



### DR ZENA LIM

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Dr Zena Lim is a USA fellowship trained Consultant Ophthalmologist and Adult & Paediatric Eye Surgeon. She is the Medical Director of the Focal Eye Centre and The Children's Eye & ENT Centre.

Besides being proficient in all aspects of general ophthalmology, including laser procedures, customized cataract surgery, glaucoma and diabetic/degenerative eye management, Dr Zena Lim has special interests in squint ("strabismus") surgery for adults and children and in various aspects of paediatric ophthalmology.

She has trained and done research stints at the top eye units in North America, including the Duke University Eye Centre, North Carolina, USA and Hospital for Sick Children, Toronto, Canada. Besides presenting and lecturing at numerous international/regional conferences, in 2010 she was awarded "Best of the Anterior Segment Specialty Meetings" at the American Academy of Ophthalmology Meeting. She also holds a "Gold Medal in Ophthalmology" for being top of her cohort in the Master of Medicine (Ophth) examinations.

Prior to setting up her practices, Dr Zena Lim was appointed Adjunct Asst Professor at the Duke-NUS Graduate Medical School, and an active Core Faculty member of the Ophthalmology Residency Program at the Singapore National Eye Centre.

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Strabismus, more commonly known as "squint", is a condition of misaligned eyes. One or sometimes both of the eyes may turn inwards, outwards, or less commonly upwards or downwards. The misalignment can be constant, meaning the same eye deviates in a certain direction all the time, or intermittent, meaning the misalignment occurs only at certain times, often when the afflicted person is tired, sick or daydreaming.

Most strabismus is the result of an abnormality of neuromuscular control of eye movements which is not well understood. Occasionally, strabismus can result from conditions affecting the eye muscles such as orbital floor or wall fractures with eye muscle entrapment, hyperthyroidism, or III, IV or VI cranial nerve palsies.

Besides the occasionally obvious eye misalignment, strabismus can also cause double vision ("diplopia"), lazy eye ("amblyopia") in young children, or even development of constant abnormal head postures such as head tilts.

## "TOO YOUNG OR OLD" FOR STRABISMUS TREATMENT?

### STRABISMUS AND LAZY EYE DIFFERENTIATED

There is a common misconception that strabismus and lazy eye are the same condition. Lazy eye or "amblyopia" is a decrease in a child's vision that results when one or both eyes send a blurry image to the brain. The brain then "learns" to see blurry with the affected eye/eyes, even when appropriate glasses are given. Amblyopia can occur even though there are no structural ocular problems. There are several causes of amblyopia, and strabismus is one of them. Hence, these 2 conditions are related but commonly mistaken to be the same condition.

### HOW DOES STRABISMUS AFFECT ONE'S 3D DEPTH PERCEPTION?

3D depth perception or "stereopsis" is the ability to see objects in three dimensions. In order to experience fine stereopsis, we need good vision in both eyes and the ability to keep both eyes aligned. Development of stereopsis occurs during the critical period from soon after birth till ages 4-5. However, that does not mean that since the critical period for stereopsis to develop has passed, no treatment for strabismus should be rendered after ages 4-5. Age should not be a deterrent to treatment, though treatment prior to age 6 could allow for better results compared with later treatment.

### TREATMENT OPTIONS

Most squints in children need to be assessed as soon as possible to prevent the onset of amblyopia, and to improve the chances of successful treatment. If the child already has amblyopia, an eye patch may be required over the normal eye to encourage use of the squinting eye. Depending on the type of strabismus, treatments options include glasses, eye exercises when appropriate, and occasionally strabismus surgery or Botox to selected extraocular muscles. Surgery is recommended if squint control is poor, the squint becomes constant, 3D depth perception is deteriorating, or to correct an abnormal head posture.

### WHEN IS A "GOOD" AGE TO UNDERGO SQUINT SURGERY?

I often get asked by parents of children with strabismus, whether their child is too young to undergo strabismus surgery. I have had patients as young as 6 months of age to as old as 80 years undergoing strabismus surgery. For the children, strabismus surgery gives them a chance to regain normal eye alignment thereby facilitating the development of some degree of 3D depth perception, or corrects an abnormal head posture. Similarly, the adults often ask me if it's too late for anything to be done, many having lived with their condition for years thinking they had no treatment options. For the adults, corrective surgery is often undertaken to correct double vision, and to regain normal eye alignment, even though stereopsis cannot be developed or regained once the critical period is passed. Many adults ask if strabismus surgery is cosmetic in nature, and I always tell them that strabismus surgery is reconstructive, restoring their eyes back to normal alignment and not cosmetic in nature. There are also subtler benefits of surgery in adults as their squints can often have a significant impact on their psychological well being. Many scientific studies have shown that patients with strabismus can be discriminated against during recruitment interviews, passed over for promotion and are less likely to find a partner. In some people the loss of confidence and self-esteem can be very debilitating, and this is especially true if their job involves regular face-to-face encounters with different people.

### STRABISMUS SURGERY EXPLAINED

Strabismus surgery involves tightening, relaxing or re-positioning the extraocular muscles, to change the eye position. Strabismus surgery is nearly always a day-case procedure, and can be performed adjustable or non-adjustable. In adjustable surgery, which can be performed in cooperative older children and adults, the stitches can be adjusted shortly after the surgery, when the patient is awake, to fine-tune the post-operative eye alignment.

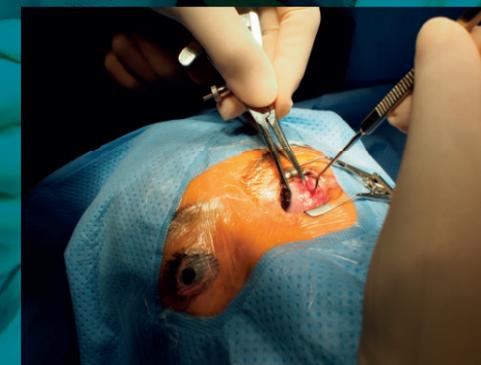
Everyone with strabismus deserves a chance. There is never an age too young or old for treatment.



A left convergent squint



A divergent and upward deviating right squint



Strabismus surgery close-up

Performing strabismus surgery