

# Sex Linked Recessive Genetic Crosses involving Red-Green Colorblindness

1. **SEX**     **XX**     &     **Xy**

1 : 1 = 100 **females** to 106 **males**

more males conceived  
and more males die before birth

yet, still have 106 **M** to 100 **F**

	<b>X</b>	<b>y</b>
<b>X</b>	<b>XX</b>	<b>Xy</b>
<b>X</b>	<b>XX</b>	<b>Xy</b>

2. **SEX LINKED** (trait on X chromosome)

female carrier (**Rr**) & normal male (**Ry**)

**R** **r**                      **R**  
**X** **X**                      **X** **Y**

- a) **50/50** males and females
- b) **3 : 1** cb to normal
- c) **100%** normal females
- d) **50/50** normal males to cb males

	<b>X<sup>R</sup></b>	<b>y</b>
<b>X<sup>R</sup></b>	<b>X<sup>R</sup>X<sup>R</sup></b>	<b>X<sup>R</sup>y</b>
<b>X<sup>r</sup></b>	<b>X<sup>R</sup>X<sup>r</sup></b>	<b>X<sup>r</sup>y</b>

female carrier (**Rr**) & cb male (**ry**)

**R** **r**                      **r**  
**X** **X**                      **X** **Y**

- a) **50/50** males and females
- b) **1 : 1** cb to normal females
- c) **1 : 1** cb to normal males

	<b>X<sup>r</sup></b>	<b>y</b>
<b>X<sup>R</sup></b>	<b>X<sup>R</sup>X<sup>r</sup></b>	<b>X<sup>R</sup>y</b>
<b>X<sup>r</sup></b>	<b>X<sup>r</sup>X<sup>r</sup></b> <b>Sally</b>	<b>X<sup>r</sup>y</b>

If Sally's maternal grandpa was normal,  
what is the genotype of Sally's  
MATERNAL GRANDMA ?

	<b>X<sup>R</sup></b>	<b>y</b>
?		
?	<b>X<sup>R</sup>X<sup>r</sup></b> <b>Sally's Mom</b>	