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Tom Nolan's research reviews—10 February 2022

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I know it's not covid

I've become so familiar with the line "I know it's not covid because my lateral flow was negative," that it can come as a shock when you hear that someone has done a PCR test for a cough. So the findings of an online survey exploring how people interpret lateral flow tests come as a bit of a surprise. In this clinical trial, 360 adults living in the US recruited through the online CloudResearch platform were asked to imagine being "a healthy 45-year-old who lives with two other people, works from home, and has not been vaccinated against covid-19." One of the four subsequent scenarios was to then imagine having a fever and a cough—but not have any recent covid contacts. They were offered FDA instructions on how to interpret the result, instructions developed with decision science principles, or no instructions. Around 20% in each group chose not to self isolate, against CDC (and UK government) advice. But in real life and during the current omicron wave, would the figure be anywhere near that low?

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All too well

People with Lutembacher syndrome have a congenital secundum atrial septal defect and mitral stenosis. One feature of the condition is that the atrial septal defect acts as a left-to-right shunt, thereby reducing the pressure in the overloaded left atrium. Applying this to heart failure, could an atrial shunt device have the same effect, and improve symptoms and prognosis in heart failure by reducing left atrial pressure? Several shunt devices are being studied, but until now there have been no phase III randomised controlled trials.

The REDUCE LAP HF-II study randomly assigned 626 patients with heart failure (age over 40 years, with an ejection fraction over 40% and a pulmonary capillary wedge pressure during exercise of at least 25 mm Hg) to either receive an atrial shunt device or a sham procedure. Over the one year follow-up, there was no difference in heart failure events between the two groups. Good news for the study participants was that there was an unexpected improvement in health status in participants in both arms of the trial and mortality was also lower than expected.

Lancet doi:10.1016/S0140-6736(22)00016-2

Western diets over and gout

Dietary Guidelines for Americans 2020 - 2025 includes four recommended eating patterns, each clearly not named by a celebrity doctor hoping for a best selling book: Dietary Approaches to Stop Hypertension (DASH), Alternative Healthy Eating Index (AHEI), Prudent, and the Alternate Mediterranean Diet Score.

A prospective cohort study of over 80 000 US women in the Nurses' Health Study began asking participants to complete food questionnaires every two years from 1984 and calculated associations between diet and incidence of gout over a 34 year follow-up. Researchers matched their questionnaire responses to best fit the four healthy diets recommended in the guidelines or to the unhealthy—and very much not recommended—Western diet. There were 3890 cases of gout in total. Those in the highest quintile of Western diet had a 49% increased incidence of gout, whereas those in the highest quintile of the recommended diets had between a 12% and a 32% lower risk of developing gout. The DASH diet—high in fruit, vegetables, whole grains, low-fat dairy, and low in saturated fat—came out on top, but in general it's the same as ever: Western diet bad.

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Net gains

Does reducing deaths from malaria with mosquito nets in young children just shift deaths from younger to older ages? How do you answer this question definitively unless someone does a large prospective study that follows up participants into adulthood? Fortunately, just such a study has now been published. All 6706 children born in a rural part of southern Tanzania between 1998 and 2003 were enrolled; earlier published findings found that treated mosquito nets were associated with a 27% increase in survival in children aged 1 month to 4 years. In the latest study, researchers followed up 89% of participants, with a mean follow-up of 16 years. And the result? The reduced risk persisted into adulthood, with a hazard ratio for death of 0.57 (95% confidence interval 0.45 to 0.72) for those who were reported to have used treated nets at more than half of the early-life data collection visits compared with those reported to have used treated nets at less than half the visits.

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Hard sell for stem cell therapy

We are often told that gene therapies will transform medicine, but will they ever become widely available in publicly funded healthcare systems? Betibeglogene autotemcel gene therapy for people with transfusion dependant β thalassemia costs around £1 450 000 per patient, according to NICE. A 2021 draft NICE technology appraisal did not recommend the treatment, noting that clinical trials were small with short follow-up and the treatment did not meet their usual threshold for cost effectiveness.

In a phase III, open label study 20 out of 22 adults and children with transfusion dependent β thalassemia who had the gene therapy achieved

transfusion independence after one year. However, there seems little likelihood of patients in the UK and Europe receiving this treatment, with recent reports that the company behind it, Bluebird Bio, is withdrawing from Europe due to the “challenges of achieving appropriate value recognition and market access.”

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