



## Lowering and Raising Serum Urate Levels:

### Off-Label Effects of Commonly Used Medications

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Drug-induced hyperuricemia and gout present an increasingly prevalent problem in clinical practice. Herein, we review the urate-lowering or urate-raising effects of commonly used agents.

We performed a PubMed search using the terms gout, urate, and medication, along with the specific agents/classes described herein. Reports were reviewed until 2022, and original studies were considered if they primarily or secondarily reported the effects of 1 or more drugs on serum urate level.

Previous reviews were assessed for references to additional studies that described urate-altering effects of medications. Urate-changing drugs are summarized regarding their magnitude of effect, mechanism of action, and clinical significance. Potentially urate-lowering drugs include angiotensin II receptor blockers, calcium channel blockers, high-dose aspirin and salicylates, some nonsalicylate nonsteroidal anti-inflammatory drugs, angiotensin-converting enzyme inhibitors, sodium-glucose cotransporter 2 inhibitors, statins, and fenofibrate.

Potentially urate-increasing drugs discussed include diuretics,  $\beta$ -blockers, insulin, pyrazinamide, ethambutol, calcineurin inhibitors, low-dose aspirin, testosterone, and lactate. In patients who have or are at risk for hyperuricemia or gout, an increased awareness of drugs that affect serum urate level may allow for prescribing that effectively treats the indicated problem while minimizing adverse effects on hyperuricemia and gout.

Sources: Nicole Leung, MD · Kevin Yip, MD · Michael H. Pillinger, MD · Michael Toprover, MD

