*STEC*), *Campylobacter*, *Staph*

- Chlorophyllins- Bind bacterial toxins and byproducts, Deodorizing (↓ sulfur compounds)

Combination products- better choice for cases **>10days**

- multi-herb, multi-target antimicrobial designed for persistent, dysenteric, parasitic, or refractory GI infections.

Combination products- - Gentler formula that bridges antibacterial and anti-viral therapy

- Thyme, Olive leaf, Pau D'Arco

H. Plyori formula- *Salmonella*, *Shigella*, *E. coli* (non-*STEC*), *Campylobacter*

- Reduces burning, reflux, improves barrier integrity

General GI Products for Foodborne Urgent Care

Dehydrated Cabbage- irritation, ulcerations, GI sensitivity, nausea

- Vitamin A supports epithelial integrity and immune defense, gamma oryzanol stabilizes gastric mucosa, and vitamin U (methylmethionine) promotes mucosal repair
- Chlorophyllins bind bacterial toxins and help reduce nausea

Combination Powder- irritation, ulcerations, GI sensitivity, nausea

- Deglycyrrhizinated licorice, okra mucilage, aloe vera, and MSM calm inflamed tissue, reduce oxidative stress, and provide a protective demulcent layer
- Zinc carnosine (PepZinGI®), L-glutamine, and N-acetyl-D-glucosamine promote epithelial repair, tight-junction integrity, and mucosal regeneration

General GI Products for Foodborne Urgent Care

Saccharomyces Boulardii: 2 b.i.d.

- Neutralizes bacterial toxins- Degrades toxins from **C. difficile**, E. coli, Vibrio
- Reduces secretory, watery diarrhea
- Competes for binding sites on intestinal epithelium- Limits colonization without harming native flora
- Reduces post-infectious intestinal permeability
- Increases secretory IgA
- **Unaffected by antibiotics**

Soluble and Insoluble Fiber Mix

A balanced fiber blend stabilizes stools, feeds the microbiome, and accelerates recovery after acute GI illness especially during the post-infectious phase.

- Soluble fibers (apple pectin, flax, chia, fenugreek) absorb excess fluid
- Insoluble fibers (bamboo, beet fiber) add bulk and support motility

36YO F Patient Case: Food Poisoning

Patient went to a party with her husband 2 days ago

- She was at the party for a few hours, felt fine until the next day
 - Took some TUMS and laid down; woke up an hour later with vomiting and diarrhea (non-bloody)
- At the party she had some drinks, grilled chicken and **potato salad**; she also had a few pretzels and chips throughout the evening
 - 3 of her friends were also ill the next day but her husband was not impacted

Current Assessment:

1. Diarrhea- non-bloody but urgent (3-5x per day)
2. Nausea but vomiting resolved
3. Abdominal cramping with or without food
4. Able to stay hydrated; can eat small simple foods
5. No fever

Potato Salad Illness

Potato salad is one of the **most classic vehicles for bacterial foodborne illness** in the medical and public health literature. The characteristics of potato salad make it an almost ideal bacterial growth medium:

- **High moisture content:** bacteria require water activity; potato salad provides it abundantly
- **Neutral to slightly acidic pH :** optimal for most foodborne pathogens
- **Rich nutrient substrate:** starch, protein (eggs, meat additions), and fat (mayonnaise) provide everything bacteria need
- **Temperature abuse is common:** picnics, buffets, potlucks, outdoor events where cold chain is broken
- **Mayonnaise misconception:** commercially prepared mayonnaise is actually **acidic enough to inhibit bacterial growth**; the problem is that potato salad dilutes the mayo with starchy, neutral-pH ingredients, raising the overall pH into the bacterial growth range
- **The potatoes themselves** are the primary growth substrate, not the mayonnaise

