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CDKL5-4-3-2-1-GONE

Pedants who prefer 'antiseizure medicines' to 'antiepilepsy medicines' because these drugs are not disease modifying—may soon find room in their vocabulary for both terms. CDKL5 deficiency disorder is an early onset neurodevelopmental disorder, or so we thought. But by experimentally manipulating when CDKL5 was switched off in mice, authors were able to produce a very similar disorder starting at different times of life; is CDKL5 instead a disease of neuronal maintenance? Switching off is cool, but can we turn it back on again in poorly mice? Even in later life, restoring CDKL5 function rescues most of the phenotype. This is an extraordinary proof of principle and one that paves the way for future gene therapies—acknowledging all the mouse-work caveats, not least of which are that mice with CDKL5 disease do not seem to seize.

J Clin Invest. 2021; 13120; e143655

IF STIFF, MASTIFF SNIFF WHIFF. TERIFF!

Quirky science may be more likely to appear in Carphology—but what to make of implausible work that replicates? A study of dogs that detect seizure odours (see *Shih Tzu sniffs you. Fits? True*, 2019). In this study, they used a remote odour delivery mechanism, to deliver epileptic seizure-associated and non-seizure associated odours and video-recorded the reactions of the dogs to each. In untrained pooches, they saw more affiliative behavioural changes with seizure smells. They conclude that epileptic seizures are associated with a unique

volatile organic signature. This feels like a missed opportunity for intervention. Doggy super heroes!

Animals (Basel). 2021; 11(8): 2267.

A FOCUS GROUP BIGGER THAN AXMINSTER

Researchers wanted to create new outcome measures for Alzheimer's disease. How do we best listen to lots of people with lived experience, particularly in a common disorder? What would the tea and biscuit budget be for 5800 respondents? Think of the mental well-being of the junior researcher slogging through 80000 free text replies. 21st Century tech to the rescue! Clustering and natural language processing (NLP) techniques grouped responses in to 184 themes and permitted subgroup analysis based on age, gender and education. This was a tremendous and elegant use of NLP that could be argued to be no less valid than the assumptions and biases that can be introduced with other qualitative approaches.

J Prev Alzheimers Dis. 2021; 8 (4): 448–456.

LOOP-THE-LOOP

The effort that went into this proof of principle, n of 1 study of closed-loop neuromodulation for someone with treatment resistant depression is pretty laudable. Closed loop studies both sense and stimulate—they are smart devices. The deep-brain stimulation was targeted to a personalised symptom-specific biomarker, as well as a neuroanatomical location. In this study, a 36-year-old woman underwent a 10-day stereo-EEG to map the

Figure 1 Science can be beautiful and inspiring. It can also be pragmatic—such as this figure, a rat made from ovals. On Twitter A Fo Ben at @Carphology_PN would love to see your examples of the journal illustrations that were probably created by great scientists but only so-so artists. Taken from Morales-Botello *et al.* 2012. PLoS ONE 7 (7): e40174 and reused under CC license.

stimulus response of her emotional circuitry. Astonishingly they identified spectral activity features in six standard frequency bands that discriminated 15 min segments of resting-state activity coinciding with high and low symptom states. They concluded that bilateral amygdala gamma power alone was sufficient to detect the high symptom severity state. NeuroPace stimulation of the ventral capsule-ventral striatum-amygdala circuit was associated with significant symptom improvement. Intriguingly her recovery was rapid and sustained.

Competing interests None declared.

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