Lay Abstracts

Haas-Neill S, Iwashita E, Dvorkin-Gheva A, Forsythe P. (2022). Effects of Two Distinct Psychoactive Microbes, Lacticaseibacillus rhamnosus JB-1 and Limosilactobacillus reuteri 6475, on Circulating and Hippocampal mRNA in Male Mice. *International journal of molecular sciences*, *23*(17), 9653.

**Lay Abstract:** There are more bacteria in a human intestine than there are human cells in the rest of the body. Some bacteria, when eaten, colonize the gut and have been shown to improve depression, anxiety-like behaviour, and social deficits in mice. Here, we studied molecules called messenger ribonucleic acids (mRNAs) in the blood and brains of mice after feeding them two of these mood-altering bacteria. mRNAs carry instructions that tell cells what molecules to build to adapt to a situation, so by examining them we were able to learn how these good bacteria are able to improve the moods of mice. If this work can be translated to humans, it may provide safe alternatives to standard anti-depressant drugs, which currently lead to complications in some patients.

Haas-Neill S, Al-Saleh HA, Al-Hashimi A, Kapoor A, Shayegan B, Austin RC, Al-Nedawi K. (2018). Thrombotic characteristics of extracellular vesicles derived from prostate cancer cells. *The Prostate, 78*(13):953-961.

**Lay Abstract:** One of the hallmarks of cancer is increased inflammation both around the tumour and throughout the body. This inflammation is harmful because it makes it easier for the tumour to continue to mutate and develop. But how does cancer maintain this state of advanced inflammation? Here, we show that prostate cancer tumours shed tiny bubbles of fat called 'extracellular vesicles' that contain molecules such as tissue factor, which increases clotting activity as the vesicles travel throughout the body. The vesicles were also demonstrated to activate a molecule called protease-activated receptor-1, which also partially explains how tumours can increase inflammation in parts of the body they are not in.