

Migraines may increase risk of pregnancy complications

A study of women in Denmark with and without migraines who became pregnant has found that migraines were associated with an increased risk of pregnancy-associated hypertension disorders in the mother (<https://doi.org/10.1111/head.13536>). Maternal migraine was also associated with an increased risk of a variety of adverse outcomes in newborns, including low birth weight, preterm birth, caesarean delivery and febrile seizures.

The study included 22 841 pregnancies among women with migraine and 228 324 age- and conception-year matched pregnancies among women without migraine.

Treated migraine was not linked with higher risks of adverse outcomes compared with untreated migraine. This suggests that migraine itself, rather than its treatment, is associated with pregnancy complications.

Optimizing antibiotic use and combatting antibiotic resistance

A review article highlights how the global problem of antibiotic resistance can be overlooked in favour of more immediate concerns, including the consequences of missing a serious infection (<https://doi.org/10.1016/j.cmi.2019.03.008>).

The research suggests six simple tips for a coordinated approach to optimizing antibiotic use:

- Access to antibiotics should be carefully regulated
- The immediacy of the problem of resistance should be emphasized
- Rules for antibiotic prescribing should be made collectively, with involvement of clinicians and patients
- Doctors' prescribing behaviour should be monitored and fed back to them
- Reputational incentives and sanctions should be introduced
- Perverse incentives that drive over-use should be addressed.

Curriculum design influences medical students' attitudes to psychiatry

Medical students with poor attitudes toward psychiatry are unlikely to choose it as a career, and current psychiatry recruitment is inadequate for future NHS needs. Amending medical school curricula has been suggested as one solution.

A naturalistic mixed-methods cross-sectional survey of two sequential cohorts in a UK medical school was undertaken (de Cates et al, 2019), before and after restructuring of the MBChB curriculum. As well as increasing integration with other specialties, the emphasis placed on psychiatry increased throughout the course, but the final psychiatry block reduced in length from 8 to 6 weeks.

Students experiencing the refreshed curriculum had better attitudes to psychiatry and psychiatric patients and were more positive about psychiatry as a career for themselves and others, compared to students on the old curriculum. This was demonstrated both quantitatively and qualitatively. Restructuring undergraduate medical curricula



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to enhance integration may yield added value, including the potential to improve attitudes to specialties previously learned in silos, such as psychiatry. This may improve recruitment and the understanding of mental health for all future doctors.

Talking about the implication of the study, Dr Angharad de Cates, Wellcome Trust Clinical Doctoral Fellow, Department of Psychiatry, University of Oxford, Oxford, said: 'Psychiatry is often considered a medical specialty

that is different to others. Our paper suggests that although psychiatry has its characteristic and defining features as a specialty, medical students appear to appreciate and value its importance within medicine to a greater extent when it is taught alongside other aspects of medicine.'

de Cates AN, de Cates P, Singh SP, Marwaha S. Can curriculum design influence medical students' attitudes to psychiatry? A comparison of two different approaches. *Med Teach*. 2019 May 6:1–10. <https://doi.org/10.1080/0142159X.2019.1602253>

Association between Apgar scores of 7–9 and neonatal mortality and morbidity

A population-based cohort study carried out in Sweden investigated associations between Apgar scores of 7, 8 and 9 (*vs* 10) at 1, 5 and 10 minutes, and neonatal mortality and morbidity (Razaz et al, 2019).

The study included 1 551 436 non-malformed live singleton infants, born at term between 1999 and 2016, with Apgar scores of ≥ 7 at 1, 5 and 10 minutes. Infants with Apgar scores of 7, 8 and 9 at 1, 5 and 10 minutes were compared with those with an Apgar score of 10 at 1, 5 and 10 minutes.

The main outcome measures were neonatal mortality and morbidity, including neonatal infections, asphyxia-related complications, respiratory distress and neonatal hypoglycaemia.

Compared with infants with an Apgar score of 10, adjusted odds ratios for neonatal mortality, neonatal infections, asphyxia-

related complications, respiratory distress and neonatal hypoglycaemia were higher among infants with lower Apgar scores, especially at 5 and 10 minutes. A reduction in Apgar score from 10 at 5 minutes to 9 at 10 minutes was also associated with higher odds of neonatal morbidity, compared with a stable Apgar score of 10 at 5 and 10 minutes.

The authors concluded that in term non-malformed infants with Apgar scores within the normal range (7–10), risks of neonatal mortality and morbidity are higher among infants with lower Apgar score values, and also among those experiencing a reduction in score from 5 minutes to 10 minutes.

