

Pacific University

CommonKnowledge

---

College of Optometry

Theses, Dissertations and Capstone Projects

---

12-2002

## A diagnostic guide of selected conditions for helping to identify children who present with visually related reading problems

Scott A. McPherson  
*Pacific University*

Janet K. Drakulich  
*Pacific University*

### Recommended Citation

McPherson, Scott A. and Drakulich, Janet K., "A diagnostic guide of selected conditions for helping to identify children who present with visually related reading problems" (2002). *College of Optometry*. 1336.  
<https://commons.pacificu.edu/opt/1336>

This Dissertation is brought to you for free and open access by the Theses, Dissertations and Capstone Projects at CommonKnowledge. It has been accepted for inclusion in College of Optometry by an authorized administrator of CommonKnowledge. For more information, please contact [CommonKnowledge@pacificu.edu](mailto:CommonKnowledge@pacificu.edu).

---

# **A diagnostic guide of selected conditions for helping to identify children who present with visually related reading problems**

## **Abstract**

In order to properly identify and treat those children with visually related reading problems, a diagnostic flow chart was developed to assist optometrists with this task. This diagnostic tool addresses ten of the most commonly encountered visual problems associated with reading. It is a "user friendly" product that easily moves between some of the common signs/symptoms presented by your patients and an appropriate diagnostic condition. Within each diagnostic condition are the following sections: a short description, other signs and symptoms, and suggested treatment options for this condition. This diagnostic flow chart and CD are included in the appendix section of this document and is available for anyone's use. Our hope is that optometrists will find this product useful and therefore, children with visually related reading problems will receive the proper treatment so that they can reach their full potential.

## **Degree Type**

Dissertation

## **Degree Name**

Master of Science in Vision Science

## **Committee Chair**

Scott Cooper

## **Subject Categories**

Optometry

## Copyright and terms of use

If you have downloaded this document directly from the web or from CommonKnowledge, see the "Rights" section on the previous page for the terms of use.

**If you have received this document through an interlibrary loan/document delivery service, the following terms of use apply:**

Copyright in this work is held by the author(s). You may download or print any portion of this document for personal use only, or for any use that is allowed by fair use (Title 17, §107 U.S.C.). Except for personal or fair use, you or your borrowing library may not reproduce, remix, republish, post, transmit, or distribute this document, or any portion thereof, without the permission of the copyright owner. [Note: If this document is licensed under a Creative Commons license (see "Rights" on the previous page) which allows broader usage rights, your use is governed by the terms of that license.]

Inquiries regarding further use of these materials should be addressed to: CommonKnowledge Rights, Pacific University Library, 2043 College Way, Forest Grove, OR 97116, (503) 352-7209. Email inquiries may be directed to: [copyright@pacificu.edu](mailto:copyright@pacificu.edu)



**A DIAGNOSTIC GUIDE OF SELECTED CONDITIONS FOR  
HELPING TO IDENTIFY CHILDREN WHO PRESENT WITH  
VISUALLY RELATED READING PROBLEMS**

PRESENTED BY:

Scott A. McPherson

Janet K. Drakulich

A thesis submitted to the faculty of the  
College of Optometry  
Pacific University  
Forest Grove, Oregon  
For the degree of  
Doctor of Optometry  
December 2002

Advisors

Scott Cooper, O.D., M.S.  
Associate Professor of Optometry

Anita McClain, Ed. D.  
Professor of Education

Scott A. McPherson

Scott A. McPherson, Author

Janet K. Drakulich

Janet K. Drakulich, Author

Advisors:

Scott Cooper

Dr. Scott Cooper  
Associate Professor of Optometry  
Pacific University College of Optometry

Anita McClain

Dr. Anita McClain  
Professor, M.Ed. VFL Program  
Pacific University School of Education

## **BIOGRAPHY**

### **SCOTT A. McPHERSON, B.S.**

Scott is a third year student at Pacific University College of Optometry and will be graduating in May 2004. He obtained his Bachelor of Science Degree at Pacific University in Visual Science. Scott plans to practice primary care optometry and specialize in vision therapy and low vision.

### **JANET K. DRAKULICH, B.S.**

Janet is also a third year student at Pacific University College of Optometry and will be graduating in May 2003. She obtained her Bachelor of Science Degree at University of Nevada, Reno in Health Science. She plans to practice primary care optometry.

## ACKNOWLEDGEMENTS

The author's would like to acknowledge the following individuals who were instrumental in the completion of our thesis project:

**Dr. Darin Paulson**, our professor representing the College of Optometry, who approved of our thesis idea and motivated us to begin this project.

**Dr. Scott Cooper**, our professor representing the College of Optometry, who gave of his time, expertise, helpful suggestions, and encouragement in developing this product.

**Dr. Anita McClain**, our professor representing the School of Education, who gave of her time, expertise, helpful suggestions, and enthusiasm in developing this product.

## ABSTRACT

In order to properly identify and treat those children with visually related reading problems, a diagnostic flow chart was developed to assist optometrists with this task. This diagnostic tool addresses ten of the most commonly encountered visual problems associated with reading. It is a “user friendly” product that easily moves between some of the common signs/symptoms presented by your patients and an appropriate diagnostic condition. Within each diagnostic condition are the following sections: a short description, other signs and symptoms, and suggested treatment options for this condition. This diagnostic flow chart and CD are included in the appendix section of this document and is available for anyone’s use.

Our hope is that optometrists will find this product useful and therefore, children with visually related reading problems will receive the proper treatment so that they can reach their full potential.



## TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
Signature page	ii
Biographies	iii
Acknowledgments	iv
Abstract	v
Table of Contents	vi
Introduction	1
Literature Review	2-9
References	10-12
Appendix/CD	A1

# **A Diagnostic Guide of Selected Conditions for Helping to Identify Children Who Present With Visually Related Reading Problems**

---

## **INTRODUCTION**

Patients who present with signs/symptoms suggestive of visually related reading problems are effectively treated in a variety of ways. Vision therapy is one treatment option that is available to the optometrist. Vision therapy is not a “cure all” nor is it the only appropriate treatment modality for all patients.

Our goal for developing this product is to provide optometrists with appropriate options for treating patients with visually related reading problems. This product is designed to be “user friendly.” The table of contents lists some of the more common visual signs/symptoms that your patients could have. Each sign/symptom suggests one or more appropriate diagnosis. Within each diagnostic category are three separate sections that can help the optometrist decide if this is the appropriate diagnosis. These three sections are: short description, other signs & symptoms, and treatment options for that particular problem. Several hyperlink keys have been installed to help the optometrist navigate throughout this program more efficiently. Keys such as “Back,” “Next,” and “Back to Table of Contents” can help speed a search through this program. This diagnostic flow chart is found in the appendix section of this document along with the CD version. We are making this product available for anyone’s use.

Hopefully this diagnostic tool will be helpful in your practice. Every child should have the opportunity to enjoy reading for pleasure as well as having the ability to read more efficiently so that they can succeed at school and later on the job.

# **A Diagnostic Guide of Selected Conditions for Helping to Identify Children Who Present With Visually Related Reading Problems**

---

## **LITERATURE REVIEW**

It is not uncommon for children to present with vision problems that directly affect their learning. Their teachers and/or parents will have identified them as struggling in school (Richman 24-25). Furthermore, when these educators and parents are concerned about this sort of problem they will probably schedule these children to see an eye care specialist. For clinicians, there are three major objectives to consider whenever examining these patients. They are as follows:

1. To find out what learning tasks are deficient,
2. To determine if there is a visual component exacerbating or contributing to the learning dysfunction, and
3. If there is a vision and learning relationship, to provide appropriate treatment, management or referral for the problem.

First one needs to define the nature of the child's learning problem. A thorough case history will help to determine what types of learning difficulties the child is experiencing. According to Shaywitz, the most frequently studied learning disabilities are the reading disabilities (Shaywitz 998). Therefore, assume that the teacher or parent reports that the child is having reading problems. The next step would be to determine what type of reading problem they are experiencing. One may ask the child to respond to

certain optometric tests. Depending upon their responses, one can determine if the deficiencies are due to or in combination with reduced comprehension, mechanics of reading, word order, or recognition of letters.

