



## Use of nutraceuticals and micronutrient supplementation for the management of Polycystic Ovary Syndrome: a scoping review

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Polycystic Ovary Syndrome (PCOS) is a common hormonal condition affecting women of reproductive age<sup>(1)</sup>. Women with PCOS experience a broad range of clinical symptoms, collectively grouped into reproductive, metabolic, psychological and anthropometric features<sup>(2)</sup>. Complementary therapies, such as nutrient supplementation, have been identified as potential adjunct therapeutic approaches to support currently recommended lifestyle and pharmacological interventions<sup>(3)</sup>. However, evidence for their overall efficacy and safety is inconsistent and unclear. This review aimed to systematically map the available literature on the use of nutrient supplementation for the management of PCOS features, including metabolic, reproductive, psychological and anthropometric. This review followed a systematic approach with literature searches using CINAHL, Cochrane reviews, Medline, PsycINFO, Scopus and LILACS conducted up to April 2022. All types of study designs were included if they reported on the efficacy or association between micronutrient supplementation and/or nutraceuticals on features of PCOS in women ( $\geq 18$  years) with a confirmed diagnosis of PCOS. A total of 317 articles were included involving  $n = 23,926$  women. Forty-three different supplements examined various clinical features of PCOS grouped into metabolic, reproductive, psychological and anthropometric. The most studied supplements included Inositols ( $n = 83$ ), Vitamin D ( $n = 51$ ), N-acetylcysteine ( $n = 25$ ), Omega-3 fatty acids ( $n = 18$ ) and Biotics ( $n = 14$ ). Most studies ( $n = 262$ ; 83%) reported on reproductive features followed by metabolic ( $n = 212$ ; 66%), anthropometric ( $n = 181$ ; 57%) and psychological ( $n = 5$ ; 2%). Less than half ( $n = 148$ ; 47%) of the included studies reported on the potential for adverse events. Our results highlight that the potential therapeutic benefit of micronutrient and nutraceutical supplementation on psychological features of PCOS warrants future exploration. Additional primary studies that are adequately powered are needed to investigate therapeutic doses needed for clinical benefits. Lastly, a more rigorous approach to monitoring and recording adverse event data is recommended.

**Keywords:** Polycystic Ovary Syndrome; nutraceuticals; supplementation; micronutrients

### Ethics Declaration

Yes

### Financial Support

This research received no external funding.

### References

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