

Calico Cats are Almost Always Female, Rarely Male

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Q. Are calico cats always female?

A. Calico cats are almost always female. This is because the gene that codes for coloration is found on the X chromosome. This 'color gene' will code for a specific color such as black, orange, etc.



Each individual receives an X chromosome from its mother. It receives a Y (male) or X (female) chromosome from its father. Female kittens, then, have 2 X chromosomes and males have a Y and an X.

A cat must have 2 X chromosomes for it to be calico. It takes 2 X chromosomes to be female; and it takes 2 X chromosomes each carrying a gene that codes for a different color for the cat to be calico. Another chromosome (not the X or the Y) codes for white.

As the early embryo develops, some cells turn on one X chromosome, and some use the coding from the other. Let us say cell A turns on the X chromosome whose 'color gene' codes for orange. As cell A divides, all its daughter cells will also code for orange. This results in a patch of orange, since the daughter cells remain in a group. Another cell, cell B, turns on the other X chromosome which happens to have the code for black. Its group of daughter cells will result in a patch of black. Because the early embryonic cells randomly turn on one X chromosome or the other, we get these multiple patches of color.

There are rare instances when a male kitten could have 2 X chromosomes and one Y chromosome. He then could be a calico if each of the X chromosomes has a 'color gene' which codes for a different color.