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

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# 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.

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

#### PRESENTED BY:

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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

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**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.

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## 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 pronunciate 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 (Birnbaum 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.

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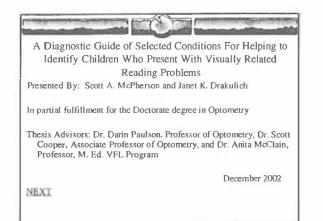
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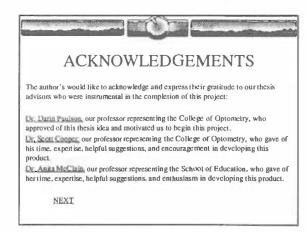
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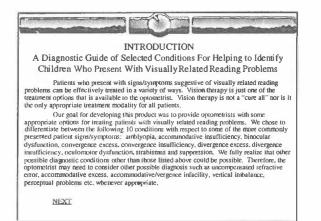
## APPENDIX

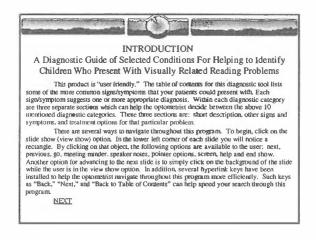
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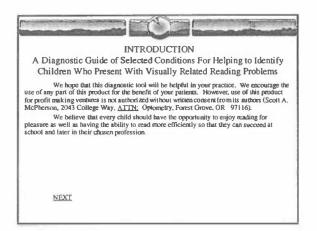
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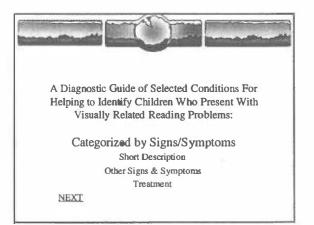
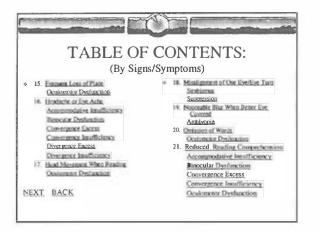
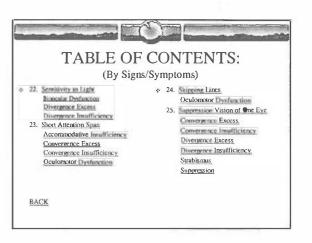
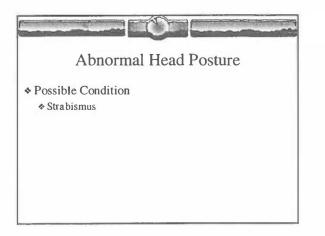
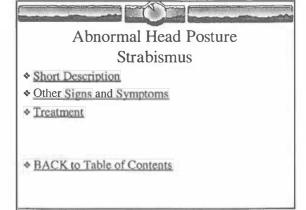


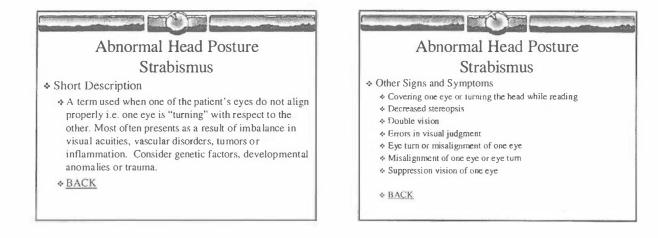
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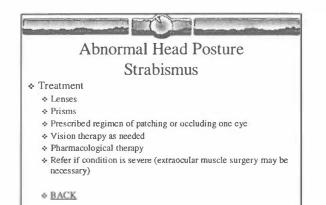


