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URL of this page: https://medlineplus.gov/refractiveerrors.html

Refractive Errors
Also called: Farsightedness, Hyperopia, Myopia, Nearsightedness

The cornea and lens of your eye helps you focus. Refractive errors are vision problems that happen when the shape of the eye keeps you from focusing well. The cause could be the length of the eyeball (longer or shorter), changes in the shape of the cornea, or aging of the lens.

Four common refractive errors are:

- Myopia, or nearsightedness - clear vision close up but blurry in the distance
- Hyperopia, or farsightedness - clear vision in the distance but blurry close up
- Presbyopia - inability to focus close up as a result of aging
- Astigmatism - focus problems caused by the cornea

The most common symptom is blurred vision. Other symptoms may include double vision, haziness, glare or halos around bright lights, squinting, headaches, or eye strain.

Glasses or contact lenses can usually correct refractive errors. Laser eye surgery may also be a possibility.

NIH: National Eye Institute

Start Here

- Astigmatism [https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/astigmatism]
  NIH⟩ (National Eye Institute)
  Also in Spanish [https://www.nei.nih.gov/espanol/aprenda-sobre-la-salud-ocular/enfermedades-y-afecciones-de-los-ojos/astigmatismo]

- Refractive Errors [https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/refractive-errors]
  NIH⟩ (National Eye Institute)
  Also in Spanish [https://www.nei.nih.gov/espanol/aprenda-sobre-la-salud-ocular/enfermedades-y-afecciones-de-los-ojos/errores-de-refraccion]

- Types of Refractive Errors [https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/refractive-errors/types-refractive-errors] NIH⟩ (National Eye Institute)

Diagnosis and Tests

- Dilating Eye Drops [https://www.aapos.org/glossary/dilating-eye-drops]
  (American Association for Pediatric Ophthalmology and Strabismus)

- Eye Exam and Vision Testing Basics [https://www.aao.org/eye-health/tips-prevention/eye-exams-101]
  (American Academy of Ophthalmology)
  Also in Spanish [https://www.aao.org/salud-ocular/consejos/examenes-de-los-ojos-101]

- Retinoscopy [https://www.aapos.org/glossary/retinoscopy] (American Association for Pediatric Ophthalmology and Strabismus)

- Vision Screening [https://medlineplus.gov/lab-tests/vision-screening/] NIH⟩ (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/examen-de-la-vista/]

Prevention and Risk Factors

- Get a Dilated Eye Exam [https://www.nei.nih.gov/learn-about-eye-health/healthy-vision/get-dilated-eye-exam]
  NIH (National Eye Institute)
  Also in Spanish [https://www.nei.nih.gov/espanol/aprenda-sobre-la-salud-ocular/vision-saludable/hagase-un-examen-de-los-ojos-con-dilatacion-de-las-pupilas]

Treatments and Therapies

- Cornea Transplant [https://www.mayoclinic.org/tests-procedures/cornea-transplant/about/pac-20385285?p=1]
  (Mayo Foundation for Medical Education and Research)

- Eye Wear: MedlinePlus Health Topic [https://medlineplus.gov/eyewear.html] **NIH** (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/eyewear.html]

- Laser Eye Surgery: MedlinePlus Health Topic [https://medlineplus.gov/lasereyesurgery.html] **NIH** (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/lasereyesurgery.html]

- Phakic Intraocular Lenses [https://www.fda.gov/medical-devices/implants-and-prosthetics/phakic-intraocular-lenses]
  (Food and Drug Administration)

- What Is Refractive Surgery? [https://www.aao.org/eye-health/treatments/what-is-refractive-surgery]
  (American Academy of Ophthalmology)
  Also in Spanish [https://www.aao.org/salud-ocular/tratamientos/cirugia-refractiva]

Related Issues

- Abnormal Head Position [https://www.aapos.org/glossary/abnormal-head-position]
  (American Association for Pediatric Ophthalmology and Strabismus)

- What Are the Risks and How Can I Find the Right Doctor for Me? (Refractive Surgery) [https://www.fda.gov/medical-devices/lasik/what-are-risks-and-how-can-i-find-right-doctor-me] (Food and Drug Administration)

