

Emerging research about twin types

As there is still a lot that the scientific community is learning about multiples, the following may also be of interest.

Boy/girl identical twins

Identical twins are almost always the same gender, but surprisingly there are a tiny number of boy-girl identical (monozygotic) twins. They result from an egg that contains an unusual mixture of sex chromosomes—not the usual XX for a girl, and XY for a boy. Occasionally, an egg contains three sex chromosomes, two X's and a Y. But if the egg divides to produce monozygotic twins, a chromosome may be lost in the process, leaving one embryo with a girl's XX combination, and her monozygotic twin as an XY boy.

This can also happen when the egg is fertilized with the male chromosome, making an XY egg, that splits into two, with one of the embryos dropping the Y, making her an XO girl, and resulting in Turner's Syndrome.

Identical twins start off as one egg that splits, but the two separate embryos don't always develop identically. More and more experts are beginning to refer to these twins as monozygotic twins instead of as identical twins. There are only a few historically documented cases of boy-girl identical twins, so it's not surprising most people have never heard of it.

Semi-Identical Twins

This type of twinning was identified by scientists in a report in the *Journal of Human Genetics* in 2007. Described as identical on the mother's side but sharing only half their father's genes, the rare twins developed when two sperm fertilized a single egg, forming a 'triploid', which then split.

The twins, born in 2003 or 2004 in the United States, are described as somewhere between identical and fraternal. One twin is a hermaphrodite being raised as a female,

with both testicular and ovarian structures, while the other is anatomically male.

Semi-identical twinning is distinguished from 'polar body twinning' because the egg was fertilized by two sperm before splitting. Semi-identical twins are also known as: 'sesquizygotic', a term postulated by biologist Michael Golubovsky.

Polar Body Twinning

A theorized third type of twinning occurs when an unfertilized ovum splits into two equal parts and is subsequently fertilized by two separate sperm. Polar body twins share about 75% of their genetic markers; less than identical twins, but more than fraternal twins.

Polar Body Twinning is distinguished from semi-identical twinning, in that the egg splits before fertilization. Although a case of semi-identical twinning has been confirmed, polar body twinning remains a theory. This type of twins are also known as half twins, or half-identical twinning.

For further interesting info about rare types of twins, you may also like this article: <http://www.bellaonline.com/articles/art32872.asp>