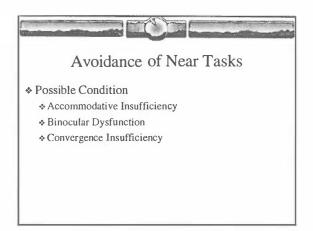


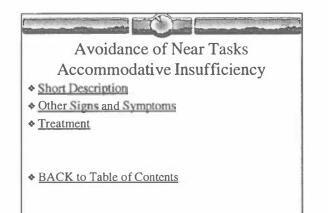


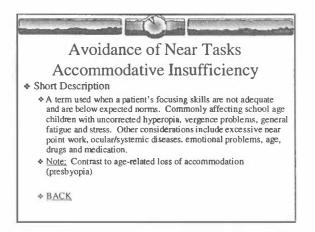


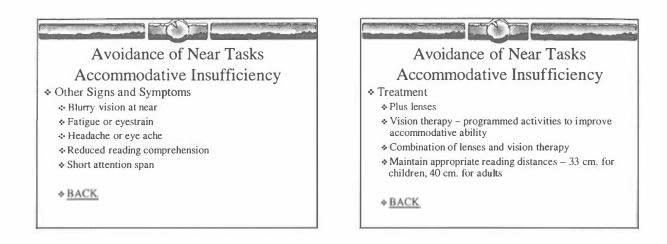


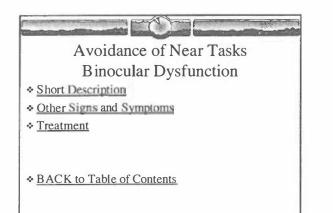


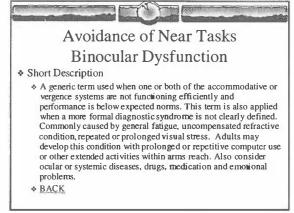


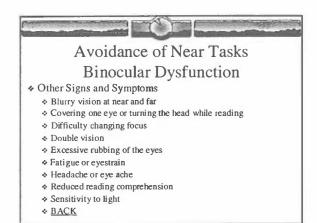


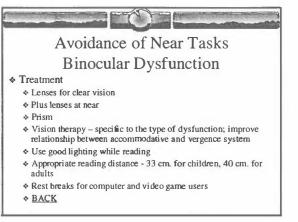


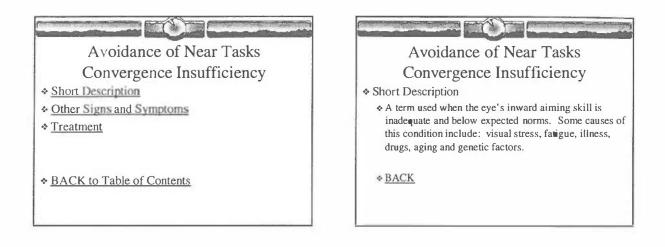


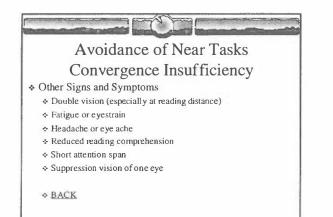


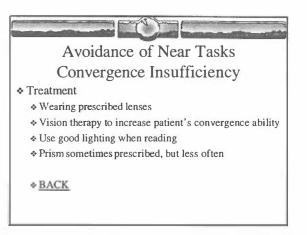


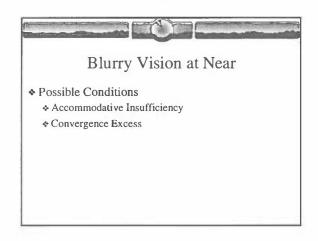


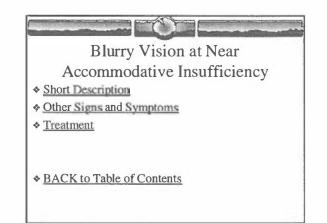


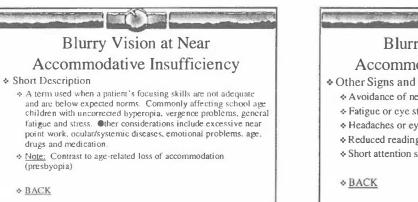


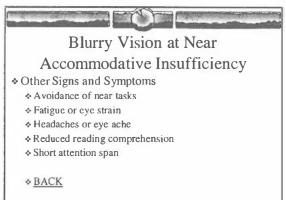


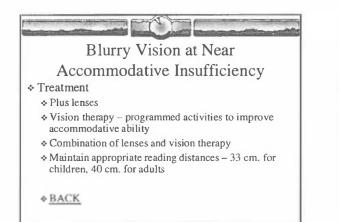


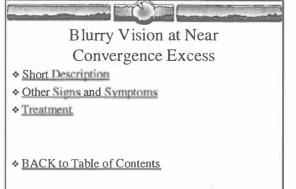


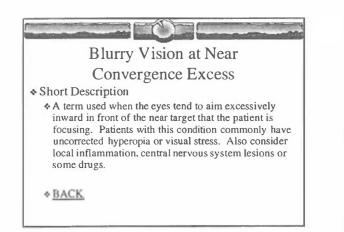


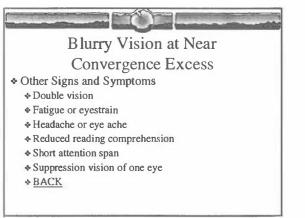


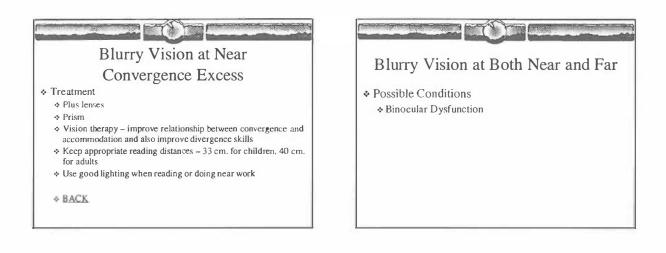


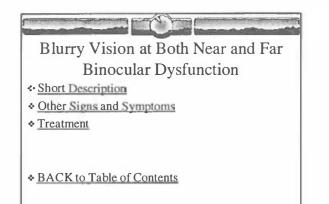


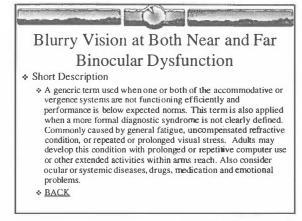


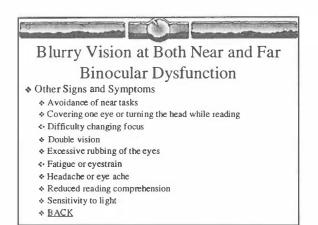


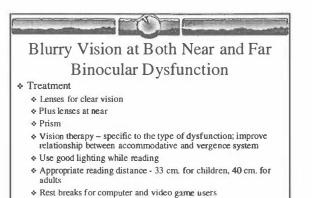






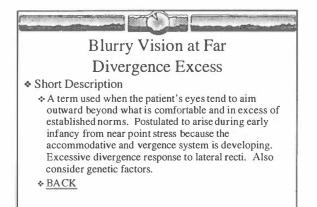


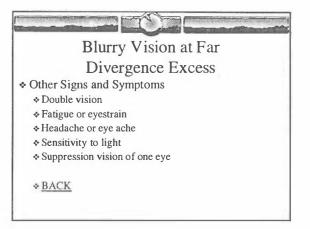


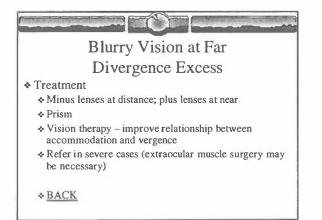


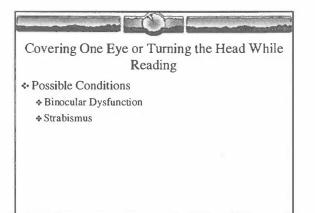
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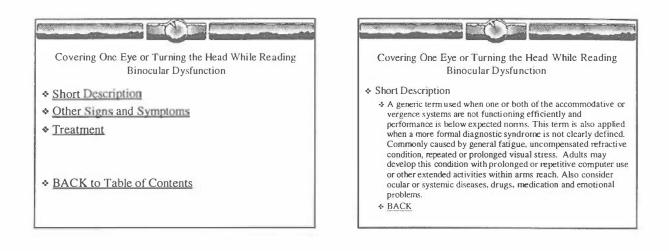


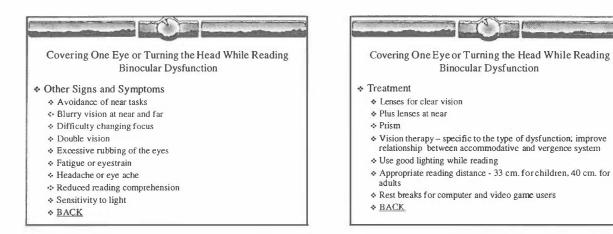


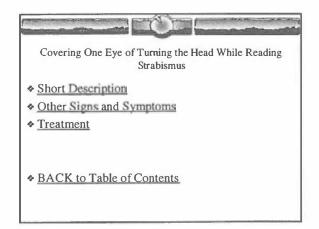


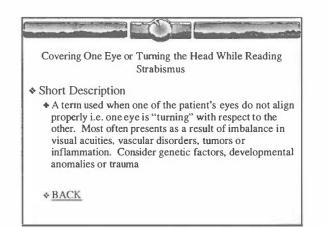






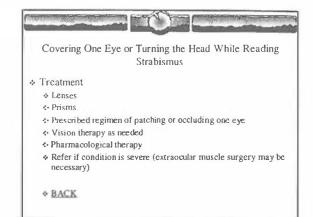


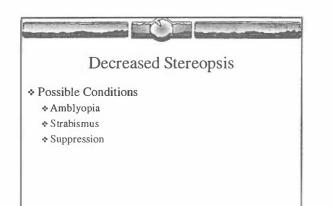


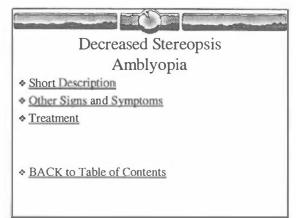


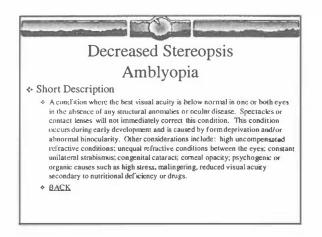
Coverin	g One Eye or Turning the Head While Reading Strabismus
Other Si	gns and Symptoms
<ul> <li>Abnor</li> </ul>	mal head posture
* Decrea	sed stereopsis
<ul> <li>Double</li> </ul>	visien
* Errors	in visual judgment
✤ Eye tur	n or misalignment of one eye
+ Misalia	anment of one eye or eye turn
« Suppre	ssion vision of one eye
* BACK	

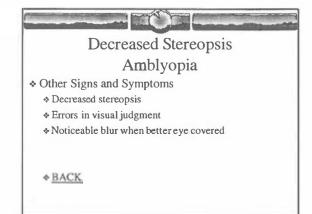
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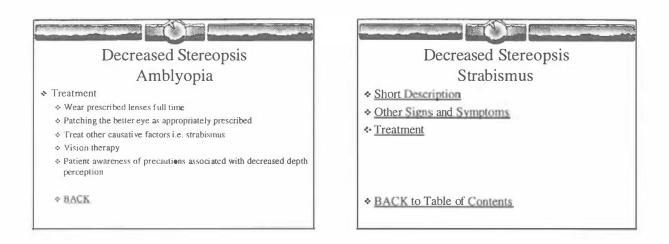


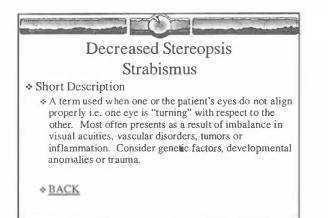


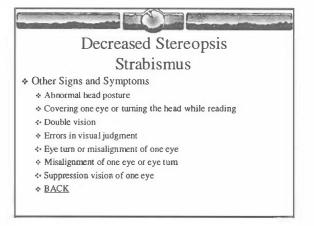


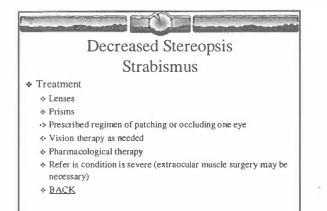


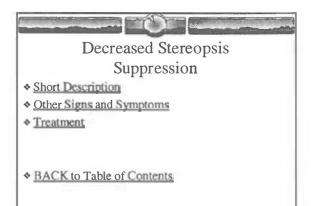


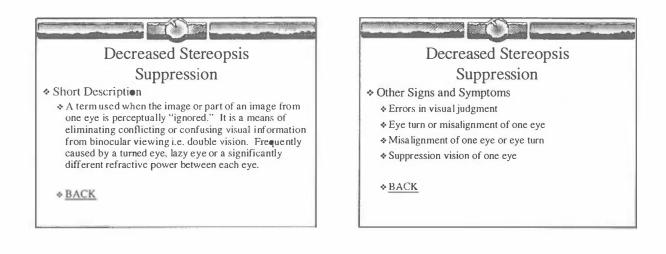


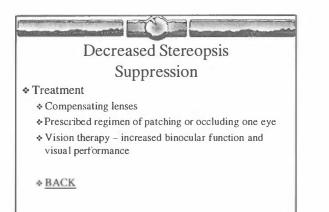


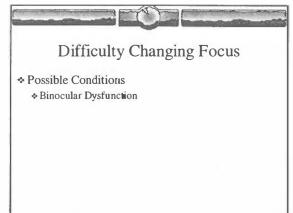






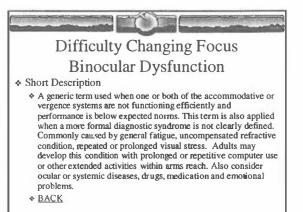




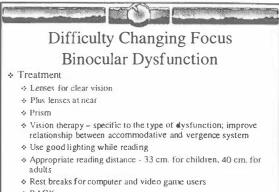


## Difficulty Changing Focus Binocular Dysfunction

- \* Short Description
- Other Signs and Symptoms
- ♦ <u>Treatment</u>
- BACK to Table of Contents