Specifics

- Astigmatism [https://www.mayoclinic.org/diseases-conditions/astigmatism/symptoms-causes/syc-20353835?p=1]
  (Mayo Foundation for Medical Education and Research)

- Corneal Conditions [https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/corneal-conditions]
  NIH (National Eye Institute)

- Presbyopia [https://www.mayoclinic.org/diseases-conditions/presbyopia/symptoms-causes/syc-20363328?p=1]
  (Mayo Foundation for Medical Education and Research)

- Progressive (High) Myopia [https://www.aapos.org/glossary/progressive-high-myopia]
  (American Association for Pediatric Ophthalmology and Strabismus)

Genetics

- Deafness and myopia syndrome: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/deafness-and-myopia-syndrome] **NIH** (National Library of Medicine)

- Farsightedness: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/farsightedness]
  NIH (National Library of Medicine)

- Nearsightedness: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/nearsightedness]
  NIH (National Library of Medicine)

Images

- Corneal transplant - series [https://medlineplus.gov/ency/presentations/100082_1.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/esp_presentations/100082_1.htm]

Statistics and Research

- Eye Health Data and Statistics [https://www.nei.nih.gov/learn-about-eye-health/eye-health-data-and-statistics]
  NIH⟩ (National Eye Institute)
  Also in Spanish [https://www.nei.nih.gov/espanol/aprenda-sobre-la-salud-ocular/datos-y-estadisticas-relacionadas-con-la-salud-ocular]

Clinical Trials

- ClinicalTrials.gov: Astigmatism [https://clinicaltrials.gov/search?cond=%22Astigmatism%22&aggFilters=status:not%20rec]
  NIH⟩ (National Institutes of Health)

- ClinicalTrials.gov: Hyperopia [https://clinicaltrials.gov/search?cond=%22Hyperopia%22&aggFilters=status:not%20rec]
  NIH⟩ (National Institutes of Health)

- ClinicalTrials.gov: Lenses, Intraocular [https://clinicaltrials.gov/search?cond=%22Lenses,+Intraocular%22&aggFilters=status:not%20rec] NIH⟩ (National Institutes of Health)

- ClinicalTrials.gov: Myopia [https://clinicaltrials.gov/search?cond=%22Myopia%22&aggFilters=status:not%20rec]
  NIH⟩ (National Institutes of Health)

- ClinicalTrials.gov: Presbyopia [https://clinicaltrials.gov/search?cond=%22Presbyopia%22&aggFilters=status:not%20rec]
  NIH⟩ (National Institutes of Health)

- ClinicalTrials.gov: Refractive Errors [https://clinicaltrials.gov/search?cond=%22Refractive+Errors%22&aggFilters=status:not%20rec] NIH⟩ (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Evaluation of ocular findings in children with autism spectrum disorder: Observational... [https://www.ncbi.nlm.nih.gov/pubmed/40696676]

- Article: Prevalence and patterns of subnormal visual acuity and refractive errors among... [https://www.ncbi.nlm.nih.gov/pubmed/40696280]

- Article: Status of continuation of spectacle use among school children in selected... [https://www.ncbi.nlm.nih.gov/pubmed/40674886]

- Refractive Errors -- see more articles [https://pubmed.ncbi.nlm.nih.gov/?term=%22Refractive+Errors%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+]

Reference Desk

- How the Eyes Work [https://www.nei.nih.gov/learn-about-eye-health/healthy-vision/how-eyes-work]
  NIH⟩ (National Eye Institute)
  Also in Spanish [https://www.nei.nih.gov/espanol/aprenda-sobre-la-salud-ocular/vision-saludable/como-funcionan-los-ojos]
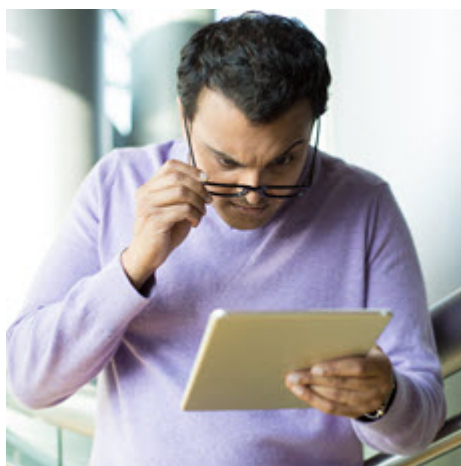
Find an Expert

