Carphology by A Fo Ben

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TWO DEND-WRONGS MAKE A DEND-RIGHT?

We are familiar with the concept that epilepsy could be a channelopathy and this may make sense for seizures and medications, but how about the comorbidities? Heinz Beck and colleagues, focusing on sodium spikes in hippocampal pyramidal cell dendrites, found that selectively blocking Na_v 1.3 channels improved the precision of spatial coding and reversed hippocampal memory deficits. Dendritic spike generation is markedly altered in animals with chronic epilepsy with dendritic branches doubled. In addition, the threshold of the eliciting dendritic spikes is much lower in animals with epilepsy. This tantalising result suggests that cognitive symptoms may not be inevitable and may be modifiable, preventable.
bioRxiv https://doi.org/10.1101/2020.11.23.393694.

FLYING WITHOUT RADAR

Carphology is a happy home for outsiders who may wish to eschew the norms and forge their own paths. The editorial 'A hypothesis is a liability' feels counterintuitive and challenges us that looking only for the predicted result, we may miss the importance of the metaphorical Petri dish of mould discarded near an open window. Geneticists with technology-driven approaches have long used 'hypothesis-neutral approaches', but do we need to ensure that we develop outsiders with counter-cultural research styles, as the article says—'not all that wander are lost'?
Genome Biol 2020;21(1):231. doi: 10.1186/s13059-020-02133-w.

TAMING THE TIGER

Retooling hallucinogens to create designer psychoactive therapies is an attractive model for drug design. Researchers wanted to study the psychedelic alkaloid ibogaine because it shows anti-addictive properties in both humans and animals. They used the principles of function-oriented synthesis to identify key structural motifs of the therapeutic pharmacophore of ibogaine and to engineer tabernanthalog. This is a water-soluble, non-hallucinogenic, non-toxic analogue of ibogaine which can be prepared in a single step. In rodents, tabernanthalog was found to increase neural plasticity, reduce alcohol-seeking and heroin-seeking behaviour, and even produced antidepressant effects. Anyone want to invest in anti-addictive hallucinogens?
Nature 2021 ;589(7842):474–479.

HOME AND AWAY

Over the last year, we have all got used to new unfamiliar working environments. Running clinic from the conservatory? Virtual colonoscopies from the loft? Counselling patients about their first seizure when they are on speaker phone and clearly driving… How does this affect our performance when we are home or away? What can we learn from professional footballers (figure 1)? When playing in an empty stadium, the advantage of the home team drops by 50%—perhaps we may find a similar drop-off in performance without a phalanx of medical students beside us in clinic?
doi:10.31219/osf.io/hczkj.

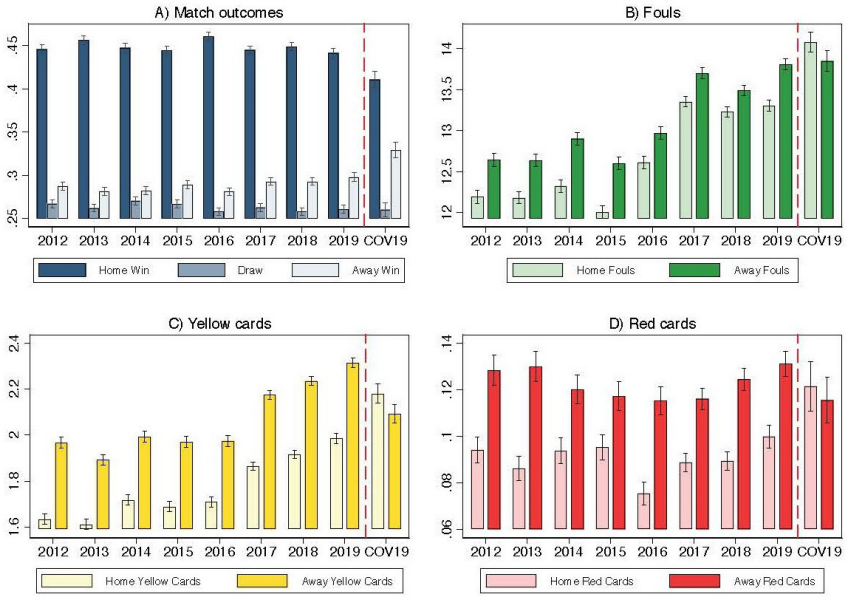

Figure 1 Data from season 2012/2013–2020/2021. Seasons 2019/2020 and 2020/2021 are pooled together and split by pre-lockdown and post-lockdown. (A) Proportion of home wins, draws and away wins. (B) Mean fouls/match. (C) Mean yellow cards/match. (D) Mean red cards/ match.

Competing interests None declared.

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