

MEDIA RELEASE

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It takes two to tango: effect of calcium on iron levels crucial to human health

Research led by Centenary Institute scientists has developed a new framework for understanding how iron is transported around the body, making leeway for the development of more targeted therapies for people suffering from iron-related chronic health conditions, such as anaemia.

An adequate level of iron is crucial for maintaining healthy organs. People who are deficient in iron are anaemic, meaning their blood isn't producing enough red blood cells and is depriving their body of oxygen. Anaemia is a major public health burden worldwide, and particularly affects young women, with recent statistics suggesting as many as 1-in-10 women of reproductive age suffer from the condition. On the other hand, too much iron can also be toxic and cause damage to vital organs, such as the liver, heart and pancreas, while also driving the development of cancer and infections.

Previous studies have shown a protein called *ferroportin* plays an essential role in exporting iron from the intestinal cells, through the cell membrane and into the bloodstream. In fact, it's the only known exporter of absorbed dietary iron into blood plasma. But little has been known about the actual process.

A group of international scientists, including three from Centenary, set out to better understand iron metabolism. In a study published in the prestigious scientific journal *Nature Communications*, they determined that the presence of calcium is required for iron to be transported into the blood stream, and that iron potentially is transported in complex with a metabolite through *ferroportin*.

Dr Chandrika Deshpande from Centenary's Structural Biology Program, led by Associate Professor Mika Jormakka, is lead author of the study. She says the breakthrough provides a big leap forward in our understanding of iron transport in our bodies, and could change the way we approach iron-level related conditions, such as anaemia.

"Our findings suggest there could be a relationship between low blood calcium and anaemia. This advances our understanding of how dietary iron is absorbed into the bloodstream, which may aid in the development of strategies to manipulate *ferroportin* through therapeutics or drugs."

To arrange an interview, please contact: Centenary Institute Media and Communications Manager, Laura Parr, l.parr@centenary.org.au, 0435 530 537.

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