

وسهلا

أهلا



## الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

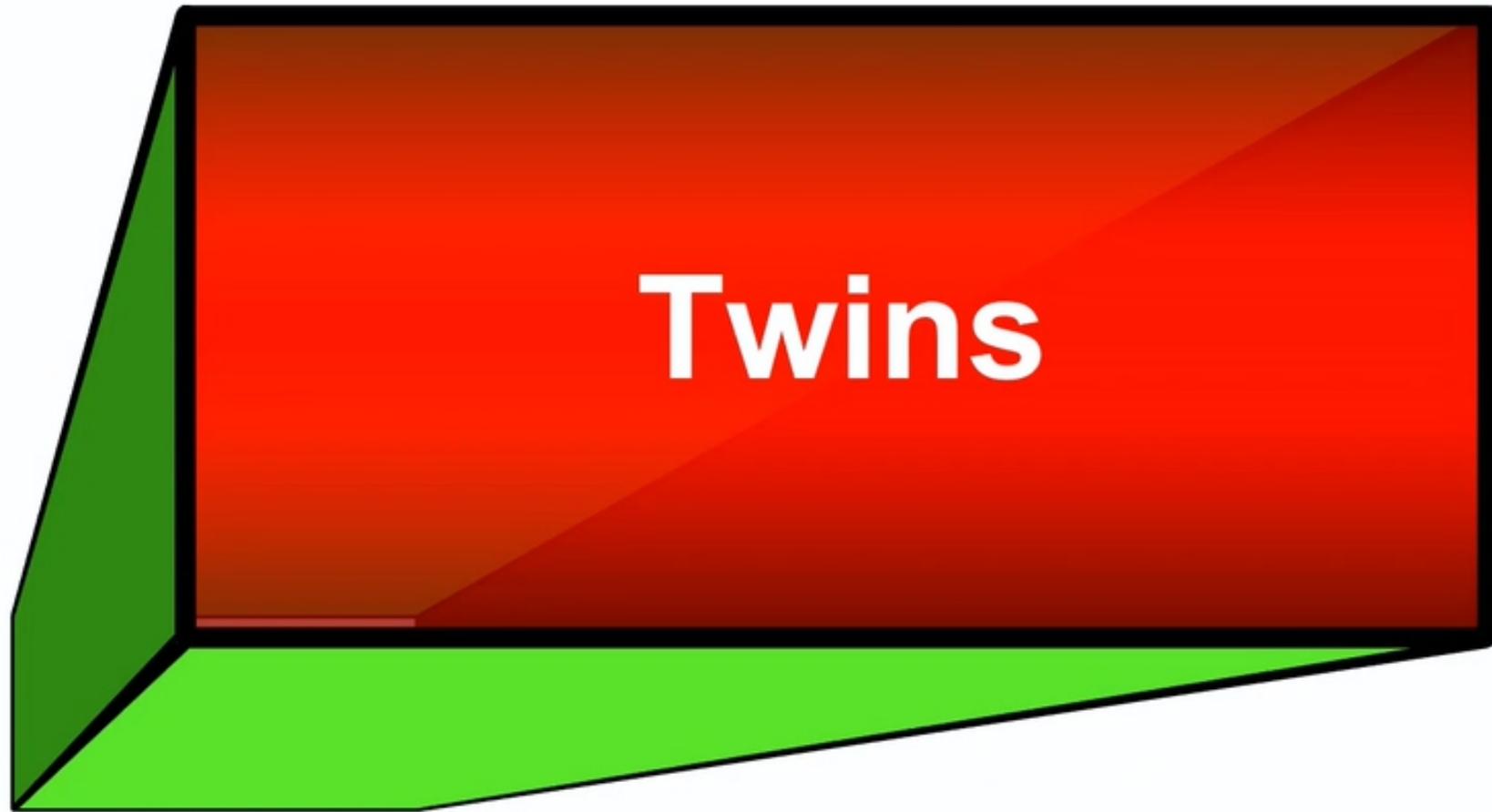
رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

مساعد العميد لشؤون الطلاب والامتحانات - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

**Dr. Youssef Hussein Anatomy** اليوتيوب

جروب الفيس د. يوسف حسين (استاذ التشريح)

