

# Accommodation Insufficiency Management: Does +2.00D ADD work for all?

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## INTRODUCTION

Maximum addition (ADD) of +2.00D has commonly suggested management for Accommodation Insufficiency (AI) in ophthalmic literatures. Interesting to be described in this case report, a severe AI associated with convergence insufficiency requires higher ADD than +2.00D

## CASE PRESENTATION

A 27-year female presented with blurry vision, diplopia and eyestrain during near work, and the symptoms are worsening since age of 10. The CT brain test all showed normal. Ocular and medical history were unremarkable. Comprehensive binocular assessments were performed to determine any non strabismic binocular disorder during her first visit at the Optometry Clinic, Hospital Raja Perempuan Zainab II and the results shown as in Table 1.

TABLE 1. Assessments on first visit

Assessment	RE	LE.
VA ( unaided ) ( Near )	6/6	6/6
Pupils	N24	
Hirshberg	No RAPD/ PERRLA	
Stereopsis ( TNO )	Center	
	60 sec of arc	
Refraction ( non-cyclo )	Plano/-0.25 x 10 6/6 , N24	+0.25/-0.25 x 135 6/6, N24
( cyclo )	+0.25/-0.25 x 10 6/6	+0.50 / -0.25 x 135 6/6
NPC	30 cm	
Cover test (near)	Small exophoria with good recovery	
( distant )	orthophoria	
Maddox test ( near )	14 exophoria	
( distant )	2 exophoria	
AA	1 D, 1D, 1 D	1D, 1D, 1D
	BE: 1 D, 1D, 1 D	
MEM	+1.25	+1.25 D
NRA	+2.00 D	
PRA	-0.50 D	
AA FACILITY	3 CPM	4 CPM
	BE: 3 CPM	
VERGENCE FACILITY	3 CPM	
PFV ( BO ) ( near )	X / 14 / 10	
( distant )	X / 16 / 12	

As Accommodation Insufficiency was suspected, another refraction was conducted after two months and binocular functions tests were performed accordingly. Results showed a same refractive status with reduced amplitude of accommodation to 1 diopters monocular, 1 diopters binocularly and near point convergence was 30 cm. After the 2<sup>nd</sup> visit, she was diagnosed with severe Accommodation Insufficiency (AI) and was prescribed with ADD +3.00D spectacle to ease her near vision (improved to N6). After a month, patient's condition has improved as shown in Table 2.

TABLE 2. Assessments on third visit

Assessment	RE	LE.
VA ( aided ) ( Near )	6/6	6/6
NPC	N6	
	15 cm	
Cover test (near)	Small exophoria with good recovery	
( distant )	orthophoria	
Maddox test ( near )	8 exophoria	
( distant )	2 exophoria	
AA	5 D, 5D, 5D	5D, 5D, 5D
	BE: 5.5D, 5.5D, 5.5D	
MEM	+0.75	+1.00 D
NRA	+2.00 D	
PRA	-2.00 D	
AA FACILITY	6 CPM	6 CPM
	BE: 5 CPM	
VERGENCE FACILITY	8 CPM	
PFV ( BO ) ( near )	X / 20 / 18	
( distant )	X / 18 / 16	

## DISCUSSION

Based on the first visit assessment, the amplitude of accommodation (AA) of the patient was less than the age expected. The minimum AA for her using the Hofstetter's formula is 9 D but her AA was 1 D. Furthermore, near point of convergence (NPC) was receded, MEM showed a lag in accommodation of +1.25 D, NRA was normal while PRA was -0.50 D which was less than expected value. Facility testing with -2.00D revealed patient has difficulty to clear the words for both monocular and binocular accommodative facility ( MAF and BAF ).

The accommodative data findings strongly shows less than expected value leading to the diagnosis of severe accommodative insufficiency with vergence disorder. Less accommodation will cause less convergence demand hence the patient reveal an exophoria at near.

Since the patient has severe accommodation insufficiency, this patient was managed with an added lenses +3.00 D combination with letter "E" push-up and Dot Card vision therapy. After a month, the symptoms were alleviated as well as the accommodative and vergence systems improved.

## CONCLUSION

This case report presents that the added lenses +3.00 D approach works for severe AI with remote NPC. Therefore, it is suggested as an initial management prior to further therapy. Prism therapy was suggested for future management.



## REFERENCES

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