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## A case against the use of cylinders in a reading prescription

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## A case against the use of cylinders in a reading prescription

### Abstract

A case against the use of cylinders in a reading prescription

### Degree Type

Thesis

### Degree Name

Master of Science in Vision Science

### Committee Chair

### Subject Categories

Optometry

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A CASE AGAINST THE USE OF CYLINDERS  
IN A READING PRESCRIPTION

BY  
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PRESENTED TO THE FACULTY OF  
THE COLLEGE OF OPTOMETRY  
PACIFIC UNIVERSITY

SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE,  
DOCTOR OF OPTOMETRY

1953

CASE HISTORY:

Patients chief complaint:

"My eyes tire and I get headaches after short periods of reading. I have some glasses, but I can read better without them."

Pertinant information:

The patient was a senior in high school making average grades. She has recently been under treatment for a glandular disorder of the neck but she stated that it was cleared up at the time of the optometric examination. Her last dental checkup revealed nothing apparently wrong with her teeth. General health was apparently good.

The previous prescription was:

OD.  $\neq 0.75$

OS.  $\neq 0.75 -0.50 \times 65$  The left being the dominant eye.

PRELIMINARY FINDINGS:

External Examination:

Position	Straight
Cilia and Palpebrae	Straight and Clear
Lid Margins and Caruncle	Clear
Conjunctiva and Puncta	Not injected
Scleara	Not injected
Cornea	Clear and Bright
Anterior Chamber	Appears normal
Iris	Blue Pigment, Equal
Lens	Clear
Lacrimal Drainage	Good Drainage
Tension	Equal

Pupillary Reactions:

Direct	Present
Consensual	Present
Near Point	Present
Speed	Fast
Size	3 - 4 mm.

Ophthalmoscopic Examination:

Cornea	Clear
Anterior Chamber	Normal Depth
Iris	Even and Equal
Crystalline lens	No Opacities
Vitreous	Clear
Fundus Coloration	Light Orange
Disc Margin	Well Defined
Physiological Cupping	Slight
Vessel Ratio	3/2

OPTOMETRIC FINDINGS\*

Original

P.R.

2/3/53

4/17/53

2	Ophthalmometer: O.D.	-.25x90	
	O.S.	-.50x90	
**3	Lat ph thru hab Rx	1xo	2 xo
13A	Lat ph at 16" thru hab Rx	5 xo	3 xo
4	"Static" retinoscopy O.D.	+.50-.25x90	+.50-.25x90
	O.S.	+.50-.50x80	+.50-.25x90
5	"Dynamic" retinoscopy O.D.	+2.00-.25x90	+2.25-.25x90
	at 20" O.S.	+2.00-.50x80	+2.25-.25x90
6	"Dynamic" retinoscopy O.D.	+1.50-.25x90	
	at 40" O.S.	+1.50-.50x80	
7	Subjective to 20/20 O.D.	+1.25-.25x125	+1.25-.25x125
	O.S.	+1.25-.50x70	+1.25-.25x70
7A	Subjective to best visual acuity O.D.	+.50-.25x125	+.50-.25x125
	O.S.	+.50-.50x70	+.50-.25x70
8	Lat ph thru #7	2 xo	2x0
9	B O to blur thru #7	7	9
10	B O break & recover thru #7	16/8	16/8
11	B I break & recover thru #7	24/12	24/16
12	Vert ph thru #7	ortho	Ortho
12	Vert ductions thru #7	4/2 4/2	4/2 4/2
13B	Lat ph at 16" thru #7	7xo	2 xo
14A	Diss cross O.D.	+2.50-.25x125	+2.75-.25x125
	cylinder at 16" O.S.	+2.50-.50x70	+2.75-.50x70
15A	Lat ph thru 14A	10 xo	9x0
14B	Binoc cross O.D.	+2.50-.25x125	+2.50-.25x125
	cylinder at 16" O.S.	+2.50-.50x70	+2.50-.50x70
15B	Lat ph thru #14B	10 xo	8xo
16A	B O blur out 16" thru #7	x	x
16B	B O break and recover thru #7	16/6	17/8
17A	B I blur out thru #7	27	30
17B	B I break & recover 16" thru #7	33/20	38/20
18	Vert ph 16" thru #7	ortho	ortho
18	Vert ductions 16" thru #7	4/2 4/2	4/2 4/2
19	Minus to blur 13" O.D.	9.00	10.50
	O.S.	10.50	10.50
	O.U.	10.50	10.00
20	Minus to blur out 16"	-.2.50	-3.00
20	Lat ph 16" thru -2.50	9 eso	8 eso thru -3.00
21	Plus to blur out 16"	+3.00	+2.25
21	Lat ph 16" thru +3.00	18 xo	19 xo thru +2.00

\* The numbers shown are the numerical designations for the indicated tests as adopted by the Optometric Extension Program.