Suppose two patients are examined. Assume they are both 12-year-old boys whose teacher and parents have reported they exhibit poor reading comprehension. The first child is able to correctly pronounce words that are familiar of children his age. Furthermore, he shows no signs of visual fatigue, eyestrain or discomfort while reading. Even though he can read for long periods of time, he cannot understand what he just read. When asked questions about the reading, he is only able to repeat back the exact words that were found in the text and cannot provide any insight or alternative phrases that indicate he understands what he just read. Moreover, his comprehension does not improve when he is read to. Would you suppose, given his case history, that his reading problem was due to a visual dysfunction? It would seem that there are additional factors that enter into the picture other than vision. For instance, maybe he has a language deficiency that is contributing to his reading comprehension problem.

Now consider the second little boy. This child can also identify and decode words that are familiar to him. However, in contrast to the first child, he shows decreased performance when required to read for long periods of time. His reading comprehension further declines when he is asked to read books with small print size. Frequently he omits words or inserts the wrong word, rereads the same line, or skips lines altogether. Now, given this case history, would you suppose that a visual dysfunction is contributing to his reading problem? With this little boy, we would suspect that he has

some problems with his visual system. The eye care specialist should specifically examine the sensory and motor aspects of eye movement and accommodation/vergence skills to help identify where in the visual system this child is having difficulties. These two examples demonstrate how a careful case history can help differentiate visually based learning problems from learning problems caused by other factors.

According to Flax, there are several distinctions between learning to read and reading to learn. These two aspects of reading have different characteristics and visual demands. Let us first consider some of the features in learning to read. In the beginning years of school, the books have large print with few words per page. There may even be pictures that depict what is going on in the story. Furthermore, the reading activity usually lasts for only a short period of time (Flax 367-368).

When learning to read, there are important visual factors that need consideration. At this age, the child should possess accurate oculomotor control. They should also have adequate visual form discrimination and directional orientation. When first learning to read, however, accommodation and vergence skills are of less importance.

In contrast, reading to learn requires longer reading sessions using books with smaller print. There is less dependence on form perception because context, phonic and linguistic cues are used to help these children recognize words. At this point in their education, typically about third grade, the emphasis shifts from the mechanics of reading to comprehension and speed. Because of this, accommodation and vergence skills become much more important. While form perception becomes less important, oculomotor control becomes more important. This aspect of the visual system helps the

student maintain their place while reading as well as preserving what they have just read (Flax 368-371).

Some children may not have any difficulty learning to read because the visual system is not sufficiently taxed to produce signs and symptoms. When the emphasis shifts to reading to learn, those children with fragile or dysfunctional visual systems may begin to exhibit learning problems, in addition to specific signs and symptoms related to these deficiencies (Birbaum 488).

Oculomotor control, accommodation, binocular vision, and visual perception can affect different subject areas. First, consider oculomotor control. When a student is just beginning to learn to read, precise oculomotor control is necessary in maintaining attention to fine detail and sequential inspection of words. With reading experience, oculomotor control becomes more important for maintaining their place while reading. With inaccurate control, omissions, substitutions and careless errors may result. Poor oculomotor control may also adversely affect reading comprehension. To avoid such errors, students may compensate by drastically slowing their reading rate (Scheiman 137).

Even in subjects like math, oculomotor control is important. Careless errors such as miscopying the numbers or shifting the numbers to the wrong column when adding or subtracting are examples of problems that appear with poor oculomotor control.

Now relate accommodation to learning. Deficiencies in accommodation begin to appear when we transition to more advanced levels of reading, somewhere around third or fourth grade. Here the emphasis in reading shifts from merely decoding words to

speed and comprehension. Books with smaller print compounded with longer reading periods tend to accentuate reading problems. As a result, fatigue will generally appear as one of the primary signs and symptoms experienced by these students. In addition, headaches and blurriness are common. Major problems such as asthenopia or localized eye discomfort, distance blur or slowness of near-far clarity as well as accommodative spasm may also develop. Therefore, the suspicion of accommodative dysfunctions should be heightened for those children in grades three and beyond who are having reading problems (Flax 368-369).

The results from research by Simons and Grisham suggest that binocular vision also affects learning (Simons 585), but primarily for older students. Rarely does it occur when children are just beginning to read. This is probably because sustainability is more important when reading emphasis moves towards speed and comprehension and is usually not a factor when decoding. As the homework level increases, binocular dysfunctions become more identifiable, especially when reading efficiency and comprehension decline. Intense headaches occurring in the occipital lobe as well as in the frontal and temporal lobes are commonly seen when binocular vision is deficient.

Visual perception seems to affect most aspects of learning. In the beginning, word recognition is a major component of reading, as is recalling, matching of shapes, and directional orientation of the letters. When reading shifts to speed and comprehension, visual perception decreases in importance and students are often able to compensate for most visual perception deficits (Flax 371).

Visual spatial abilities are also important to the development of numbers as

quantities. Visualization assists students in understanding spatial relationships in subjects such as geometry and trigonometry. Some students need to visualize the words in order to spell them correctly. Errors occur when these students are unable to do this and instead base the correct spelling on the sound of the words rather than on the perception of the words. Visual perception deficiencies may also appear in writing. However, we must be careful because some of these problems may be due to faulty fine motor control or developmental delays.

It is apparent from this discussion that many visual factors can affect learning. If there is a coexisting learning disorder, these visual difficulties are likely to compound their frustration and become barriers to progress. Since deficiencies can result in obvious learning difficulties for students, it is necessary for the eye care professional to properly diagnose, treat and manage or refer these patients. Before this can be done, however, there are certain signs and symptoms that would cue the parent, teacher or eye care professional into identifying those children who have visual dysfunctions that may affect learning. For organizational purposes, these are grouped into three broad categories: signs and symptoms that are physical in nature, those that result from the visual condition, and those that result from adaptive mechanisms from the visual condition.

The first category is the most frequently observed and causes the patient considerable discomfort or even pain. The three most commonly reported physical signs and symptoms include headaches (eye-ache), fatigue or eyestrain while reading, and double vision that may manifest with a misaligned eye (Hennessey 177). Any of these



problems could interfere with learning because attention and effort is diverted from the reading material. Other physical responses include tearing of the eyes, nausea, dizziness, sensitivity to light, and blurred vision that is especially prevalent at near.

There is a lengthy list of signs and symptoms that result from the visual condition itself. All of those listed below cause considerable problems for the reader and could interfere with learning efficiency. The most common problem from this group is reduced or inefficient comprehension. The remaining signs and symptoms include: difficulty changing focus from near to far, errors in visual judgment, reduced stereopsis or depth perception, less efficient visual performance in sports, poor eye-hand coordination, short attention span, excessive rubbing of the eyes, frequent loss of place while reading, omission of words, and skipping lines. Any of these problems could hinder reading performance. The problems compound when the patient presents with more than one of these conditions.

The final category considers those signs and symptoms that are compensatory mechanisms from the deficient condition. Three of these problems occur most frequently in patients who present with visual dysfunctions that affect learning. These include: suppression of vision in a turned eye, covering one eye or turning one's head while reading or watching T.V., and finally, avoidance of near tasks, especially reading. These behaviors represent more of an indication of poor eye movements. Other examples of this include finger reading and excessive head movements while reading. Again, the body compensates to alleviate uncomfortable or painful physical signs and symptoms. These compensatory behaviors are only short term "cures" because when the condition is

further ignored or left untreated, the problem becomes worse.

Once a patient has been identified and diagnosed with a specific visual dysfunction, there are several therapies to consider that may help minimize or eliminate the problem. The two most commonly prescribed treatments are spectacle or contact lenses and vision therapy (Dwyer 224-225). Studies show that both of these methods achieve great success in patients presenting with many of these learning related visual dysfunctions (Gallaway 85 and Hellerstein 624-625). Other therapies that could complement the two mentioned above include the following: maintain the appropriate distances for reading and near work, 33 cm. for children and 40 cm. for adults, using the appropriate amount of light while reading which requires the light to be brighter on the reading material than the surrounding area, without glare. Other therapies include taking frequent rest breaks as needed, patching the eye as appropriately prescribed, educating the patient about the eye condition, and finally, allowing additional time to complete the reading or near point activity.

