

Nondisjunction and Intersex Traits – Use <https://mattgilbert.net/biologygames/meiosis/index.html>

The most common karyotypes are **46,XX** (typical female) and **46,XY** (typical male). A human with a different karyotype from these is said to have a form of **intersex trait**.

In this activity, you will explore intersex traits that can result from nondisjunction (not separating) of sex chromosomes (X and Y) during meiosis. Nondisjunction can happen for any chromosome, but this activity focuses on sex chromosomes.

Use the website to create a zygote with an intersex trait. The karyotype must be viable, not lethal.

1. Record information for two different traits below.

	Trait #1	Trait #2
Name of trait		
Karyotype (example: 46,XX)		
How common is it?		
Physical aspects of the trait		

2. Can you find a way to create a typical 46,XX or 46,XY zygote that results from nondisjunction in both sperm and egg? Explain how you did it.

Evaluate the model

3. What are the merits of the model? What ideas does it demonstrate well or help us to understand?
4. What language is used in this model to describe variations in traits? To describe gender or sex? Suggest any language modifications that you would make to improve communication in the model.
5. What are the limitations of the model? What steps in meiosis and fertilization are left out, inaccurate, or misleading?