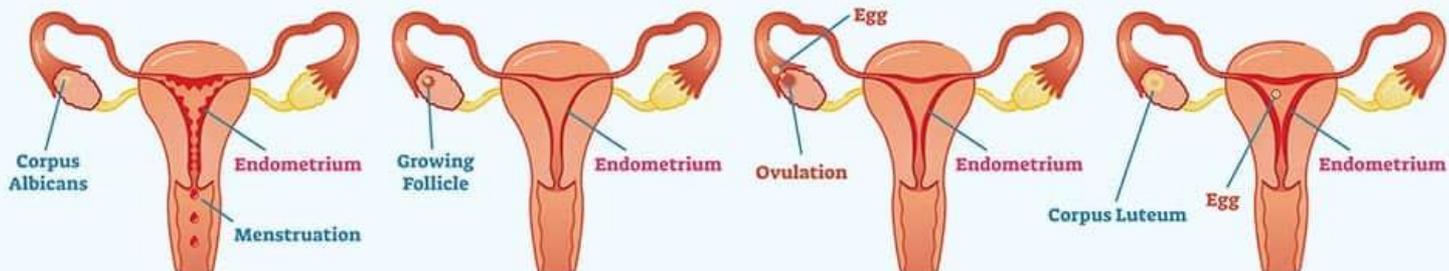
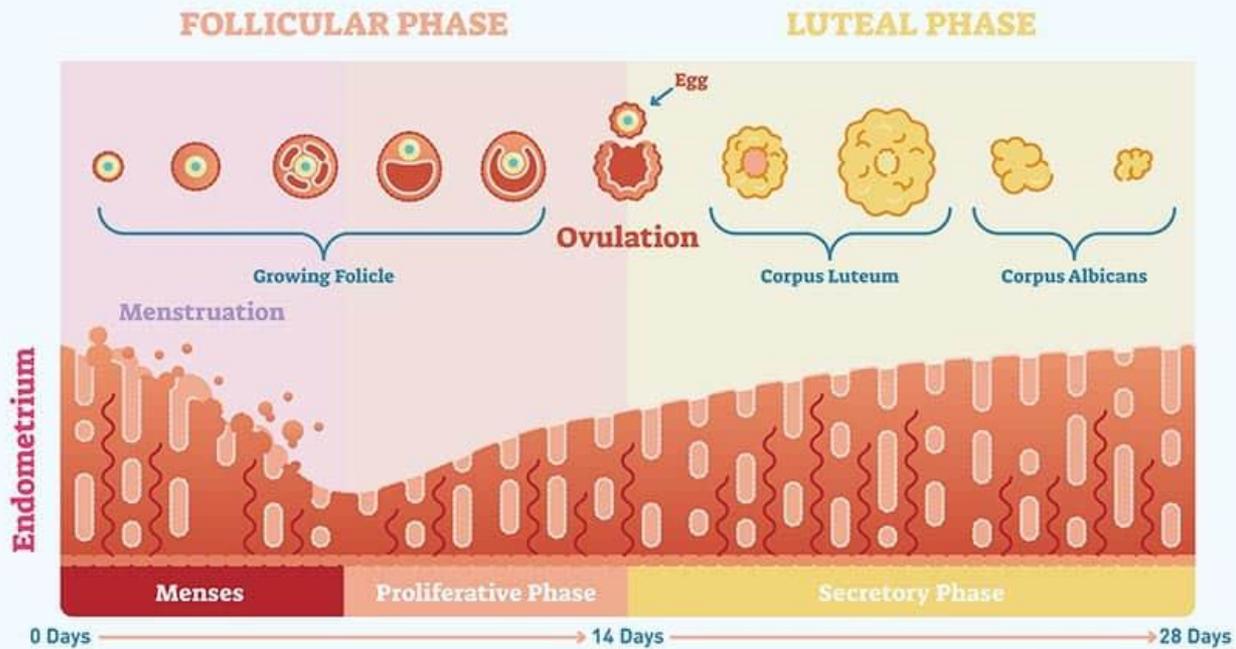




