

Study could help target new pancreatitis treatments

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Pancreatitis is often a fatal condition, in which the pancreas digests itself and surrounding tissue. Scientists have previously found that alcohol can trigger the condition by combining with fatty acids in the pancreas, which leads to an excessive release of stored calcium ions. Once calcium ions enter cell fluid in the pancreas it activates digestive enzymes and damages the cells.

The team, in collaboration with the RIKEN Brain Science Institute in Japan, have now identified channels within special stores that allow calcium to enter the fluid inside [pancreatic cells](#). They have also found that toxic calcium release can be significantly reduced if the gene responsible for the production of these channels is 'deleted' (or knocked-out).

Professor Ole Petersen, from the University's School of Biomedical Sciences, explains: "The pancreas releases enzymes into the gut, where they become activated and digest our food. When these digestive enzymes are activated inside the cells, however, they start to digest the [pancreas](#) itself, causing serious damage and often death. [Alcohol](#) is widely recognised as one of the triggers for this process, but the reasons behind it have been unclear.

"We now know that alcohol, in combination with [fatty acids](#), can produce substances that cause an excessive increase in calcium ions in the pancreatic cell water. We have found that this excessive build-up is caused by the movement of [calcium ions](#) from special calcium stores

into the cell water, which activate digestive enzymes from within the cell. Our new research identifies the channels through which calcium movement occurs and importantly the genes which are responsible for the production of these channels.

"This work highlights the dangers of excessive drinking; the higher the levels of alcohol in the blood, the higher the risk of pancreatitis. Now that we have identified the [genes](#) that can control the condition, we should be able to develop more successful treatments for the disease."

The research is published in *Proceedings of the National Academy of Sciences (PNAS)*.

Source: University of Liverpool ([news](#) : [web](#))

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