



Symptoms

Colour vision deficiency is the decreased ability to distinguish different colours. People with colour vision deficiency can usually distinguish most of the single colours (e.g. red and orange). However, if several colours are mixed together (e.g. purple and blue, red and green, etc.), they may fail to see the differences in colours. In addition, the ability to distinguish different colours may be further weakened if the lighting is poor or the object is light-coloured. As the signals of traffic light are bright and dark-coloured, they can easily identify the red and green traffic light signals, yet people may find difficulty in distinguishing light red and light green paints.

Types

There are several types of colour vision deficiency. The most common one is red-green deficiency (difficulty in distinguishing between red and green). Blue-yellow deficiency is relatively rare. If a person cannot distinguish any colour and sees different colours as a single colour with only shades, it is called colour blindness (achromatopsia).

Causes

Colour vision deficiency is typically an inherited genetic disorder, but there are also other causes (e.g. illnesses that affect the retina, choroid or optic nerve). Colour blindness is mainly inherited. Very rarely, people develop colour blindness as a result of brain damage.

Formation

There are 3 types of cells that are responsible for colour vision in the retina. If any one type of these cells cannot function properly or completely, colour vision deficiency results. If any two types of these cells cannot function completely, colour blindness results.

Incidence

Among the inherited colour vision deficiency, more than 90% of them have varying degrees of red-green colour deficiency while yellow-blue deficiency is only a minority. Most of the affected people are male. There are eight with colour vision deficiency in every 100 males while there is only one with colour vision deficiency in every 200 females. In contrast, colour blindness is very rare, affecting only one in every 30,000 people.

Management

People with colour vision deficiency usually fail to identify their symptoms as they presume that other people distinguish the same colours as they do. Although colour vision deficiency is incurable, it does not significantly affect one's daily activities. However, people with colour vision deficiency may find it difficult to engage in certain occupations that require colour perception, for example, police officer, firefighter, Customs officer, Correctional Services officer, Immigration Service staff, pilot, pharmacist, laboratory technician, painter, etc.

