

The cells start off as a female with two X chromosomes. The cell divides and the embryo is getting slightly bigger and still each cell has both X chromosomes active, but in early embryogenesis each cell will inactivate one of its X's, and one cell will remain with the paternal X as active, while the other one a maternal one. And now this process will happen at random, and you'll have almost half of the cells with the maternal x active, half with the paternal X. The embryo will continue to grow, the cells will divide. All the descendants of that cell, all the descendants will keep that same X active. And you've seen this in calico cats right? The coat color gene is on the X chromosome, and that's precisely why these cats look like this, a mosaic appearance because of the process of x chromosome inactivation.