

## **Condition:** Red-Green color blindness

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### **Inheritance:**

X-linked recessive.

### **Genetic etiology:**

Mutation in *OPN1LW* and *OPN1MW*, encoding red- and green-sensitive opsins. These genes are clustered on the X chromosome, with one red pigment gene followed by 1-6 green pigment genes. Unequal crossover events between these genes leads to creation of nonexpressed hybrid genes and deletions.

### **Frequency:**

8% of Caucasian males; 0.5% females.

### **Clinical features:**

Inability to distinguish red and green colors.

### **Management:**

Affected individuals learn to recognize important cues, such as traffic lights.

### **Genetic counseling:**

Based on X-linked inheritance; genetic testing is available.