Understanding the cause of irreversible blindness in East Africa

Research into a common eye condition in East Africa which causes irreversible vision loss is receiving vital funding from the eye research charity Fight for Sight, in partnership with The Royal College of Ophthalmologists (RCOphth).

Image source: Getty/Gallo

Researchers aim to develop effective treatments for a condition known as Tanzanian endemic optic neuropathy (TEON) based on the results from this study. Forty thousand people between the ages of 10-39 years old are affected by the condition in East Africa.

In this condition damage to the powerhouse of the cell, the mitochondria, eventually leads to death of the optic nerve, which connects the eye to the brain.

Researchers believe that a combination of reduced sunlight exposure and poor dietary habits in people who are genetically susceptible, contributes to damage in the mitochondria, resulting in the condition. This study will provide evidence to confirm this theory.

Thirty recently diagnosed TEON patients will be compared to healthy controls. Lifestyle factors such as exposure to sunlight, dietary details and family history will be compared in conjunction with genetics, vitamin D assessments and eye examinations.

This study is vital to help preserve the sight of the young East African population. It's imperative that investigative research is preformed to understand the cause of this condition, which is currently unknown.

"I'm grateful to have been awarded the Fight for Sight/ RCOphth John Lee Primer Fellowship award which will enable me to tackle a condition which causes irreversible visual impairment resulting in significant disability, with educational and economic implications. Ultimately we hope that this work will lead to an effective intervention to prevent this significant cause of visual impairment in young adults," Dr Frederick Burgess, who will head up the study, says.

The knowledge gained from this research can be applied globally to increase the understanding about optic nerve disease and how the environment and genetic factors affect it.