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Tom Nolan's research reviews—1 February 2024

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Weight loss and cancer diagnosis

Most studies investigating weight loss and cancer use codes for unintended weight loss in the patient record to estimate the likelihood of a subsequent cancer diagnosis. As such, they don't tell us how much weight loss is significant: it could be 1%, 5%, or 10%, depending on all the various different factors swirling around in the consultation. A new analysis tries to help us put a number on it, reviewing weight data in two major cohort studies of US healthcare workers and seeing how often people get diagnosed with cancer within a year of weight loss being recorded. It found that those with weight loss of greater than 10% of their body weight had an incidence of 1362 cancer cases per 100 000 person-years, compared with 869 cancer cases per 100 000 person-years in those with no weight loss. Those who seemed to have lost weight unintentionally (according to lifestyle data) had a higher risk of a cancer diagnosis, with a relative risk of 1.23 in those with 5-10 kg weight loss, increasing to 1.98 in those with over 10 kg weight loss.

JAMA doi:10.1001/jama.2023.25869

Controlling hypertension in low and middle income countries

A common criticism of cardiovascular prevention strategies in the UK is that, despite universal health coverage, it's easier for the wealthy to access diagnosis and treatment. A paper in *Nature Medicine* asks what impact scaling up hypertension diagnosis and treatment would have in low and middle income countries, to guide policy makers on where to prioritise their resources. The study looked at 44 countries, assessing things like the proportion of people with hypertension who are aware of their diagnosis, what proportion were receiving treatment, and how these varied according to wealth levels within each country. It highlights the huge variations in diagnosis and treatment between and within countries—and shows that, as in the UK, there's no simple solution to how to provide equitable access to cardiovascular disease prevention.

Nat Med doi:10.1038/s41591-023-02769-8

The cost of sickle cell disease

In November the Medicines and Healthcare products Regulatory Agency (MHRA) approved a gene editing technique for sickle cell disease, making the UK the first country in the world to do so. But, at a reported cost of \$2.2 million per treatment, can the NHS—or any healthcare system—afford it? A new cost effectiveness analysis in the US has estimated that, from a societal perspective, the treatment costs somewhere between \$126 000 and \$281 000 per quality-adjusted life year. Whether it will be available through the NHS will hinge on what the National

Institute for Health and Care Excellence (NICE) concludes.

Ann Intern Med doi:10.7326/M23-1520

Exercise games to prevent falls

My experience with exercise games—apparently known as exergames—comes mainly from the pop music dancing game *Just Dance*. For a short period during lockdown, I became quite good at dancing to a song by the Puerto Rican rapper Daddy Yankee called “Shaky, Shaky, Shaky.” That song title neatly describes the quality of much of the research in the field of using games for health, so it's great to see a randomised control trial assessing the effect of an exergame on falls in older people. Balance training can prevent falls in older people, but it is often not available or hard to access, so researchers created eight games that can be played at home by stepping on targets on a step mat (exergame training) or using a touchpad (cognitive training). A total of 769 people aged 65 years or older were enrolled in the study, and after 12 months the rate of falls in the exergame, cognitive training, and control groups were compared. A significant reduction in falls in the exergame training group compared with controls was seen (163 falls versus 231, incidence rate ratio 0.74 (95% confidence interval 0.56 to 0.98)), but not between the exergame and cognitive training groups.

Nat Med doi:10.1038/s41591-023-02739-0

Outcomes after prostate cancer treatment

When considering treatment options for localised prostate cancer, patients have to weigh up the risk of various possible long term side effects, including urinary incontinence, sexual dysfunction, and bowel problems. An observational study reviewed symptom scores for these problems 10 years after treatment with radical prostatectomy, external beam radiotherapy, brachytherapy, or active surveillance for over 2000 people with localised prostate cancer in the US. For men with a better prognosis, it found that urinary incontinence was more common after radical prostatectomy compared with other treatments, but there was no important difference in other symptoms. For those with a worse prognosis, those who had external beam radiotherapy with androgen therapy were more likely to have worse bowel and hormone function than those who had surgery.

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