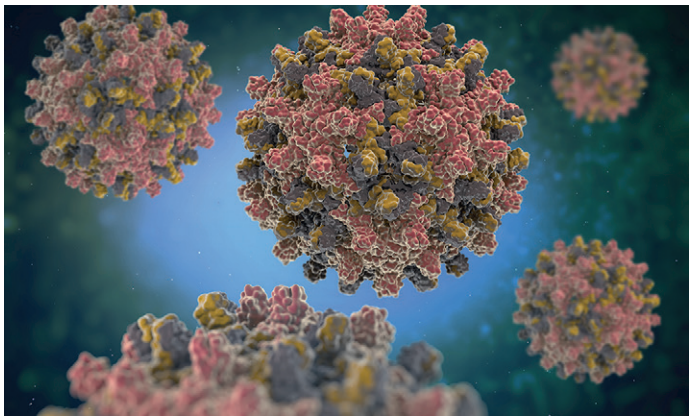


Hepatitis B virus found in Bronze Age tissue samples

Researchers have sequenced the genomes of Bronze Age humans and found evidence of hepatitis B virus (HBV) in 25 of 304 individuals across a span of 4000 years, suggesting that humans throughout Eurasia have been infected with HBV for thousands of years. In the first study, **published in *Nature***, the international investigator team analysed ancient DNA sequences from 304 central and western Eurasian humans, who lived between about 2000 and 7000 years ago. They found evidence of HBV infections in 25 individuals who had lived between 800 and 4500 years ago. The authors recovered 12 full or partial HBV genomes — including genotypes that are now extinct — that they compared with modern human and non-human primate HBV genomes. They found that ancient HBV genomes existed in regions incongruent with the present day distribution of the virus, and identified at least one now extinct genotype. Discovery of further ancient viral sequences may provide a clearer picture of the true origin and early history of HBV, and advance understanding of the contributions of natural and cultural changes to disease burden and mortality. In a related study, **also published in *Nature***, the multinational research team sequenced the genomes of 137 ancient humans from the Eurasian steppes — a vast region spanning about 8000 km from Hungary to northeastern China — from the period 2500 BC to AD 1500. They also genotyped 502 present day individuals with self-reported ancestries from across Central Asia, the Altai, Siberia and the Caucasus. Their findings shed light on the population history of the region, suggesting a gradual transition from Bronze Age Indo-European pastoralists of West Eurasian origin toward a society of mounted warriors of primarily East Asian ancestry.

https://www.nature.com/articles/s41586-018-0094-2
https://www.nature.com/articles/s41586-018-0097-z

Early antibiotic use: does it reduce vaccine effectiveness?

Researchers from the South Australian Health and Medical Research Institute at Flinders University have found in pre-clinical models that antibiotic exposure in infant mice impairs their responses to five important, routine vaccines used around the world, including vaccines against meningitis, pneumonia, tuberculosis and whooping cough. Published in *Cell Host and Microbe Today*, the study showed that "it appears that antibiotics in the first year of life change the way the body builds immunity and responds to vaccination", according to lead author Associate Professor David Lynn. His team has commenced a clinical study at the Women's and Children's Hospital in Adelaide to identify whether their findings also apply to human infants, and to explore how the healthy gut microbiome influences the effectiveness of vaccination.

https://www.cell.com/cell-host-microbe/fulltext/S1931-3128(18)30206-3

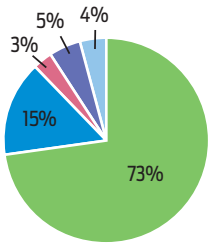
Cate Swannell doi: 10.5694/mja18.n0406

MJA InSight Poll

No computerised exam should begin without a paper-and-pen back-up plan

Total votes = 172

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree



Take part in next week's poll on: www.mja.com.au/insight

MJA Podcasts

Associate Professor Sue Evans is Head of the Clinical Registry Unit and Director of the CRE in Patient Safety at Monash University's School of Public Health and Preventive Medicine. She discusses evidence from the Prostate Cancer Outcomes Registry, to accompany her co-authored research published online on 28 May 2018.

