

وسهلا



أهلا

يُمنع أخذ السلايدات بدون
إذن المحرر واي اجراء
يخالف ذلك يقع تحت طائلة
المسؤولية القانونية
جميع المعلومات للاستخدام
التعليمي فقط

الأستاذ الدكتور يوسف حسين

كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

Prof. Dr. Youssef Hussein Anatomy - YouTube

الواتس (أي استفسار)
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Functions of placenta

• Functions of the placenta

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(I) Gases Exchange (respiration)

- The fetus takes **oxygen** from the maternal blood cross the placental barrier.
- The **carbon dioxide** passes to the maternal blood cross the placental barrier.

(II) **Nutrition:** The fetus takes **nutrients and electrolytes** from maternal blood cross the placental barrier (such as carbohydrate, fat, protein, amino acid, vitamins, minerals)

(III) **Excretion: Waste products** resulted from the metabolism like urea and uric acid pass from the fetal blood to the maternal blood cross the placental barrier.

(IV) Protection:

a- It allows the passage of antibodies (**IgG**) from the maternal blood to the fetal blood (**passive immunity**).

b- It prevents the passage of **most of the microorganisms and drugs** from the maternal blood to the fetal blood.

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- **However**, some organisms like **poliomyelitis, AIDS, syphilis and measles**, also few drugs cross the barrier produce congenital anomalies of the fetus.

(V) Endocrine function:

a- Human chorionic gonadotrophic hormone (HCGH)

- 1- it is used as an **early indicator of pregnancy**.
- 2- It is important for maintaining growth of the **corpus luteum** to secrete progesterone till the 4th month of the pregnancy.
- 3- It helps development and descends of the **gonads** (testis or ovary).

b- Human Chorionic thyrotrophin hormone

c- Human Chorionic corticotrophin hormone

d- **Human Chorionic somatomammotropin hormone:** regulates carbohydrate, lipid and protein metabolism of the mother to produce glucose, fatty acid and protein for nutrition of the fetus. Increase of this hormone leads to diabetic pregnancy

(V) Endocrine function:

e- Estrogen and progesterone hormones:

1- Help maintenance of the pregnancy by:

a- Support of the endometrium.

b- Maintains dilations of the spiral arteries of the endometrium.

2- Inhibit release of FSH and LH (inhibition of ovulation during pregnancy).

3- They stimulate the development of the breast.

4- At the end of the pregnancy,

a- Estrogen hormone **relaxes the pelvic ligaments** and increases smooth muscle contractility of the uterus.

b- Estrogen hormone makes **uterus more sensitive to oxytocin** hormone.

c- Drops off the progesterone hormone stimulates the beginning of the uterine contractions.