- Find a Doctor of Optometry [https://www.aoa.org/healthy-eyes/find-a-doctor?sso=y] (American Optometric Association)

- Find an Ophthalmologist [https://secure.aao.org/aao/find-ophthalmologist] (American Academy of Ophthalmology)
  Also in Spanish [https://secure.aao.org/aao/encontrar-oftalmologo]

- Finding an Eye Doctor [https://www.nei.nih.gov/learn-about-eye-health/healthy-vision/finding-eye-doctor]
  NIH⟩ (National Eye Institute)

- National Eye Institute [https://www.nei.nih.gov/] NIH⟩

Children

- Anisometropia [https://www.aapos.org/glossary/anisometropia] (American Association for Pediatric Ophthalmology and Strabismus)

- Farsightedness (Hyperopia) (For Parents) [https://kidshealth.org/en/parents/farsightedness.html] (Nemours Foundation)

- Nearsightedness (Myopia) (For Parents) [https://kidshealth.org/en/parents/nearsightedness.html] (Nemours Foundation)
  Also in Spanish [https://kidshealth.org/es/parents/nearsightedness.html]

- Photoscreening [https://www.aapos.org/glossary/photoscreening]
  (American Association for Pediatric Ophthalmology and Strabismus)

- Refractive Errors in Children [https://www.aapos.org/glossary/refractive-errors-in-children]
  (American Association for Pediatric Ophthalmology and Strabismus)

- Treatment of Increasing Myopia in Children [https://aapos.org/glossary/treatment-for-progressive-myopia]
  (American Association for Pediatric Ophthalmology and Strabismus)

- Your Child's Vision [https://kidshealth.org/en/parents/vision.html] (Nemours Foundation)
  Also in Spanish [https://kidshealth.org/es/parents/vision.html]

Patient Handouts

- Astigmatism [https://medlineplus.gov/ency/article/001015.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/001015.htm]

- Farsightedness [https://medlineplus.gov/ency/article/001020.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/001020.htm]

- Nearsightedness [https://medlineplus.gov/ency/article/001023.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/001023.htm]

- Presbyopia [https://medlineplus.gov/ency/article/001026.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/001026.htm]

- Refraction [https://medlineplus.gov/ency/article/003844.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/003844.htm]

MEDICAL ENCYCLOPEDIA

Astigmatism [https://medlineplus.gov/ency/article/001015.htm]

Corneal transplant [https://medlineplus.gov/ency/article/003008.htm]

Corneal transplant - discharge [https://medlineplus.gov/ency/patientinstructions/000243.htm]

Corneal transplant - series [https://medlineplus.gov/ency/presentations/100082_1.htm]

Farsightedness [https://medlineplus.gov/ency/article/001020.htm]

Home vision tests [https://medlineplus.gov/ency/article/003446.htm]

Nearsightedness [https://medlineplus.gov/ency/article/001023.htm]

Presbyopia [https://medlineplus.gov/ency/article/001026.htm]

Refraction [https://medlineplus.gov/ency/article/003844.htm]

Refractive corneal surgery - discharge [https://medlineplus.gov/ency/patientinstructions/000245.htm]

Refractive corneal surgery - what to ask your doctor [https://medlineplus.gov/ency/patientinstructions/000305.htm]

Standard eye exam [https://medlineplus.gov/ency/article/003434.htm]

Visual acuity test [https://medlineplus.gov/ency/article/003396.htm]

Related Health Topics

Eye Wear [https://medlineplus.gov/eyewear.html]

Laser Eye Surgery [https://medlineplus.gov/lasereyesurgery.html]

Vision Impairment and Blindness [https://medlineplus.gov/visionimpairmentandblindness.html]

National Institutes of Health

The primary NIH organization for research on *Refractive Errors* is the National Eye Institute [https://nei.nih.gov/]

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