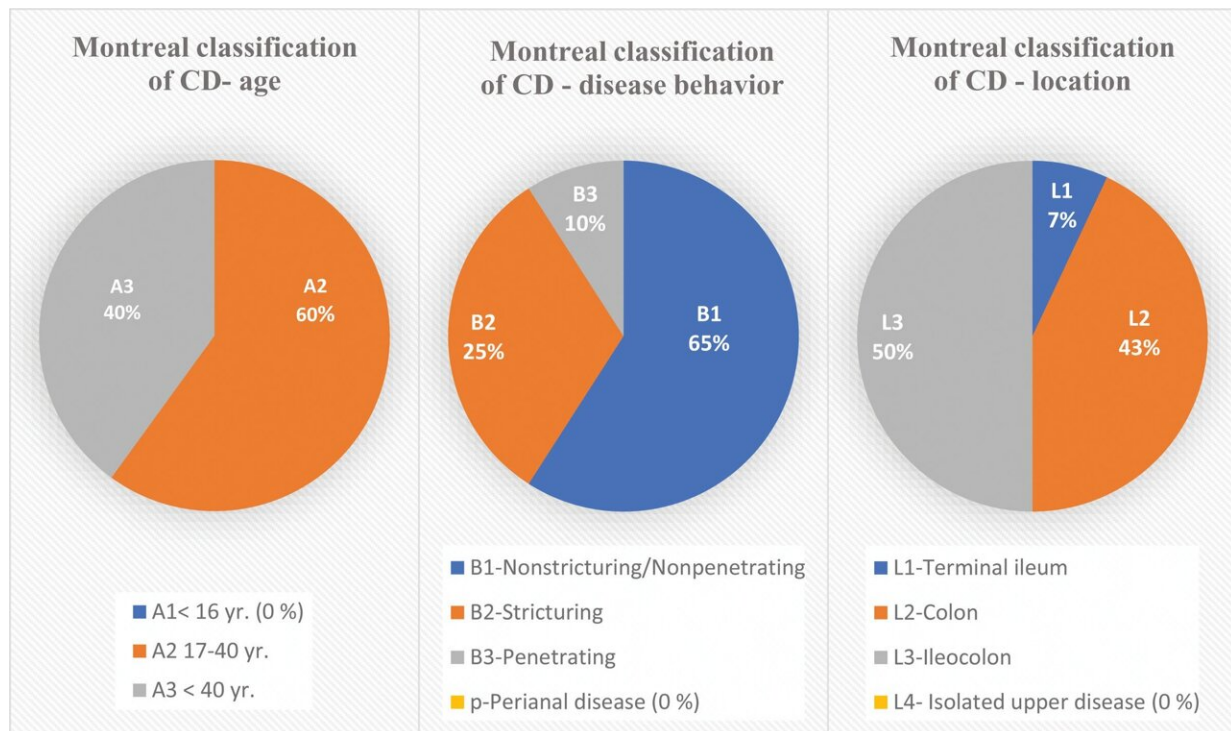


# Vitamin D deficiency linked to inflammation in IBD patients

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Percentage distribution of included patients with Crohn disease according to the Montreal classification. Credit: *Medicine* (2023). DOI: 10.1097/MD.00000000000035505

Lower levels of vitamin D found in inflammatory bowel disease (IBD) patients are linked to inflammation, potentially playing a role in the disease's development, according to findings from a cross-sectional

observational study [published](#) in the journal *Medicine*.

"Insufficient [vitamin](#) D levels in IBD patients are known to heighten relapse risks and [disease](#) recurrence, potentially resulting in complications like osteoporosis and calcium deficiency due to its impact on [inflammation](#) and IBD development.

"Our study aimed to investigate serum vitamin D levels in patients with IBD compared to healthy individuals and evaluate the relationship between vitamin D and [inflammatory markers](#)," says Dr. Antonia Topalova-Dimitrova, MD of Department of Gastroenterology, University Hospital St. Ivan Rilski and Medical University in Sofia, Bulgaria.

## **The strong association between vitamin D levels and IBD inflammation severity**

The study investigated the link between vitamin D levels and inflammatory bowel diseases, focusing on Crohn's disease (CD) and ulcerative colitis (UC). In a group of 106 participants, including 92 IBD patients and 14 healthy controls, the research found a substantial association between lower serum vitamin D levels and increased inflammatory markers in IBD patients.

The results showcased that individuals with CD and UC had notably lower serum vitamin D levels ( $16 \pm 8.6$  ng/mL) compared to healthy individuals ( $26 \pm 9.73$  ng/mL). Specifically, 32.6% of IBD patients exhibited vitamin D deficiency, while 66.3% had insufficient levels. In contrast, the healthy control group had a higher percentage (35.7%) of individuals with normal vitamin D levels.

The study also revealed something intriguing—when vitamin D levels

were lower in people with inflammatory bowel diseases, markers linked to inflammation, such as white blood cell counts and certain proteins like CRP-C, tended to be higher. This suggests that as vitamin D levels decrease, signs of inflammation may increase, hinting at vitamin D playing a role in how inflammation happens in IBD. This could mean that maintaining healthy vitamin D levels might help in managing inflammation in these diseases.

## **Does the observed relationship between vitamin D levels and inflammation in IBD imply causation or just a correlation?**

It is crucial to note that while the study demonstrates a strong association between vitamin D levels and inflammation severity in IBD, it doesn't establish causation. The findings suggest a correlation between lower vitamin D levels and increased inflammation, indicating a possible influence of vitamin D on the severity of IBD. Factors contributing to low vitamin D in individuals with IBD include malabsorption, reduced food intake, limited sunlight exposure, and certain genetic predispositions.

The implications of these findings are significant, especially considering the rising prevalence of IBD-related conditions like Crohn's and colitis. Vitamin D deficiency in patients with IBD is associated with a higher frequency of disease relapse, slower response to biological therapy, and an increased risk of surgical intervention. Understanding the potential role of vitamin D in modulating inflammation in IBD could pave the way for targeted interventions. Strategies to address vitamin D deficiency in IBD patients, such as supplementation may complement existing treatments and potentially help manage disease severity and relapse.

Overall, the study shows a clear correlation between increased

inflammation in IBD [patients](#) and reduced vitamin D levels; however, more investigation is required to pinpoint the exact mechanisms and establish a cause-and-effect relationship. Nonetheless, these findings offer promising insights into potential avenues for managing and understanding the complex nature of IBD.

Dr. Dimitrova concludes, "It is strongly advised to evaluate vitamin D levels in individuals with IBD due to the associated risks of disease relapse, surgical interventions, osteoporosis, calcium deficiency, and reduced responsiveness to biologic treatments. Enhancing vitamin D levels can be pursued through dietary improvements, increased sunlight exposure (though challenging for those with IBD), or oral supplementation."

**More information:** Antonia Topalova-Dimitrova et al, Lower vitamin D levels are associated with the pathogenesis of inflammatory bowel diseases, *Medicine* (2023). [DOI: 10.1097/MD.00000000000035505](https://doi.org/10.1097/MD.00000000000035505)

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