It is important that parents, teachers, and eye care professionals become aware that faulty vision can contribute to reading difficulties in children. There are several treatment options available, of which vision therapy is just one option. By properly identifying children who could benefit from such therapy, these children can learn to read more efficiently with better comprehension.

## REFERENCES

1. Beitchman, Joseph H. and Arlene R. Young. "Learning Disorders With a Special Emphasis on Reading Disorders: A Review of the Past 10 Years." Journal of the American Academy of Child and Adolescent Psychiatry August, 1997; 36 (8): 1020-1032.
2. Birnbaum, Martin H. "Nearpoint visual stress: clinical implications," Journal of the American Optometric Association 1985; 56: 480-490.
3. Dwyer, Peter and Bruce Wick. "The Influence of Refractive Correction Upon Disorders of Vergence and Accommodation." Optometry And Vision Science 1995; 72 (4): 224-232.
4. Flax, Nathan. "Problems In Relating Visual Function To Reading Disorder." American Journal of Optometry and Archives of American Academy of Optometry 1970; 47: 366-372.
5. Gallaway, Michael and Mitchell Scheiman. "The efficacy of vision therapy for convergence excess." Journal of the American Optometric Association 1997; 68: 81-86.
6. Griffin, John R. and J. David Grisham. Binocular Anomalies: Diagnosis and Vision Therapy, 3<sup>rd</sup> ed. Newton, MA: Butterworth-Heinemann, 1995.
7. Hellerstein, Dowis and W.C. Maples. "Optometric management of strabismus patients." Journal of the American Optometric Association 1994; 65: 621-625.

8. Hennessey, Iosue and Michael W. Rouse. "Relation of Symptoms to Accommodative Infacility of School-Aged Children." American Journal of Optometry and Physiological Optics 1984; 61: 177-183.
9. Hoffman, Louis G. "Incidence of vision difficulties in children with learning disabilities." Journal of the American Optometric Association 1980; 51: 447-451.
10. Lennerstrand, Jakobsson and Gun Kvarnström. "Screening for ocular dysfunction in children: Approaching a common program." ACTA Ophthalmologica Scandinavica 1995: 26-40.
11. Lyon, G. Reid. "Learning Disabilities." The Future of Children: Special Education For Students With Disabilities Spring 1996; 6 (1): 54-76.
12. Meier, J.H. "Prevalence and characteristics of learning disabilities found in second grade children." Journal of Learning Disabilities 1971; 4: 1-16.
13. Richman, Jack E. "Use of a sustained visual attention task to determine children at risk for learning problems." Journal of the American Optometric Association 1986; 57: 20-26.
14. Scheiman, Mitchell M. and Michael W. Rouse. Optometric Management Of Learning-Related Vision Problems St. Louis: Mosby-Year Book, Inc., 1994.
15. Scheiman, Mitchell M. and Bruce Wick. Clinical management of binocular vision: heterophoric, accommodative, and eye movement disorders Philadelphia: JB Lippincott, 1994.

16. Shaywitz, Sally E., et al. "Prevalence of Reading Disability in Boys and Girls." The Journal of the American Medical Association August 1990; 264 (8): 998-1002.
17. Simons, Herbert D. and J. David Grisham. "Binocular anomalies and reading problems." Journal of the American Optometric Association 1987; 58: 578-587.
18. Wold, Pierce and Joan Kennington. "Effectiveness of optometric vision therapy." Journal of the American Optometric Association 1978; 49: 1047-1054.

# APPENDIX

## **A Diagnostic Guide of Selected Conditions for Helping to Identify Children Who Present With Visually Related Reading Problems**

(CD version is included on the back cover of this document)

A Diagnostic Guide of Selected Conditions For Helping to Identify Children Who Present With Visually Related Reading Problems

Presented By: Scott A. McPherson and Janet K. Drakulich

In partial fulfillment for the Doctorate degree in Optometry

Thesis Advisors: Dr. Darin Paulson, Professor of Optometry, Dr. Scott Cooper, Associate Professor of Optometry, and Dr. Anita McClain, Professor, M. Ed. VFL Program

December 2002

NEXT

ACKNOWLEDGEMENTS

The author's would like to acknowledge and express their gratitude to our thesis advisors who were instrumental in the completion of this project:

Dr. Darin Paulson, our professor representing the College of Optometry, who approved of this thesis idea and motivated us to begin this project.

Dr. Scott Cooper, our professor representing the College of Optometry, who gave of his time, expertise, helpful suggestions, and encouragement in developing this product.

Dr. Anita McClain, our professor representing the School of Education, who gave of her time, expertise, helpful suggestions, and enthusiasm in developing this product.

NEXT

INTRODUCTION

A Diagnostic Guide of Selected Conditions For Helping to Identify Children Who Present With Visually Related Reading Problems

Patients who present with signs/symptoms suggestive of visually related reading problems can be effectively treated in a variety of ways. Vision therapy is just one of the treatment options that is available to the optometrist. Vision therapy is not a "cure all" nor is it the only appropriate treatment modality for all patients.

Our goal for developing this product was to provide optometrists with some appropriate options for treating patients with visually related reading problems. We chose to differentiate between the following 10 conditions with respect to some of the more commonly presented patient signs/symptoms: amblyopia, accommodative insufficiency, binocular dysfunction, convergence excess, convergence insufficiency, divergence excess, divergence insufficiency, oculomotor dysfunction, strabismus and suppression. We fully realize that other possible diagnostic conditions other than those listed above could be possible. Therefore, the optometrist may need to consider other possible diagnosis such as uncompensated refractive error, accommodative excess, accommodative/vergence infacility, vertical imbalance, perceptual problems etc. whenever appropriate.

NEXT

INTRODUCTION

A Diagnostic Guide of Selected Conditions For Helping to Identify Children Who Present With Visually Related Reading Problems

This product is "user friendly." The table of contents for this diagnostic tool lists some of the more common signs/symptoms that your patients could present with. Each sign/symptom suggests one or more appropriate diagnosis. Within each diagnostic category are three separate sections which can help the optometrist decide between the above 10 mentioned diagnostic categories. These three sections are: short description, other signs and symptoms, and treatment options for that particular problem.

There are several ways to navigate throughout this program. To begin, click on the slide show (view show) option. In the lower left corner of each slide you will notice a rectangle. By clicking on that object, the following options are available to the user: next, previous, go, meeting minder, speaker notes, pointer options, screen, help and end show. Another option for advancing to the next slide is to simply click on the background of the slide while the user is in the view show option. In addition, several hyperlink keys have been installed to help the optometrist navigate throughout this program more efficiently. Such keys as "Back," "Next," and "Back to Table of Contents" can help speed your search through this program.

NEXT

INTRODUCTION

A Diagnostic Guide of Selected Conditions For Helping to Identify Children Who Present With Visually Related Reading Problems

We hope that this diagnostic tool will be helpful in your practice. We encourage the use of any part of this product for the benefit of your patients. However, use of this product for profit making ventures is not authorized without written consent from its authors (Scott A. McPherson, 2043 College Way, A.T.T.N: Optometry, Forest Grove, OR 97116).

We believe that every child should have the opportunity to enjoy reading for pleasure as well as having the ability to read more efficiently so that they can succeed at school and later in their chosen profession.

