

Clinician Update

Gout: how low to get uric acid

IS THERE A MINIMUM URIC ACID?

The American College of Rheumatology guidelines for gout treatment recommend a uric acid goal of <6 mg per dL. But, is there evidence that there is a nadir or “too low” level of uric acid that we should strive to reach with uric acid lowering therapy (ULT).



There is no evidence that a specific minimum uric acid level should be avoided when treating gout with tophi, though most guidelines recommend targeting serum urate (SU) <6 mg/dL, with some suggesting <5 mg/dL for tophaceous disease.

The 2020 American College of Rheumatology guideline strongly recommends a treat-to-target approach with an SU target of <6 mg/dL for all patients with gout, including those with tophi.

However, this guideline deliberately does not specify lower SU thresholds for patients with more severe disease, noting that while there is ample evidence that lower SU levels hasten tophus resolution and reduce flare frequency, there are no trial data supporting

The lower the urate, the faster the speed of tophus reduction

specific lower thresholds.

Lower targets may be beneficial for tophaceous gout. The Lancet review notes that for patients with high urate burden such as tophaceous gout, a lower SU target of ≤ 5 mg/dL (0.30 mmol/L) might be needed, as evidence suggests the lower the urate, the faster the speed of tophus reduction.

Similarly, expert opinion supports that lower SU levels are associated with faster crystal dissolution.

Long-term data from the 5-year NOR-Gout study demonstrated that maintaining low SU through treat-to-target therapy resulted in complete dissolution of tophi in 63.2% of patients, with continued reduction in crystal depositions and minimal flares.

Importantly, no evidence exists suggesting harm from lowering SU below guideline targets in patients with tophaceous gout.

The lack of a defined minimum threshold reflects insufficient research rather than safety concerns about excessively low urate levels.

References

1. 2020 American College of Rheumatology Guideline for the Management of Gout. Arthritis Care & Research. 2020. FitzGerald JD, Dalbeth N, Mikuls T, et al. Guideline
2. Gout. Lancet. 2021. Dalbeth N, Gosling AL, Gaffo A, Abhishek A.
3. Critical Appraisal of Serum Urate Targets in the Management of Gout. Nature Reviews. Rheumatology. 2022. Stamp LK, Dalbeth N.
4. Association Between Serum Urate and Flares in People With Gout and Evidence for Surrogate Status: A Secondary Analysis of Two Randomised Controlled Trials.
5. The Lancet. Rheumatology. 2021. Stamp LK, Frampton C, Morillon MB, et al.
6. Ultrasound-Detected Crystal Depositions and Clinical Flares Dissolve During Successful Urate-Lowering Therapy: 5-Year Follow-Up Results From the Treat-to-Target NOR-Gout Study. Annals of the Rheumatic Diseases. 2025. Hammer HB, Karoliussen L, Terslev L, Haavardsholm EA, Uhlig T. New

