



30 days in medicine

Vitamin D supplementation and acute respiratory tract infections

Acute respiratory tract infections (ARTIs) are responsible for 10% of visits to doctors in the USA and important causes of morbidity and mortality globally. Observational studies report consistent independent associations between low serum vitamin D levels and susceptibility to ARTI. A systematic review and meta-analysis from randomised controlled trials^[1] published recently in the *BMJ* suggests that vitamin D supplementation is safe and protects against ARTI, the effect being particularly marked in those who were very deficient in the vitamin. However, a linked editorial^[2] questions the validity of the data, saying that clinical practice should probably not be changed – yet. The authors point out that the primary result is a reduction from 42% to 40% in the proportion of participants experiencing at least one ARTI. Also, the definition of ARTI varied between studies, consisting of a mixture of diverse conditions such as acute otitis media, laboratory-confirmed influenza, self-reported colds or chest infections and radiograph-confirmed pneumonia.

The jury is still out.

1. Martineau R, Jolliffe DA, Hooper RL, et al. Vitamin D supplementation to prevent acute respiratory tract infections: Systematic review and meta-analysis of individual participant data. *BMJ* 2017;356:i6583. <https://doi.org/10.1136/bmj.i6583>
2. Bolland MJ, Avenell A. Do vitamin D supplements help prevent respiratory tract infections? *BMJ* 2017;356:j456. <https://doi.org/10.1136/bmj.j456>

Anti-clotting drugs linked to bleeding near brain

A large Danish study has found that antithrombotic drug use, particularly use of a vitamin K antagonist, increases the risk of subdural haematoma. Researchers identified 10 000 patients with a first-ever subdural haematoma from 2000 to 2015, who were matched to more than 400 000 people from the general population. Among those with a subdural haematoma, 47% were taking antithrombotic medication.

The highest odds of subdural haematoma were associated with using a vitamin K antagonist such as warfarin. Low-dose aspirin was associated with a slightly increased risk of subdural haematoma, while clopidogrel and a direct oral anticoagulant were associated with a moderately higher risk. The highest risk was found in concurrent use of clopidogrel and a vitamin K antagonist. Overall, women were at higher risk than men with all antithrombotic drugs.

This study adds to the complexity of the risk-benefit equation of antithrombotic drug use.

Gaist D, Rodriguez LAG, Hellfritsch M. Association of antithrombotic drug use with sub-dural haematoma risk. *JAMA* 2017;317(8):836-846. <https://doi.org/10.1001/jama.2017.0639>

Ask two simple questions to predict depression in the elderly

Complex screening tools are no more effective than asking two simple questions to diagnose depression in older people, according to a review of clinical studies. The prevalence of depression in older people is 10 - 20%. Early detection and treatment will improve prognosis, but traditional screening is difficult because many somatic symptoms such as weight loss and disturbed sleep are common physical problems associated with ageing.

Researchers identified 133 studies evaluating 16 diagnostic tools in a total of 46 651 patients aged 60 - 87 years. Most studies used the Geriatric Depression Scale, but six used the Two Question Screen asking about symptoms in the past month: 'Have you been troubled by feeling down, depressed or hopeless?', and 'Have you experienced

little interest or pleasure in doing things?'. The results, reported in the *British Journal of Psychiatry*, showed that the Two Question Screen diagnosed depression as effectively as other screening instruments.

Tsoi KKE, Chan JYC, Hiraie HW, et al. Comparison of diagnostic performance of Two-Question Screen and 15 depression screening instruments for older adults: Systematic review and meta-analysis. *Br J Psychiatry* 2017, bjp.bp.116.186932. <https://doi.org/10.1192/bjp.bp.116.186932>

Widespread use of pneumococcal conjugate vaccine in low- and middle-income countries safe

This study, recently published in *Lancet Global Health*, shows that the local introduction in 2011 of the 13-valent pneumococcal conjugate vaccine (PCV13) using a 2 + 1 schedule is safe and effective in both HIV-infected and HIV-uninfected children.

PCV13 was designed to include disease-causing serotypes that are important in low- and middle-income countries. In this study, cases of invasive pneumococcal disease in children aged ≤5 years were identified through national laboratory-based surveillance and isolates were stereotyped. Age-matched, HIV status-matched in-hospital controls were sought for every case, aiming for four controls for every HIV-uninfected case and six controls for every HIV infection. Between January 2012 and December 2014, children aged ≥16 weeks were enrolled: 240 were cases not infected with HIV, 75 were cases with HIV infection, 1 118 were controls not infected with HIV, and 283 were controls with HIV infection. The effectiveness of two or more doses of PCV13 against PCV13-serotype invasive pneumococcal disease was 85% among 11 case-control sets of children not infected with HIV and 91% among three case-control sets of children with HIV infection. PCV13 effectiveness among 26 case-control sets of children not infected with HIV was 52% against all-serotype invasive pneumococcal disease and 94% (44 - 100%) for serotype 19A. Vaccine effectiveness against PCV7-serotype invasive pneumococcal disease was 87% in children exposed to HIV but uninfected and 90% (53 - 98%) in malnourished children not infected with HIV.

The results indicate that PVC13 in a 2 + 1 schedule is effective for preventing vaccine-type pneumococcal infections in young children not infected with HIV, including those who are malnourished or have been exposed to HIV. These findings support the recommendation for widespread use of pneumococcal conjugate vaccine in low- and middle-income countries.

Cohen C, von Mollendorp C, de Gouveia L, et al. for the South African IPD Case-Control Study Group. Effectiveness of the 13-valent pneumococcal conjugate vaccine against invasive pneumococcal disease in South African children: A case-control study. *Lancet Glob Health* 2017;5(3):e359-e369. [https://doi.org/10.1016/S2214-109X\(17\)30043-8](https://doi.org/10.1016/S2214-109X(17)30043-8)

Increasing daily water consumption does not influence weight loss in adolescents

There is little evidence to support the common recommendation of increased water consumption, usually to eight cups a day, as part of a weight-reducing diet. A study recently published in *JAMA Pediatrics* suggests that increased water consumption has no effect on body weight among overweight adolescents.

The authors compared two standardised weight-loss diets among adolescents with overweight or obesity, randomised to receive similar weight-reducing interventions, but with one group receiving advice to increase their water intake to eight cups daily and the control group

to drink as normal. The interventions included dietary counselling, daily text messages and a cookbook with health guides. The water group received well-defined messages about water consumption through counselling and text messages, a water bottle and a water pitcher with filters.

All 38 participants completed the study, with both groups reporting drinking about two cups of water a day at baseline. Self-reported change in water intake at 6 months was greater in the water group than in the control group. However, there was no difference in body

mass index at 6 months between the water group and the control group.

Wong JMW, Ebbeling CB, Robinson L, et al. Effects of advice to drink 8 cups of water per day in adolescents with overweight or obesity: A randomized clinical trial. *JAMA Pediatr* 2017 (published online 6 March 2017). <https://doi.org/10.1001/jamapediatrics.2017.0012>

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