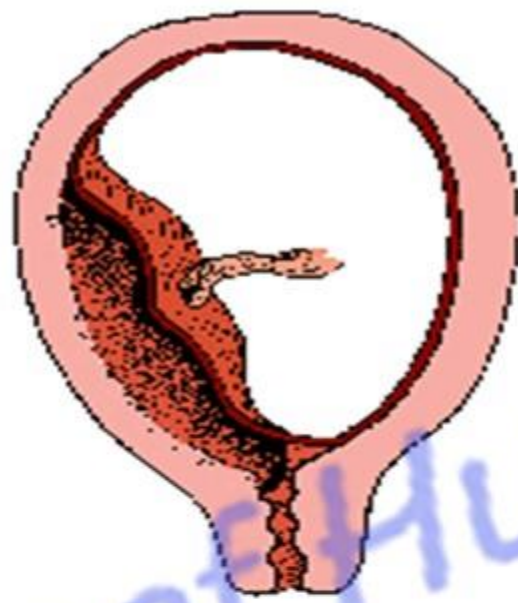


Congenital anomalies of placenta

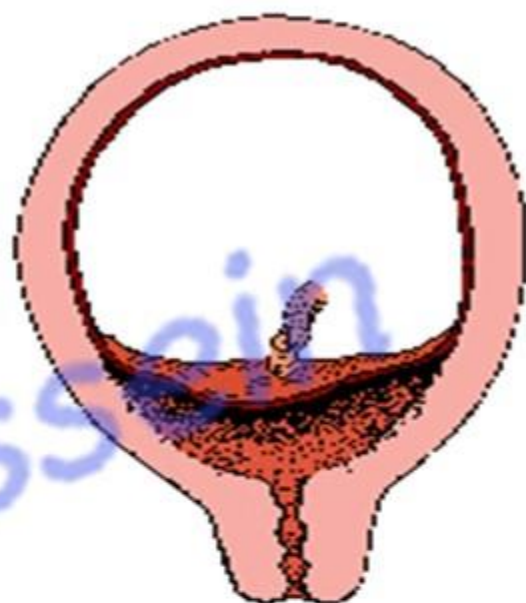
Placenta praevia



Parietalis



Marginalis



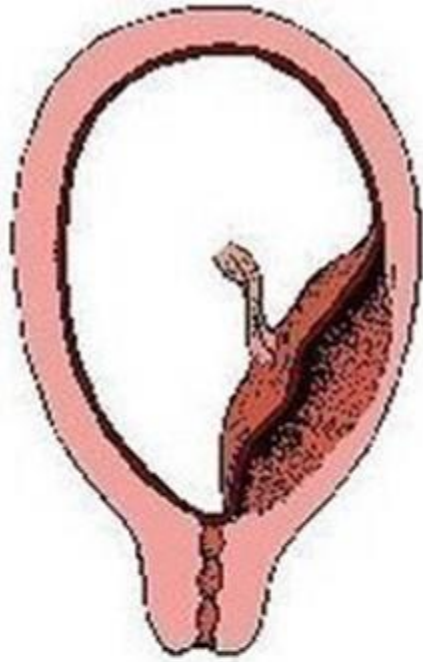
Centralis

❖ Anomalies in the position (**Placenta praevia**)

** The placenta is attached to the lower half of the uterus due to delayed rupture of zona pellucida (low level of implantation of the blastocyst). It causes severe antepartum hemorrhage.

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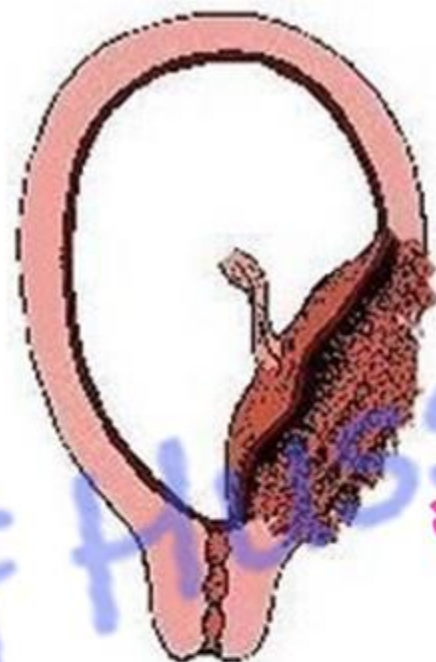
- 1- Placenta praevia parietalis:** lies in the **lower** segment of the uterus.
- 2- Placenta praevia marginalis:** reaches **margin** of the internal Os of the cervix.
- 3- Placenta praevia centralis:** **completely** covers the internal Os of the cervix.



Accreta



Increta



Percreta

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❖ Anomalies Of attachment of the placenta to the uterine wall

Delayed formation of cytotrophoblastic shell

- 1- Placenta accreta:** The placenta is too deep in the endometrium but does not penetrate the myometrium
- 2- Placenta increta:** The placenta penetrates the myometrium
- 3- Placenta percreta:** The placenta penetrates the uterine wall and attaches to the another organ as urinary bladder



