What is a Heterotropia?

Also known as a stabismus, it is a manifest deviation, wherein the eyes are misaligned under normal binocular viewing conditios

Tropias may be constant or intermittent

Tropias may affect one eye or alternate between both

In early childhood, tropias may cause an amblyopia (lazy eye)

Tropias may or may not be linked to refractive error

Tropias may or may not be linked to accommodation and convergence

A comitant heterotropia is one where the angle of deviation remains the same in all directions of gaze, regardless of which eye they use

Heterotropia Classification

Esotropia

Exotropia

Hyper/Hypotropia

Cyclotropia

Microtropia

Pseudostrabismus

Patients look like they have a strabismus but they don't

Common in children with epicanthal folds as it mimics esotropia

Also patients with a positive angle Kappa, where the corneal light reflex is displaced nasally, can look like they have an exotropia

Here, you should perform a cover test to double check

IPE: Accommodative

Esotropia disappears when the hyperm-etropia is fully corrected

Usually arises between 2-5 years

Amblyopia is uncommon unless the hypermetropia has been uncorrected for a long time. E.g. the problem not picked up at an early age

IPE: Accommodative (cont)

Usually normal BSV with glasses on

Management - perform cycloplegic refraction and issue a full prescription.
Treat the amblyopia if present.
If there's low amounts of hypermetropia and astigmatism, exercises might help to reduce the need to wear glasses as child gets older (over 8)
Most patients will always need to wear glasses or contact lenses

Investigation: Key Things to Note

Their age - if young, it may be linked to amblyopia and impact their visual develo-pment, if a little older, was it acquired?

If the tropia is new or longstanding

Is it causing any symptoms?

Is it present all the time, why not if not?

Are any adaptations present?

Is referral required?

Investigation: Concluding Information

The type of test you perform and the expected outcome depends on your prelim-inary diagnosis

Usually, if the tropia isn't causing a problem, then it isn't much of a worry. Measurements may be helpful to monitor. Tailor your test to their binocular status and move on

If the tropia is causing a problem and the px is symptomatic, they warrant further invest-igation

In young children, squints need careful investigation to determine the cause and appropriate management!!

Esotropia

CPE: Non-Accommodative

Esotropia present all the time and unaffected by the accommodative state

Deviation may alter between both eyes

For example, infantile esotropia. Has an early onset in the first year of life usually before 6 months and is a large angle often >30. Could be an alternating deviation, thus VA good in both eyes Dissociated vertical deviation may be present Not associated with hypermetropia

Management - correct the refractive error and treat the amblyopia. May require surgery to align the visual axes and allow normal BSV to develop. Best to perform before they're 2.

Investigation: Relevant Clinical Tests

Case history alongside observing patient

Visual acuity at both distance and near

Cover test with and without prism bar

Refraction

Ocular motility

Suppression tests e.g. worth 4 dot test, 4 base out prism

Accommodation and Covergence

Bagolini lenses

Patient investigations would depend on whether the tropia is new or longstanding (esp. in an adult), depend on whether patient is a child, and whether the tropia is constant or intermittent

CPE: Partially Accommodative

Esotropia present at all time and increases in size when patient accommodates

Deviation size reduces when the hyperm-etropia is corrected but it is still present

Occurs in early childhood (ages 1-3)

Anomalous retinal correspondence may be present

Dissociated vertical deviation may be present (different from vertical tropia where only 1 eye deviates upwards)

Management: fully correct the refractive error, treat the amblyopia (as they're childr-en!), only refer for surgery in extreme cases

Primary Esotropia	Secondary Esotropia	Consec-utive Esotropia
Constant: partially accomm-odative or non accomm-odative	Results from a loss of vision	Due to a surgical overcorre-ction of an exotropic strabismus
Intermittent: fully accommodative, conver-gence excess, relates to fixation distance e.g. at distance or near, non-specific		