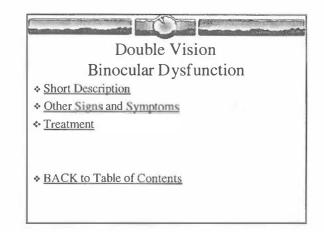


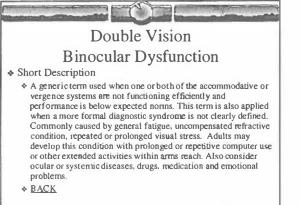
]	Difficulty Changing Focus
	Binocular Dysfunction
* Other Si	gns and Symptoms
* Avoid	ance of near tasks
<ul> <li>Blurry</li> </ul>	vision at near and far
· Cover	ing one eye or turning the head while reading
* Douhl	e vision
* Exces	sive rubbing of the eyes
<- Fatigu	e or eyestrain
<ul> <li>Heada</li> </ul>	che or eye ache
* Reduc	ed reading comprehension
* Sensit	ivity to light
♦ BACH	

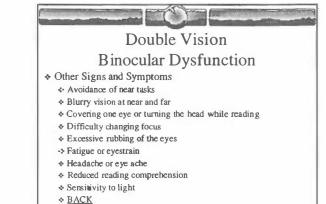


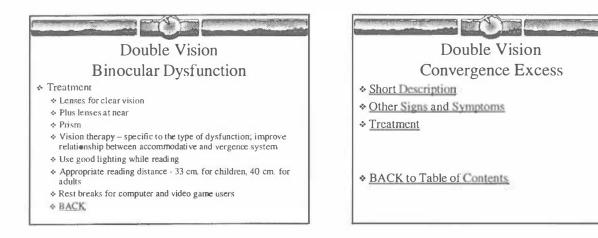
\* BACK

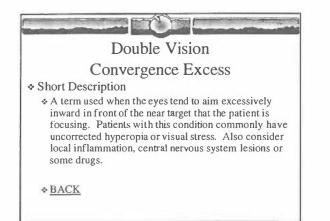
Double Vision
Possible Conditions
Binocular Dysfunction
Convergence Excess
Convergence Insufficiency
Divergence Excess
Divergence Insufficiency
Strabismus

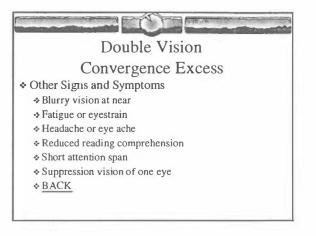


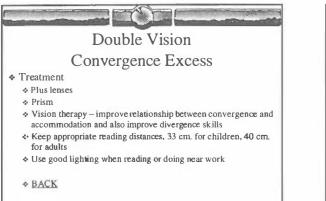


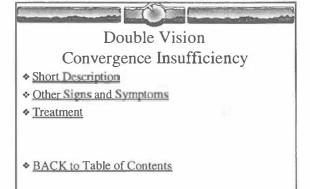


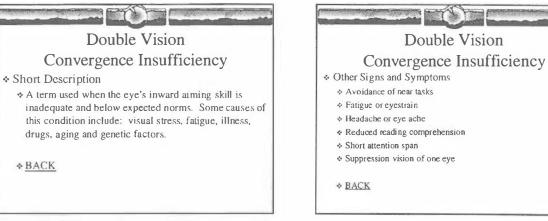


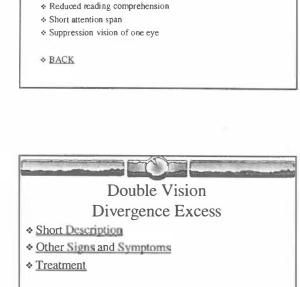






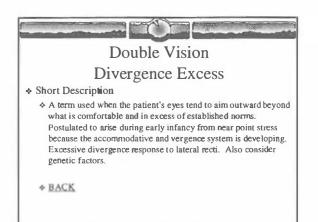


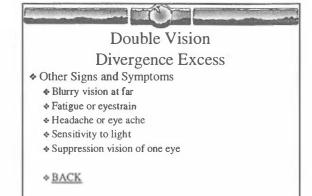


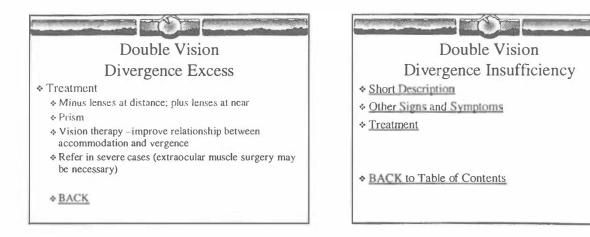


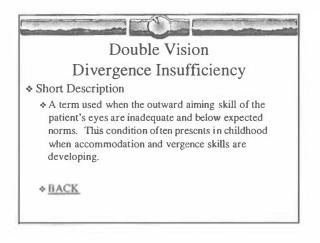
Double Vision Double Vision Convergence Insufficiency \* Treatment \* Wearing prescribed lenses \* Vision therapy to increase patient's convergence ability \* Use good lighting when reading \* Prism sometimes prescribed, but less often \* BACK