Razaz N, Cnattingius S, Joseph KS. Association between Apgar scores of 7 to 9 and neonatal mortality and morbidity: population based cohort study of term infants in Sweden. *BMJ*. 2019 May 7;365:l1656. <https://doi.org/10.1136/bmj.l1656>

Longer use of antibiotics by women during mid/late adulthood increases risk of cardiovascular events

Women who take antibiotics over a long period of time are at increased risk of a heart attack or stroke, according to research involving nearly 36 500 women who took part in the Nurses' Health Study (Heianza et al, 2019).

During an average follow-up period of nearly 8 years, during which time the women continued to complete questionnaires every 2 years, 1056 participants developed cardiovascular disease.

After adjustments to take account of factors, such as age, race, sex, diet and lifestyle, reasons for antibiotic use, overweight or obesity, other diseases and medication use, the researchers found that women who used antibiotics for periods of 2 months or longer in late adulthood were 32% more likely to develop cardiovascular disease than women who did not use antibiotics. Women who took antibiotics for longer than 2 months in middle age had a 28% increased risk compared to women who did



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not. The researchers could find no increased risk of antibiotic use by younger adults aged between 20–39 years.

First author Dr Yoriko Heianza, a research fellow at Tulane University, New Orleans, USA, said: 'By investigating the duration of antibiotic use in various stages of adulthood we have found an association between long-term use in middle age and later life and an increased risk of stroke and heart disease during the following 8 years.

As these women grew older they were more likely to need more antibiotics, and sometimes for longer periods of time, which suggests a cumulative effect may be the reason for the stronger link in older age between antibiotic use and cardiovascular disease.'

Heianza Y, Zheng Y, Ma W et al. Duration and life-stage of antibiotic use and risk of cardiovascular events in women. *Eur Heart J*. 2019 Apr 24. <https://doi.org/10.1093/eurheartj/ehz231>

Sunscreen application does not prevent vitamin D production in the majority of people

A study was carried out to assess the ability of two sunscreens to inhibit vitamin D synthesis (Young et al, 2019). Participants were split into four groups and all, apart from those in the control group, went on a week-long holiday to an area with a very high UV index.

Twenty people received a broad spectrum sunscreen with a sun protection factor (SPF) of 15, offering UVB protection and high UVA protection. Twenty people received a non-broad spectrum sunscreen, also SPF 15 but with low UVA protection. These two groups were told how to use their sunscreens correctly, so as to achieve the labelled SPF. In contrast, 22 people used their own sunscreen with no instructions on how to apply it, and 17 people formed a control group who remained in Poland. Blood samples were taken from participants 24 hours before and 24–48 hours after the holiday.

SPF 15 sunscreens applied at sufficient

thickness to inhibit sunburn allowed a highly significant improvement of vitamin D levels, with higher levels in those who used the broad spectrum sunscreen than the low UVA protective sunscreen. People who used their own sunscreens had significant vitamin D synthesis, but they all had sunburn, almost certainly because they did not use the sunscreen correctly. The control group has a slight decline in vitamin D.

Lead author Professor Antony Young of King's College London, said: 'Our study, during a week of perfect weather in Tenerife, showed that sunscreens, even when used optimally to prevent sunburn, allowed excellent vitamin D synthesis.'

Young AR, Narbutt J, Harrison GI et al. Optimal sunscreen use, during a sun-holiday with a very high UV index, allows vitamin D synthesis without sunburn. *Br J Dermatol*. 2019 May 8. <https://doi.org/10.1111/bjd.17888>

Inflammatory bowel disease during childhood linked to higher rates of cancer and early death

Patients diagnosed with ulcerative colitis during childhood had a 2.5 times higher risk of developing cancer and a 3.7 times higher risk of dying during follow up compared with the general population (<https://doi.org/10.1111/apt.15258>). For those with Crohn's disease, the risk was 2.6 times higher for cancer and 2.2 times higher for death compared with the general population.

Work stress plus impaired sleep increases risk of cardiovascular death in people with hypertension

Work stress together with impaired sleep has been linked to a threefold higher risk of cardiovascular death in employees with hypertension (<https://doi.org/10.1177/2047487319839183>).

Risk factors for revision for prosthetic joint infection following knee replacement

The most important risk factors for developing severe infection after knee replacement have been identified ([https://doi.org/10.1016/S1473-3099\(18\)30755-2](https://doi.org/10.1016/S1473-3099(18)30755-2)). Patients who are under 60 years of age, men, and those with chronic pulmonary disease, diabetes, liver disease or a higher body mass index are at increased risk of having revision surgery as a result of infection.

Fitness may affect risk of lung and colorectal cancer and likelihood of survival after diagnosis

A new study has found that adults who were the most fit had the lowest risk of developing lung and colorectal cancer. Also, among individuals who developed lung or colorectal cancer, those who had high fitness levels before their cancer diagnosis were less likely to die compared with those who had low fitness levels (<https://doi.org/10.1002/cncr.32085>).

