

Research finds vitamin D is important for respiratory health

25 January 2018, by Jess Reid



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A new study carried out by The University of Western Australia, the Busselton Health Study and Sir Charles Gairdner Hospital has found vitamin D deficiency can contribute to poor respiratory functioning and health in middle-aged adults.

While it is well known that [vitamin D](#) plays an important role in maintaining healthy bones and preventing osteoporosis, the study suggests vitamin D may also play an important role in [respiratory health](#) through its effects on lung development and structure, respiratory muscle strength, inflammation and immune response to respiratory pathogens.

The researchers measured serum vitamin D levels, [lung function](#) and respiratory symptoms in more than 5000 baby boomers at the Busselton Healthy Ageing Study and found that low levels of vitamin D were associated with respiratory illnesses such as asthma and bronchitis, and [respiratory symptoms](#) common to these conditions including wheezing and chest tightness.

Importantly the investigators also found that low

lung function (Forced Vital Capacity or FVC) was significantly related to low vitamin D levels. Conversely high levels of vitamin D were associated with better lung function suggesting it plays an important role in maintaining good respiratory [health](#). The effect of vitamin D on respiratory health remained the same even when factoring in other aspects that contribute to vitamin D levels such as seasonal fluctuation, obesity and other chronic diseases.

The study found that the prevalence of serum vitamin D deficiency in the population was higher in women under the age of 55 and around 11 per cent of women and men were currently taking vitamin D supplements.

Lead investigator Dr. Siobhain Mulrennan said that with around 10 per cent of men and women currently identified as having low levels of vitamin D their findings paved the way for further studies to examine the effect of vitamin D on lung tissue.

"There is emerging evidence that increasing vitamin D levels either through lifestyle or supplementation can reduce asthma symptoms and severity among individuals with inadequate levels," Dr. Mulrennan said.

Professor Alan James said the study used extensive data collected on the enthusiastic participants of the Busselton Health Study to add further evidence for the observed link between vitamin D and lung function and respiratory health.

"Data and DNA samples collected in the ongoing Busselton Healthy Ageing Study will allow further studies investigating the genetic factors that influence vitamin D levels and the relationship to lung function and common respiratory conditions such as asthma, chronic obstructive pulmonary disease and bronchitis," he said.

Dr. Michael Hunter said opinion was still divided as

to whether vitamin D deficiency contributes to [lung](#) diseases such as asthma, bronchitis and COPD or is in fact a result of existing disease or its treatment.

"A follow-up study of these same study participants is currently underway which will allow us to investigate longitudinally the effects of vitamin D levels and relationship to the development of respiratory illness and associated symptoms, as well as other health outcomes associated with ageing," Dr. Hunter said.

More information: Siobhain Mulrennan et al. Vitamin D and respiratory health in the Busselton Healthy Ageing Study, *Respirology* (2018). [DOI: 10.1111/resp.13239](#)

Provided by University of Western Australia

APA citation: Research finds vitamin D is important for respiratory health (2018, January 25) retrieved 12 October 2022 from <https://medicalxpress.com/news/2018-01-vitamin-d-important-respiratory-health.html>

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