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Lab discovery in New Zealand offers hope for lymphoedema treatment

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A newly discovered molecule shows promise for treating painful lymphoedema



Scientists at University of Auckland, New Zealand have made a breakthrough that could lead to effective treatments for lymphoedema, a painful swelling condition for which there is currently no cure.

Lymphoedema can be congenital or caused by an injury, but it mostly occurs as an unintended consequence following breast-cancer treatment. It occurs when the lymphatic system, which moves fluid throughout the body via specialised vessels, is damaged, leading to fluid accumulation in tissues.

“Our group of researchers has discovered a new molecule and pathway that together promote lymphatic vessel growth,” said Dr Jonathan Astin, a senior lecturer in molecular medicine and pathology in the Faculty of Medical and Health Sciences at Waipapa Taumata Rau, University of Auckland.

The scientists discovered the growth-promoting molecule, known as ‘insulin-like growth factor’, or IGF, accelerates the growth of lymphatic vessels in zebrafish, so has potential to repair damaged vessels.

“We initially made this discovery in zebrafish but have also shown that the factor works in human lymphatic cells”, said Dr Astin.

They then worked with a University colleague, senior research fellow Dr Justin Rustenhoven, to grow human cells in the lab and found the IGF, could also ‘instruct’ human lymphatic vessels to grow.

“This work is of interest to the medical community as it provides an additional way to induce lymphatic vessel growth,” said Dr Astin.

The next step will be to test an IGF based therapy on mice with lymphoedema to see whether it helps.

Astin is cautious about promising too much but says this holds the potential to become a therapy for this painful, incurable condition in the future.