

Sex-Linked Traits

Traits controlled by genes located on the sex chromosome

<p>Remember:</p> <p>Genetic Female: XX</p> <p>Genetic Male: XY</p>	<p>Because genetic males have only one X chromosome, they are affected by recessive X-linked traits more often than are genetic females.</p> <p>Females are less likely to express a recessive X-linked trait, because the other X chromosome may mask the effect of the trait</p>									
<p>The trait for red-green colour vision deficiency is a recessive X-linked trait</p> <p>The mother is the carrier for the trait because she has the recessive allele (b) on one of her X chromosomes ($X^B X^b$)</p> <p>The father is not coloured deficient ($X^B Y$)</p> <p>If they have children, will anyone be colour deficient?</p>	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td></td> <td style="padding: 5px;">X^B</td> <td style="padding: 5px;">X^b</td> </tr> <tr> <td style="padding: 5px;">X^B</td> <td style="padding: 10px;">$X^B X^B$</td> <td style="padding: 10px;">$X^B X^b$</td> </tr> <tr> <td style="padding: 5px;">Y</td> <td style="padding: 10px;">$X^B Y$</td> <td style="padding: 10px;">$X^b Y$</td> </tr> </table>		X^B	X^b	X^B	$X^B X^B$	$X^B X^b$	Y	$X^B Y$	$X^b Y$
	X^B	X^b								
X^B	$X^B X^B$	$X^B X^b$								
Y	$X^B Y$	$X^b Y$								

X^B = normal

X^b = colour deficient

Y = Y chromosome

Will anyone be coloured deficient?

Genotype $X^b Y$ will be colour deficient

Remember that $X^B X^b$ has the dominant trait (B)

(they're a carrier but don't express the deficiency)