

Sea creatures' sex protein provides new insight into diabetes

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A genetic accident in the sea more than 500 million years ago has provided new insight into diabetes, according to research from Queen Mary, University of London.

Professor Maurice Elphick, from Queen Mary's School of Biological and Chemical Sciences, says his findings could help to explain a rare form of the disease that causes sufferers to urinate more than three litres every day.

As reported in the journal *Gene*, Professor Elphick has discovered that some marine animals produce 'NG peptides' - proteins that help the creatures release their eggs and sperm at the same time. Critically, it emerges that NG [peptides](#) are made by a gene very similar to the [mutant gene](#) that causes diabetes insipidus.

He says: "Genetic tests on patients with diabetes insipidus show their symptoms are caused by an inability to produce the hormone vasopressin, which tells the body how much urine to make.

"I have discovered that marine animals, like [sea urchins](#) and acorn worms, produce NG peptides in much the same way to how our [brain cells](#) produce vasopressin. This similarity can be traced back to a one-off genetic accident in one of our ancient sea-dwelling ancestors, when a gene for vasopressin-like molecules mutated and became associated with a gene for NG peptides."

Asked about the medical relevance of his discovery, Professor Elphick said: "By researching further into how animals like sea urchins produce NG peptides, we will understand better why the faulty human [vasopressin](#) gene can cause this form of diabetes in around 10,000 people in the UK."

Provided by Queen Mary, University of London

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