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Women with Ehlers-Danlos Syndrome have lower serum 25(OH)D in comparison to controls: UK Biobank study

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The Ehlers-Danlos Syndromes (EDS) are disorders of the connective tissue. EDS presents clinical manifestations potentially related to hypovitaminosis D, such as skeletal and bone health issues (musculoskeletal pain, osteopenia, osteoporosis, osteoarthritis) (1), whilst other characteristics of this syndrome can hinder vitamin D intake, such as gastrointestinal issues, dysphagia and disordered eating (2). Concomitantly, pain and dysautonomia may promote indoor living (3) and reduce exposure to UVB irradiation, which could affect vitamin D status.

This study aimed to identify whether females with EDS are more likely to have lower serum 25- hydroxyvitamin D (25(OH)D).

This was a cross-sectional study, analysing data from 224 EDS cases and 224 controls, using UK Biobank baseline data. The UK Biobank cohort includes over 500 K individuals, aged 40–69 years at baseline (data collection 2006–2010). The UK Biobank study was conducted according to the Declaration of Helsinki and all procedures were approved by the UK North West Multi-Centre Research Ethics Committee (MREC); application 11/NW/0382. Written informed consent was obtained from all subjects.

People with EDS had lower serum 25(OH)D, by 9.25 nmol/L, in comparison to controls ($p = 0.002$). We completed two logistic regression models (using <25nmol/l (deficient) and <50 nmol/L (insufficient) cut-off points for 25(OH)D). Cases had an increased odds ratio (3.88 ($P = 0.036$, CI:1.096–13.768)) of having 25(OH)D serum level below 25 nmol/L. However, EDS was not found to predict 25(OH)D levels below 50 nmol/L (OR = 2.00, $P = 0.109$, CI: 0.855–4.702). Non-users of vitamin D supplementation were 3 times more likely to have a 25(OH)D levels below 50 nmol/L (OR = 3.02, $P = 0.018$, CI:1.207–7.570). For season of vitamin D measurement, Summer ($P = 0.020$, CI: 0.066–0.792) and Autumn ($P = 0.037$, CI: 0.125–0.939) predicted a 25(OH)D serum level above 50 nmol/L compared to the reference (Spring).

This is the largest study to date investigating vitamin D status in people with EDS. The findings suggests that attention needs to be given to the 25(OH)D status in patients with EDS. However, this study has limitations such as a female-only cohort that is of middle to older age and a majority white population. In addition, due to the available data in the UK Biobank this study could not stratify the EDS subtypes included. Further research in larger and more diverse populations is required, alongside randomised clinical trials to assess the impact of vitamin D supplementation in EDS.

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References

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