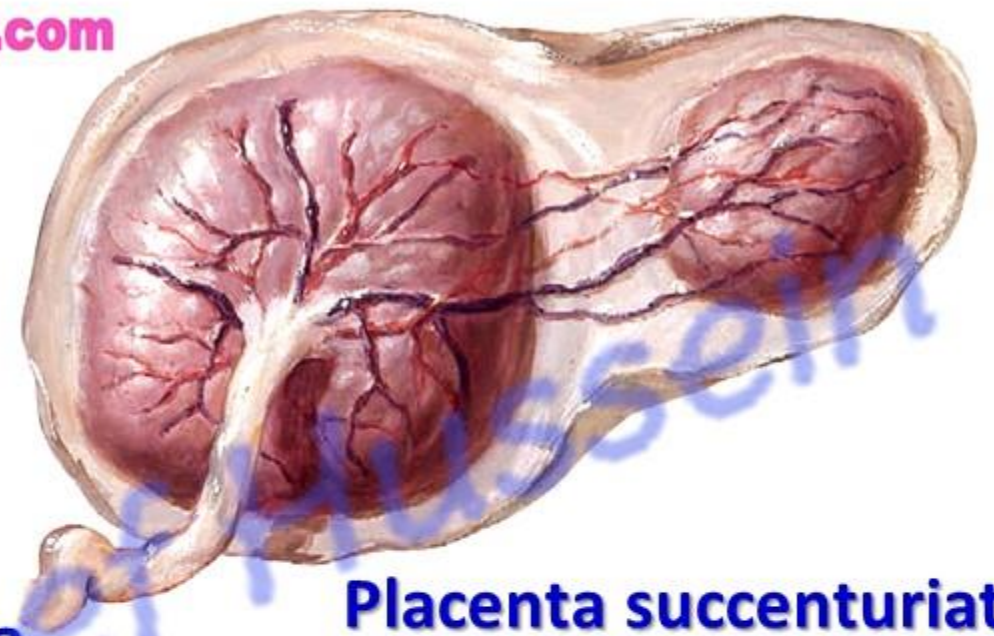
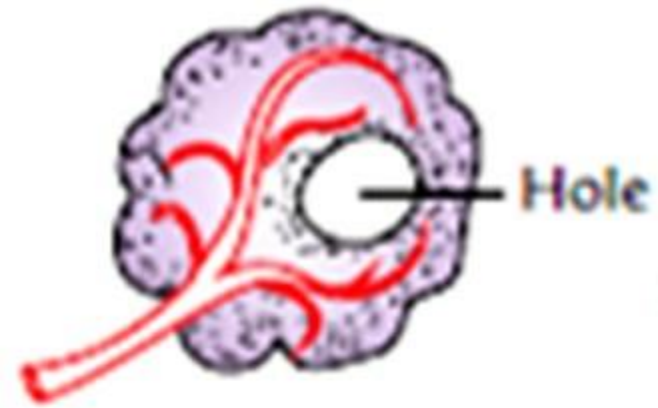
Marginal (Battledore) placenta



Velamentous placenta

❖ **Abnormal attachment of the umbilical cord:**

- 1- Battledore placenta**, it is attached to the margins of the placenta.
- 2- Velamentous placenta**, it is attached to the amnion away from placenta and blood vessels are ramify before reaching the placenta



Fenestrated placenta

Circumvallate placenta

Placenta succenturiate

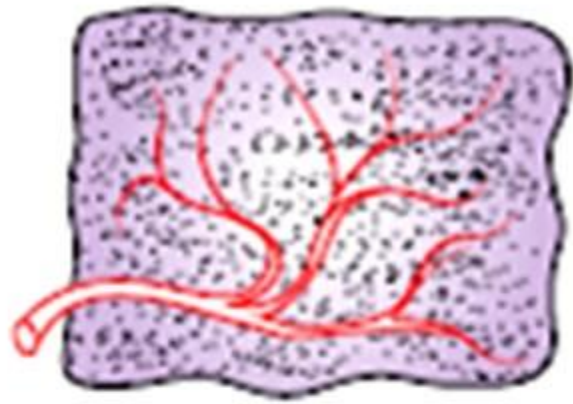
❖ **Abnormalities in the shape of the placenta**

❖ **Fenestrated placenta:** small window in the placenta.

❖ **Circumvallate placenta:** it has a central depression on its **fetal** surface and the margin is elevated.

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❖ **Placenta succenturiate:** a small part of the placenta is separated from the main part, but remains connected through blood vessels and placental membranes.