Potato Salad: Common organisms, Incubation + Clinical pattern

ORGANISM	INCUBATION	MECHANISM	DOMINANT SYMPTOMS	KEY DISTINGUISHER
S. aureus Enterotoxin A–E	1–6 hrs typically 2–4 hrs	Preformed heat-stable toxin	Vomiting dominant nausea, cramps diarrhea secondary	No fever • vomiting first • food handler nasal carriage source • resolves 24–48 hrs
B. cereus Emetic type	1–5 hrs mirrors S. aureus	Preformed cereulide toxin	Vomiting dominant clinically indistinguishable from S. aureus	Starchy substrate (potato, rice, pasta) • cereulide survives boiling • resolves 6–24 hrs
B. cereus Diarrheal type	6–15 hrs in-vivo toxin	In-vivo toxin production	Diarrhea dominant cramping; vomiting minimal	Overlaps C. perfringens pattern • longer incubation separates from emetic type
C. perfringens Type A enterotoxin	8–16 hrs in-vivo sporulation	Enterotoxin during gut sporulation	Diarrhea + cramps vomiting absent or minimal	No fever • no vomiting • meat additions (chicken, ham) increase risk • resolves in ~24 hrs
Salmonella S. enteritidis	6–48 hrs true infection	Mucosal invasion + systemic spread	Fever + diarrhea may be bloody or mucoid; nausea, cramps	Fever distinguishes from above • egg source • duration 4–7 days • systemic risk in elderly/immunocompromised

Patient Case: Food Poisoning

Treatment:

- **Emulsified Oregano Oil** 3 t.i.d.
- **Dehydrated Cabbage**- - 3 t.i.d.
- ***S. boulardii***- 2 b.i.d.
- Stay hydrated with broth and electrolytes. Room temp is coldest fluids allowed until cramping subsides

Within 48 hours stomach cramping subsided and diarrhea stopped

- Patient continued to improve with no long-term effects.
- Continue treatment for 2-4 weeks to ensure irritation is resolve and precautionary antimicrobial

GASTROINTESTINAL TRACT



Sulfur Food/Nutrient Reactions

Patients that complain of **gas**, **bloating** or **pain** after foods such as broccoli, cauliflower and brussel sprouts often have hypochlorhydria (low stomach acid).

Symptoms with nutrients like NAC, glutathione and MSM might also occur.

- Proteins from sulfur-rich foods are **poorly cleaved**
- Large sulfur-containing peptides reach the small intestine
- These become **substrate for bacterial fermentation** and **H₂S production**

Acid Containing Digestives - Biofeedback Dosing

1. Begin with **1 capsule** of an acid-containing digestive **mid-meal**
2. If there is **no warmth, heaviness, or mild heat**, increase by:
 - **1 capsule per meal every 1–3 days**
3. Eventually, the patient may notice:
 - A **gentle warmth**
 - A subtle **burning or heaviness**
4. Once warmth is felt:
 - **Reduce the dose by 1 capsule**
 - This becomes the **working dose**

Betaine HCL and Reflux/GERD

Stomach acid triggers release of gastrin, which:

- Increases acid secretion
- **Increases lower esophageal sphincter (LES) tone**
- **Coordinates gastric emptying**
 - Coordinate stomach → duodenum emptying
- Signal the pyloric sphincter
- Trigger pancreatic enzyme and bile release

Betaine HCL and Reflux/GERD

- Bloating after meals
- Early satiety
- Sulfur food intolerance
- History of long-term PPI use
- SIBO or dysbiosis