NEXT

A Diagnostic Guide of Selected Conditions For Helping to Identify Children Who Present With Visually Related Reading Problems:

Categorized by Signs/Symptoms

Short Description

Other Signs & Symptoms

Treatment

NEXT

**TABLE OF CONTENTS:**  
(By Signs/Symptoms)

- ❖ 1. Abnormal Head Posture  
Strabismus
- 2. Avoidance of Near Tasks  
Accommodative Insufficiency  
Binocular Dysfunction  
Convergence Insufficiency
- 3. Blurry Vision at Near  
Accommodative Insufficiency  
Convergence Excess
- 4. Blurry Vision at Both Near & Far  
Binocular Dysfunction
- 5. Blurry Vision at Far  
Divergence Excess
- 6. Covering One Eye/Turning Head  
Binocular Dysfunction  
Strabismus
- 7. Decreased Stereopsis  
Amblyopia  
Strabismus  
Suppression
- 8. Difficulty Changing Focus  
Binocular Dysfunction

NEXT

**TABLE OF CONTENTS:**  
(By Signs/Symptoms)

- ❖ 9. Double Vision  
Binocular Dysfunction  
Convergence Excess  
Convergence Insufficiency  
Divergence Excess  
Divergence Insufficiency  
Strabismus
- 10. Errors in Visual Judgment  
Δθlyopia  
Strabismus  
Suppression
- 11. Excess Rubbing of Eyes  
Binocular Dysfunction
- 12. Eye Turn/Misalignment of One Eye  
Strabismus  
Suppression
- 13. Failure or Instability  
Accommodative Insufficiency  
Binocular Dysfunction  
Convergence Excess  
Convergence Insufficiency  
Divergence Excess  
Divergence Insufficiency  
Oculomotor Dysfunction
- 14. Finger Reading  
Oculomotor Dysfunction

NEXT BACK

**TABLE OF CONTENTS:**  
(By Signs/Symptoms)

- ❖ 15. Frequent Loss of Place  
Oculomotor Dysfunction
- 16. Headache or Eye Ache  
Accommodative Insufficiency  
Binocular Dysfunction  
Convergence Excess  
Convergence Insufficiency  
Divergence Excess  
Divergence Insufficiency
- 17. Head Movement When Reading  
Oculomotor Dysfunction
- 18. Misalignment of One Eye/One Turn  
Strabismus  
Suppression
- 19. Noticeable Blur When Better Eye Covered  
Amblyopia
- 20. Omission of Words  
Oculomotor Dysfunction
- 21. Reduced Reading Comprehension  
Accommodative Insufficiency  
Binocular Dysfunction  
Convergence Excess  
Convergence Insufficiency  
Oculomotor Dysfunction

NEXT BACK

**TABLE OF CONTENTS:**  
(By Signs/Symptoms)

- ❖ 22. Sensitivity to Light  
Binocular Dysfunction  
Divergence Excess  
Divergence Insufficiency
- 23. Short Attention Span  
Accommodative Insufficiency  
Convergence Excess  
Convergence Insufficiency  
Oculomotor Dysfunction
- 24. Squint Lines  
Oculomotor Dysfunction
- 25. Suppression Vision of One Eye  
Convergence Excess  
Convergence Insufficiency  
Divergence Excess  
Divergence Insufficiency  
Strabismus  
Suppression

BACK

**Abnormal Head Posture**

- ❖ Possible Condition
  - ❖ Strabismus

**Abnormal Head Posture  
Strabismus**

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment
  
- ❖ BACK to Table of Contents



## Abnormal Head Posture Strabismus

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.
- ❖ [BACK](#)

## Abnormal Head Posture Strabismus

- ❖ Other Signs and Symptoms
  - ❖ Covering one eye or turning the head while reading
  - ❖ Decreased stereopsis
  - ❖ Double vision
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Abnormal Head Posture Strabismus

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

## Avoidance of Near Tasks

- ❖ Possible Condition
  - ❖ Accommodative Insufficiency
  - ❖ Binocular Dysfunction
  - ❖ Convergence Insufficiency

## Avoidance of Near Tasks Accommodative Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Avoidance of Near Tasks Accommodative Insufficiency

- ❖ Short Description
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
  - ❖ **Note:** Contrast to age-related loss of accommodation (presbyopia)
- ❖ [BACK](#)

**Avoidance of Near Tasks  
Accommodative Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at near
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
- ❖ [BACK](#)

**Avoidance of Near Tasks  
Accommodative Insufficiency**

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances – 33 cm. for children, 40 cm. for adults
- ❖ [BACK](#)

**Avoidance of Near Tasks  
Binocular Dysfunction**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

**Avoidance of Near Tasks  
Binocular Dysfunction**


- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

**Avoidance of Near Tasks  
Binocular Dysfunction**

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
- ❖ [BACK](#)

**Avoidance of Near Tasks  
Binocular Dysfunction**


- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)



## Avoidance of Near Tasks Convergence Insufficiency


- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)




## Avoidance of Near Tasks Convergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.
- ❖ [BACK](#)




## Avoidance of Near Tasks Convergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Double vision (especially at reading distance)
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)




## Avoidance of Near Tasks Convergence Insufficiency

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often
- ❖ [BACK](#)



## Blurry Vision at Near

- ❖ Possible Conditions
  - ❖ Accommodative Insufficiency
  - ❖ Convergence Excess



## Blurry Vision at Near Accommodative Insufficiency

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)

**Blurry Vision at Near  
Accommodative Insufficiency**

- ❖ **Short Description**
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
  - ❖ Note: Contrast to age-related loss of accommodation (presbyopia)
- ❖ [BACK](#)

**Blurry Vision at Near  
Accommodative Insufficiency**

- ❖ **Other Signs and Symptoms**
  - ❖ Avoidance of near tasks
  - ❖ Fatigue or eye strain
  - ❖ Headaches or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
- ❖ [BACK](#)

**Blurry Vision at Near  
Accommodative Insufficiency**

- ❖ **Treatment**
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances – 33 cm. for children, 40 cm. for adults
- ❖ [BACK](#)

**Blurry Vision at Near  
Convergence Excess**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

**Blurry Vision at Near  
Convergence Excess**

- ❖ **Short Description**
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.
- ❖ [BACK](#)

**Blurry Vision at Near  
Convergence Excess**

- ❖ **Other Signs and Symptoms**
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Blurry Vision at Near Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work
- ❖ [BACK](#)

## Blurry Vision at Both Near and Far

- ❖ Possible Conditions
  - ❖ Binocular Dysfunction

## Blurry Vision at Both Near and Far Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Blurry Vision at Both Near and Far Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, or repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

## Blurry Vision at Both Near and Far Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
- ❖ [BACK](#)

## Blurry Vision at Both Near and Far Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)

## Blurry Vision at Far

- ❖ Possible Conditions
  - ❖ Divergence Excess

## Blurry Vision at Far Divergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Blurry Vision at Far Divergence Excess

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.
- ❖ [BACK](#)

## Blurry Vision at Far Divergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Blurry Vision at Far Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

## Covering One Eye or Turning the Head While Reading

- ❖ Possible Conditions
  - ❖ Binocular Dysfunction
  - ❖ Strabismus

Covering One Eye or Turning the Head While Reading  
Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

Covering One Eye or Turning the Head While Reading  
Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

Covering One Eye or Turning the Head While Reading  
Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
  - ❖ [BACK](#)

Covering One Eye or Turning the Head While Reading  
Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
  - ❖ [BACK](#)

Covering One Eye or Turning the Head While Reading  
Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

Covering One Eye or Turning the Head While Reading  
Strabismus

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma
- ❖ [BACK](#)

### Covering One Eye or Turning the Head While Reading Strabismus

- ❖ Other Signs and Symptoms
  - ❖ Abnormal head posture
  - ❖ Decreased stereopsis
  - ❖ Double vision
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

### Covering One Eye or Turning the Head While Reading Strabismus

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

### Decreased Stereopsis

- ❖ Possible Conditions
  - ❖ Amblyopia
  - ❖ Strabismus
  - ❖ Suppression

### Decreased Stereopsis Amblyopia

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)


### Decreased Stereopsis Amblyopia

- ❖ Short Description
  - ❖ A condition where the best visual acuity is below normal in one or both eyes in the absence of any structural anomalies or ocular disease. Spectacles or contact lenses will not immediately correct this condition. This condition occurs during early development and is caused by form deprivation and/or abnormal binocularity. Other considerations include: high uncompensated refractive conditions; unequal refractive conditions between the eyes; constant unilateral strabismus; congenital cataract; corneal opacity; psychogenic or organic causes such as high stress, malingering, reduced visual acuity secondary to nutritional deficiency or drugs.
- ❖ [BACK](#)

### Decreased Stereopsis Amblyopia

- ❖ Other Signs and Symptoms
  - ❖ Decreased stereopsis
  - ❖ Errors in visual judgment
  - ❖ Noticeable blur when better eye covered
- ❖ [BACK](#)






## Decreased Stereopsis Amblyopia

- ❖ Treatment
  - ❖ Wear prescribed lenses full time
  - ❖ Patching the better eye as appropriately prescribed
  - ❖ Treat other causative factors i.e. strabismus
  - ❖ Vision therapy
  - ❖ Patient awareness of precautions associated with decreased depth perception


❖ [BACK](#)



## Decreased Stereopsis Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)


❖ [BACK to Table of Contents](#)



## Decreased Stereopsis Strabismus

- ❖ Short Description
  - ❖ A term used when one or the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.