TABLE 11  
SUMMARY OF

MANIPULATORY AND PERCEPTUAL SKILLS

Techniques or Skills	Dates Given													
	2/3/53						4/17/53							
Rotations						P						P		
Pursuit Fixations						P						P		
Near Pt. of Binocularity						P						P		
Donders Amplitude						P						P		
Fixations						P						P		
Saccadic Fixations						P						P		
Accomodative Rock						P						P		
Simultaneous Perception						P						P		
Far-Point Binocularity						P						P		
Far-Point Stereopsis						P						P		
Far-Point Pericentral Suppresion						P						P		
Far-Point Central Suppresion						P						P		
Far Point Visual Discrimination						P						P		
Hand and Eye Coordination						P						P		
Color Vision						P						P		
Far-Point Lateral Phoria						F						F		
Far-Point Vertical Phoria						P						P		
Near Point Vertical Phoria						P						P		
Near-Point Binocularity						P						P		
Near-Point Stereopsis						P						P		
Near-Point Pericentral Suppresion						P						P		
Near-Point Central Suppresion						P						P		
Near-Point Visual Discrimination						P						P		
Near-Point Lateral Phoria						P						P		

A double ruling indicates a progress report was taken at this point. See Table I.



## ANALYSIS AND DIAGNOSIS

The analytical examination showed a well organized pattern and indicated a need for more plus than the patient was wearing. The only disturbing factor was a relatively unstable phoria picture at the far point. All of the skills were passing with the exception of the far point lateral phoria, which showed an extreme instability. Taking these factors into consideration, it was hard to understand why the patient had rejected her previous lenses.

Miss M. reported, as noted in the case history, that she could read with greater comfort without her lenses than she could with them. These facts led the clinician to seek a possible disorganizing factor in the previous lenses. The decentration was checked and found to be correct. The optical centers of the lenses were checked and found to be of equal height. These checks eliminated the possibility of induced prismatic effect being the cause of the lens rejection. The answer to the problem was then sought in the premise of some practitioners—that cylindrical corrections may not be tolerated for part time wear due to various factors. The fact that the cylinder was prescribed only for one eye and at an oblique axis was considered as being one possible disorganizing influence. The one eye happened to be the dominant eye, suggesting another reason that the lenses were unacceptable for part time wear. The basic reason for the patient not accepting

a cylindrical correction for near use only, is believed to be that she is continuously subjected to two different visual environments, one without her correction for astigmatism at far and the other with it corrected at near, a task unacceptable to a patient of a critical nature. Therefore, a new prescription, devoid of cylinder and incorporating the amount of plus found in the analytical was prescribed. It was made up in a bifocal form to enable the patient to see the blackboard.

A progress report on 4/17/53 revealed that the plus acceptance at near had risen, the far point phoria picture showed greater stability and the whole pattern showed adequate performance through the present prescription.

The patient stated that she could read as long as she wanted to with complete comfort.

PRESCRIBED TREATMENT

Plus 0.50 OU.

Plus 1.00 add OU.

The patient was instructed to wear the glasses for all near point tasks. She was told it might be beneficial to wear them for far vision, such as a motion picture.

COMMENT:

At the present time, the visual picture of Miss M. is adequate. If the additional plus had been given in the bifocal form used, with the addition of the cylindrical correction, there is a possibility that the cylinder would have been eventually acceptable. The patient, however, voiced a strong opposition to wearing glasses full time. There was not sufficient indication for a distance correction, so this was not tried.

The main contribution to the writers thinking is that it would be wise to use extreme caution when prescribing cylinder for part time wear.

SUMMARY:

This is a case of an 18 year old girl with a reading discomfort complaint. She was wearing a "reading only" prescription incorporating a moderate amount of plus and cylinder that she stated made the discomfort worse. The findings revealed a need for more plus than she was wearing. A prescription of more plus but without the cylindrical component was given the patient, affording improved performance and comfort in the visual function.