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Fed: Stem cell find to shed light on womb disorders
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SYDNEY, Sept 13 AAP - Australian scientists have made a stem cell breakthrough that could shed light on mysterious reproductive ailments suffered by millions of women.

Researchers at Monash University have identified stem cells in the lining of women's wombs that have the ability to switch into a range of fat, bone or muscle cells as needed.

The find, reported in the international journal Human Reproduction, could help explain the mechanics of common gynaecological conditions such as endometriosis, a painful and poorly understood disorder affecting six per cent of women.

However, its first application will be in tissue engineering to repair pelvic floor prolapse, a condition developed by more than half of women after childbirth.

Dr Caroline Gargett and her PhD student Kjjiana Schwab isolated mesenchymal stem-like cells (MSC) from endometrial tissue and discovered for the first time that they are very likely to be stem cells.

The cells were able to produce clones to form colonies of new cells 15 times faster than other endometrial cells.

They also were capable of transforming into different cell types like fat, bone, cartilage and smooth muscle cells.

Dr Gargett, a senior scientist at the Centre for Women's Health Research at Monash Institute of Medical Research, said the find was significant because they would now be able to characterise the cells and use them for good.

The first application would be to collect the cells from individual women to treat gynaecological problems such as pelvic floor prolapse.

"Pelvic floor prolapse is a common problem that significantly impacts the lives of many women and they find it embarrassing to talk about," she said.

"It is a hidden disorder in need of an innovative therapy."

Surgeons currently use a synthetic mesh to reinforce the region after the "collapse", but Dr Gargett said the cells could be used to engineer a superior natural tissue that

was firmer and longer lasting.

Researchers believe the cells may also have a role in the development of abnormal endometrial growth disorders like endometriosis and adenomyosis.

However, it would probably be at least 10 years before applications would be used in the clinic, she said.

The next stages of the research will include testing tissue-engineering applications in animals before they are used in humans.

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