Membranous



Bilobed



Multilobular

❖ **Abnormalities in the shape of the placenta**

- ❖ **Membranous (Diffuse) placenta:** it is thin and lines the greater part of the cavity of the uterus. It occurs when chorionic villi persist all around the blastocyst
- ❖ **Bilobed (bidiscoidal) placenta:** The placenta consists of two lobes
- ❖ **Multilobular placenta:** The placenta consists of more than two lobes

❖ **Abnormalities in size and weight**

1. Very small placenta (under weight).
2. Very large placenta (over weight).

❖ **Congenital tumors of the placenta**

- 1- **Benign tumor:** vesicular mole.
- 2- **Malignant tumor:** Chorion epithelioma.

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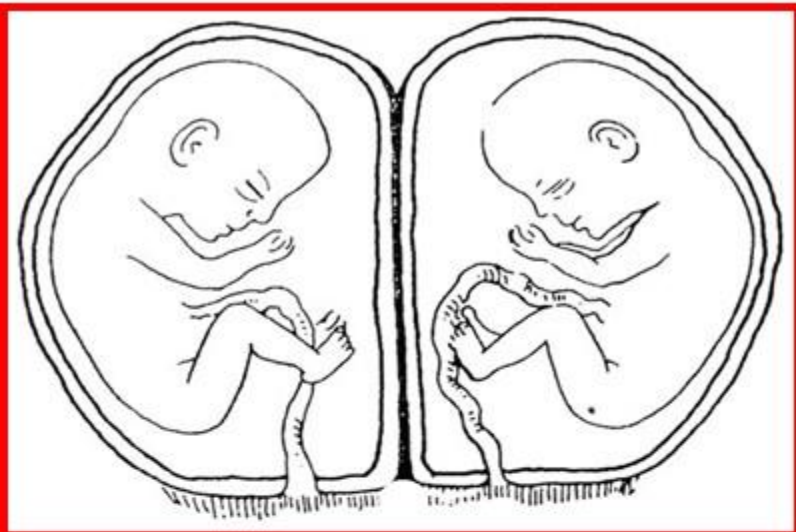