Dr Catherine Handy Marshall, of Johns Hopkins School of Medicine, Baltimore, Maryland, USA, and her colleagues studied 49 143 adults who underwent exercise stress testing from 1991–2009 and were followed for a median of 7.7 years. The study is the largest of its kind, as well as the first of its kind to involve women and a large percentage of non-white individuals.

Those in the highest fitness category had a 77% decreased risk of developing lung cancer and a 61% decreased risk of developing colorectal cancer. Among individuals who developed lung cancer, those with the highest fitness had a 44% decreased risk of dying during follow up, and among adults who developed colorectal cancer, those with the highest fitness had an 89% decreased risk.

Workplace bullying can lead to health-related problems and negative behaviour in victims

A cluster approach was taken to examine phenomenological configurations of workplace bullying (Paciello et al, 2019). Researchers asked 1019 Italian employees about their experiences of workplace bullying, counterproductive behaviour and health symptoms. They were also asked about their coping strategies, negative emotions experienced at work and moral disengagement.

Five groups were identified, one of which includes victims who are the target of work-related bullying and frequently exposed to personal-related bullying, who experience high health problems and misbehaviour (4.4% of the sample).

Another group experience work-related bullying but less frequent personal-related bullying, and show lower health problems and misbehaviour (9.6%). Although they generally use problem-solving strategies, they tend to be overwhelmed by the negative emotions they experience and are not able to control them. They also have a tendency to morally disengage.

A third group have limited exposure to work-related bullying and no exposure to



Dr Roberta Fida, Senior Lecturer in Work Psychology, Norwich Business School, University of East Anglia, Norwich

personal-related bullying (22.3%). While not experiencing health-related problems they sometimes engage in counterproductive work behaviour.

A fourth group includes those who are not bullied, but have high health-related symptoms and some misbehaviour (23.9%). The last group identified are not exposed to any bullying, and have no health symptoms or behavioural problems (39.9%).

Dr Roberta Fida, a senior lecturer in work psychology at the Norwich Business School, University of East

Anglia, Norwich, commented: ‘Overall, our results show the need to consider not only exposure to and types of bullying but also their associated consequences.... The greater the intensity of bullying and the more the exposure to different types of bullying, the higher the likelihood of engaging in counterproductive workplace behaviour.’

Paciello M, Fida R, Tramontano C, Ghezzi V, Barbaranelli C. Phenomenological configurations of workplace bullying: A cluster approach. *Pers Individ Dif.* 2019 May 15. <https://doi.org/10.1016/j.paid.2019.05.001>

Lidocaine and phenylephrine no better than placebo in reducing pain and distress of nasogastric tube insertion in young children and infants

Nasogastric tube insertion is a common but distressing procedure in young children. A prospective, randomized, controlled, double-blind, superiority trial was carried out in a single tertiary paediatric emergency department in Australia to compare the efficacy of topical local anaesthetic and vasoconstrictor nasal spray with placebo for distress related to nasogastric tube insertion ([https://doi.org/10.1016/S2352-4642\(19\)30058-6](https://doi.org/10.1016/S2352-4642(19)30058-6)).

Eligible participants were children aged 6 months to 5 years who were planned to

have a nasogastric tube inserted as part of their emergency department treatment. Patients were randomly assigned to receive lidocaine and phenylephrine nasal spray, or 0.9% sodium chloride placebo nasal spray, before nasogastric tube insertion. The primary outcome was procedure-related distress, measured using the Face, Legs, Activity, Cry, and Consolability (FLACC) scale during the final attempt at tube insertion.

A total of 50 children received each intervention. There was no difference

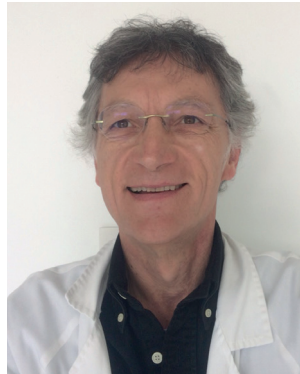
in median FLACC score at the time of nasogastric tube insertion for lidocaine and phenylephrine *vs* placebo. Adverse effects of the spray or nasogastric tube insertion occurred in 14 (28%) of those who received lidocaine and phenylephrine and 21 (42%) of those who received placebo.

The authors concluded that lidocaine and phenylephrine nasal spray does not reduce procedure-related distress associated with nasogastric tube insertion in young children compared with placebo.

Beta blockers help prevent decompensation of cirrhosis in patients with portal hypertension

An investigator-initiated, double-blind, randomized controlled trial took place in eight hospitals in Spain to look at the place of β blockers in preventing decompensation of cirrhosis with portal hypertension (PREDESCI) (Villanueva et al, 2019).