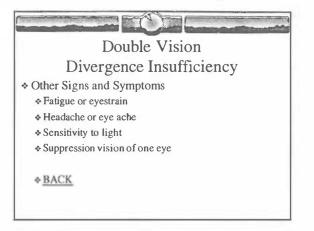


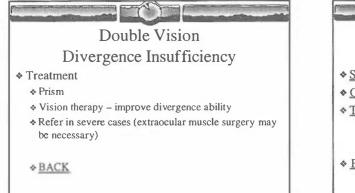


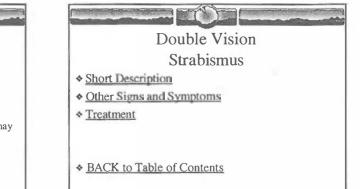


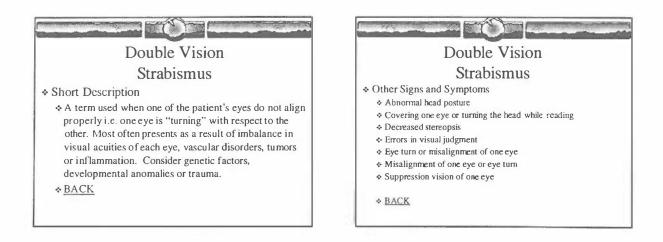


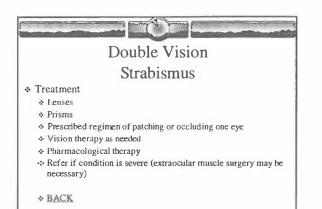


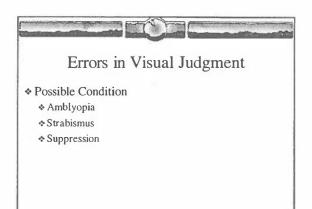


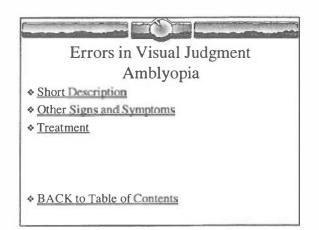


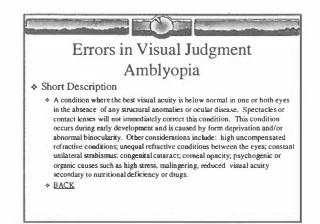


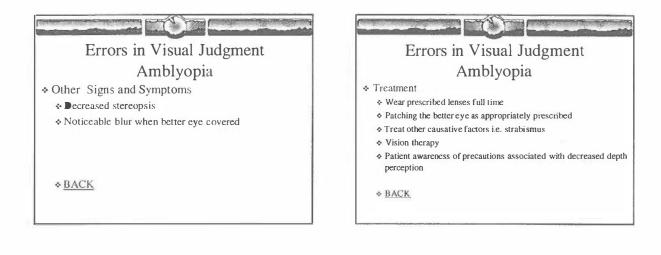


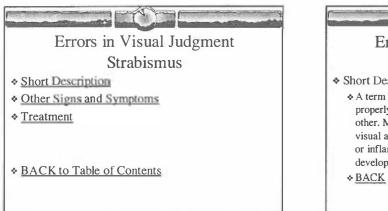


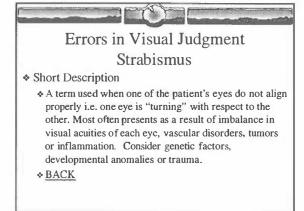


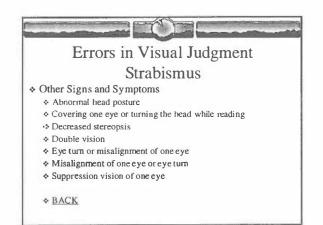


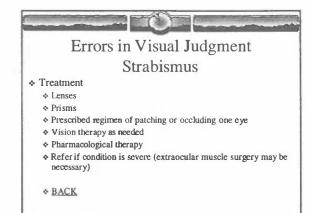


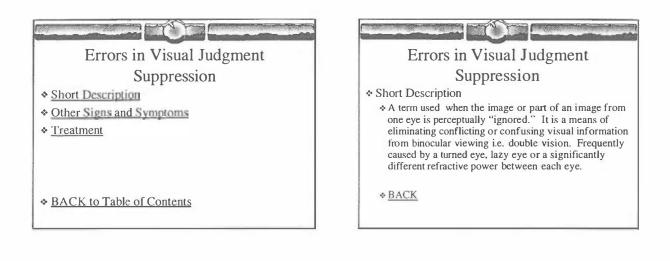


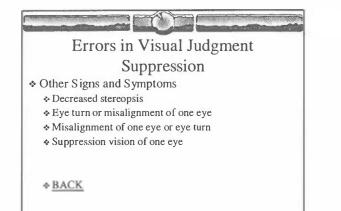


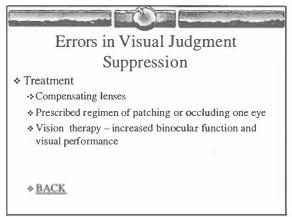


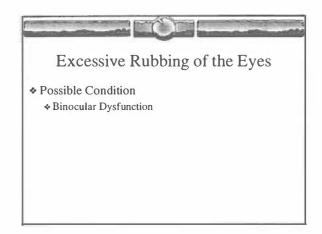


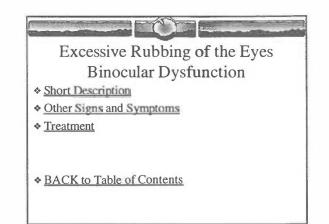


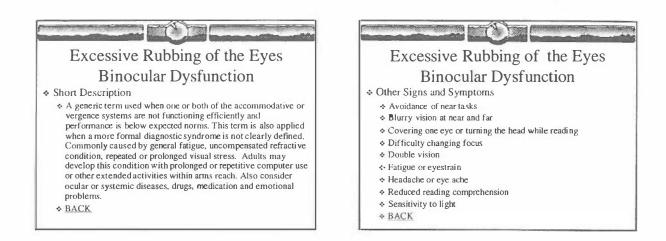


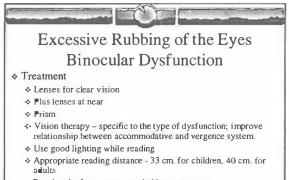




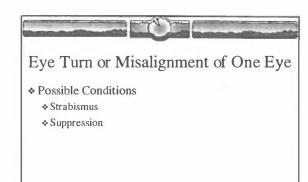


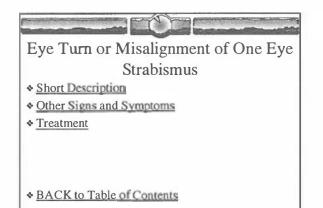


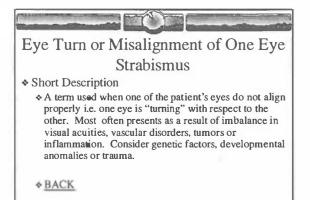


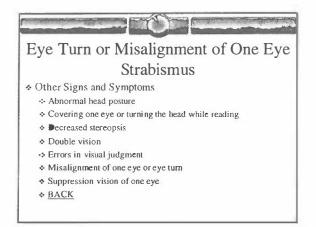


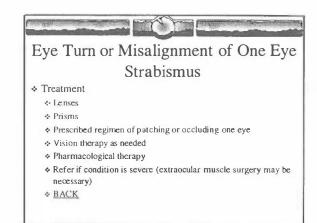
- \* Rest breaks for computer and video game users
- ♦ <u>BACK</u>



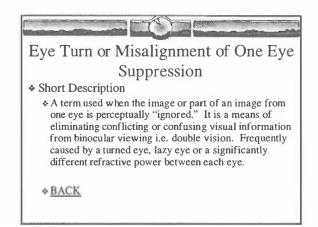


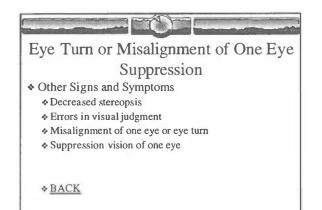




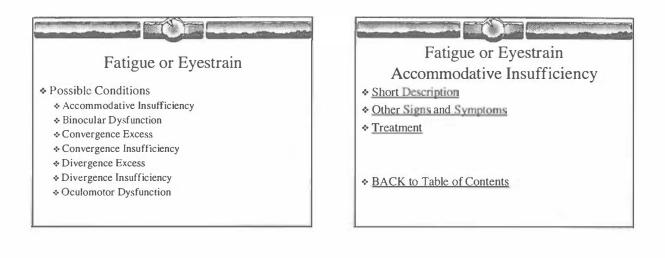


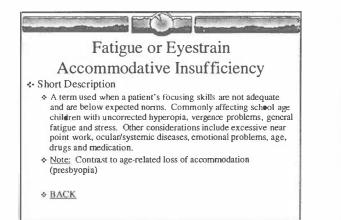


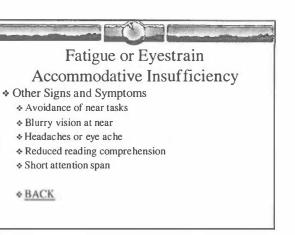


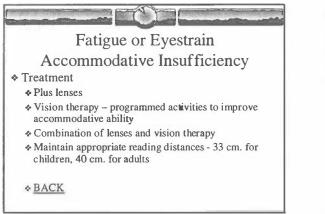


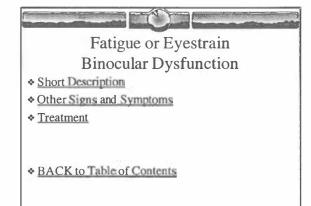


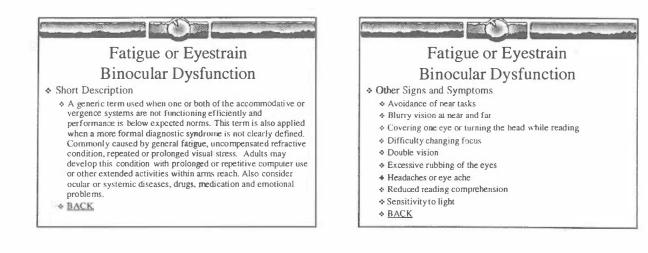


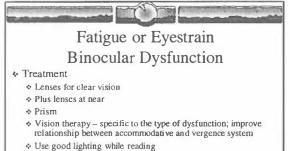








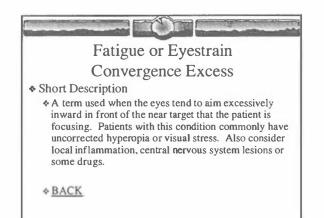


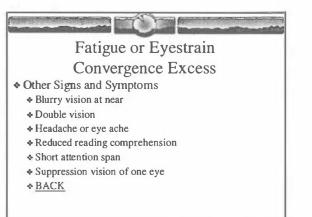


- Appropriate reading distance 33 cm. for children, 40 cm. for adults
- \* Rest breaks for computer and video game users
- \* BACK

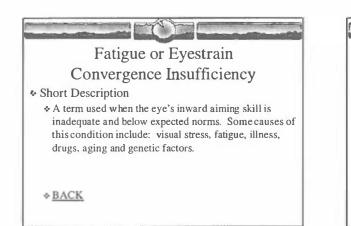
Fatigue or Eyestrain Convergence Excess

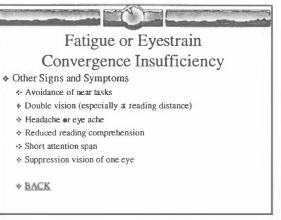
- \* Short Description
- \* Other Signs and Symptoms
- Treatment
- BACK to Table of Contents

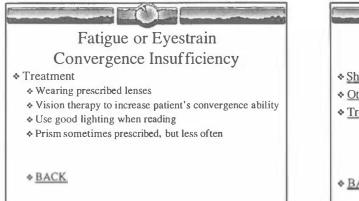


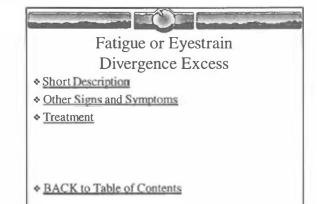


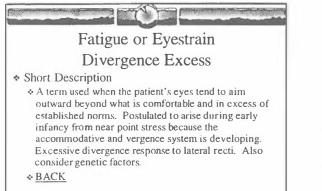


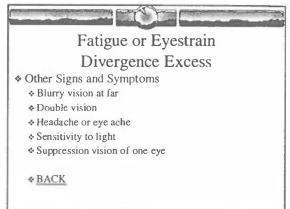


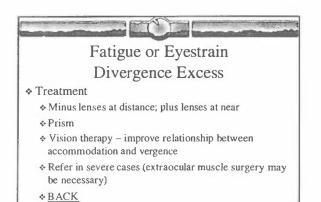








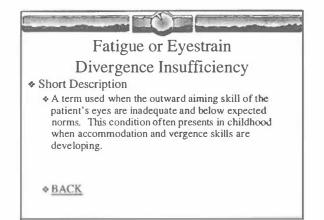


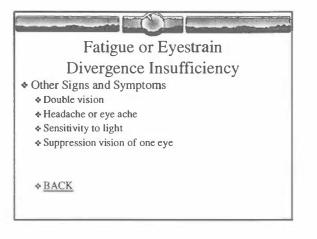


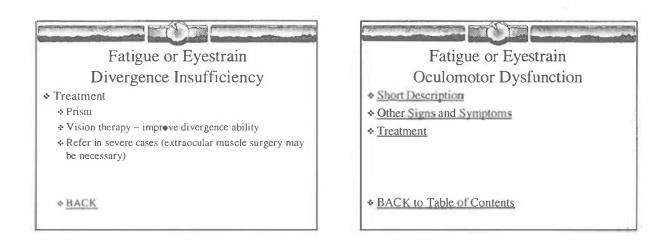
Fatigue or Eyestrain Divergence Insufficiency