Twins

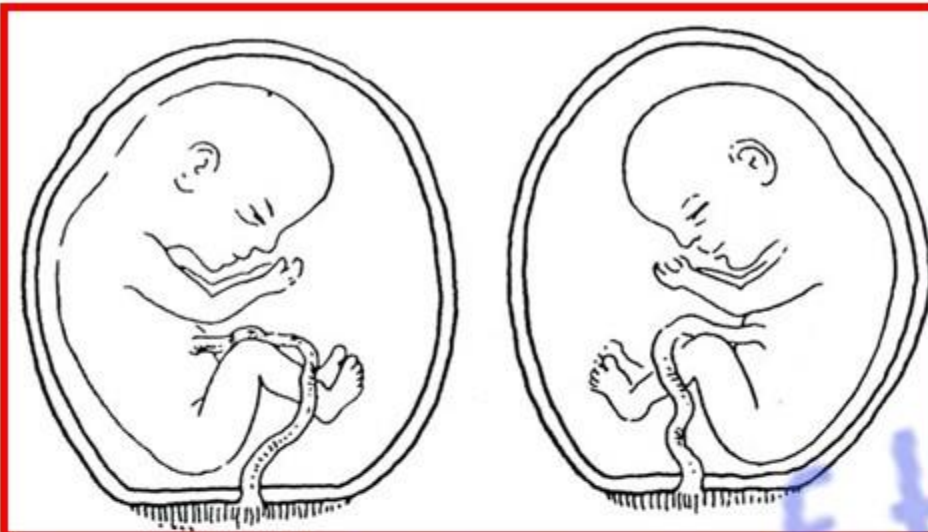
- **Twins**

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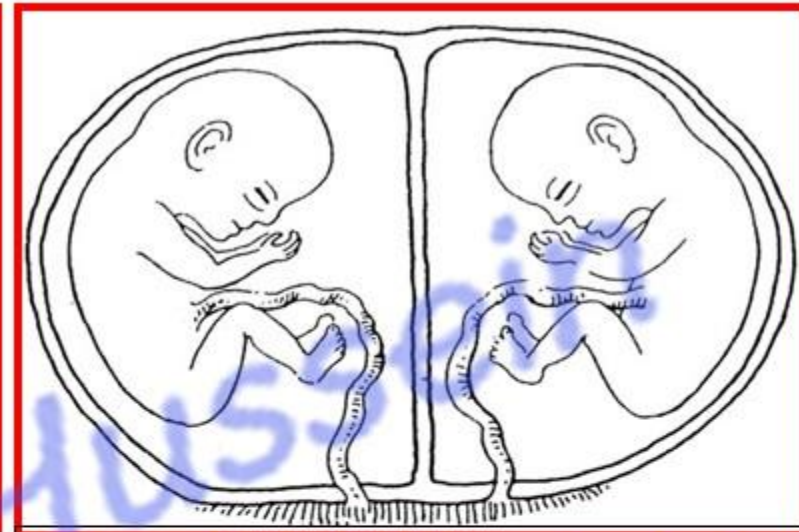
	Monozygotic (Identical)	Dizygotic (fraternal)
	One ovum + one sperm give one zygote. Zygote divided into 2 typical embryos.	2 ova + 2 sperms give 2 zygotes.
1- Sex	The same	may the same or not
2- Chromosomal pattern	Identical	Not identical
3- General features	highly similar	different
4- Amniotic cavity	2 cavities (one for each embryo)	two
5- Umbilical cord	2 cords (one for each embryo)	two
6- Placenta	one common placenta for the two embryos	Two separate placentas.
7- Chorionic vesicle	one vesicle	Two separate vesicles.



Diamniotic / Dichorionic fused



Diamniotic / Dichorionic separate

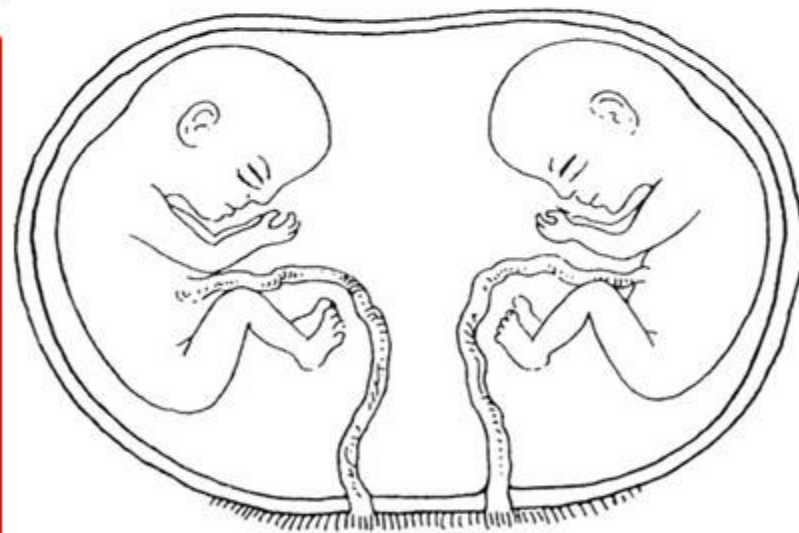


Diamniotic / Monochorionic

❖ **Monozygotic (Identical)**

- 1. Split within 3-4 days after fertilization:** the twins are **diamniotic / dichorionic**. two amniotic cavities & two placentas
- 2. Split between 3-8 days after fertilization:** **diamniotic / monochorionic**. two amniotic cavities & one placenta.
- 3. Split between 8-13 days after fertilization:** they are in one sac **monoamniotic / monochorionic** one amniotic cavity & one placenta (dangerous because cords can become entangled).

