



The Difference Between Identical and Fraternal Twins

Because fraternal, or dizygotic, twins are 2 separate fertilized eggs, they usually develop 2 separate amniotic sacs, placentas, and supporting structures. Identical, or monozygotic, twins may or may not share the same amniotic sac, depending on how early the single fertilized egg divides into 2.

If twins are a boy and a girl, clearly they are fraternal twins, as they do not have the same DNA. A boy has XY chromosomes and a girl has XX chromosomes. Girl-boy twins occur when one X egg is fertilized with an X sperm, and a Y sperm fertilizes the other X egg.

Sometimes health care professionals identify same-sex twins as fraternal or identical based on ultrasound findings or by examining the membranes at the time of delivery. The best way to determine if twins are identical or fraternal is by examining each child's DNA. Occasionally a family is told that their twins are fraternal based on placenta findings, when they are in fact identical. Other times, a family may see the minor differences in identical twins and declare the twins fraternal based on these differences in appearance. There are a few commercial laboratories that, for a fee, will send families DNA collection kits to determine if the twins are identical or fraternal. The families swab the insides of each child's cheek for a DNA sample and send the kit back to the laboratory to await results.

Identical twins have the same DNA; however, they may not look exactly identical to one another because of environmental factors such as womb position and life experiences after being born. Our family joke about one of our twin's stitches for a lacerated upper lip was that he wanted to distinguish himself from his identical twin brother! In addition to life's bumps, bruises, and differing hairstyles, a child's DNA is constantly adapting to that child's experiences. Different stretches of one's DNA can turn on or off in response to environmental surroundings—therefore, over time, a pair of identical twins' DNA becomes more and more distinctive. All twins, whether fraternal or identical, are truly 2 separate, unique individuals.

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