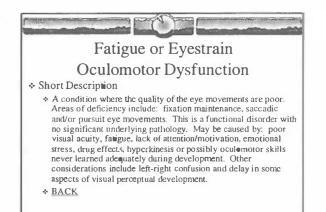
- \* Short Description
- \* Other Signs and Symptoms
- \* Treatment

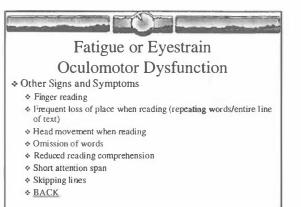
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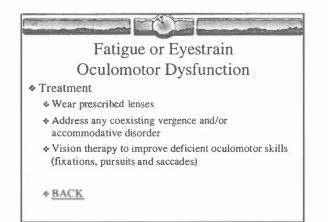


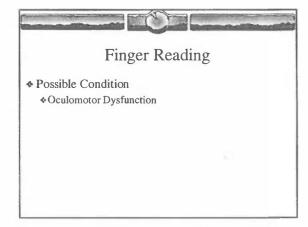


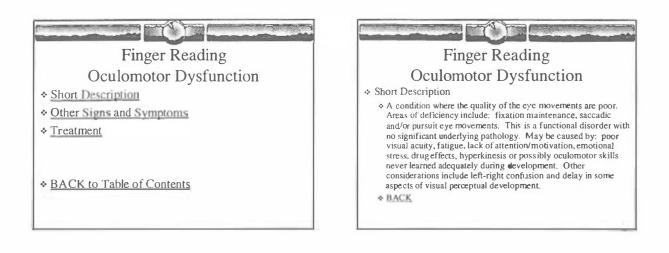


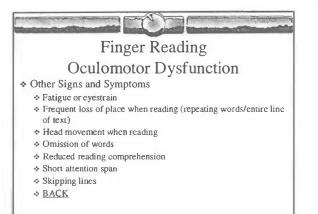


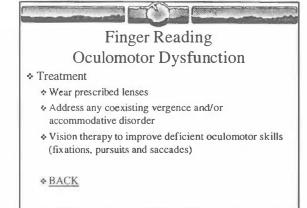


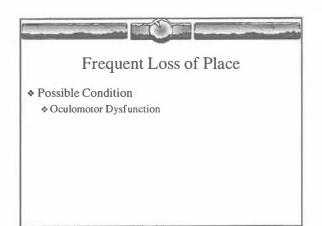


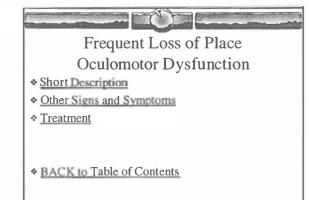




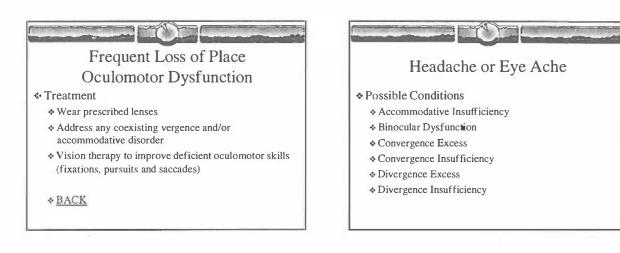


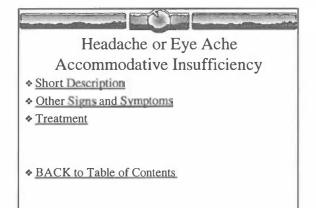


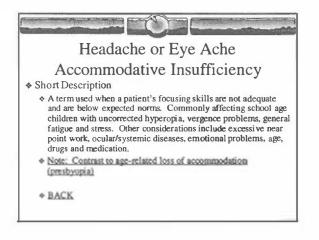


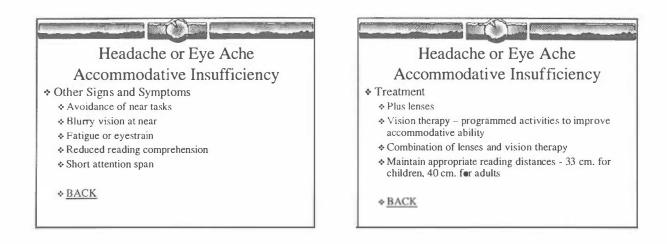


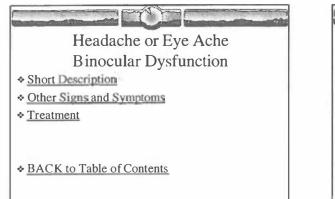


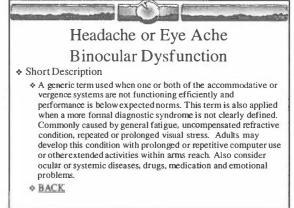


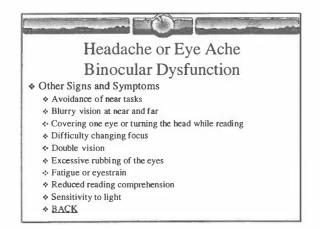


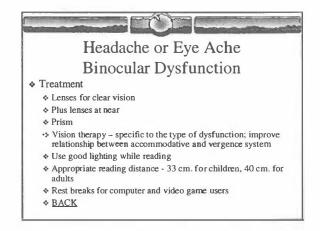


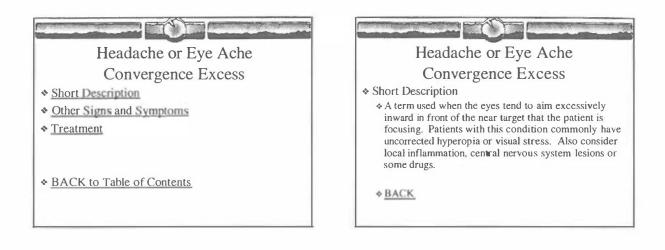


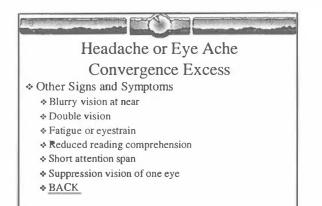


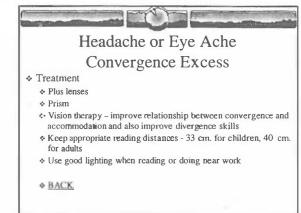


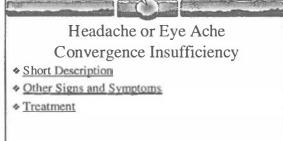




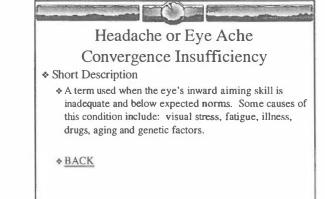




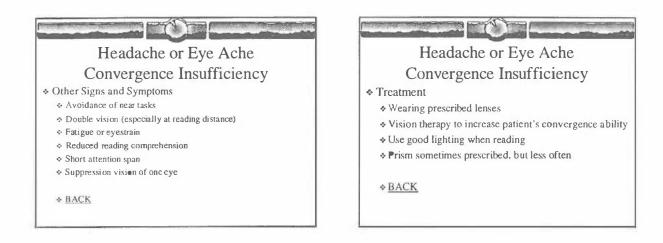


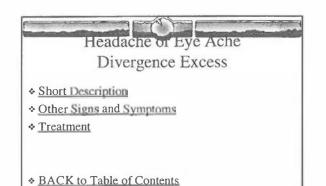


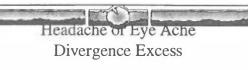
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Short Description

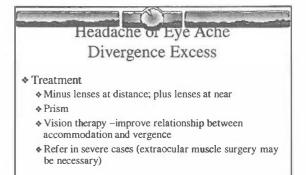
\* A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider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