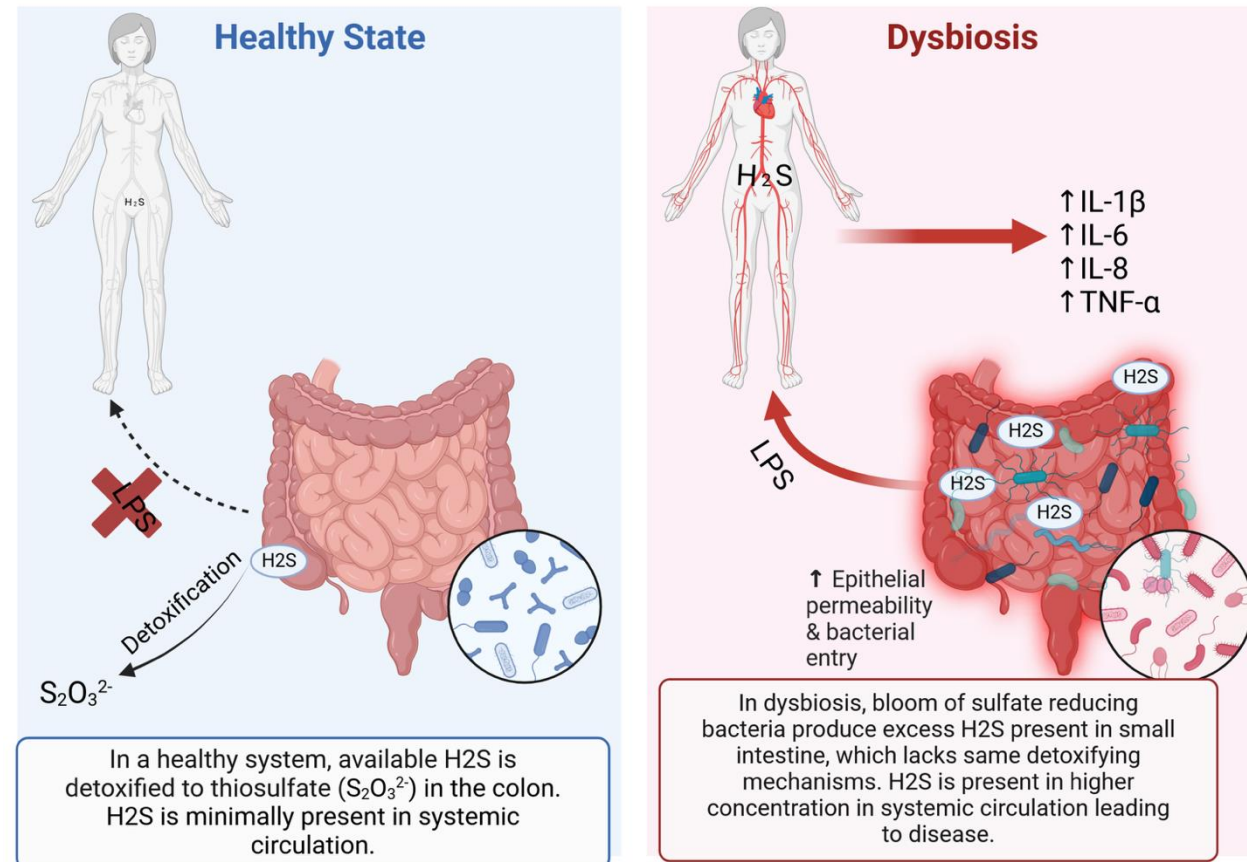
Patients with **active erosive esophagitis, ulcers, or Barrett's** need careful evaluation before use.

Hydrogen Sulfide

Excess H₂S causes:

- Bloating, gas, cramping
- Rotten-egg odor stools or flatus
- Nausea or reflux sensations
- Brain fog, fatigue, headaches
- Worsening histamine or mast-cell symptoms
- Directly inhibits cytochrome c oxidase (Complex IV) in the electron transport chain → Mitochondrial dysfunction

Impact of H₂S Dysbiosis



Int. J. Mol. Sci. **2025**, *26*(7), 3340;

Molybdenum and Hydrogen Sulfide

- Cofactor for **sulfite oxidase**
- Converts toxic sulfites → sulfate
- Prevents sulfur from stalling at H₂S or sulfite intermediates
- **Can help with chemical sensitives**

Molybdenum: Aldehyde Metabolism

“Chemically Sensitive Patients”