Professor John McNeil is Head of the Department of Epidemiology and Preventive Medicine at Monash University. He talks about Australian middle-aged mortality, to accompany his co-authored research letter published in this issue.

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2. *News*: The researchers, the university and the bizarre medical cult
Wilcken; https://www.doctorportal.com.au/mjainsight/2018/16/the-researchers-the-university-and-the-bizarre-medical-cult/

3. *News*: Be on the alert for parechovirus
MacKee; https://www.doctorportal.com.au/mjainsight/2018/16/be-on-the-alert-for-parechovirus/

4. *Views*: Rethinking our response to eating disorders
Maguire; https://www.doctorportal.com.au/mjainsight/2018/16/rethinking-our-response-to-eating-disorders/

5. *Views*: Upstream of EDs, downstream of headspace: helping the "missing middle"
McGorry et al; https://www.doctorportal.com.au/mjainsight/2018/17/upstream-of-eds-downstream-of-headspace-helping-the-missing-middle/

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JUNE

4 Podcast with Professor Maria Crotty, Professor of Rehabilitation at the Department of Rehabilitation, Aged and Extended Care at Flinders University; Dr Stephen Judd, CEO of HammondCare; and Associate Professor Craig Whitehead, a geriatrician and Regional Clinical Director for Rehabilitation and Aged Care in the Southern Adelaide Health Service

4 Podcast with Dr Miranda Paraskeva, lung transplant physician at the Alfred Hospital in Melbourne

4 Podcast with Professor John McNeil, Head of the Department of Epidemiology and Preventive Medicine at Monash University

MAY

28 *Study protocol*: Hyperglycaemia in early pregnancy: the Treatment of Booking Gestational diabetes Mellitus (TOBOGM) study. A randomised controlled trial
Simmons et al; doi: 10.5694/mja17.01129

28 Podcast with Professor David Simmons, consultant endocrinologist and Professor of Medicine at Western Sydney University

28 *Research*: Active surveillance of men with low risk prostate cancer: evidence from the Prostate Cancer Outcomes Registry–Victoria
Evans et al; doi: 10.5694/mja17.00559

28 Podcast with Associate Professor Sue Evans, Head of the Clinical Registry Unit and Director of the CRE in Patient Safety at Monash University's School of Public Health and Preventive Medicine

28 *Research letter*: Presence of gluten in gluten-free food provided by food businesses: a cross-sectional Australian study
Halmos et al; doi: 10.5694/mja17.00883

28 Podcast with Dr Jason Tye-Din, gastroenterology consultant at Royal Melbourne Hospital and laboratory head at the Walter and Eliza Hall Institute of Medical Research

21 *Perspective*: Virtual medicine: how virtual reality is easing pain, calming nerves and improving health
Spiegel; doi: 10.5694/mja17.00540

21 Podcast with Dr Brennan Spiegel, Director of Health Services Research at Cedar-Sinai Health Services in Los Angeles

14 *Research*: Effects of post-discharge management on rates of early re-admission and death after hospitalisation for heart failure
Huynh et al; doi: 10.5694/mja17.00809

14 *Research*: RedUSe: reducing antipsychotic and benzodiazepine prescribing in residential aged care facilities
Bowers et al; doi: 10.5694/mja17.00857

14 Podcast with Dr Juanita Westbury, senior lecturer in Dementia Care at the University of Tasmania's Wicking Dementia Research and Education Centre

14 *Research*: Psychological distress in remote mining and construction workers in Australia
Mawren et al; doi: 10.5694/mja17.00950

14 Podcast with Dr Jennifer Bowers, managing director of Rural and Remote Mental Health

7 Podcast with Dr Shih-Ning Then, senior lecturer at the Australian Centre for Health Law Research at Queensland University of Technology