❖ [BACK](#)



## Decreased Stereopsis Strabismus

- ❖ Other Signs and Symptoms
  - ❖ Abnormal head posture
  - ❖ Covering one eye or turning the head while reading
  - ❖ Double vision
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye


❖ [BACK](#)



## Decreased Stereopsis Strabismus

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)

❖ [BACK](#)



## Decreased Stereopsis Suppression

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Decreased Stereopsis Suppression

- ❖ **Short Description**
  - ❖ A term used when the image or part of an image from one eye is perceptually "ignored." It is a means of eliminating conflicting or confusing visual information from binocular viewing i.e. double vision. Frequently caused by a turned eye, lazy eye or a significantly different refractive power between each eye.

❖ [BACK](#)

## Decreased Stereopsis Suppression

- ❖ **Other Signs and Symptoms**
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye

❖ [BACK](#)

## Decreased Stereopsis Suppression

- ❖ **Treatment**
  - ❖ Compensating lenses
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy – increased binocular function and visual performance

❖ [BACK](#)

## Difficulty Changing Focus

- ❖ **Possible Conditions**
  - ❖ Binocular Dysfunction

## Difficulty Changing Focus Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Difficulty Changing Focus Binocular Dysfunction

- ❖ **Short Description**
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

## Difficulty Changing Focus Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
  - ❖ [BACK](#)

## Difficulty Changing Focus Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
  - ❖ [BACK](#)

## Double Vision

- ❖ Possible Conditions
  - ❖ Binocular Dysfunction
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Divergence Excess
  - ❖ Divergence Insufficiency
  - ❖ Strabismus

## Double Vision Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Double Vision Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
  - ❖ [BACK](#)

## Double Vision Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
  - ❖ [BACK](#)

## Double Vision Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)

## Double Vision Convergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Double Vision Convergence Excess

- ❖ [Short Description](#)
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.
- ❖ [BACK](#)

## Double Vision Convergence Excess

- ❖ [Other Signs and Symptoms](#)
  - ❖ Blurry vision at near
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Double Vision Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances, 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work
- ❖ [BACK](#)

## Double Vision Convergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

**Double Vision  
Convergence Insufficiency**

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.
- ❖ [BACK](#)

**Double Vision  
Convergence Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

**Double Vision  
Convergence Insufficiency**

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often
- ❖ [BACK](#)

**Double Vision  
Divergence Excess**


- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

**Double Vision  
Divergence Excess**

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.
- ❖ [BACK](#)

**Double Vision  
Divergence Excess**


- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at far
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)



### Double Vision Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)


❖ [BACK](#)



### Double Vision Divergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)


❖ [BACK to Table of Contents](#)



### Double Vision Divergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the outward aiming skill of the patient's eyes are inadequate and below expected norms. This condition often presents in childhood when accommodation and vergence skills are developing.


❖ [BACK](#)



### Double Vision Divergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye


❖ [BACK](#)



### Double Vision Divergence Insufficiency

- ❖ Treatment
  - ❖ Prism
  - ❖ Vision therapy – improve divergence ability
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)

❖ [BACK](#)



### Double Vision Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Double Vision Strabismus

### ❖ Short Description

- ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities of each eye, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.

❖ [BACK](#)

## Double Vision Strabismus

### ❖ Other Signs and Symptoms

- ❖ Abnormal head posture
- ❖ Covering one eye or turning the head while reading
- ❖ Decreased stereopsis
- ❖ Errors in visual judgment
- ❖ Eye turn or misalignment of one eye
- ❖ Misalignment of one eye or eye turn
- ❖ Suppression vision of one eye

❖ [BACK](#)

## Double Vision Strabismus

### ❖ Treatment

- ❖ Lenses
- ❖ Prisms
- ❖ Prescribed regimen of patching or occluding one eye
- ❖ Vision therapy as needed
- ❖ Pharmacological therapy
- ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)

❖ [BACK](#)

## Errors in Visual Judgment

### ❖ Possible Condition

- ❖ Amblyopia
- ❖ Strabismus
- ❖ Suppression

## Errors in Visual Judgment Amblyopia

### ❖ [Short Description](#)

### ❖ [Other Signs and Symptoms](#)

### ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Errors in Visual Judgment Amblyopia

### ❖ Short Description

- ❖ A condition where the best visual acuity is below normal in one or both eyes in the absence of any structural anomalies or ocular disease. Spectacles or contact lenses will not immediately correct this condition. This condition occurs during early development and is caused by form deprivation and/or abnormal binocularity. Other considerations include: high uncompensated refractive conditions; unequal refractive conditions between the eyes; constant unilateral strabismus; congenital cataract; corneal opacity; psychogenic or organic causes such as high stress, malingering, reduced visual acuity secondary to nutritional deficiency or drugs.

❖ [BACK](#)

**Errors in Visual Judgment  
Amblyopia**

- ❖ Other Signs and Symptoms
  - ❖ Decreased stereopsis
  - ❖ Noticeable blur when better eye covered

❖ [BACK](#)

**Errors in Visual Judgment  
Amblyopia**

- ❖ Treatment
  - ❖ Wear prescribed lenses full time
  - ❖ Patching the better eye as appropriately prescribed
  - ❖ Treat other causative factors i.e. strabismus
  - ❖ Vision therapy
  - ❖ Patient awareness of precautions associated with decreased depth perception

❖ [BACK](#)

**Errors in Visual Judgment  
Strabismus**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

**Errors in Visual Judgment  
Strabismus**

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities of each eye, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.

❖ [BACK](#)

**Errors in Visual Judgment  
Strabismus**

- ❖ Other Signs and Symptoms
  - ❖ Abnormal head posture
  - ❖ Covering one eye or turning the head while reading
  - ❖ Decreased stereopsis
  - ❖ Double vision
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye


❖ [BACK](#)

**Errors in Visual Judgment  
Strabismus**

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)

❖ [BACK](#)






## Errors in Visual Judgment Suppression


- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)




## Errors in Visual Judgment Suppression

- ❖ [Short Description](#)
  - ❖ A term used when the image or part of an image from one eye is perceptually "ignored." It is a means of eliminating conflicting or confusing visual information from binocular viewing i.e. double vision. Frequently caused by a turned eye, lazy eye or a significantly different refractive power between each eye.
- ❖ [BACK](#)




## Errors in Visual Judgment Suppression

- ❖ [Other Signs and Symptoms](#)
  - ❖ Decreased stereopsis
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)




## Errors in Visual Judgment Suppression

- ❖ [Treatment](#)
  - ❖ Compensating lenses
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy – increased binocular function and visual performance
- ❖ [BACK](#)



## Excessive Rubbing of the Eyes

- ❖ [Possible Condition](#)
  - ❖ Binocular Dysfunction



## Excessive Rubbing of the Eyes Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Excessive Rubbing of the Eyes Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

## Excessive Rubbing of the Eyes Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
- ❖ [BACK](#)

## Excessive Rubbing of the Eyes Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system.
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye

- ❖ Possible Conditions
  - ❖ Strabismus
  - ❖ Suppression

## Eye Turn or Misalignment of One Eye Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

- ❖ [BACK to Table of Contents](#)

## Eye Turn or Misalignment of One Eye Strabismus

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.

- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye Strabismus

- ❖ Other Signs and Symptoms
  - ❖ Abnormal head posture
  - ❖ Covering one eye or turning the head while reading
  - ❖ Decreased stereopsis
  - ❖ Double vision
  - ❖ Errors in visual judgment
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye Strabismus

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye Suppression

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

- ❖ [BACK to Table of Contents](#)

## Eye Turn or Misalignment of One Eye Suppression

- ❖ Short Description
  - ❖ A term used when the image or part of an image from one eye is perceptually "ignored." It is a means of eliminating conflicting or confusing visual information from binocular viewing i.e. double vision. Frequently caused by a turned eye, lazy eye or a significantly different refractive power between each eye.

- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye Suppression


- ❖ Other Signs and Symptoms
  - ❖ Decreased stereopsis
  - ❖ Errors in visual judgment
  - ❖ Misalignment of one eye or eye turn
  - ❖ Suppression vision of one eye

- ❖ [BACK](#)

## Eye Turn or Misalignment of One Eye Suppression


- ❖ Treatment
  - ❖ Compensating lenses
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy – increased binocular function and visual performance

- ❖ [BACK](#)



## Fatigue or Eyestrain


- ❖ Possible Conditions
  - ❖ Accommodative Insufficiency
  - ❖ Binocular Dysfunction
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Divergence Excess
  - ❖ Divergence Insufficiency
  - ❖ Oculomotor Dysfunction



## Fatigue or Eyestrain Accommodative Insufficiency

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment


❖ [BACK to Table of Contents](#)



## Fatigue or Eyestrain Accommodative Insufficiency

- ❖ Short Description
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
  - ❖ Note: Contrast to age-related loss of accommodation (presbyopia)


❖ [BACK](#)



## Fatigue or Eyestrain Accommodative Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near
  - ❖ Headaches or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span


❖ [BACK](#)



## Fatigue or Eyestrain Accommodative Insufficiency

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances - 33 cm. for children, 40 cm. for adults

❖ [BACK](#)



## Fatigue or Eyestrain Binocular Dysfunction

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)

## Fatigue or Eyestrain Binocular Dysfunction

### ❖ Short Description

- ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.

❖ [BACK](#)

## Fatigue or Eyestrain Binocular Dysfunction

### ❖ Other Signs and Symptoms

- ❖ Avoidance of near tasks
- ❖ Blurry vision at near and far
- ❖ Covering one eye or turning the head while reading
- ❖ Difficulty changing focus
- ❖ Double vision
- ❖ Excessive rubbing of the eyes
- ❖ Headaches or eye ache
- ❖ Reduced reading comprehension
- ❖ Sensitivity to light
- ❖ [BACK](#)

## Fatigue or Eyestrain Binocular Dysfunction

### ❖ Treatment

- ❖ Lenses for clear vision
- ❖ Plus lenses at near
- ❖ Prism
- ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
- ❖ Use good lighting while reading
- ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
- ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)

## Fatigue or Eyestrain Convergence Excess

### ❖ [Short Description](#)

### ❖ [Other Signs and Symptoms](#)

### ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Fatigue or Eyestrain Convergence Excess

### ❖ Short Description


- ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.

❖ [BACK](#)

## Fatigue or Eyestrain Convergence Excess

### ❖ Other Signs and Symptoms


- ❖ Blurry vision at near
- ❖ Double vision
- ❖ Headache or eye ache
- ❖ Reduced reading comprehension
- ❖ Short attention span
- ❖ Suppression vision of one eye
- ❖ [BACK](#)



## Fatigue or Eyestrain Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work


❖ [BACK](#)



## Fatigue or Eyestrain Convergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)


❖ [BACK to Table of Contents](#)



## Fatigue or Eyestrain Convergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.


❖ [BACK](#)



## Fatigue or Eyestrain Convergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Double vision (especially at reading distance)
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye


❖ [BACK](#)



## Fatigue or Eyestrain Convergence Insufficiency

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often

❖ [BACK](#)



## Fatigue or Eyestrain Divergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Fatigue or Eyestrain Divergence Excess

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.
- ❖ [BACK](#)

## Fatigue or Eyestrain Divergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at far
  - ❖ Double vision
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Fatigue or Eyestrain Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

## Fatigue or Eyestrain Divergence Insufficiency


- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Fatigue or Eyestrain Divergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the outward aiming skill of the patient's eyes are inadequate and below expected norms. This condition often presents in childhood when accommodation and vergence skills are developing.
- ❖ [BACK](#)

## Fatigue or Eyestrain Divergence Insufficiency


- ❖ Other Signs and Symptoms
  - ❖ Double vision
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)



## Fatigue or Eyestrain Divergence Insufficiency

- ❖ Treatment
  - ❖ Prism
  - ❖ Vision therapy – improve divergence ability
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)


❖ [BACK](#)



## Fatigue or Eyestrain Oculomotor Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)


❖ [BACK to Table of Contents](#)



## Fatigue or Eyestrain Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.


❖ [BACK](#)



## Fatigue or Eyestrain Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words/entire line of text)
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Skipping lines


❖ [BACK](#)



## Fatigue or Eyestrain Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)


❖ [BACK](#)



## Finger Reading

- ❖ Possible Condition
  - ❖ Oculomotor Dysfunction






## Finger Reading Oculomotor Dysfunction


- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)




## Finger Reading Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.
- ❖ [BACK](#)




## Finger Reading Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Frequent loss of place when reading (repeating words/entire line of text)
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Skipping lines
  - ❖ [BACK](#)




## Finger Reading Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)



## Frequent Loss of Place

- ❖ Possible Condition
  - ❖ Oculomotor Dysfunction



## Frequent Loss of Place Oculomotor Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Frequent Loss of Place Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.
- ❖ [BACK](#)

## Frequent Loss of Place Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Skipping lines
- ❖ [BACK](#)

## Frequent Loss of Place Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)

## Headache or Eye Ache


- ❖ Possible Conditions
  - ❖ Accommodative Insufficiency
  - ❖ Binocular Dysfunction
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Divergence Excess
  - ❖ Divergence Insufficiency

## Headache or Eye Ache Accommodative Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)


## Headache or Eye Ache Accommodative Insufficiency

- ❖ Short Description
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
- ❖ [Note: Contrast to age-related loss of accommodation \(presbyopia\)](#)
- ❖ [BACK](#)




## Headache or Eye Ache Accommodative Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near
  - ❖ Fatigue or eyestrain
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
- ❖ [BACK](#)




## Headache or Eye Ache Accommodative Insufficiency

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances - 33 cm. for children, 40 cm. for adults
- ❖ [BACK](#)




## Headache or Eye Ache Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)




## Headache or Eye Ache Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)




## Headache or Eye Ache Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Reduced reading comprehension
  - ❖ Sensitivity to light
- ❖ [BACK](#)




## Headache or Eye Ache Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)




## Headache or Eye Ache Convergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)




## Headache or Eye Ache Convergence Excess

- ❖ Short Description
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.
  
- ❖ [BACK](#)




## Headache or Eye Ache Convergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at near
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
  
- ❖ [BACK](#)




## Headache or Eye Ache Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances - 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work
  
- ❖ [BACK](#)



## Headache or Eye Ache Convergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)



## Headache or Eye Ache Convergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.
  
- ❖ [BACK](#)

## Headache or Eye Ache Convergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Double vision (especially at reading distance)
  - ❖ Fatigue or eyestrain
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Suppression vision of one eye

❖ [BACK](#)

## Headache or Eye Ache Convergence Insufficiency

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often

❖ [BACK](#)

## Headache or Eye Ache Divergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Headache or Eye Ache Divergence Excess

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.

❖ [BACK](#)

## Headache or Eye Ache Divergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at far
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye

❖ [BACK](#)

## Headache or Eye Ache Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy –improve relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)

❖ [BACK](#)

**Headache or Eye Ache  
Divergence Insufficiency**

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ BACK to Table of Contents

**Headache or Eye Ache  
Divergence Insufficiency**

- ❖ Short Description
  - ❖ A term used when the outward aiming skill of the patient's eyes are inadequate and below expected norms. This condition often presents in childhood when accommodation and vergence skills are developing.

