Nystagmus

What is nystagmus?

Nystagmus is an involuntary, shaking, “to and fro” movement of the eyes. These jiggling or jerking movements are usually in horizontal or vertical directions.

What are the different types of nystagmus?

Nystagmus is typically classified as congenital or acquired, with multiple subcategories.

**Congenital nystagmus** onset is typically between 6 weeks and several months of age. If it starts after 6 months of age, this is considered acquired and may require imaging studies. **Infantile nystagmus** tends to be divided into two groups, depending on the underlying problem. One group arises from an abnormal afferent (or sensory) system, and the other from an abnormal efferent (motor) system. The efferent type is more common, but sometimes patients have early nystagmus due to afferent, or vision system, problems. In patients with early nystagmus secondary to afferent problems, conditions that limit their vision are thought to be responsible for the development of their nystagmus. The brain needs feedback from the eyes, through vision, to learn to keep them steady. Conditions that can be associated with this type of nystagmus include congenital cataracts, optic nerve hypoplasia, Leber’s congenital amaurosis, achromatopsia, oculocutaneous albinism, aniridia, choroidal coloboma, severe refractive error, among others. Sensory nystagmus tends to occur by 2-3 months of life. More commonly, patients have nystagmus in the efferent group. congenital motor nystagmus tends to be horizontal, bilateral, and is sometimes inherited. For these patients, the jiggling may affect vision some, but usually not too much.

Acquired nystagmus occurs later, at least after the age of 6 months of age and can occur anytime thereafter. It can have many etiologies. Acquired nystagmus can be associated with serious medical conditions and will usually require further evaluation with imaging studies of the brain in order to determine a potential cause.

What ocular/medical conditions are associated with nystagmus?

- Cataract
- Strabismus
- Amblyopia
- Optic nerve hypoplasia
- Leber’s congenital amaurosis
- Aniridia
- Achromatopsia
- Severe refractive error
- Retina coloboma
- Other optic nerve and retina disorders
- **Albinism**
- Medication use
- Vitamin deficiency
- Fetal alcohol syndrome
- Trauma
- Inner ear (vestibular) problems
- Stroke (most common cause in older people with acquired nystagmus)
- Brain tumor (rare cause of acquired nystagmus)

All children and adults with nystagmus should be evaluated by an ophthalmologist (and primary care physician) to determine if any association exists with other conditions.

**Is nystagmus inheritable?**

Nystagmus can be inheritable, sometimes with a strong family history. Dominant, recessive and x-linked patterns have been reported. The severity of nystagmus often varies among members of an involved family.

**How does nystagmus affect a child’s visual development? What will the vision be as an adult?**

The visual development of a child with nystagmus is quite variable. Some children with nystagmus have a mild reduction in visual acuity (20/50 or better), while others have severe visual disability (20/200 or worse). It is difficult to predict what the visual acuity will be as an adult; however, most individuals with nystagmus have some reduction of visual function.

**What does a person with nystagmus actually see?**

Children with nystagmus typically see the world similarly to other children, albeit with some blurriness. The world does not appear to “shake.” Individuals with adult onset or acquired nystagmus often report the appearance of movement of the seen world (oscillopsia).

**Why do people with nystagmus tilt or turn their head?**

Nystagmus severity can vary upon direction of gaze; the eyes oscillate more when looking in certain directions. The gaze position of least eye movement is the “null point” and tends to be where vision is best. Tilting or turning the head into this direction where the movements are least can thus optimize vision.

**Can nystagmus occur in one eye?**
Yes, but rarely. Spasmus nutans (triad of nystagmus, head bobbing or nodding, and a head turn or tilt) is often noted to have unilateral nystagmus. However, under close observation, the nystagmus is bilateral but highly asymmetric with a high-frequency “shimmering” movement.

**Can surgery make nystagmus go away?**

Eye muscle surgery (strabismus surgery) may be indicated for some individuals with nystagmus. The goal of surgery in most instances is to help alleviate a significantly abnormal head position or to decrease the amplitude of nystagmus. Surgery can sometimes cause vision improvement but does not fully eliminate nystagmus.

**What non-surgical treatments exist for nystagmus?**

Significant refractive error is corrected with glasses or contact lenses. Contact lenses, in some circumstances, can be more visually beneficial than spectacles. Variable success has been noted with medications used to dampen the severity of nystagmus. Unfortunately, the use of these medications is frequently limited by side effects. Botulinum toxin is helpful for some individuals with severe, intractable oscillopsia.

**Where can I find more information about nystagmus?**

- For more information, visit the American Nystagmus Network

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