

Rediscovering the Rete Ovarii: The "Antennae" of the Ovary

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Relevance Women's health and the ovaries Subfertility affects up to 1 in 6 individuals In 50% of women who experience subfertility, the cause is never determined_{1.2}. Subfertility can originate from the

ovaries. The ovaries are small glands that store and release oocytes.

Aside from fertility, the ovaries are important for overall health. They are the body's source for sex hormones, like estrogen and progesterone.

What is the rete ovarii?

The **rete ovarii (RO)** is an appendage of the ovary. Several studies have found that it may be important for ovary development and ovarian health_{3,4,5,6}.

3-month-old mouse



Microscopy image of the rete ovarii (shown in red) next to the ovary (shown in cyan) in an adult mouse, our model organism.

including the rete ovarii (highlighted in the pink square) from a medical anatomical textbook published in the

Diagram of the human female reproductive system

Morgagni Ovary Corpus luteum

Initially discovered in 1870, the rete ovarii was dismissed for decades as a vestigial, or useless, structure - similarly to how we think of the appendix.

Could the rete ovarii be important for fertility and female reproductive health?



Reproductive-age female mice will undergo a surgery to remove the rete ovarii or a sham surgery. After recovering from surgery, the mice will be tracked for fertility.



into what genes are being expressed. Using this information, we can develop testable hypotheses about the function of the rete ovarii.

Hormone levels

There are still a lot of mysteries surrounding the ovary and female reproductive health. With more research, we can improve our understanding and improve overall human health.

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References: 1. World Health Organization, 2023. 2. Farquar, et al., 2019. 3 McKey, et al. 2022. 4. Byskov & Moore, 1973. 5. Lee, et al. 2011 6. Wenzel & Odend'hal, 1985 7. Modified from Walter, et al., 1949.





Findings

What have we learned so far?



We have found that progesterone receptors (seen in cyan) are expressed in the rete ovarii in the adult mouse. Progesterone is important for female reproductive health.

What does this mean for human health?

The rete ovarii may be important for sensing and responding to hormones important for female health, like progesterone.

Successful completion of this research may unveil disruptions of the rete ovarii as a source of subfertility or other ovarian diseases

Funding and References



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