♦ <u>BACK</u>

## Headache of Eye Ache **Divergence** Excess Other Signs and Symptoms \* Blurry vision at far

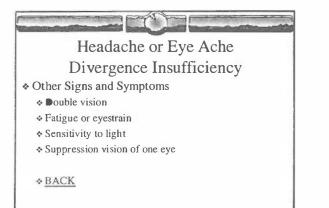
- \* Double vision
- \* Fatigue or eyestrain
- \* Sensitivity to light
- \* Suppression vision of one eye

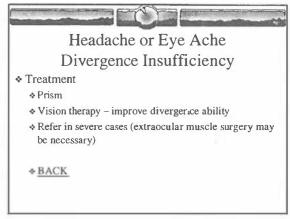
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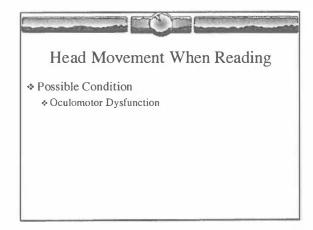


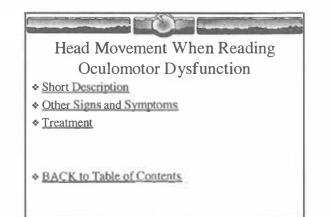
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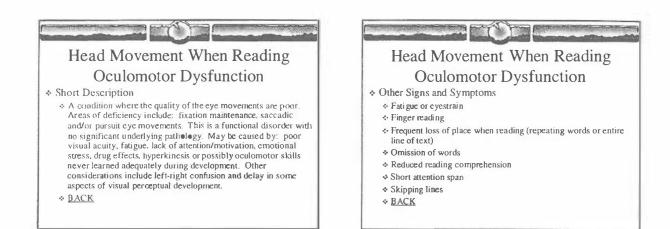
### Headache or Eye Ache Headache or Eye Ache **Divergence Insufficiency Divergence Insufficiency** \* Short Description \* Short Description \* A term used when the outward aiming skill of the \* Other Signs and Symptoms patient's eyes are inadequate and below expected \* Treatment norms. This condition often presents in childhood when accommodation and vergence skills are developing. \* BACK to Table of Contents ♦ BACK

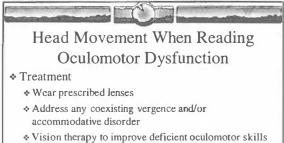


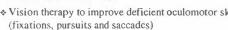














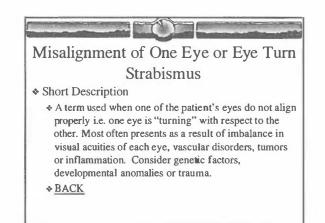
- - ♦ Strabismus
- \* Suppression

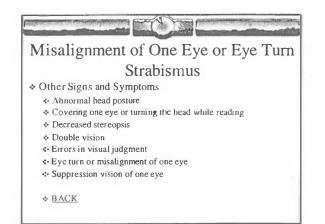
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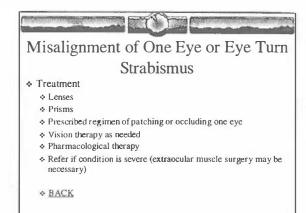
### Misalignment of One Eye or Eye Turn Strabismus \* Short Description

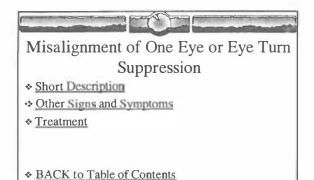
- Other Signs and Symptoms
- \* Treatment

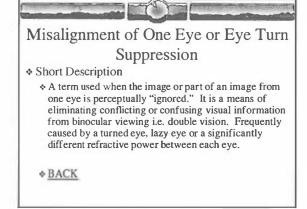
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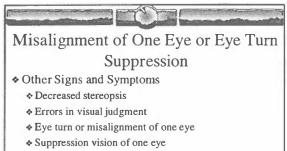




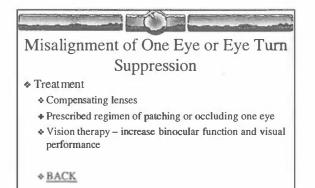


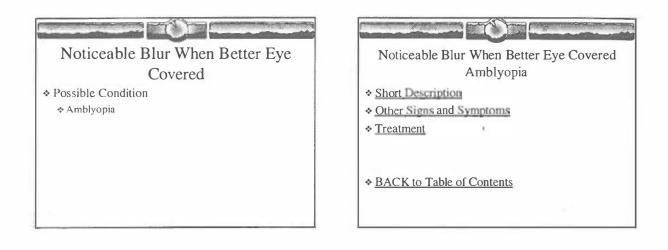


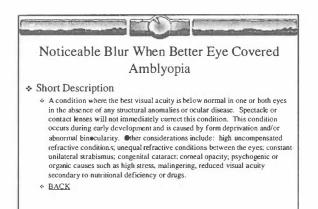


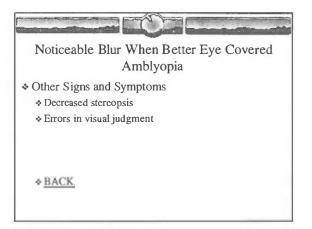


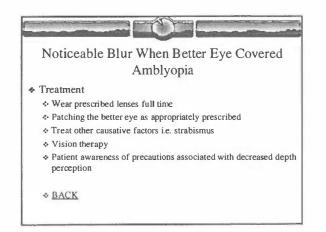
**♦** BACK

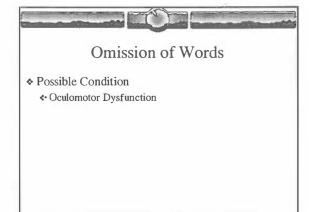


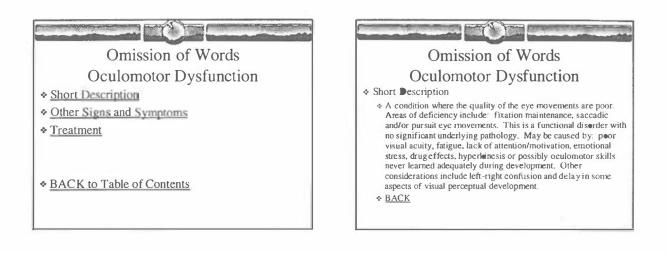


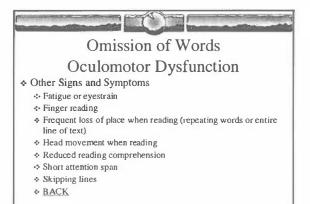


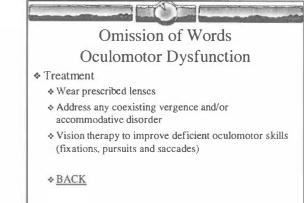


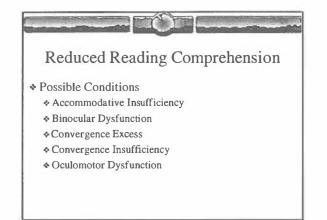


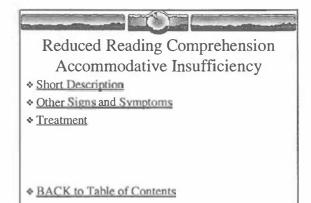


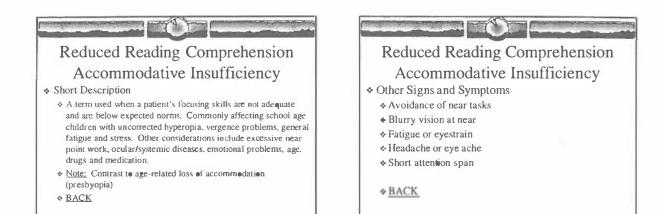


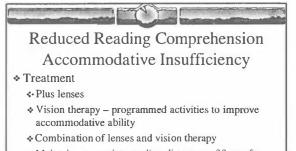












- Maintain appropriate reading distances 33 cm. for children, 40 cm. for adults
- ♦ <u>BACK</u>

### Reduced Reading Comprehension Binocular Dysfunction

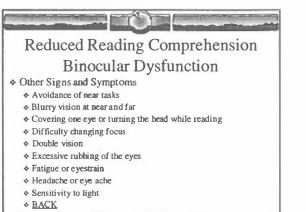
- Short Description
- \* Other Signs and Symptoms
- \* Treatment
- \* BACK to Table of Contents

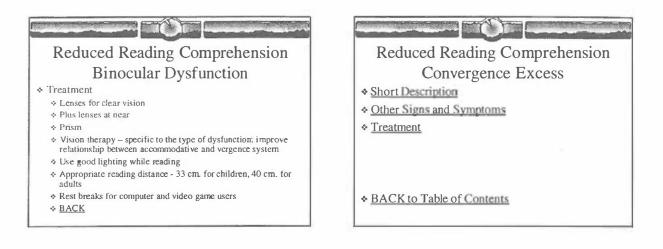
### Reduced Reading Comprehension Binocular Dysfunction

