BrienHoldenVisionInstitute

CROSSED EYES, NYSTAGMUS AND AMBLYOPIA

THINK

A mom comes to see you because she is worried about her little boy. She has noticed that his right eye seems to be looking towards his nose, while his left eye is looking straight ahead. She wants to know what the problem is and if anything can be done for her son.

WHAT YOU WILL LEARN

When you have worked through this unit you should be able to:

- Describe the signs and symptoms of “strabismus”, “squint” and “tropia”
- Identify some of the causes of strabismus
- Describe what amblyopia is
- Know the signs and symptoms of nystagmus
- Identify when to refer a person with strabismus, amblyopia or nystagmus.

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STRAIGHT EYES

- While most people have eyes that both point in the same direction, some people will have an eye that points in a different direction
- People often call this a “crossed” eye
- Crossed eyes are also called strabismus, squint or tropia.

Figure 12-1: Straight eyes

CROSSED EYES

WHAT IS IT?	• Crossed eyes are also called strabismus, squint or a tropia
	• A person with a squint will have one straight eye but the other eye will be turned
	• Often it is just one eye that turns all the time, but some squints change from one eye to the other
	• The squinting eye can turn in different directions:
	  ○ Esotropia: In
	  ○ Exotropia: Out
	  ○ Hypertropia: Up
	  ○ Hypotropia: Down
	• Can happen at any age but is more common in young children
	• It is more serious if it appears suddenly in an adult – they will usually complain of double vision.

CAUSES	• Eye squints can be caused by several things, such as:
	  ○ Weakness or damage of an extra-ocular muscle
	  ○ Eye disease
	  ○ Uncorrected refractive error
	  ○ Trauma or injury to the eye
	  ○ Brain tumour, trauma or injury to the head.

WHAT DO I ASK?	• When did you first notice the eye turn? • Did it happen recently or have you had it since you were a child? • Did you have any injury or trauma to your eye or your head? • Do you see double?

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SYMPTOMS	• May have double vision (especially if the squint started recently) • Might not be able to see out of the turned eye (if it is an old squint) • Blurred vision out of the turned eye • Headaches • Eye strain.
WHAT DOES IT LOOK LIKE?	 ***Figure 12-2: Left Esotropia – note how the right eye is looking straight ahead, but the left eye is pointed inwards.*** ***[photo courtesy of Murray McGavin: ICEH]***
SIGNS	• Turned eye • The person may tilt their head when they look at you.
WHAT SHOULD I DO?	• Measure visual acuity in both right and left eye • Perform a cover test (if you have learnt how to do this) • Perform a Hirschberg test (if you have learnt how to do this) • Refer to an ophthalmologist.
REFERRAL CRITERIA	• People with an eye turn need to be referred to a medical practitioner or an ophthalmologist • Adults who suddenly get a squint need to be referred immediately – it could be a very serious condition • All babies and children with a squint should be referred so that any refractive error can be corrected or any disease treated.

EYE TURNS IN ADULTS:

- **An adult who has had a squint since childhood does not need a referral**
- **If a squint suddenly happens in an adult this may be a sign of a serious disease**
- **If the squint is new, the person might tell you that everything looks double**
- **The person should be referred to a medical practitioner immediately.**

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NYSTAGMUS

WHAT IS IT?	• A continual, rhythmic movement of the eyes that a person cannot stop or control
	• In both eyes
	• The movement is usually from side to side, but can also be:
	  ○ up and down
	  ○ around and around in a circle
	• The eye movement is sometimes described as "dancing"
	• There are different kinds of nystagmus:
	  ○ *Infantile:* seen from early childhood and is more common
	  ○ *Acquired:* develops later in life
	• People with nystagmus will usually have poor vision.

CAUSES	• Infantile nystagmus can be caused by:
	  ○ Problems that a child is born with (e.g. cataracts)
	  ○ Problems that affect the child's whole body (e.g. Down syndrome)
	  ○ Problems with the brain
	  ○ Or sometimes, the problem is not known
	• Acquired nystagmus can be caused by:
	  ○ Disease
	  ○ Injury to the brain
	  ○ Alcohol
	  ○ Drugs.

WHAT DO I ASK?	• When did you first notice the eye movement? • Did it happen recently or were you born with it? • How is your vision?
SYMPTOMS	• Poor vision • Blindness
SIGNS	• Movement of the eyes • Movement will decrease when looking in a certain direction • May have a head turn or head tilt.
WHAT SHOULD I DO?	• Measure vision in both right and left eye • Perform a thorough case history focusing on family history.
REFERRAL CRITERIA	• People with nystagmus need to be referred to a medical practitioner or ophthalmologist • It is important that when nystagmus is first seen that the child or adult is referred to a medical practitioner immediately • Nystagmus may be the first sign of a serious problem with the eye or brain.

