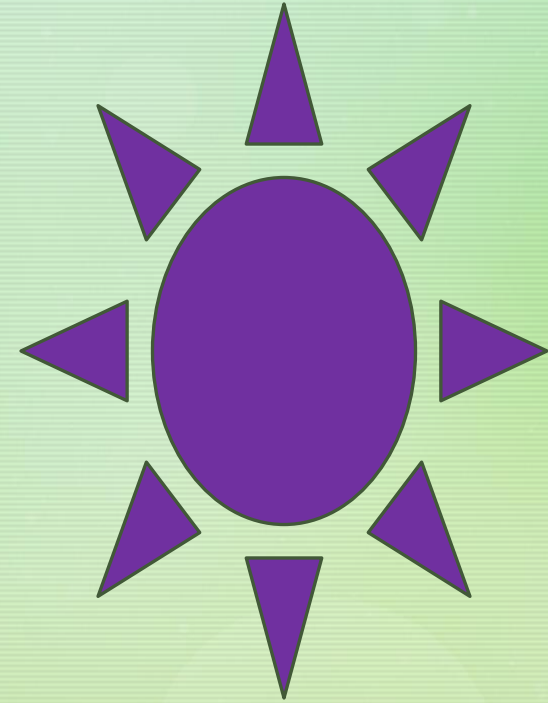


# OO GENESIS




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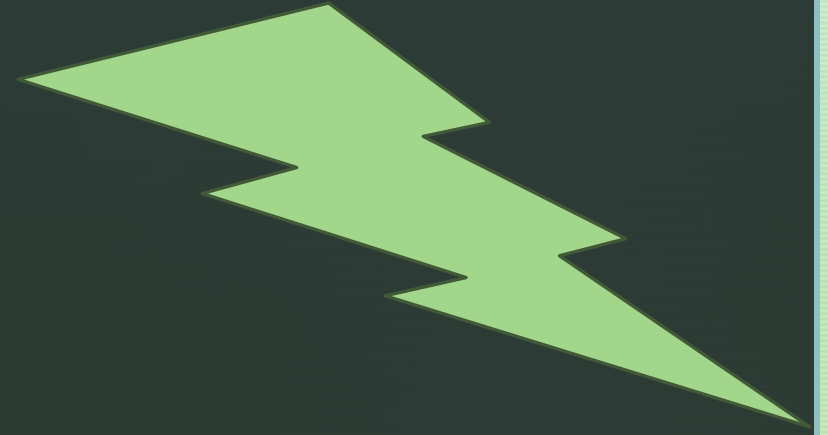


# Definition

- **Oogenesis is the process of formation of female gametes. This process begins inside the fetus before birth.**
  - **Oogenesis starts with a germ cell called oogonium and undergoes mitosis to increase in number**
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## Stages

- Pre-natal
- Antral
- Pre-ovulatory





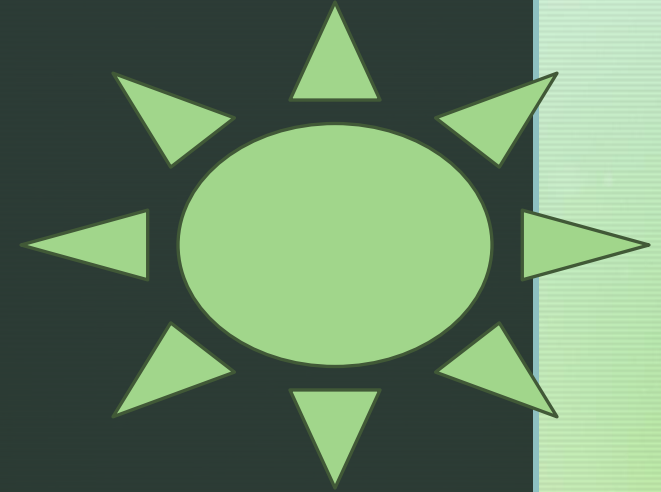
## Pre-natal stage

**The primary oocyte grows while being arrested in meiosis-I.**

**The follicular cells proliferate and form a stratified cuboidal epithelium. Such cells are known as granulosa cells.**

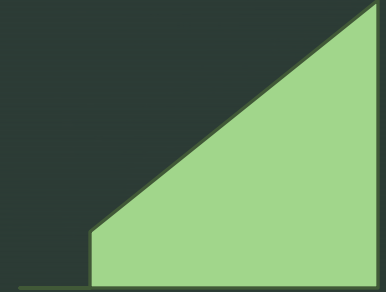
**These cells secrete glycoproteins to form zona pellucida around the primary oocyte.**

## Antral Stage



- The fluid-filled area, present between granulosa cells, combines to form a central fluid-filled space called the antrum.
- These are known as secondary follicles
- In every month cycle, these secondary follicles develop under the influence of follicle-stimulating hormone and luteinizing hormone.

