

Office of the Vice President for Research and Innovation
Mid-Atlantic Twin Registry

< Zygosity information

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Zygosity facts



Most people know that there are identical twins and fraternal twins, but do they really know the differences between the two? Do you know that there could be a third type of twin? Identical or monozygotic twins are formed when a single fertilized egg splits into two eggs. Fraternal or dizygotic twins form when two eggs are fertilized by two separate sperm. The

third type half-identical, or polar body twins, occur when a single unfertilized egg splits before fertilization and is then fertilized by separate sperm.

Here are some facts about identical, fraternal and half-identical twins:

Identical twins

- Only one-third of all twins are identical.
- Contrary to popular belief, identical twins do not “run in the family.” No hereditary influence for identical twinning has yet been identified.

- May have one shared placenta, two separate placentas or two placentas fused into one.
- They share 100% of their genetic markers.
- Are always the same sex.
- Have the same blood type.
- Not caused by fertility treatments or maternal age.
- Can result in conjoined twins or mirror image twins.

Mirror image, identical twins

- Only about 25% of identical twins and 1% of the people in the entire world are mirror image twins.
- Mirror-image twins occur when a single egg divides later in development than typical identical twins - although the egg is still very small when it splits it already has a right side and left side.
- Mirror-image twins even as babies may display opposite behaviors/developments.
- Many times their first teeth come in oppositely and their fingerprints are mirror images as well.
- In rare cases one twin has internal organs on the usual side and the other twin has them on the opposite side.

Fraternal twins

- Can be hereditary on the mother's side. The tendency to hyper-ovulate, or release more than one egg in a cycle is a genetic trait that can be passed from mother to daughter.
- May have two separate placentas or two placentas fused into one.
- Share about 50% of their genetic markers, or the same as singleton siblings.
- May be same sex or male/female.
- May or may not have the same blood type.
- Can be attributed to fertility treatments or advanced maternal age.

Half-identical twins

- It is not known what percentage of twins is half-identical.
- Might have two separate placentas or two placentas fused into one.
- Share about 75% of their genetic markers, more than fraternal but less than identical.
- May be same sex or male/female.
- May or may not have the same blood type.

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