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# Rethinking vitamin D supplementation in calcium stone formers

In this month's *CUAJ*, Basulto-Martínez et al provide a valuable contribution to the ongoing debate over vitamin D supplementation in patients with kidney stones.<sup>1</sup> They report vitamin D deficiency in 34% of 748 calcium stone formers, consistent with a 2010 Canadian stone clinic cohort<sup>2</sup> and slightly higher than the 29% observed in the general Canadian population.<sup>3</sup> Of note, the authors routinely measured serum vitamin D as part of the baseline metabolic workup, suggesting that the observed low vitamin D levels are representative of the overall kidney stone population in Canada.

Furthermore, with a median followup of 4.8 years, outcomes in 83 calcium stone formers receiving vitamin D supplementation were assessed. Significant stone growth was present on imaging in 71% of those who remained vitamin D-deficient, compared with 35% of vitamin D-replete patients.

Historically, hesitancy to prescribe vitamin D in stone formers has stemmed from conflicting evidence. While some studies have linked higher vitamin D levels to normocalciuria,<sup>4</sup> others have reported associations with hypercalciuria.<sup>5</sup> Meta-analyses have suggested that vitamin D, especially with calcium co-supplementation, may increase kidney stone risk,<sup>6,7</sup> and that higher vitamin D levels alone could also be linked to greater risk.<sup>8</sup>

More recent studies, however, are reassuring: vitamin D supplementation alone appears to have minimal lithogenic impact, even though hypercalcemia and hypercalciuria may occur.<sup>9</sup> When controlling for concurrent calcium supplementation, the association between vitamin D and stone formation is further diminished.<sup>10</sup> This evidence is reflected in the current Canadian Urological Association (CUA) guideline on kidney stones, which recommends vitamin D repletion in stone formers with deficiency, providing urinary monitoring is performed.<sup>11</sup>

Nevertheless, caution remains warranted. Some studies showing no increase in stone risk had relatively short followup periods — six weeks,<sup>12</sup> eight weeks,<sup>13</sup> 16 weeks<sup>14</sup> — and most often assessed stone risk through urinary parameters rather than stone recurrence.

The present study reinforces that vitamin D deficiency is common among Canadian calcium oxalate

stone formers. Although the literature remains mixed, this and other recent studies suggest that vitamin D supplementation may not be as harmful as once feared. For the general population, Health Canada recommends 400 IU of vitamin D daily for adults aged  $\geq 51$  years to support their overall health,<sup>15</sup> and advises considering supplementation in people aged 2–50 who do not achieve adequate vitamin D intake from diet alone.

With this in mind, the average calcium oxalate stone former, especially over age 50, may stand to gain overall health benefits from modest vitamin D supplementation. As per CUA guidelines, patients with suspected metabolic abnormalities should have vitamin D levels measured before repletion, with urinary monitoring for hypercalciuria during therapy. When counseling patients on diet and supplementation, physicians in Canada should also consider the extra-urinary health benefits, which may warrant more frequent vitamin D supplementation and more vigilance for vitamin D deficiency.

Further research could investigate seasonal fluctuations in vitamin D status,<sup>16</sup> explore differences across ethnic and socioeconomic groups,<sup>16</sup> and evaluate the role of CYP24A1 genetic testing,<sup>17</sup> which affects vitamin D metabolism, in patients who develop hypercalciuria during supplementation.

We congratulate the authors on their excellent study published in this issue of the *CUAJ*.

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## UPCOMING CUA AFFILIATED MEETINGS

### ACUOG 25

19th Atlantic Canada Urologic Oncology Group (ACUOG) Multidisciplinary Meeting



Meeting chair, Ricardo Rendon

November 14-15, 2025

Halifax Marriott Harbourfront Hotel, Halifax, NS

[Nadia.pace@org](mailto:Nadia.pace@org)



WESTERN CANADA URO-ONCOLOGY GROUP (WCUOG) 4<sup>TH</sup> ANNUAL MEETING 2025



NOVEMBER 28 – 29, 2025

VANCOUVER MARRIOTT PINNACLE DOWNTOWN

Peter Black, Meeting Chair of WCUOG 2025

[janique.deslvariers@cua.org](mailto:janique.deslvariers@cua.org)



CUA-GUMOC Community Practitioners with an Interest in GU Cancers Regional Meetings



Toronto Edition

Friday, November 7, 2025

Marriott Downtown at CF Toronto Eaton Centre



Vancouver Edition

Friday, November 28, 2025

Pinnacle Hotel Harbourfront



Co-Chairs:  
Aly-Khan Lalani and Dorothy Lo

[cua.org/upcoming-events](http://cua.org/upcoming-events)

Co-Chairs:  
Christian Kollmannsberger and Simon Yu