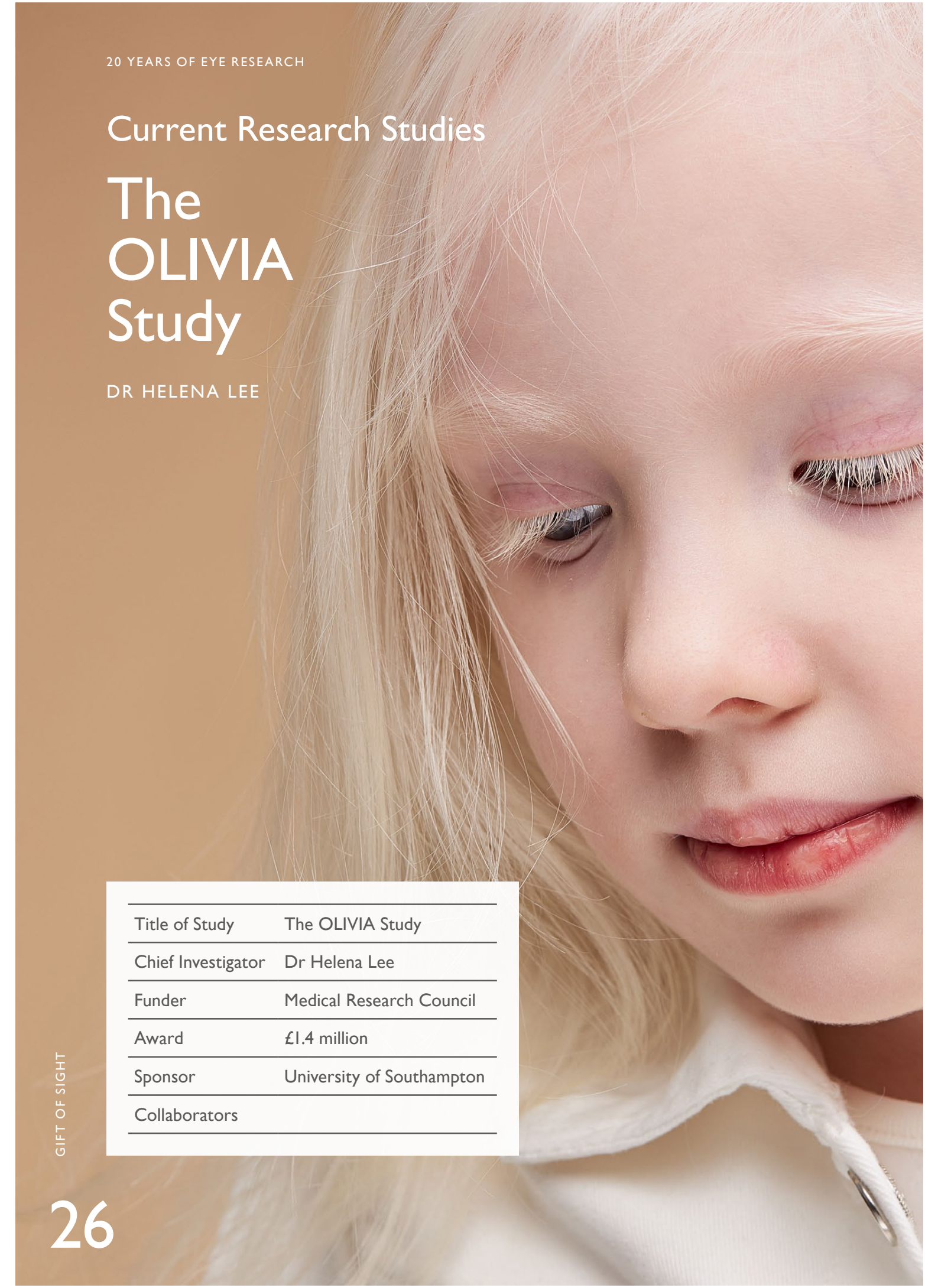
Current Research Studies

The OLIVIA Study

DR HELENA LEE



Title of Study	The OLIVIA Study
Chief Investigator	Dr Helena Lee
Funder	Medical Research Council
Award	£1.4 million
Sponsor	University of Southampton
Collaborators	

WHY?

Currently there are no treatments for the eye problems caused by albinism. The average vision in albinism at, 20/80, is below UK driving standards, impacting school, work, and social life. Finding a treatment that can improve eyesight in albinism was named a priority by the Sight Loss and Vision Priority Setting Partnership in 2013.

WHAT WE KNOW ALREADY

We know that the brain has the amazing ability to change and adapt in children. We also know that we make use of the brain's ability to rewire itself, when we improve eyesight in lazy eyes using glasses and patching. In albinism, a chemical called L-DOPA is missing from the eye and this causes problems with eye development. This is why eyesight is so poor in albinism. However the eye is still able to change and develop in young children with albinism. Similar to the treatment of lazy eyes we can target this flexibility in albinism. Potentially, replacing L-DOPA in albinism at a young age, will improve eye development and eyesight.

AIMS OF THE STUDY

The main aim of this study is to prove for the first time that we can change how the eye develops and improve eyesight in albinism after birth, by replacing the missing L-DOPA. We will also figure out what the best dose of L-DOPA is, by testing its effects on eye development and eyesight in mice with albinism, when given at different ages, doses and lengths of time.

The second aim of this study is to carry out a small trial of L-DOPA treatment in children with albinism.

L-DOPA is a safe medicine that is currently being used to treat infants and young children born with problems in controlling movement of their limbs. We will explore, together with the parents of the affected children, if the treatment and examinations carried out as part of this trial are reasonable. If successful, this study will completely change how children with albinism are treated. It will also set an important precedent for the development of new treatments for other eye diseases that affect children.

THE BENEFITS

The biggest potential beneficiaries of this research will be the infants and young children with albinism, his/her family and society at large. It will provide valuable guidance on the optimal treatment interval, the risk of complications, tolerance and uptake of the treatment. It will also employ outcome measures that are useful for service-users and health policy makers and establish the acceptability of this intervention to service users.

This research will also help to streamline and accelerate research into albinism and other disorders of retinal development, through the creation of a freely available on-line repository of murine retinal optical coherence tomography (OCT) imaging and electroretinography data, and a detailed human albinism genotyping and phenotyping database.

Our approach towards developing an effective treatment for albinism serves as an excellent example of how clinical observations at bedside can be taken back into the laboratory for more detailed mechanistic investigations and novel therapeutics development which can then be translated back into clinical practice.