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TREATMENT FOR NYSTAGMUS:

- **There is no real treatment for nystagmus**
- **However, referral to a medical practitioner is very important, because nystagmus may be the first sign of a serious problem with the eye or brain**
- **If it is an acquired nystagmus and it is found early, they can find the cause of the nystagmus and maybe the problem can be fixed**
- **Spectacles will not correct nystagmus.**

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AMBLYOPIA

WHAT IS IT?	• An eye with amblyopia (also called an amblyopic eye) has decreased vision, even though the eye appears to be healthy and normal • An amblyopic eye will not see clearly even if you correct any refractive error • An eye with amblyopia is sometimes called a lazy eye • When a baby is born, the centres in the brain that control vision are not fully developed yet • The brain continues to develop until the child is about eight years old • The vision centres and visual pathways in the brain need good vision from both eyes to develop normally; if one eye does not see well, then the part of the brain that receives vision from this eye will not develop properly • This means that even if you treat the cause of the poor vision when the child is older, the child will still not see well as the brain is unable to interpret the image properly – because the visual pathways did not form properly in the first eight years of the child's life • An adult who gets poor vision later in life will not develop amblyopia because the pathways already developed in their first years of life.

CAUSES	• Amblyopia can be caused by anything that prevents the eye from seeing well during childhood, such as:
	  ○ Crossed eyes
	  ○ Nystagmus
	  ○ Uncorrected refractive error in early childhood (especially if in one eye only)
	  ○ Eye problem at birth (e.g. cataract).

WHAT DO I ASK?	• When did you first notice the poor vision? • Have you always had poor vision in this eye, or did it happen recently? • Ask parents if the child holds their book close or trips over objects.
SYMPTOMS	• Poor vision (mostly in one eye, but sometimes in both eyes) • May have an eye turn • Often the child does not realise they have poor vision in one eye, so amblyopia does not get detected until it is too late.
SIGNS	• The child may squint or frown to try and see better • There may be an eye turn • The child may cover or close one eye when looking at an object • There could be a head turn or head tilt.
WHAT SHOULD I DO?	• Measure visual acuity in both right and left eye • Do pinhole visual acuity • Examine the eye with an ophthalmoscope to make sure it is healthy • Perform a cover test (if you know how).
TREATMENT PLAN	• Refer all people with amblyopia • Children with poor vision that does not improve with a spectacle prescription should be referred to an ophthalmologist • Children with amblyopia who have seen an ophthalmologist or children's eye specialist may be asked to use a patch over one eye to help improve the vision in their amblyopic eye • It is important that the parents of the child follow very carefully the instructions to patch the eye.

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If a child receives treatment for an eye condition before they are eight years old, amblyopia can be reversed or prevented.

AMBLYOPIA: DIAGNOSIS OF EXCLUSION

- **This means that you can only say that a person has amblyopia if all other possible reasons for poor vision have been excluded (ruled out)**
- **It can be very dangerous to assume that a person has amblyopia – they might have a more serious eye disease that you are missing!**
- **If you are not sure, refer the person to an ophthalmologist.**

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NYSTAGMUS SUMMARY – CROSSED EYES, NYSTAGMUS AND AMBLYOPIA

CROSSED EYE

- Crossed eyes are also called strabismus, squint or a tropia
- A person with a squint will have one straight eye, but the other eye will be turned
- Patients with an eye turn need to be referred to a medical practitioner
- Adults who suddenly get a squint need to be referred immediately.

NYSTAGMUS

- Is a continual, rhythmic movement of the eyes that the person cannot stop or control
- There are different kinds of nystagmus:
  - Infantile: seen from early childhood
  - Acquired: develops later in life
- People with nystagmus need to be referred to a medical practitioner or ophthalmologist
- It is important that when nystagmus is first seen that the child or adult is referred to a medical practitioner immediately.

AMBYLOPIA

- An eye with amblyopia is sometimes called a lazy eye
- An amblyopic eye is an eye with decreased vision, even though the eye appears healthy and normal
- Amblyopia can be caused by anything that prevents the eye from seeing well during childhood
- Amblyopia is a diagnosis of exclusion
- Refer all people with amblyopia
- It is important for young children to be referred so that refractive error can be corrected and any disease treated at a young age – before amblyopia has developed.

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TEST YOURSELF QUESTIONS

1. **What are three other terms for crossed eyes?**
   a. _____
   b. _____
   c. _____

2. **What are some of the possible causes of a squint?**
   _____
   _____
   _____

3. **Why is it so important to refer a baby or young child who has a squint?**
   _____
   _____
   _____

4. **Do all people with crossed eyes have double vision? Please explain your answer.**
   _____
   _____
   _____

5. **What is nystagmus and what are the two types of nystagmus?**
   _____
   _____
   _____

6. **What should you if you see a person with nystagmus?**
   _____
   _____
   _____

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