150-300mcg/day; Doses above 500mcg should be followed up with copper testing

Molybdenum is required for **aldehyde oxidase**, which helps break down:

- Formaldehyde
- Acetaldehyde (from alcohol, Candida, dysbiosis)
- Solvents, fragrances, off-gassing VOCs

In chemically sensitive patients:

- Aldehydes linger longer
- Nervous system symptoms worsen (panic, palpitations, insomnia, air hunger)

Hydroxocobalamin: B12-2000

Hydroxocobalamin directly binds hydrogen sulfide

Hydroxocobalamin has a high-affinity cobalt center that can bind:

Hydrogen sulfide (H_2S)

Nitric oxide (NO)

Cyanide

This binding:

- Neutralizes free H_2S
- Reduces mitochondrial inhibition
- Lowers neurologic and vascular symptoms

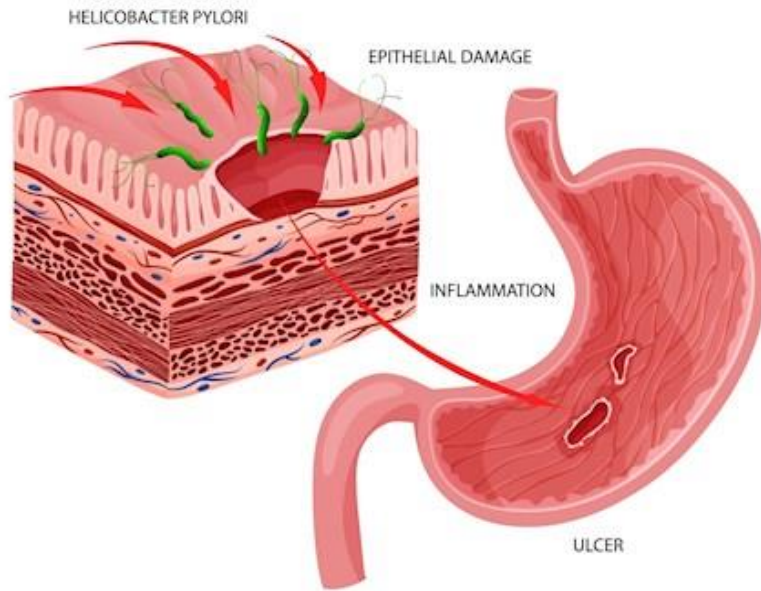
Methyl-B12 and adenosyl-B12 **do not bind sulfur gases** the way hydroxo-B12 does.

Emulsified Oregano Oil and Sulfur Consuming Bacteria

Emulsified Oregano Oil is a good option for cases you suspect high level of sulfur consuming bacteria *Desulfovibrio* and *Bilophila*

Does not donate sulfur

Bloating in AM - *H. pylori*



H. pylori produces urease, converting urea → ammonia.

Ammonia locally buffers stomach acid, increasing gastric pH at the mucosal surface.

This blunts:

- Parietal cell acid output
- Gastrin–somatostatin feedback loops (maintains proper pH)

Result: inadequate acid signaling, thus delaying stomach emptying

- Water becomes trapped in a hypotonic, poorly contracting stomach → This creates a sensation of fullness without gas production

Rosacea and *H. pylori*

Suspected in 30-50% of those patients have both the presence of rosacea and GI symptoms

- **CagA (Cytotoxin-Associated Gene A)** - Triggers: IL-8, IL-6, TNF- α release. Endothelial activation and vascular instability
- **VacA (Vacuolating Cytotoxin A)** - Causes epithelial injury and apoptosis. Disrupts tight junctions $\rightarrow$ $\uparrow$ permeability
- **Urease (Ammonia Production)**- Ammonia: Irritates mucosa, Activates mast cells, Stimulates nitric oxide production
- **Induction of Nitric Oxide (iNOS Pathway)**- Virulence factors upregulate inducible nitric oxide synthase
 - Excess NO $\rightarrow$ vasodilation and neurovascular inflammation