❖ BACK

**Headache or Eye Ache  
Divergence Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Sensitivity to light
  - ❖ Suppression vision of one eye

❖ BACK

**Headache or Eye Ache  
Divergence Insufficiency**

- ❖ Treatment
  - ❖ Prism
  - ❖ Vision therapy – improve divergence ability
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)

❖ BACK

**Head Movement When Reading**

- ❖ Possible Condition
  - ❖ Oculomotor Dysfunction

**Head Movement When Reading  
Oculomotor Dysfunction**

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ BACK to Table of Contents

## Head Movement When Reading Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.
- ❖ [BACK](#)

## Head Movement When Reading Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words or entire line of text)
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Skipping lines
  - ❖ [BACK](#)

## Head Movement When Reading Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)

## Misalignment of One Eye or Eye Turn

- ❖ Possible Conditions
  - ❖ Strabismus
  - ❖ Suppression

## Misalignment of One Eye or Eye Turn Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Misalignment of One Eye or Eye Turn Strabismus

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities of each eye, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.
- ❖ [BACK](#)

## Misalignment of One Eye or Eye Turn Strabismus

### ❖ Other Signs and Symptoms

- ❖ Abnormal head posture
- ❖ Covering one eye or turning the head while reading
- ❖ Decreased stereopsis
- ❖ Double vision
- ❖ Errors in visual judgment
- ❖ Eye turn or misalignment of one eye
- ❖ Suppression vision of one eye

❖ [BACK](#)

## Misalignment of One Eye or Eye Turn Strabismus

### ❖ Treatment

- ❖ Lenses
- ❖ Prisms
- ❖ Prescribed regimen of patching or occluding one eye
- ❖ Vision therapy as needed
- ❖ Pharmacological therapy
- ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)

❖ [BACK](#)

## Misalignment of One Eye or Eye Turn Suppression

### ❖ [Short Description](#)

### ❖ [Other Signs and Symptoms](#)

### ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Misalignment of One Eye or Eye Turn Suppression

### ❖ Short Description

- ❖ A term used when the image or part of an image from one eye is perceptually "ignored." It is a means of eliminating conflicting or confusing visual information from binocular viewing i.e. double vision. Frequently caused by a turned eye, lazy eye or a significantly different refractive power between each eye.

❖ [BACK](#)

## Misalignment of One Eye or Eye Turn Suppression

### ❖ Other Signs and Symptoms

- ❖ Decreased stereopsis
- ❖ Errors in visual judgment
- ❖ Eye turn or misalignment of one eye
- ❖ Suppression vision of one eye

❖ [BACK](#)

## Misalignment of One Eye or Eye Turn Suppression

### ❖ Treatment

- ❖ Compensating lenses
- ❖ Prescribed regimen of patching or occluding one eye
- ❖ Vision therapy – increase binocular function and visual performance

❖ [BACK](#)



## Noticeable Blur When Better Eye Covered

- ❖ Possible Condition
  - ❖ Amblyopia

## Noticeable Blur When Better Eye Covered Amblyopia

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)

## Noticeable Blur When Better Eye Covered Amblyopia

- ❖ Short Description
  - ❖ A condition where the best visual acuity is below normal in one or both eyes in the absence of any structural anomalies or ocular disease. Spectacle or contact lenses will not immediately correct this condition. This condition occurs during early development and is caused by form deprivation and/or abnormal binocularity. Other considerations include: high uncompensated refractive conditions; unequal refractive conditions between the eyes; constant unilateral strabismus; congenital cataract; corneal opacity; psychogenic or organic causes such as high stress, malingering, reduced visual acuity secondary to nutritional deficiency or drugs.
- ❖ [BACK](#)

## Noticeable Blur When Better Eye Covered Amblyopia

- ❖ Other Signs and Symptoms
  - ❖ Decreased stereopsis
  - ❖ Errors in visual judgment

❖ [BACK](#)

## Noticeable Blur When Better Eye Covered Amblyopia

- ❖ Treatment
  - ❖ Wear prescribed lenses full time
  - ❖ Patching the better eye as appropriately prescribed
  - ❖ Treat other causative factors i.e. strabismus
  - ❖ Vision therapy
  - ❖ Patient awareness of precautions associated with decreased depth perception
- ❖ [BACK](#)

## Omission of Words

- ❖ Possible Condition
  - ❖ Oculomotor Dysfunction

**Omission of Words  
Oculomotor Dysfunction**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

**Omission of Words  
Oculomotor Dysfunction**

- ❖ [Short Description](#)
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hypermetropia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.
- ❖ [BACK](#)

**Omission of Words  
Oculomotor Dysfunction**

- ❖ [Other Signs and Symptoms](#)
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words or entire line of text)
  - ❖ Head movement when reading
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
  - ❖ Skipping lines
  - ❖ [BACK](#)

**Omission of Words  
Oculomotor Dysfunction**

- ❖ [Treatment](#)
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)

**Reduced Reading Comprehension**

- ❖ [Possible Conditions](#)
  - ❖ Accommodative Insufficiency
  - ❖ Binocular Dysfunction
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Oculomotor Dysfunction

**Reduced Reading Comprehension  
Accommodative Insufficiency**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Reduced Reading Comprehension Accommodative Insufficiency

- ❖ Short Description
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
  - ❖ Note: Contrast to age-related loss of accommodation (presbyopia)
  - ❖ [BACK](#)

## Reduced Reading Comprehension Accommodative Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Short attention span
- ❖ [BACK](#)

## Reduced Reading Comprehension Accommodative Insufficiency

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ [BACK](#)

## Reduced Reading Comprehension Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Reduced Reading Comprehension Binocular Dysfunction

- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
  - ❖ [BACK](#)

## Reduced Reading Comprehension Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eyes
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light
  - ❖ [BACK](#)

## Reduced Reading Comprehension Binocular Dysfunction

- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance - 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)

## Reduced Reading Comprehension Convergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Reduced Reading Comprehension Convergence Excess

- ❖ [Short Description](#)
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.
- ❖ [BACK](#)

## Reduced Reading Comprehension Convergence Excess

- ❖ [Other Signs and Symptoms](#)
  - ❖ Blurry vision at near
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Short attention span
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Reduced Reading Comprehension Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work
- ❖ [BACK](#)

## Reduced Reading Comprehension Convergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Reduced Reading Comprehension Convergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.

❖ [BACK](#)

## Reduced Reading Comprehension Convergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Double vision (especially at reading distance)
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Short attention span
  - ❖ Suppression vision of one eye

❖ [BACK](#)

## Reduced Reading Comprehension Convergence Insufficiency

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading

❖ [BACK](#)

## Reduced Reading Comprehension Oculomotor Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Reduced Reading Comprehension Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.

❖ [BACK](#)

## Reduced Reading Comprehension Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words or entire line of text)
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Short attention span
  - ❖ Skipping lines

❖ [BACK](#)

## Reduced Reading Comprehension Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear Prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)

## Sensitivity to Light

- ❖ Possible Conditions
  - ❖ Binocular Dysfunction
  - ❖ Divergence Excess
  - ❖ Divergence Insufficiency

## Sensitivity to Light Binocular Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Sensitivity to Light Binocular Dysfunction


- ❖ Short Description
  - ❖ A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general fatigue, uncompensated refractive condition, repeated or prolonged visual stress. Adults may develop this condition with prolonged or repetitive computer use or other extended activities within arms reach. Also consider ocular or systemic diseases, drugs, medication and emotional problems.
- ❖ [BACK](#)

## Sensitivity to Light Binocular Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near and far
  - ❖ Covering one eye or turning the head while reading
  - ❖ Difficulty changing focus
  - ❖ Double vision
  - ❖ Excessive rubbing of the eye
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
- ❖ [BACK](#)

## Sensitivity to Light Binocular Dysfunction


- ❖ Treatment
  - ❖ Lenses for clear vision
  - ❖ Plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – specific to the type of dysfunction; improve relationship between accommodative and vergence system
  - ❖ Use good lighting while reading
  - ❖ Appropriate reading distance – 33 cm. for children, 40 cm. for adults
  - ❖ Rest breaks for computer and video game users
- ❖ [BACK](#)



## Sensitivity to Light Divergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)


❖ [BACK to Table of Contents](#)



## Sensitivity to Light Divergence Excess

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.


❖ [BACK](#)



## Sensitivity to Light Divergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at far
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Suppression vision of one eye


❖ [BACK](#)



## Sensitivity to Light Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – normalize relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)


❖ [BACK](#)



## Sensitivity to Light Divergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)



## Sensitivity to Light Divergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the outward aiming skill of the patient's eyes are inadequate and below expected norms. This condition often presents in childhood when accommodation and vergence skills are developing.