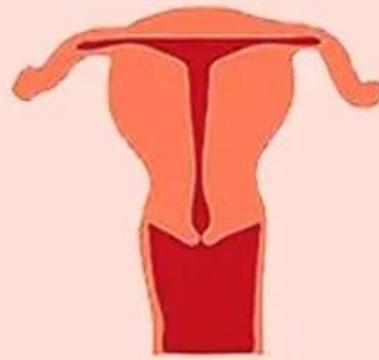


# FEMALE SEXUAL CYCLE





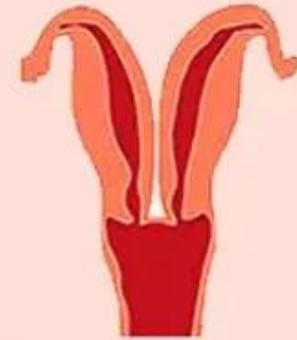
Normal Uterus



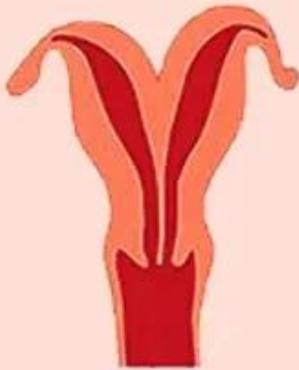
Class I: Uterine Hypoplasia and/or agenesis



