



30 days in medicine

Human papillomavirus testing leads to faster diagnosis of cervical disease

A large observational study has found that testing for human papillomavirus (HPV) in women with abnormal cervical cytology leads to faster diagnosis of cervical disease and fewer missed cases.

Researchers analysed results of cervical cytology from 457 317 women with a mean age of 39.8 years who were in screening programmes in New Mexico, USA, from January 2007 to December 2012. They assessed the effect that HPV testing after an abnormal screening cytology result had on diagnosis of cervical cancer and rates of biopsy and loop electrosurgical excision procedures.

Their results were reported in *JAMA Oncology* and showed that nearly 4.5% of the first cytology results per woman in the screening programme were reported as atypical squamous cells of undetermined significance. Of these, 80% were tested for HPV and in these women, the time to detecting abnormalities of cervical intraepithelial neoplasia grade 3 or worse (CIN3+) was much shorter in those who were being tested for HPV. In addition, the rate of loop electrosurgical excision procedures over 5 years was 20% higher in women who had HPV testing, resulting in increased detection of CIN2+ and CIN3+, than in women who were not tested for HPV.

The authors point out that nearly all the high-grade disease occurred in the 43.1% of women who were HPV-positive, allowing colposcopy and related resources to be focused on this group.

Cuzick J, Myers O, Lee J-H, et al. Outcomes in women with cytology showing atypical squamous cells of undetermined significance with vs without human papillomavirus testing. *JAMA Oncol* 2017 (epub 22 June 2017). <https://doi.org/10.1001/jamaoncol.2017.1040>

Eating fish frequently helps rheumatoid arthritis

Eating fish at least twice a week is associated with reduced disease activity in patients with rheumatoid arthritis (RA), according to research reported in *Arthritis Care and Research*. The study, a cross-sectional analysis of data from 176 patients who were taking part in a large study investigating subclinical cardiovascular disease in RA, found higher levels of joint swelling and tenderness in patients who ate fish less than once a month.

Most participants in the study had longstanding RA and were taking disease-modifying antirheumatic drugs. Patients filled in a food frequency questionnaire that detailed their diet over the previous year, and their frequency of fish consumption was analysed in relation to RA activity.

There was a clinically significant reduction in RA symptoms in people who ate fish frequently when compared with those who never ate fish, or who ate it less than once a month. The difference remained, even after taking fish oil consumption into account.

Tedeschi SK, Bathon JM, Giles JT, Lin TC, Yoshida K, Solomon DH. The relationship between fish consumption and disease activity in rheumatoid arthritis. *Arthritis Care Res* 2017 (epub 21 June 2017). <https://doi.org/10.1002/acr.23295>

Label vegetables differently to increase consumption

Labelling vegetables using language usually used with more indulgent foods increases their consumption more than plain labels or those describing health effects, according to a study published in *JAMA Internal Medicine*. The study was carried out on staff and students at a cafeteria at Stanford University, California. Each day of the autumn

term of 2016, one vegetable dish was labelled randomly in one of four ways – basic (e.g. green beans), describing what was absent (e.g. low-sodium bok choy), health-positive (e.g. vitamin-rich corn) or indulgent (e.g. rich buttery roasted sweetcorn). The labelling changed, but there was no change in the way that the vegetables were prepared.

Labelling a vegetable dish indulgently was associated with a 25% increase in the number of people selecting the dish compared with when it was given a basic label, a 41% increase over a healthy restrictive label and a 35% increase over a health-positive label. Indulgent labelling was associated with a 23% higher mass of vegetables eaten than basic labelling.

Turnwald BP, Boles DZ, Crum AJ. Association between indulgent descriptions and vegetable consumption: Twisted carrots and dynamite beets. *JAMA Intern Med* 2017 (epub 12 June 2017). <https://doi.org/10.1001/jamainternmed.2017.1637>

Female athletes with naturally high levels of testosterone have a competitive edge

Some elite women athletes have naturally high levels of testosterone, and a study published in the *British Journal of Sports Medicine* suggests that this gives them a significant competitive advantage in sports that require stamina and visuospatial ability. Researchers say that this advantage should be taken into consideration when judging women's eligibility for these events in the light of the suspension of International Association of Athletics Federations (IAAF) rules around the use of hormone treatment to lower testosterone levels. These rules were suspended unless or until there is evidence that circulating androgens are found to affect women's sporting performance, after a challenge by Indian athlete Dutee Chand.

Researchers drew on 2 127 observations of best performance by elite male and female athletes competing in events during the IAAF World Championships in 2011 and 2013 as well as measurements of androgens in their blood. Athletes were classified into three groups depending on how much free testosterone was circulating.

Women in the top third of circulating blood testosterone levels performed significantly better than those with the lowest levels in certain events – the 400 m sprint (2.7%), the 400 m hurdles (2.7%), the 800 m hurdles (1.78%), the hammer throw (4.5%) and the pole vault (2.9%). This pattern was not seen in male athletes with similar differences in testosterone levels.

As an observational study, no conclusions can be drawn about cause and effect. However, the authors conclude that the quantitative relationship between increased testosterone levels and improved athletic performance should be taken into account in women with hyperandrogenism competing in the female category.

Bermon S, Garnier P-Y. Serum androgen levels and their relation to performance in track and field: Mass spectrometry results from 2127 observations in male and female elite athletes. *Br J Sports Med* 2017 (epub 3 July 2017). <https://doi.org/10.1136/bjsports-2017-097792>

No benefit from levothyroxine in older adults with subclinical hypothyroidism

Research published in the *New England Journal of Medicine* suggests that there is no benefit in the controversial use of levothyroxine when treating older adults with subclinical hypothyroidism.

Researchers conducted a double-blind, randomised, placebo-controlled, parallel-group trial involving 737 adults at least 65 years

old (mean age 74.4 years) with persisting subclinical hypothyroidism (thyroid-stimulating hormone (TSH) levels in the range 4.6 - 19.9 mIU/L, free thyroxine normal). A total of 368 patients received levothyroxine at a starting dose of 50 µg daily, or 25 µg if the body weight was <50 kg or the patient had coronary heart disease, with dose adjustment according to the TSH level; 369 patients received placebo with mock dose adjustment.

Patients reported on any changes in the hypothyroid symptoms score and tiredness score on a thyroid-related quality of life questionnaire at 1 year. Although there were changes in the TSH level in both the treated and the placebo groups, there were no

differences in symptoms reported at 1 year and no beneficial effects of levothyroxine were seen.

The conclusion is that there is no benefit from levothyroxine in older adults who have subclinical hypothyroidism.

Stott DJ, Rodondi N, Kearney PM, et al. Thyroid hormone therapy for older adults with subclinical hypothyroidism. *N Engl J Med* 2017;376(26):2534-2544. <https://doi.org/10.1056/NEJMoa1603825>

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