## Pre-Ovulatory Stage



- This stage is induced by LH surge, and meiosis-I completes here. Two haploid cells of unequal sizes are formed within the follicle.
- One of the daughter cells that receive less cytoplasm forms a polar body. This cell does not participate in ovum formation. The other daughter cell is known as the secondary oocyte.
- The two daughter cells undergo meiosis-II. The polar body replicates to form two polar bodies, while the secondary oocyte arrests in the metaphase stage of meiosis-II.






## Ovulation

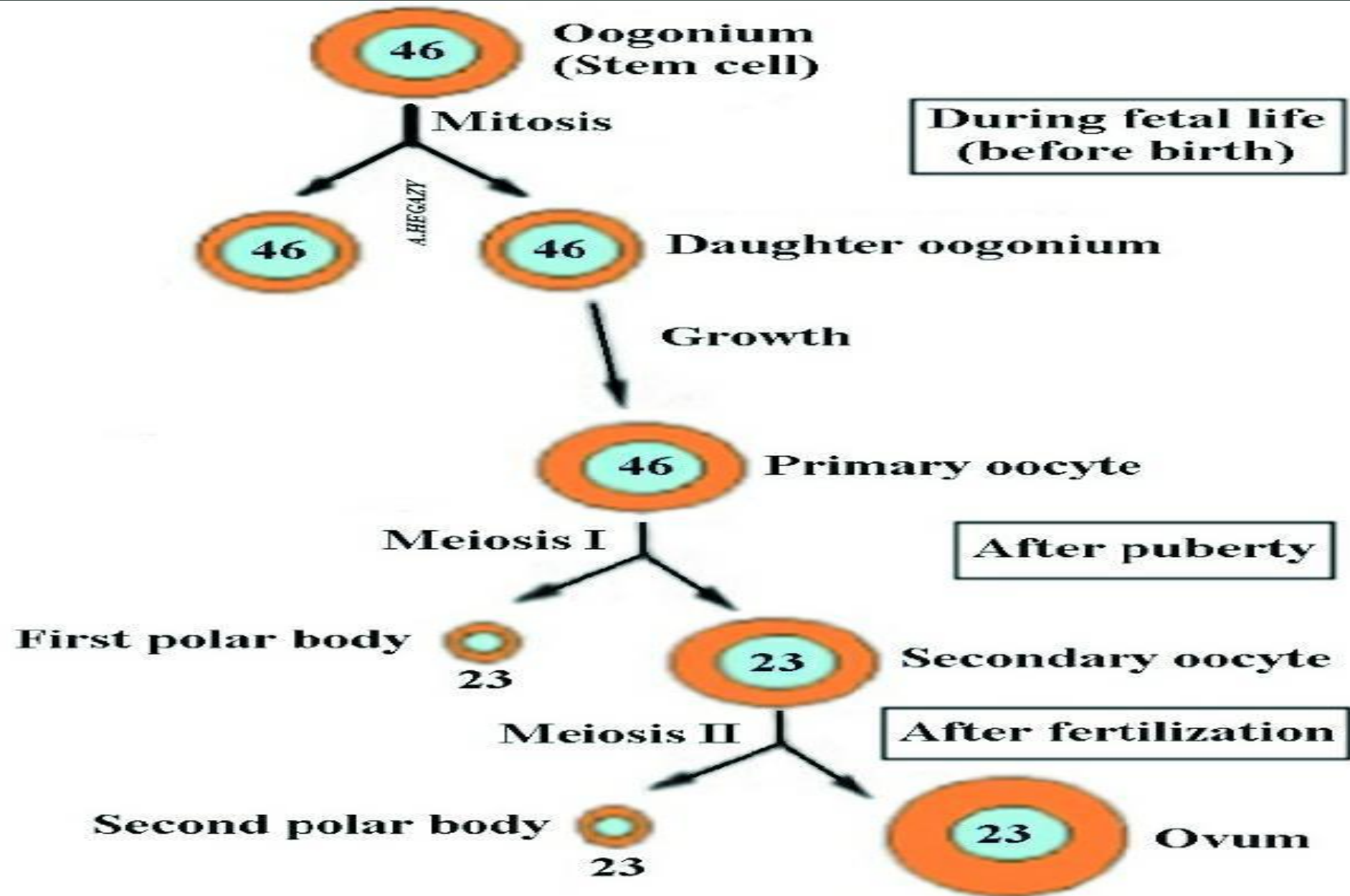
- **When a follicle attains maturity, the primary oocyte finishes its primary meiotic division and becomes secondary oocyte. Soon after, the follicle breaks and secondary oocyte is liberated in the fallopian tube even when the second meiotic division has not happened. This release of a secondary oocyte from ovaries is known as ovulation.**

# Fertilization



- Meiosis-II is completed on fertilization. This gives off a third polar body.
  - If the fertilization does not occur, the oocyte degenerates 24 hours after ovulation while remaining arrested in meiosis-II cell division.
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**Thank You**