



ANOTHER SHOT IN THE ARM FOR DEMENTIA

The anti-anti-vaxx backlash starts here. Can the herpes zoster jab prevent dementia? We cannot hold science that supports mass vaccination to a lower standard than the evidence we demand for studies that claim harm. A preprint appears to show causal evidence based on a mass vaccination scheme in Wales that immediately improved take-up of the vaccine from 0.01% of the population to 47.2%. They studied the population born a week apart in September 1933 that were delineated by this policy change. The only two health differences seen in these two groups were reduced shingles and dementia. They show that receiving the vaccine reduced the probability of a new dementia diagnosis over 7 years by 3.5 percentage points (95% CI 0.6 to 7.1, $p=0.019$), a 19.9% relative reduction. So, to reduce your personal risk of dementia, try being 89 years old born in Cwmllynfell, in the latter half of September.

medRxiv 2023.05.23.23290253.

BIG BROTHER IS WATCHING YOUR MOUSE

There is a hidden industry of animal behaviouralists who can second guess from observation the mental turmoil of rodents, mouse whisperers if you will. Attempting to modernise and automate this process, researchers used machine learning-assisted three-dimensional video analysis to reveal hidden behaviour in mice in the context of acquired and genetic epilepsies. Their aim was to compare injuries that cause epilepsy with changes seen in response to antiseizure medication (ASM). They provide a host of behavioural fingerprints, including videos that include a sex-specific behaviour in murine Dravet (significantly more 'head-up' movements and less 'dart'). They show that mice injected with ASMs normalised their behaviour to that of wild type and that there were drug-specific behaviours. This, if replicated, could

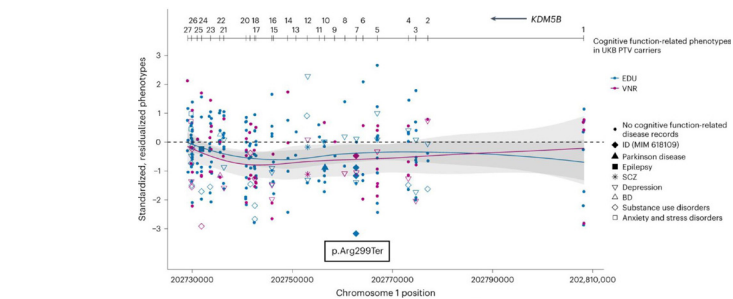


Figure 1 *KDM5B* shows lower attainment in EDU and VNR. The figure also shows SCZ and BD with other psychiatric disorders taken from inpatient records. ClinVar probably pathogenic variants for intellectual disability (MIM 618109) are shown. BD, bipolar disorder; EDU, educational attainment; SCZ, schizophrenia; VNR, verbal–numerical reasoning.

allow for drug screening interictally, reducing the burden on experimental animals to seize, which feels kinder.

Neuron. 2023;1119,:1440-1452. e5.

SPECIAL K

This feels like a 'would you rather?' question that A Fo Ben's many children may ask during a long car journey. If you had treatment-resistant depression, would you rather undergo ketamine or electroconvulsive therapy (ECT)? The more pernicky of you may wait for a randomised controlled study to report, before dignifying that question with an answer. A total of 403 patients were randomised to this clearly open study; 38 must have had their own opinion as they withdrew post randomisation. Fifty-five per cent of the patients in the ketamine group and 41% of those in the ECT group had a positive response (95% CI of the difference, 3.9 to 24.2; $p<0.001$). The ECT group showed poorer memory recall after 3 weeks of treatment and musculoskeletal side effects, whereas ketamine was linked to dissociation. So K before ECT.

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YOU CAN BANK ON IT

We are familiar with rare genetic mutation as a cause of neurodisability, and

there is strong evidence of the hereditary nature of cognitive ability. Gene discovery is normally predicated on finding the most clinically affected, but can you instead look at scale? Leveraging the potential of the UK Biobank, researchers identified that rare coding changes in eight genes are associated with cognitive function in adults. Three elements were appraised; educational attainment reaction time and verbal–numerical reasoning. Protein truncating variants were deleterious for cognition, and changes in *KDM5B* negatively affected all three endpoints (figure 1). These findings were then replicated in a Finnish and the Mass General Brigham Biobank.

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