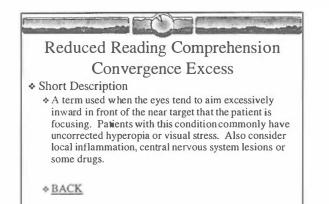
### \* Short Description

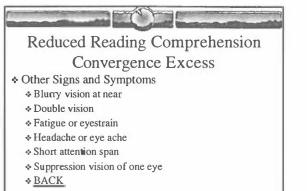
A generic term used when one or both of the accommodative or vergence systems are not functioning efficiently and performance is below expected norms. This term is also applied when a more formal diagnostic syndrome is not clearly defined. Commonly caused by general failingue, uncompensated refractive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

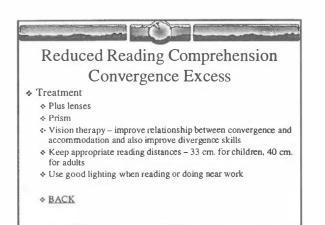
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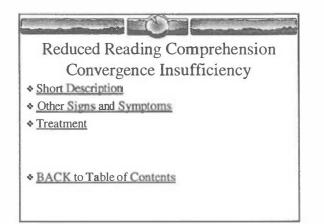


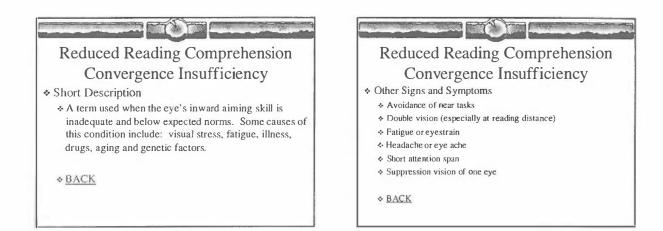


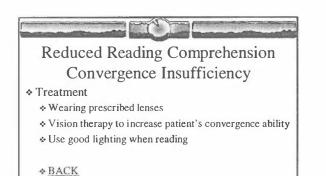














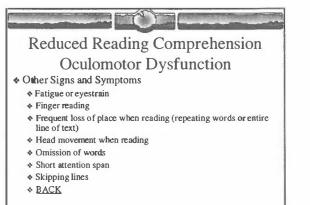
### Reduced Reading Comprehension Oculomotor Dysfunction

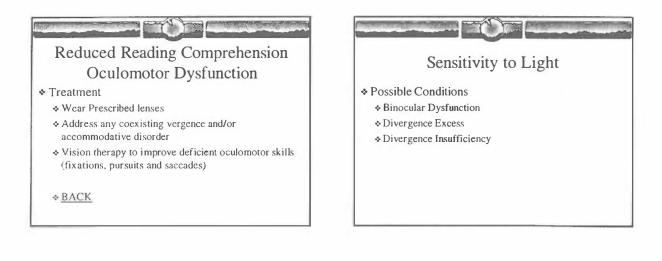
- \* Short Description
- \* Other Signs and Symptoms
- \* Treatment
- \* BACK to Table of Contents

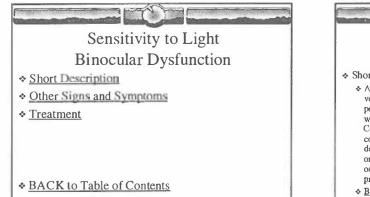
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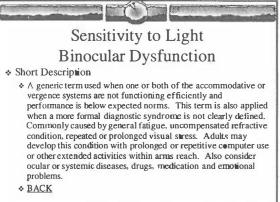
A condition where the quality of the eye movements are poor. Areas of deficiency include: fixation maintenance, saccadic and/or pursuit eye movements. This is a functional disorder with no significant underlying pathology. May be caused by: poor visual acuity, fatigue, lack of attention/motivation, emotional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

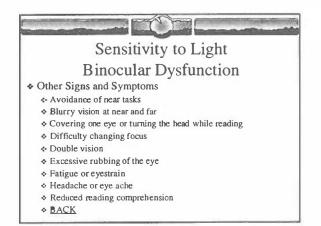
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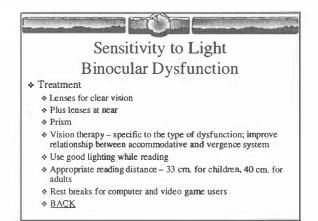


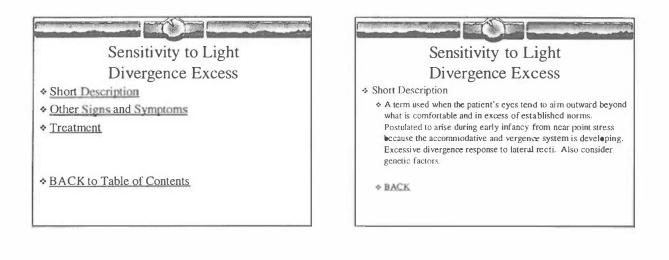


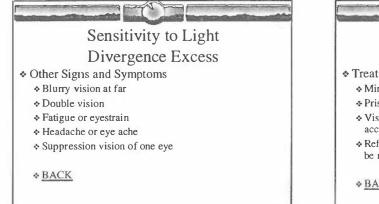


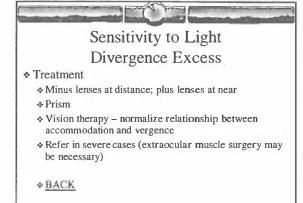


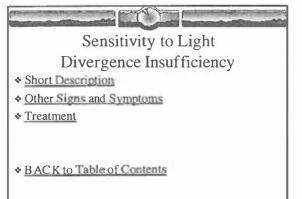


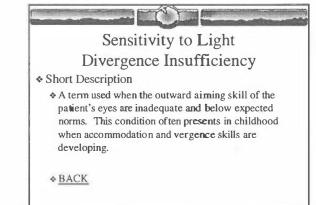


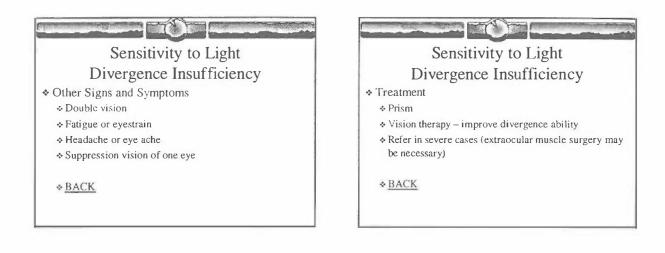


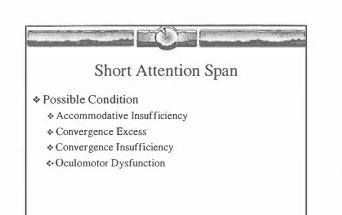


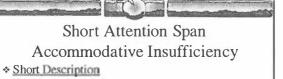




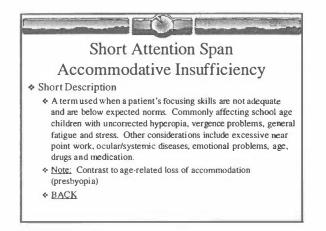


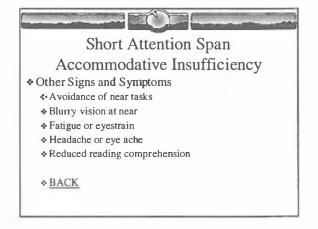


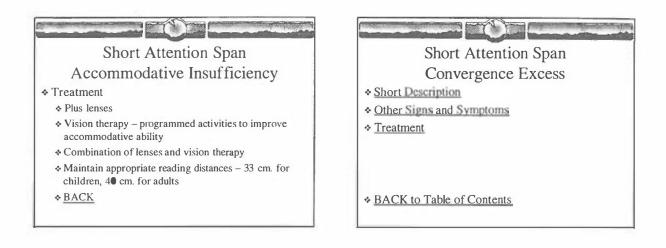


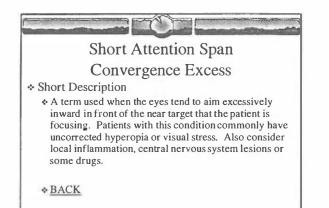


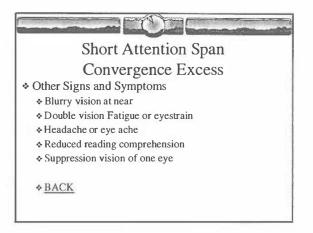
- \* Other Signs and Symptoms
- \* Treatment
- \* BACK to Table of Contents

