

Vitamin D deficiency is associated with poorer lung function in asthmatic children treated with steroids

Vitamin D deficiency is associated with poorer lung function in asthmatic children treated with inhaled corticosteroids, according to a study from researchers in Boston (Wu et al, 2012).

The study used data taken from the Childhood Asthma Management Program, a multi-centre trial of asthmatic children between the ages of 5 and 12 years who were randomly assigned to treatment with budesonide (inhaled corticosteroid), nedocromil or placebo. Vitamin D levels were categorized as deficient (≤ 20 ng/ml),

insufficient (20–30 ng/ml) or sufficient (>30 ng/ml).

Among 1024 children treated with inhaled corticosteroids, pre-bronchodilator forced expiratory volume in 1 second (FEV₁) increased during 12 months of treatment by 330 ml in the vitamin D insufficiency group and 290 ml in the vitamin D sufficiency group, but only 140 ml in the vitamin D deficient group.

Compared with children who were vitamin D sufficient or insufficient, children who were vitamin D deficient were more likely to be older, be African American, and have

higher body mass index. Compared with being vitamin D deficient, being vitamin D sufficient or insufficient was associated with a greater change in pre-bronchodilator FEV₁ over 12 months of treatment after adjustment for age, gender, race, body mass index, history of emergency department visits, and season that the vitamin D specimen was drawn.

‘In our study..., those who were deficient in vitamin D levels showed less improvement in pre-bronchodilator FEV₁ after 1 year of treatment with inhaled corticosteroids than children with sufficient levels of vitamin D,’ said Dr Ann Chen Wu, assistant professor in

the Department of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute. ‘These results indicate that vitamin D supplementation may enhance the anti-inflammatory properties of corticosteroids in patients with asthma.’

The study limitations included a small sample size of 101 vitamin D-deficient children, and only studying vitamin D levels at one time point.

Wu AC, Tantisira K, Li L, Fuhlbrigge AL, Weiss ST, Litonjua A; for the Childhood Asthma Management Program Research Group (2012) The effect of vitamin D and inhaled corticosteroid treatment on lung function in children. *Am J Respir Crit Care Med* Jul 12 (Epub ahead of print)

Obesity may affect response to breast cancer treatment

Women who are obese continue to have higher levels of oestrogen than women of normal weight even after treatment with hormone-suppressing drugs, raising the possibility that they might benefit from changes to their treatment.

The laboratory study, led by a team at The Institute of

Cancer Research in London and The Royal Marsden NHS Foundation Trust (Folkerd et al, 2012), found hormone-suppressing drugs did markedly reduce oestrogen levels in obese women, but that their levels of oestrogen remained more than double those of women of normal weight.

Senior author Professor Mitch Dowsett said: ‘We found that women with higher BMIs [body mass indices] had more oestrogen remaining in their blood after treatment than healthy weight women, which is consistent with previous suggestions that aromatase inhibitors might be slightly less effective in these women.’

Folkerd EJ, Dixon JM, Renshaw L, A'hern RP, Dowsett M (2012) Suppression of plasma estrogen levels by letrozole and anastrozole is related to body mass index in patients with breast cancer. *J Clin Oncol* Jul 16 (Epub ahead of print)

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Titanium implants may corrode

Titanium medical implants used in bone-anchored hearing aids and dental prostheses may not be as robust as is commonly believed, according to scientists at the University of Birmingham (Addison et al, 2012).

Collaborative research suggests that in environments where there is no significant wear process, microscopic particles of titanium can be found in the surrounding tissue which could be pro-inflammatory and affect the performance of the device.

Tissue was obtained from patients undergoing scheduled revision surgery associated with bone-anchored hearing aids at University Hospitals Birmingham NHS Trust. Soft tissues surrounding commercially pure titanium anchorage devices were

investigated using microfocus synchrotron X-ray spectroscopy at the Diamond Light Source (Oxford, UK).

‘The results showed, for the first time, a scattered and heterogeneous distribution of titanium in inflamed tissues taken from around failing skin-penetrating titanium implants,’ the authors report. Wear processes and implant debris were unlikely to be major contributors to the problem, they concluded: ‘In the absence of obvious macroscopic wear or loading processes, we propose that the titanium in the tissue results from micro-motion and localised corrosion in surface crevices.’

Addison O, Davenport AJ, Newport RJ et al (2012) Do ‘passive’ medical titanium surfaces deteriorate in service in the absence of wear? *J R Soc Interface* Jul 25 (E pub ahead of print)