Reproduction and Embryology course

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Course on Reproduction and Embryology for medical studies.

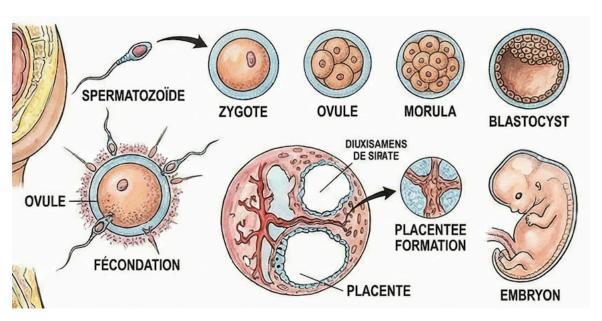


Figure 1: Generated by Google Nano Banana Pro

1 Gametes, gametogenesis and spermatogenesis

Essential Concepts

- Gametes are haploid reproductive cells with 23 chromosomes.
- · Mature gametes only form at puberty.
- They originate from **germ cells** that appear in the **3rd week of development** / **21st day**
- Meiosis consists of 2 successive specific cell divisions
 - Meiosis I:
 - * consists of the segregation of homologous chromosomes into 2 daughter cells
 - Meiosis II:
 - * consists of the **segregation of sister chromatids** in each **daughter cell**
 - Genetic recombination (crossing-over) occurs during the first meiotic division
 - Non-disjunction anomalies lead to monosomies and trisomies, including sex chromosome syndromes (that should be known).
 - Meiosis is fixed and continuous in males, but discontinuous and incomplete in females.

• Spermatogenesis:

- Spermatogenesis can only occur correctly if the testicles descend into the scrotal position early during fetal life (between the 7th and 9th month).
- The **testicle** plays both an **endocrine** and **exocrine** role.
- Spermatogenesis occurs in the seminiferous tubules.
- Sertoli cells play a major role in spermatogenesis. Know the characteristics of Sertoli cells and their role.
- The **seminiferous tubules** are divided into **two compartments** in which different **germ cells** are found.
- Between the seminiferous tubules is located the interstitial tissue where Leydig cells are found, which produce testosterone.
- The **blood-testis barrier** (barrière homéotesticulaire) (know its constitution) plays an **immune role** (know the different roles).