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Monoamniotic / Monochorionic



**** Conjoined twins (Siamese twins)**

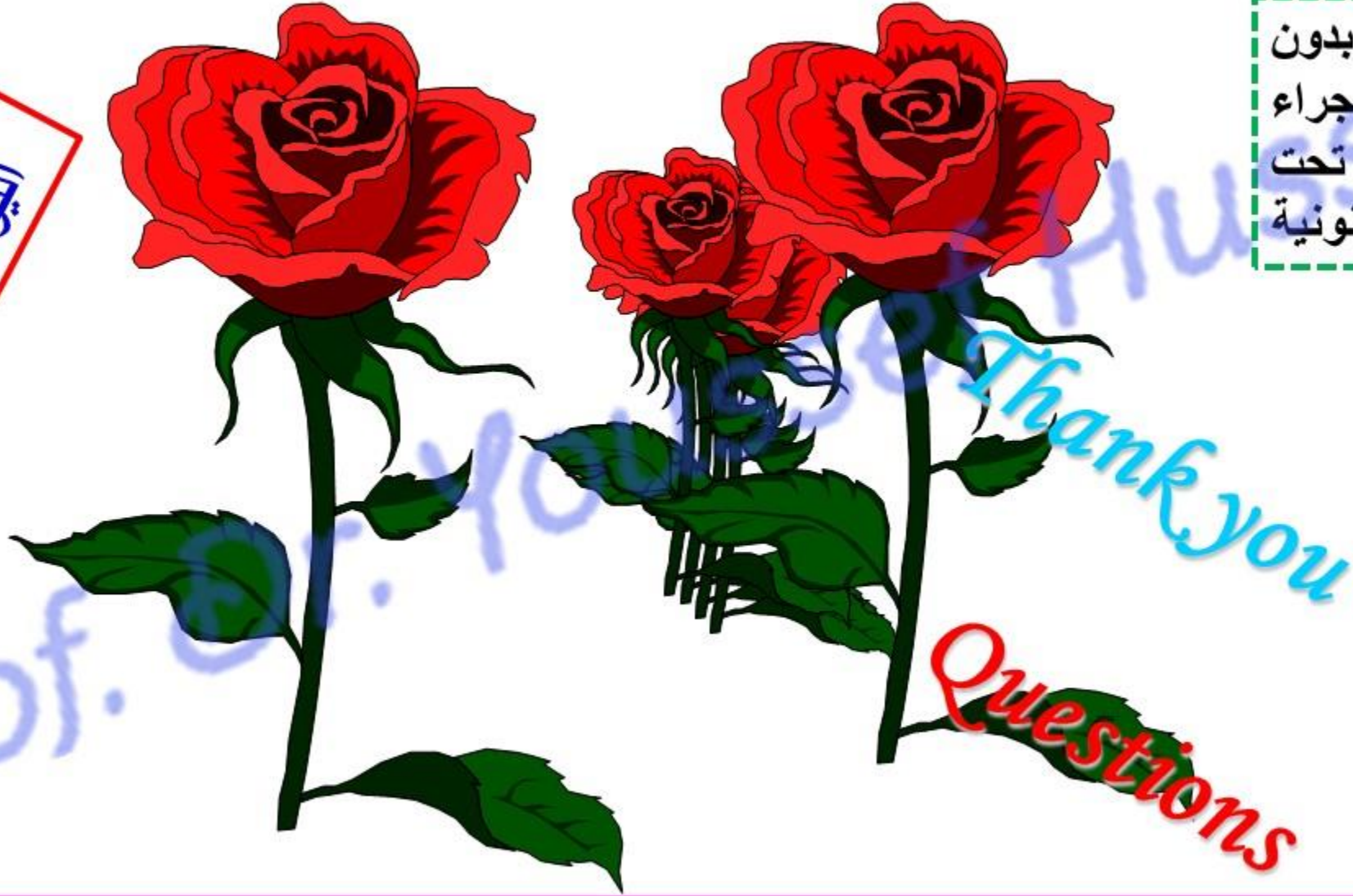
- **Identical twins (monozygotic twins)** splits late and only partially, instead of forming two separate individuals.
- **Craniopagus:** twins fused at their heads.
- **Pygopagus:** twins fused at their gluteal regions.
- **Thoracopagus:** twins fused at their thoracic wall.
- **Omphalopagus:** twins fused at their abdominal wall.
- **Conjoined Twins** fused at their skin.



https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ

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اليوتيوب د. يوسف حسين



Questions

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