Lupus Malar Rash vs Rosacea:

How to Tell the Difference

Lupus – Malar Rash

- Butterfly-shaped erythema over cheeks and nasal bridge
- **Spares the nasolabial folds (key distinguishing feature)**
- Flat or slightly raised, non-pustular
- Strong photosensitivity
- Often associated with systemic symptoms (fatigue, joint pain, oral ulcers)

Rosacea

- Central facial redness involving cheeks, nose, chin, forehead
- **Involves the nasolabial folds**
- Flushing, burning, warmth common
- Papules, pustules, and telangiectasia may be present
- Triggered by heat, alcohol, spicy foods, stress

Clinical Pearl: Nasolabial fold sparing points to lupus; fold involvement with flushing favors rosacea.

***H. pylori*: Bio-HPF**

2 b.i.d. for up to 12 weeks (with or without food)

Blend of botanicals containing potent alkaloids and other active compounds, this product can aid in balancing the microbial health of the gut.*

Addition ingredients like licorice and slippery elm can be included to soothe the gastrointestinal lining.

DGL for GERD and *H. pylori*

DGL may have a protective effect on the GI track from the carcinogenic process *Oncotarget*.

2016 Nov 1; 7(44): 71960–71973.

DGL is effective against *H. pylori*

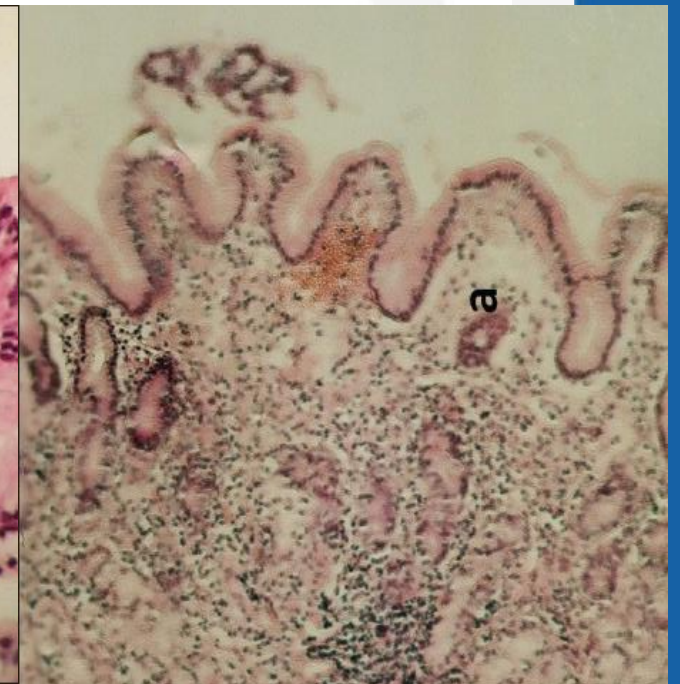
J Res Med Sci. 2013 Jun; 18(6): 532–533.

Licorice (DGL)- 250mg t.i.d. for 30 days

Before Treatment



After Treatment



J Res Med Sci. 2013 Jun; 18(6): 532–533.

N-Acetyl glucosamine (GlcNAc)

