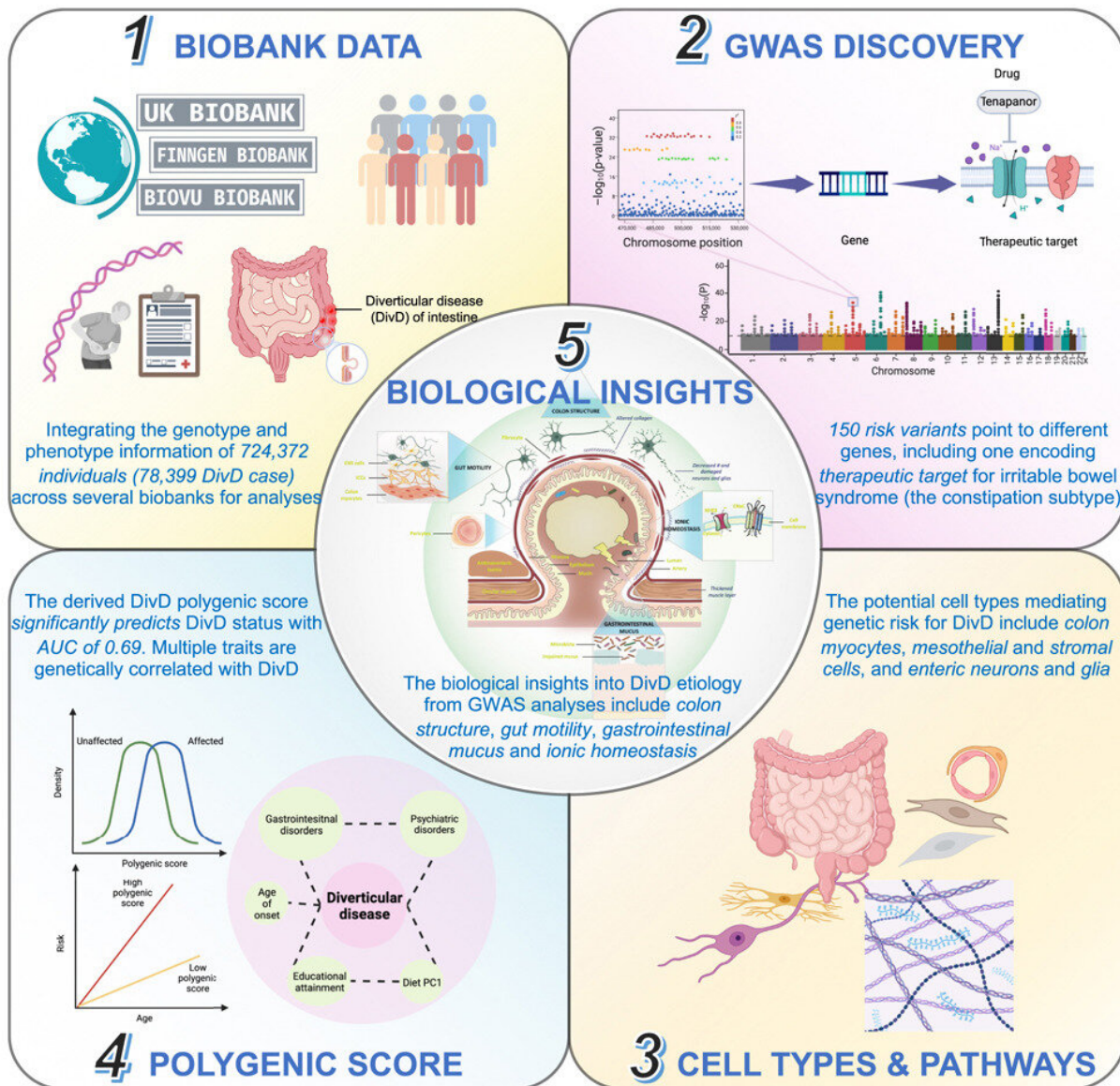


Genetics shed light on causes of intestinal disease

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Credit: *Cell Genomics* (2023). DOI: 10.1016/j.xgen.2023.100326

University of Queensland researchers have used genetics to reveal that much of the risk of developing a common and sometimes fatal intestinal disease is inherited.

Dr. Yeda Wu and Professor Naomi Wray from UQ's Institute for Molecular Bioscience have studied the causes of diverticular disease of intestine (DivD), an overlooked and understudied disease that is prevalent in Australia, particularly among [older people](#).

A [genome-wide association study](#) of more than 700,000 people showed DivD is highly heritable with 150 [genetic factors](#) linked to the risk of getting the disease. The research is published in *Cell Genomics*.

Dr. Wu said until now it was believed that a low-fiber diet was the main risk factor of DivD. "We were very surprised to see that 40% of the risk of diverticular disease of intestine is inherited," Dr. Wu said.

Diverticula are sac-like protrusions in the wall of the intestinal tract affecting 33% of people aged 50 to 59, increasing to 71% in those aged over 80.

"A quarter of people with diverticula develop symptoms and even complications such as abscesses and bleeding which can be life-threatening," Dr. Wu said. "Using our results, it should be possible to use genetics as a tool to identify people who are at a higher risk of getting DivD.

"They could then be monitored more closely by their GP and guided with changes to their diet and lifestyle to lower their risk."

Professor Wray said the study revealed [genes](#) linked to the structure of the colon, the layer of mucus in the gut and the processes that move food through the gut were involved in DivD.

"We also found these genes were highly correlated with genes for other digestive diseases, for example, [irritable bowel syndrome](#)," Professor Wray said.

"One gene encodes a [drug target](#) for IBS-constipation treatments, which is a good justification for this kind of study and how it can be used to find existing treatments that may also work on this disease.

"We can also use this method to identify other drug targets, opening up possibilities for treatment strategies that could be more effective than antibiotics and surgical removal of the colon."

The study also showed that people with DivD reported eating less wholemeal or wholegrain bread, had a lower intake of fruits and vegetables, and a lower water intake than people without DivD.

"While the genetics discovery is relevant for DivD treatment and prevention in the future, there is still a clear association between [food intake](#) and DivD," Dr. Wu said. "This aligns with the recommendations for a [healthy diet](#) for optimal gut function and health."

More information: Yeda Wu et al, 150 risk variants for diverticular disease of intestine prioritize cell types and enable polygenic prediction of disease susceptibility, *Cell Genomics* (2023). [DOI: 10.1016/j.xgen.2023.100326](https://doi.org/10.1016/j.xgen.2023.100326)

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