

Vitamin D in the etiology and management of polycystic ovary syndrome

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Polycystic ovary syndrome (PCOS), the most common endocrine disorder in women of reproductive age, presents in up to 18% of this population and is characterised by the presence of polycystic ovaries, menstrual dysfunction, infertility, and hyperandrogenism. Vitamin D deficiency is also common in women with PCOS and may exacerbate the symptoms. Observational studies show lower 25-hydroxy vitamin D (25OHD) levels were associated with insulin resistance, ovulatory and menstrual irregularities, lower pregnancy success, hirsutism, hyperandrogenism, obesity and elevated cardiovascular disease (CVD) risk factors. There is some, but limited, evidence for beneficial effects of vitamin D supplementation on menstrual dysfunction and insulin resistance in women with PCOS. In a recent study in 50 overweight/obese women with PCOS, obesity and CVD risk profiles improved in women following a 20-week lifestyle intervention during which vitamin D status improved with seasonal change. 25OHD levels changed with seasonal changes (winter-summer cohort increased 9.3 ± 5.0 nmol/L; summer-winter cohort decreased -9.0 ± 6.6 nmol/L). Changes in 25OHD were inversely correlated with changes in waist circumference ($r=-0.48$, $P<0.001$) and cholesterol ($r=-0.36$, $P=0.01$) when controlling for baseline values, such that increases in 25OHD were associated with greater reductions in waist circumference and cholesterol. This suggests therapeutic implications of vitamin D in women with PCOS. Vitamin D deficiency may play a role in exacerbating PCOS and there may be a place for vitamin D supplementation in the management of this syndrome, but current evidence is limited and additional randomized controlled trials are required to confirm the potential benefits of vitamin D supplementation.

Biography

Rebecca Thomson completed her Ph.D. at the age of 25 in 2009 from the University of South Australia. She is a postdoctoral research fellow at the Nutritional Physiology Research Centre at the University of South Australia and is interested in how nutrition and physical activity can lead to improvements in cardiometabolic health, reproductive function, mental well-being and physical performance. She has published more than 15 papers in reputed journals and has expertise in evaluating the role of lifestyle modification interventions involving diet and physical activity for improving health in a range of populations.