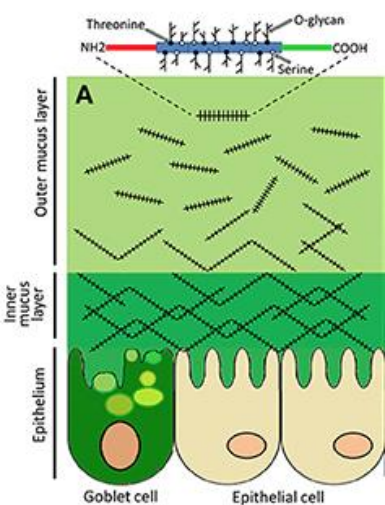
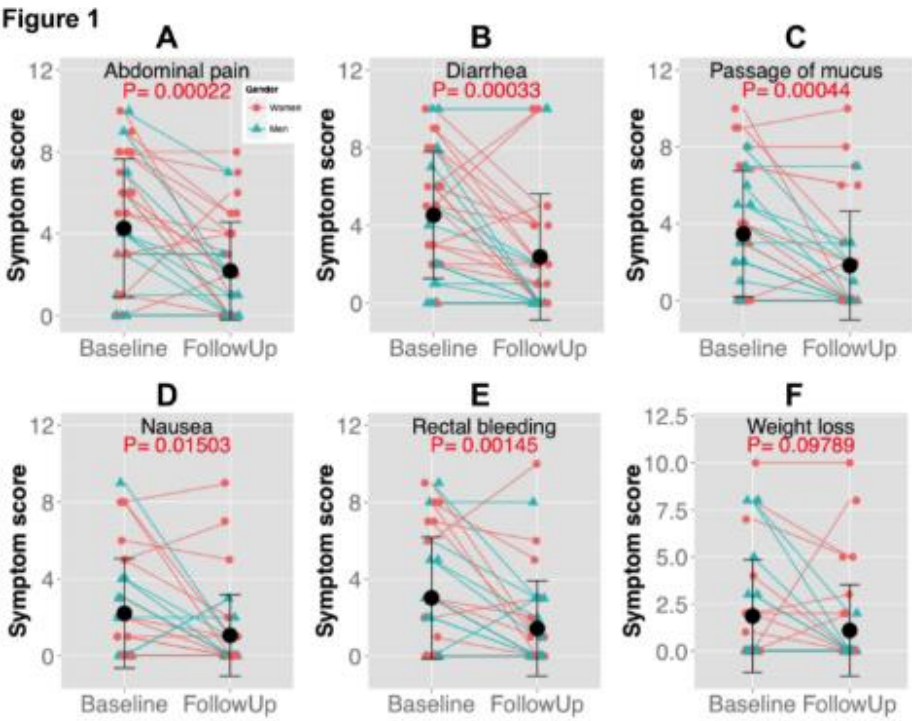


Table 2. Patients Reporting Symptom Improvement After Receiving N-Acetylglucosamine

Symptoms	N	Participants Reporting Symptom Improvement, %	Participants Reporting No Change in Symptoms, %	Participants Reporting Symptoms Worsening, %
Abdominal pain	34	58.8	32.4	8.8
Nausea	34	41.2	47.1	11.8
Diarrhea	34	64.7	26.5	8.8
Passage of mucus	34	52.9	41.2	5.9
Rectal bleeding	34	52.9	38.2	8.8
Weight loss	34	29.4	61.8	8.8
Gas	34	26.7	70.0	3.3

MSM- Methylsulfonylmethane

MSM is known to reduce inflammatory pathway mediators

- IL-6
- TNF
- Homocysteine

Also effective in extra-intestinal cases

- Osteoarthritis *Osteoarthr. Cartil.* 2007, 15, C123.
- Allergic rhinitis *J Altern Complement Med*, 8 (2002), pp. 167-173
- Reduction of lipid peroxidation *Lipids*, 22 (1987), pp. 643-646

Postnasal Drip – Waking up with Mucous

Morning mucus (throat clearing, post-nasal drip, thick saliva, “phlegmy” feeling on waking) is often **not a primary sinus issue**:

- Any other signs of sickness or sinusitis?
- Rule out allergies
- **Does it improve throughout the day?**

Increasing **mucus production** to protect tissues
Coating the throat and airway as a defensive barrier

Silent Reflux, Laryngopharyngeal Reflux (LPR)

Unlike classic Gastroesophageal reflux disease (GERD), patients often do not report heartburn.