Patients with compensated cirrhosis and clinically significant portal hypertension without high-risk varices were enrolled in the study. All participants had hepatic venous pressure gradient measurements with assessment of the response of the acute hepatic venous pressure gradient to intravenous propranolol. Responders (hepatic venous pressure gradient decrease $\geq 10\%$) were randomly assigned to propranolol (up to 160 mg twice a day) *vs* placebo and non-responders to carvedilol (≤ 25 mg/day) *vs* placebo. Doses were individually determined during an open-label titration period after which patients were randomized. The primary endpoint was incidence of cirrhosis decompensation or death.



Dr C Villanueva, Gastroenterology Department, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain

Of 631 patients evaluated, 101 patients were randomly assigned to placebo and 100 to active treatment (67 propranolol and 33 carvedilol). The primary endpoint occurred in 16 (16%) of 100 patients in the β blockers group *vs* 27 (27%) of 101 in the placebo group. The difference was caused by a reduced incidence of ascites. The overall incidence of adverse events was similar in both groups.

Commenting on the findings, Dr C Villanueva from the Gastroenterology Department,

Hospital de la Santa Creu i Sant Pau, Barcelona, Spain said: ' β blockers significantly reduces the incidence of decompensation of cirrhosis or liver-related death, mainly by decreasing the risk of developing ascites. This represents a landmark innovation in the management of patients with compensated cirrhosis.'

Villanueva C, Albillos A, Genesà J et al. β blockers to prevent decompensation of cirrhosis in patients with clinically significant portal hypertension (PREDESCI): a randomised, double-blind, placebo-controlled, multicentre trial. *Lancet*. 2019 Apr 20;393(10181):1597–1608. [https://doi.org/10.1016/S0140-6736\(18\)31875-0](https://doi.org/10.1016/S0140-6736(18)31875-0)

Maternal and fetal genetic effects on birth weight and their relevance to cardiometabolic risk factors

A large-scale international collaboration has led to new insights into the complex relationships surrounding how mothers' and babies' genes influence birth weight (Warrington et al, 2019). The research identifies 190 links between genetic code and birth weight, two-thirds of which have been discovered for the first time. Understanding factors that influence birth weight is important because babies who are born very large or small have a lower chance of survival and a higher later-life risk of metabolic diseases.

The research looked at genetic information from 230 069 mothers, with the birth weight of one child each, as well as genetic information and birth weights of 321 223 people across the UK Biobank and the Early

Growth Genetics consortium cohorts. They used novel statistical methods to tease apart the effects of the mothers' and babies' genes on the weight of newborn babies.

The researchers concluded that the direct effects of a baby's genes made a substantial contribution to birth weight. However, around one-quarter of the genetic effects identified were from the mother's genes that were not passed on to the child – affecting the baby's growth by influencing factors in the baby's environment during pregnancy.

Warrington NM, Beaumont RN, Horikoshi M et al. Maternal and fetal genetic effects on birth weight and their relevance to cardio-metabolic risk factors. *Nat Genet*. 2019 May;51(5):804–814. <https://doi.org/10.1038/s41588-019-0403-1>

CPAP vs non-invasive ventilation to treat patients with obesity hypoventilation syndrome

A multicentre, open-label, randomized controlled trial was carried out to compare the use of non-invasive ventilation and continuous positive airway pressure (CPAP) to treat patients with obesity hypoventilation syndrome (Masa et al, 2019).

The study included patients aged 15–80 years with untreated obesity hypoventilation syndrome and an apnoea-hypopnoea index of 30 or more events per h. Patients were randomly assigned to receive treatment with either non-invasive ventilation or CPAP. The primary outcome was the number of hospitalisation days per year.

A total of 100 patients were randomly assigned to the non-invasive ventilation group and 115 to the CPAP group, of which 97 patients in the non-invasive ventilation group and 107 in the CPAP group were included in the analysis. The median follow up was 5.44 years for all patients. The mean hospitalisation days per patient-year were 1.63 in the CPAP group and 1.44 in the non-invasive ventilation group. Adverse events were similar between both groups.

The authors concluded that in stable patients with obesity hypoventilation syndrome and severe obstructive sleep apnoea, non-invasive ventilation and CPAP have similar long-term effectiveness. Given that CPAP has lower complexity and cost, this might be the preferred first-line positive airway pressure treatment modality until more studies become available.

Masa JF, Mokhlesi B, Benítez I et al; Spanish Sleep Network. Long-term clinical effectiveness of continuous positive airway pressure therapy versus non-invasive ventilation therapy in patients with obesity hypoventilation syndrome: a multicentre, open-label, randomised controlled trial. *Lancet*. 2019 Apr 27;393(10182):1721–1732. [https://doi.org/10.1016/S0140-6736\(18\)32978-7](https://doi.org/10.1016/S0140-6736(18)32978-7)