

Adjustable Lens Eyeglasses for Visual Changes Associated with Hyperbaric Oxygen Treatment

J. Ptak, J. Buckey

C. Toutain-Kidd, M. Zegans

G. MacKenzie



Disclosure

Adlens Ltd.

Loaned us a Nidex autorefractor
and provided

Hemisphere adjustable lens glasses



“Have you noticed any changes
in your vision?”

Visual changes are known to occur with HBOT.

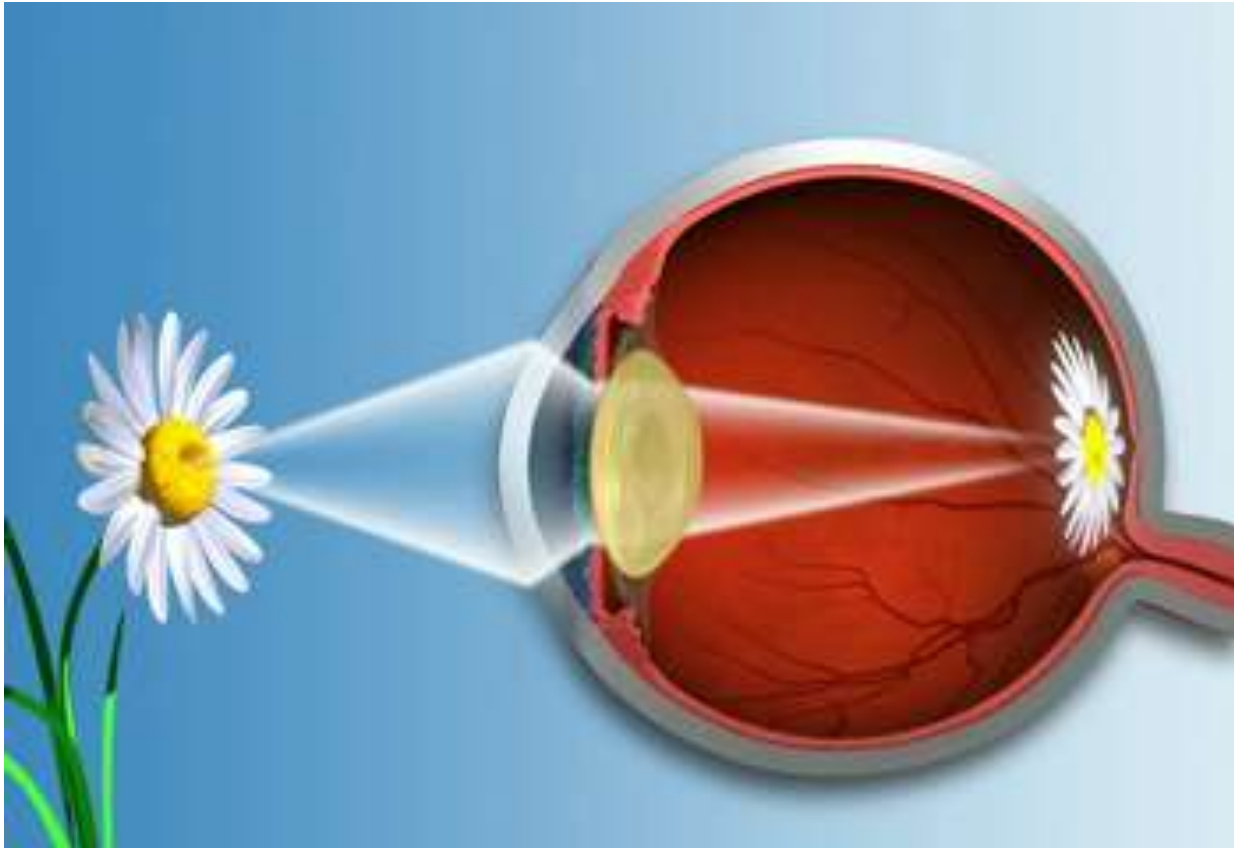


Questions

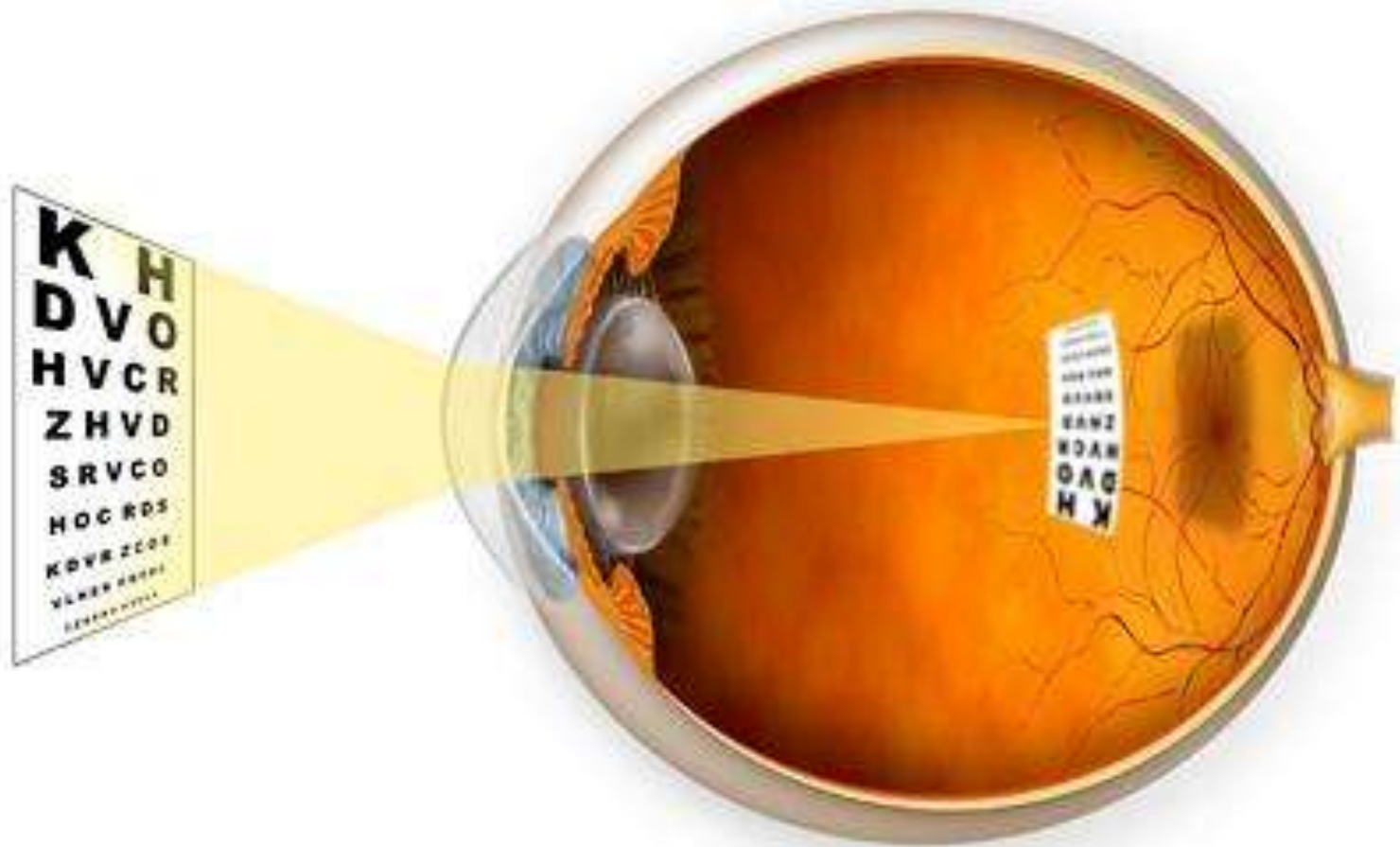