Common Symptoms

- Chronic throat clearing
- Hoarseness or voice fatigue
- Globus sensation (“lump in throat”)
- Chronic cough
- Post-nasal drip sensation
- Mild dysphagia



Mechanistic Issues in LPR:

1. Pepsin Remains Active

PPIs reduce acid, but do not eliminate pepsin production.

Pepsin can adhere to laryngeal tissue and reactivate when exposed to even mildly acidic environments.

2. Lower LES Tone and Delayed Gastric Emptying

Reduce gastric acidity to the point that feedback signaling to the lower esophageal sphincter (LES) changes.

Reduced acidity can impair proper gastric emptying

3. Increased Gastric Bacterial Overgrowth

This can increase intra-abdominal pressure via gas production → more reflux events.

Silent Reflux, Laryngopharyngeal Reflux (LPR)

Pressure + Pepsin + Motility

Neutralize and Deactivate Pepsin

DGL (Deglycyrrhizinated Licorice)

Enhances mucosal protection.

10–20 min before meals.

Okra mucilaginous can trap pepsin

Improve LES Tone

Melatonin- Improves LES tone

Zinc Carnosine-

Enhances mucosal repair.

Supports epithelial integrity.

Digestive Support

Low acid can cause:

Poor protein breakdown

Delayed gastric emptying

Fermentation → gas → pressure

Increased reflux events

Start very low dose

- Only use **with meals containing protein**
- Never use close to bedtime
- Avoid during active throat flare

Serum Phosphorus and GI Health

Phosphorus is absorbed in the small intestine

Dietary phosphorus (from protein-rich foods, nuts, seeds, dairy) must be:

- Released from food
- Kept soluble
- Absorbed in the duodenum and jejunum

If digestion or absorption is impaired, **phosphorus is one of the first minerals to drop**

'Therapeutic Diarrhea': Vitamin C

- Toxin elimination
- Can eliminate bile stagnation
- Mechanical flushing of the colon
- Reduce endotoxins



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Vitamin C Flush/Vitamin C Loading

Day 1-3: Wake up 30min earlier than your normal schedule. DO NOT eat anything. Get a large glass of water (16-24oz) add 1-2 heaping teaspoon/s of mixed ascorbate powder. Within 20 minutes if there is no bowel movement, consume another heaping teaspoon of mixed ascorbate powder – repeat until diarrhea occurs. Once diarrhea occurs, STOP the mixed ascorbate powder. If after 2 rounds and no bowel movement has occurred add 6-8oz of black coffee, or another dose of mixed ascorbate powder. Continue this regimen once per day for 3 days or as recommended by Dr. Brett Wisniewski.

Note: Make sure you consume extra water on vitamin C loading days – it is also recommended using the powdered vitamin C for the flush rather than tablet.

Following days: The goal of this therapy is to administer vitamin C in an amount that does not cause diarrhea, or to “bowel tolerance”. The bowel tolerance dose is the dose just below that which produces diarrhea. It can be determined by taking vitamin C in progressively larger amounts ~usually in 3– 6 divided doses per day until diarrhea occurs, and then reducing the dose slightly.

You often can tolerate much larger doses of vitamin C when you are ill than when you are well. As you improve, your bowel-tolerance limit decreases. Vitamin C is better tolerated when taken with food than when taken on an empty stomach. Taking vitamin C in 2 or 3 divided doses per day, as opposed to once a day, may increase the total amount absorbed and minimize the decline in serum vitamin C levels between doses. When administering large amounts of vitamin C, splitting it into multiple doses throughout the day may improve bowel tolerance and allow for a higher total daily dosage.

Start with 1000mg doses and work up from there.

‘Therapeutic Diarrhea’: Vitamin C > Laxatives

Vitamin C	Stimulant Laxatives
Osmotic	Irritant
Non-habit forming	Can cause dependency
Antioxidant	No systemic benefit
Supports immune system	No immune benefit

- Catharsis (diarrhea)
- Antioxidant support
- Collagen support
- Immune modulation
- Histamine lowering
- Potential viral inhibition

THANK YOU

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