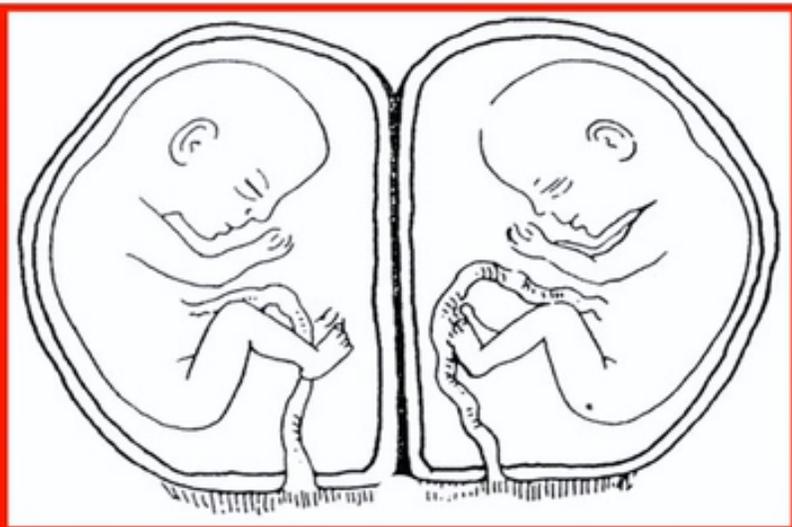


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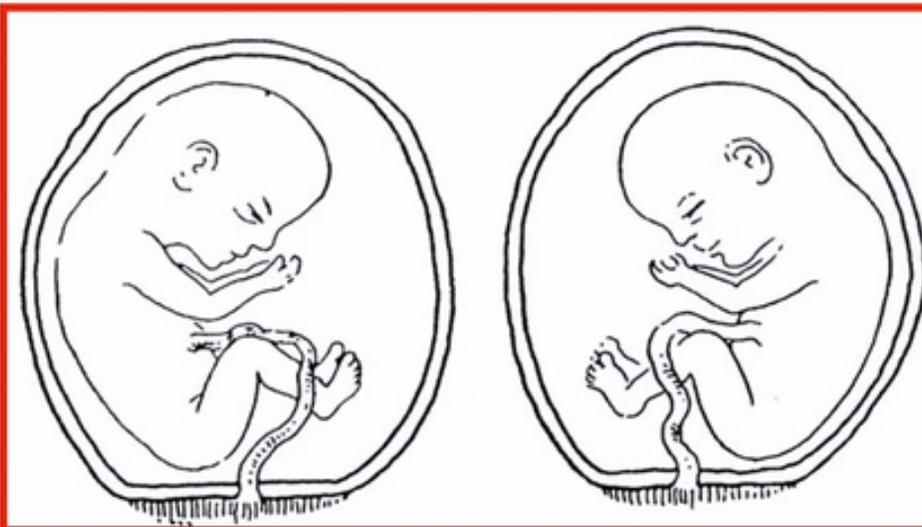
- **Twins**

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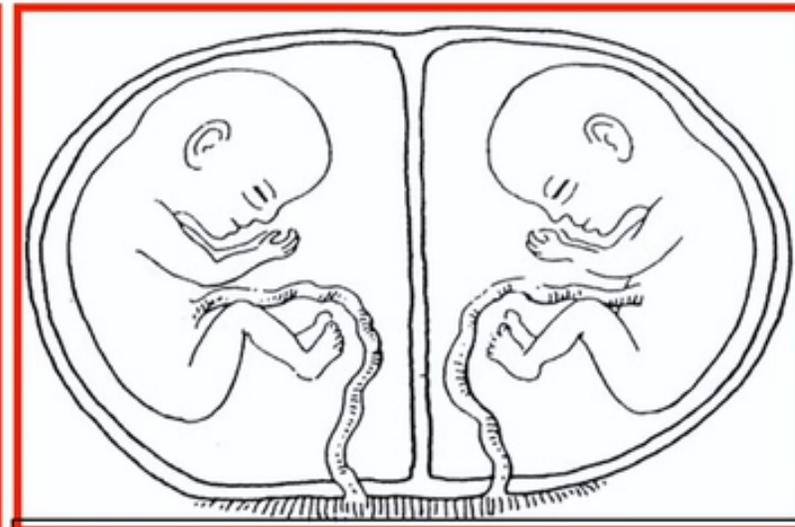
	<b>Monozygotic (Identical)</b>	<b>Dizygotic (fraternal)</b>
	One ovum + one sperm give one zygote. Zygote divided into 2 typical embryos.	2 ova + 2 sperms give 2 zygotes.
<b>1- Sex</b>	The same	may the same or not
<b>2- Chromosomal pattern</b>	Identical	Not identical
<b>3- General features</b>	highly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



**Diamniotic / Dichorionic fused**



**Diamniotic / Dichorionic separate**

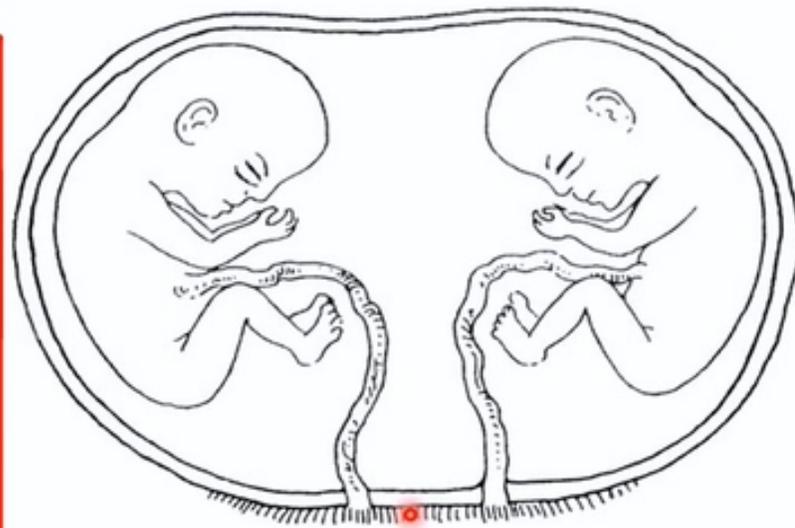


**Diamniotic / Monochorionic**

### ❖ **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**



## \*\* Conjoint twins

- **Split after 13 days after fertilization:** they are all in the same sacs and **conjoined twins** can happen.
- **Cranio-pagus:** twins fused at their heads.
- **Pygo-pagus:** twins fused at their gluteal regions.
- **Thoraco-pagus:** twins fused at their thoracic wall.
- **Siamese twins:** twins are connected by skin bridge.



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