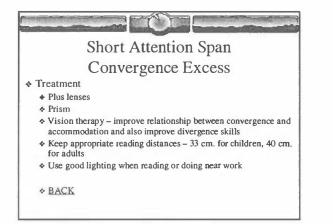


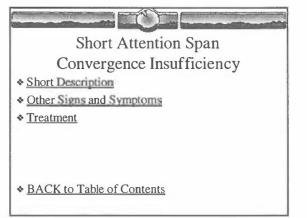


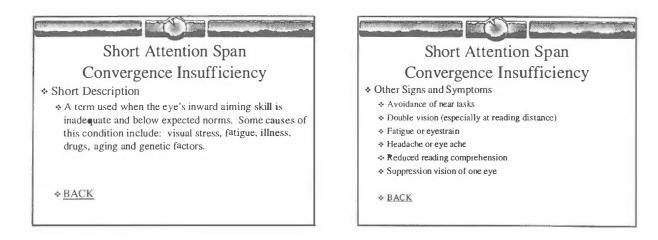


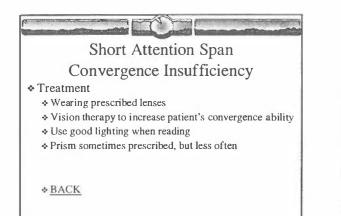


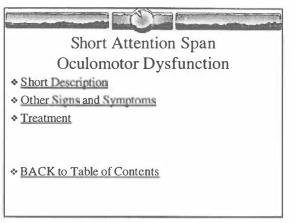


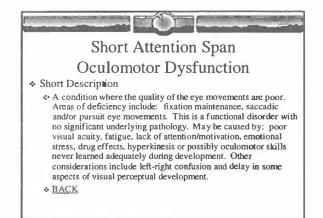


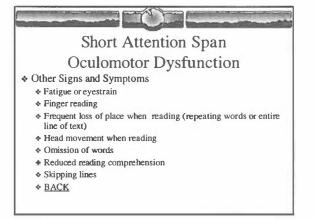


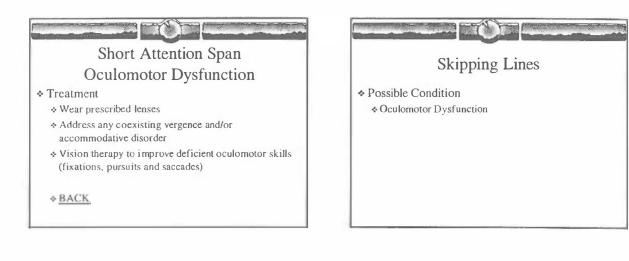


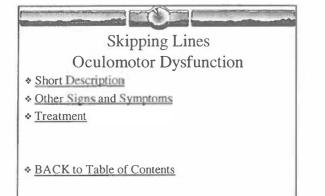


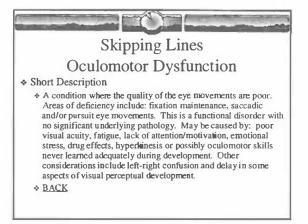


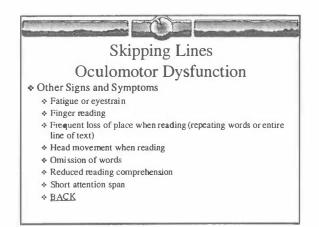


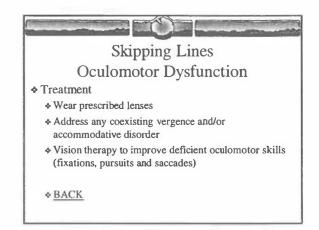


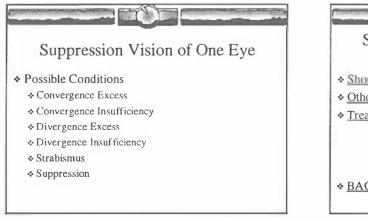


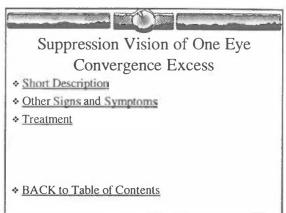


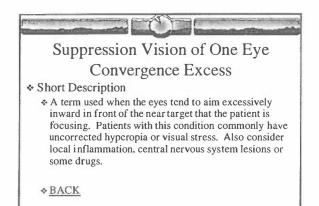


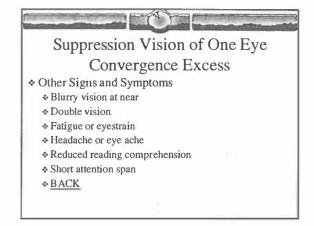


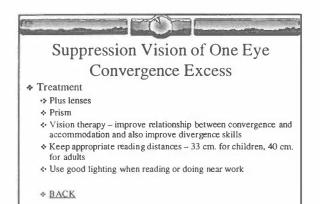


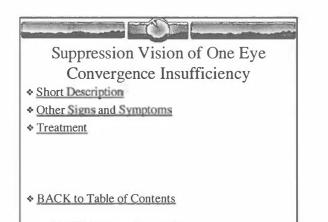


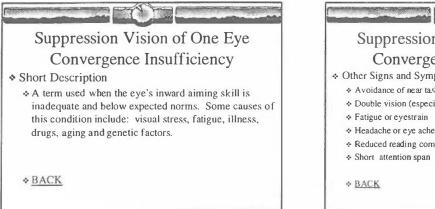


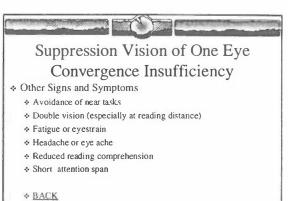


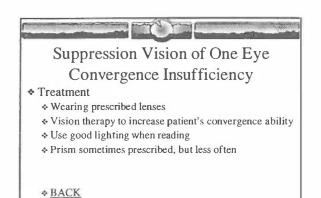


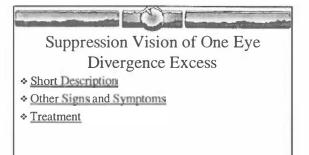












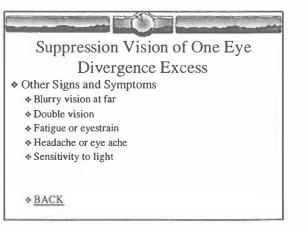
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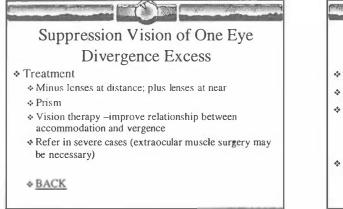
# Suppression Vision of One Eye Divergence Excess

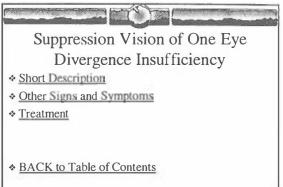
Short Description

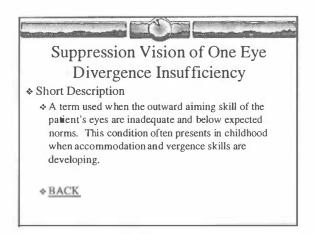
A term used when the patient's eyes tend to aim outward beyond what is comfortable and in excess of established norms. Postulated to arise during early infancy from near point stress because the accommodative and vergence system is developing. Excessive divergence response to lateral recti. Also consider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

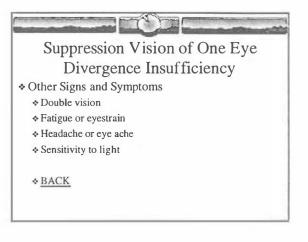
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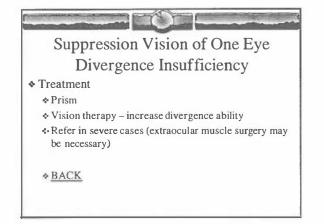


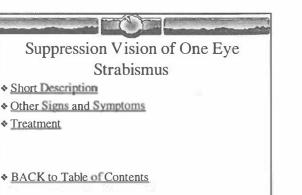


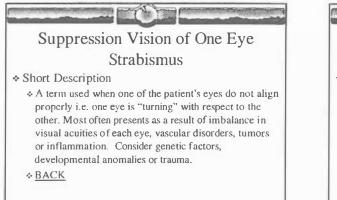


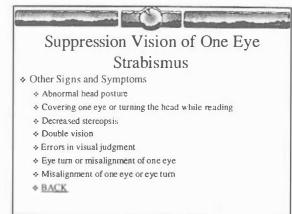


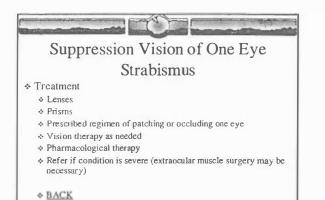


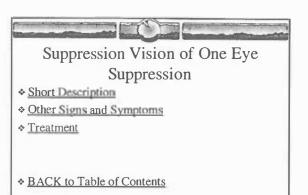


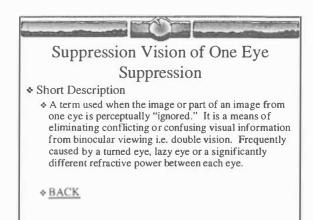


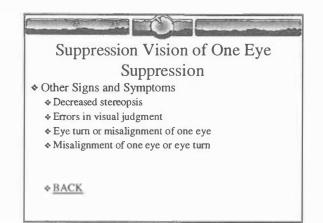












	Suppression Vision of One Eye
	Suppression
*** <sup>*</sup>	Treatment
	* Compensating lenses
	* Prescribed regimen of patching or occluding one eye
	Vision therapy – increase binocular function and visua performance
	* BACK