❖ [BACK](#)

**Sensitivity to Light  
Divergence Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Suppression vision of one eye
- ❖ BACK

**Sensitivity to Light  
Divergence Insufficiency**

- ❖ Treatment
  - ❖ Prism
  - ❖ Vision therapy – improve divergence ability
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)
- ❖ BACK

**Short Attention Span**

- ❖ Possible Condition
  - ❖ Accommodative Insufficiency
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Oculomotor Dysfunction

**Short Attention Span  
Accommodative Insufficiency**

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment
- ❖ BACK to Table of Contents

**Short Attention Span  
Accommodative Insufficiency**

- ❖ Short Description
  - ❖ A term used when a patient's focusing skills are not adequate and are below expected norms. Commonly affecting school age children with uncorrected hyperopia, vergence problems, general fatigue and stress. Other considerations include excessive near point work, ocular/systemic diseases, emotional problems, age, drugs and medication.
  - ❖ Note: Contrast to age-related loss of accommodation (presbyopia)
  - ❖ BACK

**Short Attention Span  
Accommodative Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Blurry vision at near
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
- ❖ BACK



## Short Attention Span Accommodative Insufficiency

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Vision therapy – programmed activities to improve accommodative ability
  - ❖ Combination of lenses and vision therapy
  - ❖ Maintain appropriate reading distances – 33 cm. for children, 40 cm. for adults
- ❖ [BACK](#)

## Short Attention Span Convergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

## Short Attention Span Convergence Excess

- ❖ Short Description
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.
- ❖ [BACK](#)

## Short Attention Span Convergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at near
  - ❖ Double vision Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Suppression vision of one eye
- ❖ [BACK](#)

## Short Attention Span Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work
- ❖ [BACK](#)

## Short Attention Span Convergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
  
- ❖ [BACK to Table of Contents](#)

**Short Attention Span  
Convergence Insufficiency**

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.

❖ [BACK](#)

**Short Attention Span  
Convergence Insufficiency**

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Double vision (especially at reading distance)
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Suppression vision of one eye

❖ [BACK](#)

**Short Attention Span  
Convergence Insufficiency**

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often

❖ [BACK](#)

**Short Attention Span  
Oculomotor Dysfunction**

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

**Short Attention Span  
Oculomotor Dysfunction**

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.

❖ [BACK](#)

**Short Attention Span  
Oculomotor Dysfunction**

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words or entire line of text)
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Skipping lines

❖ [BACK](#)

## Short Attention Span Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)

❖ [BACK](#)

## Skipping Lines

- ❖ Possible Condition
  - ❖ Oculomotor Dysfunction

## Skipping Lines Oculomotor Dysfunction

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Skipping Lines Oculomotor Dysfunction

- ❖ Short Description
  - ❖ A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional stress, drug effects, hyperkinesia or possibly oculomotor skills never learned adequately during development. Other considerations include left-right confusion and delay in some aspects of visual perceptual development.
- ❖ [BACK](#)

## Skipping Lines Oculomotor Dysfunction

- ❖ Other Signs and Symptoms
  - ❖ Fatigue or eyestrain
  - ❖ Finger reading
  - ❖ Frequent loss of place when reading (repeating words or entire line of text)
  - ❖ Head movement when reading
  - ❖ Omission of words
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
- ❖ [BACK](#)

## Skipping Lines Oculomotor Dysfunction

- ❖ Treatment
  - ❖ Wear prescribed lenses
  - ❖ Address any coexisting vergence and/or accommodative disorder
  - ❖ Vision therapy to improve deficient oculomotor skills (fixations, pursuits and saccades)
- ❖ [BACK](#)

## Suppression Vision of One Eye

- ❖ Possible Conditions
  - ❖ Convergence Excess
  - ❖ Convergence Insufficiency
  - ❖ Divergence Excess
  - ❖ Divergence Insufficiency
  - ❖ Strabismus
  - ❖ Suppression

## Suppression Vision of One Eye Convergence Excess

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Convergence Excess

- ❖ Short Description
  - ❖ A term used when the eyes tend to aim excessively inward in front of the near target that the patient is focusing. Patients with this condition commonly have uncorrected hyperopia or visual stress. Also consider local inflammation, central nervous system lesions or some drugs.

❖ [BACK](#)

## Suppression Vision of One Eye Convergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at near
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span
- ❖ [BACK](#)

## Suppression Vision of One Eye Convergence Excess

- ❖ Treatment
  - ❖ Plus lenses
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between convergence and accommodation and also improve divergence skills
  - ❖ Keep appropriate reading distances – 33 cm. for children, 40 cm. for adults
  - ❖ Use good lighting when reading or doing near work

❖ [BACK](#)

## Suppression Vision of One Eye Convergence Insufficiency

- ❖ Short Description
- ❖ Other Signs and Symptoms
- ❖ Treatment

❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Convergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the eye's inward aiming skill is inadequate and below expected norms. Some causes of this condition include: visual stress, fatigue, illness, drugs, aging and genetic factors.

❖ [BACK](#)

## Suppression Vision of One Eye Convergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Avoidance of near tasks
  - ❖ Double vision (especially at reading distance)
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Reduced reading comprehension
  - ❖ Short attention span

❖ [BACK](#)

## Suppression Vision of One Eye Convergence Insufficiency

- ❖ Treatment
  - ❖ Wearing prescribed lenses
  - ❖ Vision therapy to increase patient's convergence ability
  - ❖ Use good lighting when reading
  - ❖ Prism sometimes prescribed, but less often

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Excess

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Divergence Excess

- ❖ Short Description
  - ❖ A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider genetic factors.

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Excess

- ❖ Other Signs and Symptoms
  - ❖ Blurry vision at far
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Excess

- ❖ Treatment
  - ❖ Minus lenses at distance; plus lenses at near
  - ❖ Prism
  - ❖ Vision therapy – improve relationship between accommodation and vergence
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Insufficiency

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Divergence Insufficiency

- ❖ Short Description
  - ❖ A term used when the outward aiming skill of the patient's eyes are inadequate and below expected norms. This condition often presents in childhood when accommodation and vergence skills are developing.

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Insufficiency

- ❖ Other Signs and Symptoms
  - ❖ Double vision
  - ❖ Fatigue or eyestrain
  - ❖ Headache or eye ache
  - ❖ Sensitivity to light

❖ [BACK](#)

## Suppression Vision of One Eye Divergence Insufficiency

- ❖ Treatment
  - ❖ Prism
  - ❖ Vision therapy – increase divergence ability
  - ❖ Refer in severe cases (extraocular muscle surgery may be necessary)

❖ [BACK](#)

## Suppression Vision of One Eye Strabismus

- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)

❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Strabismus

- ❖ Short Description
  - ❖ A term used when one of the patient's eyes do not align properly i.e. one eye is "turning" with respect to the other. Most often presents as a result of imbalance in visual acuities of each eye, vascular disorders, tumors or inflammation. Consider genetic factors, developmental anomalies or trauma.
- ❖ [BACK](#)

## Suppression Vision of One Eye Strabismus

- ❖ Other Signs and Symptoms
  - ❖ Abnormal head posture
  - ❖ Covering one eye or turning the head while reading
  - ❖ Decreased stereopsis
  - ❖ Double vision
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
- ❖ [BACK](#)

## Suppression Vision of One Eye Strabismus

- ❖ Treatment
  - ❖ Lenses
  - ❖ Prisms
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy as needed
  - ❖ Pharmacological therapy
  - ❖ Refer if condition is severe (extraocular muscle surgery may be necessary)
- ❖ [BACK](#)

## Suppression Vision of One Eye Suppression


- ❖ [Short Description](#)
- ❖ [Other Signs and Symptoms](#)
- ❖ [Treatment](#)
- ❖ [BACK to Table of Contents](#)

## Suppression Vision of One Eye Suppression

- ❖ Short Description
  - ❖ A term used when the image or part of an image from one eye is perceptually "ignored." It is a means of eliminating conflicting or confusing visual information from binocular viewing i.e. double vision. Frequently caused by a turned eye, lazy eye or a significantly different refractive power between each eye.
- ❖ [BACK](#)

## Suppression Vision of One Eye Suppression

- ❖ Other Signs and Symptoms
  - ❖ Decreased stereopsis
  - ❖ Errors in visual judgment
  - ❖ Eye turn or misalignment of one eye
  - ❖ Misalignment of one eye or eye turn
- ❖ [BACK](#)



## Suppression Vision of One Eye Suppression

- ❖ Treatment
  - ❖ Compensating lenses
  - ❖ Prescribed regimen of patching or occluding one eye
  - ❖ Vision therapy – increase binocular function and visual performance
  
- ❖ [BACK](#)