

Why immune cells count in early pregnancy

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Photo by Bianca de Blok.

(PhysOrg.com) -- A University of Adelaide researcher has been named the 2009 Young Investigator Award winner for shedding new light on why some women are infertile, and why some pregnancies end in miscarriage.

PhD student Alison Care's research has examined the role of a type of immune cells known as macrophages ([white blood cells](#)) within the [ovary](#), which are found in abundance around developing eggs and in hormone-producing structures within the ovary.

Her research, conducted in mice, shows that when these cells are depleted there is a significant reduction in the amount of progesterone

the ovary produces. Progesterone is a hormone produced by the ovary which is essential for the maintenance of early [pregnancy](#).

"We know that the ovary requires a vascular network in order to deliver the high levels of progesterone the body requires to maintain early pregnancy. The formation of this network occurs very quickly following ovulation, and macrophages may be involved in establishing that blood supply," Ms Care says.

"It appears that the ovary has its own specialist pathway to achieve this, and that macrophages have an essential role in building the blood supply that we hadn't previously appreciated.

"This research identifies [immune system cells](#) as critical determinants of normal ovarian activity and the maintenance of early pregnancy. This might be a key to helping prevent [early pregnancy](#) loss, such as recurrent miscarriage."

Ms Care says a number of factors - such as smoking, obesity, poor nutrition and stress - could all alter the way macrophages behave and may provide reasons for [infertility](#) or miscarriage in some women.

Ms Care won the Young Investigator Award after presenting her research to a general audience and media panel at the final event, held last night at the Royal Institution of Australia. She was one of three finalists.

As the winner of the Award, Ms Care receives The Hon Carolyn Pickles Award of \$10,000. Prizes of \$3,000 each were awarded to the two runners up, Kathryn Gebhardt and Roger Yazbek.

Alison Care is a PhD student in the University of Adelaide's Discipline of Obstetrics and Gynaecology.

Provided by University of Adelaide ([news](#) : [web](#))

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