Class II: Unicornuate Uterus



Class III: Uterus Didelphys



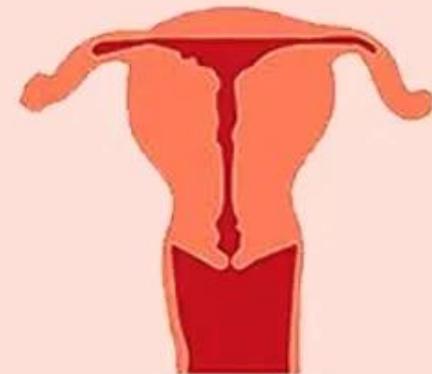
Class IV: Bicornuate Uterus



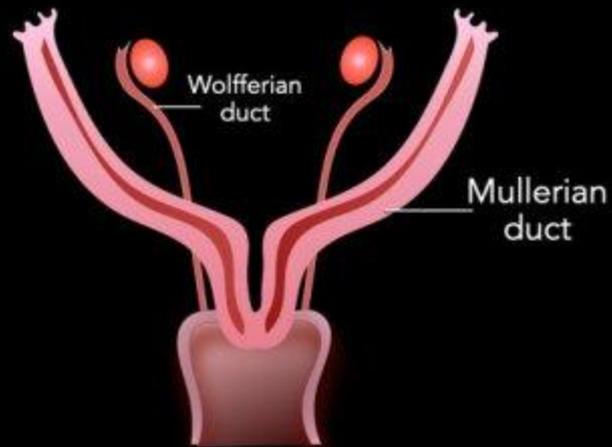
Class V: Septate Uterus



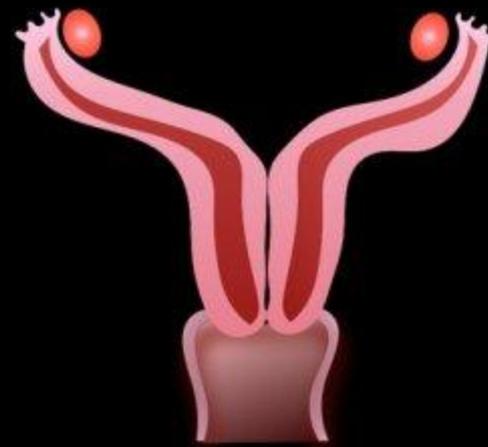
Class VI: Arcuate Uterus



Class VII: Diethylstilbestrol (DES) Drug Related



Formation



Fusion

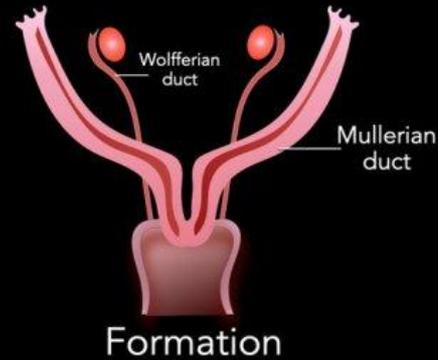


Resorption septum



# Embryology

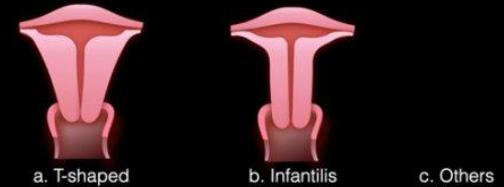
- Develops from a pair of **Müllerian ducts** that
  - Form the fallopian tubes, uterus, cervix and the upper two-thirds of the vagina.
- The ovaries and lower third of the vagina
  - have a different embryological origin (genital ridge and urogenital sinus, respectively).
- **First**
  - formation of the paired Müllerian ducts, followed by fusion of the two ducts into a single uterus, cervix and upper vagina.
- **Finally**
  - resorption of the septum will lead to a normal cavum.
- Failure of formation of the Müllerian ducts can result in an aplastic or hemi-uterus.
- Failure or incomplete fusion of the ducts can result in a bicorporeal uterus.
- Non or incomplete septal resorption results in a septate uterus.



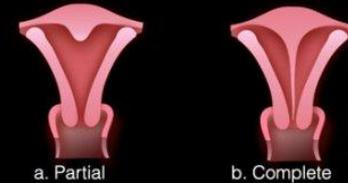
# Classification of Müllerian duct anomalies

- **Class U0** - normal uterus
- **Class U1** Dysmorphic shaped uterus either as a T-shaped cavum due to abnormally thick uterine walls or as a T-shaped cavum due to an abnormal outer contour
- **Class U2** is the result of failure of resorption of the septum. There is an internal indentation. The outer contour of the uterus is normal and this differentiates the septate uterus from the bicorporeal uterus.
- **Class U3** is a bicorporeal uterus with a left and right corpus as a result of failure of fusion. The outer contour is abnormal with an external cleft of the fundus. A bicorporeal septate uterus has both an external cleft and a septum.
- **Class U4** is a hemi-uterus as a result of unilateral failure of formation of the Müllerian duct.
- **Class U5** is an aplastic uterus as a result of bilateral failure of formation of the Müllerian ducts.
- **Class U6** are unclassified cases

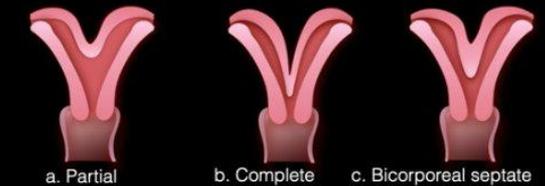
**Class U1**  
Dysmorphic Uterus



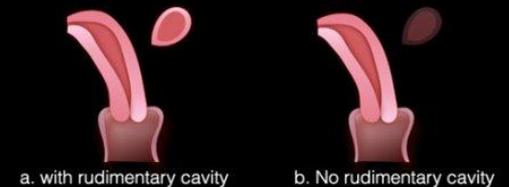
**Class U2**  
Septate Uterus



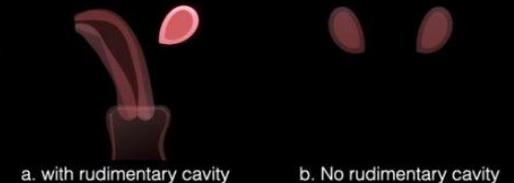
**Class U3**  
Bicorporeal Uterus



**Class U4**  
Hemi Uterus



**Class U5**  
Aplastic Uterus



# Associated anomalies

- Close relation between the paramesonephric ducts of Müller and the mesonephric ducts of Wolff.
- Mesonephric ducts of Wolff
  - play an important role in development of the urinary tract and the kidneys. Therefore abnormalities of the urinary tract often coexist with MDAs, in 30-50% of cases. Usually urinary tract anomalies are unilateral and ipsilateral to the malformed Müllerian duct derivative.
- The incidence of vertebral anomalies is higher in patients with an MDA and reported in up to 29% of cases

## Associated anomalies in MDA's

### Urinary tract anomalies

- 30-50%
- Renal agenesis most common
- Multicystic dysplastic kidney
- Duplex collecting system
- Horseshoe kidney
- Crossed fused ectopia

### Vertebral anomalies

- In up to 29%
- Wedge shaped or fused vertebral bodies
- Spina bifida
- Klippel-feil