- In what way does the vision change?
- How significant are the changes?
- Is there a “quick fix” for these changes?



Normal Vision



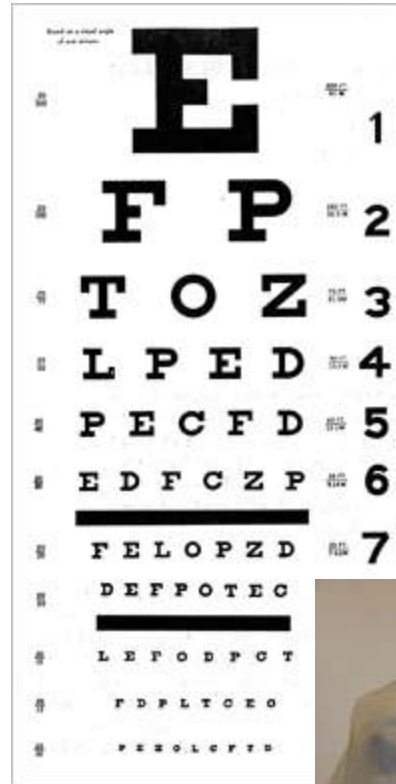
Myopia or Nearsighted



We measured

- Visual acuity using the Snellen chart
- and
- Refractive error using a Nidex AR-310A autorefractor

On all patients expected to complete more than 10 HBOTs & set up a database to tract these results.



Vision testing was done at

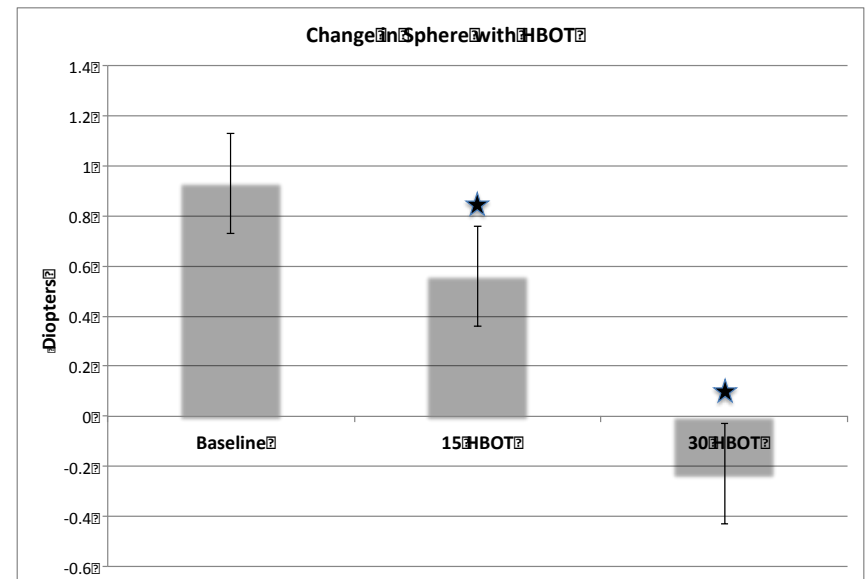
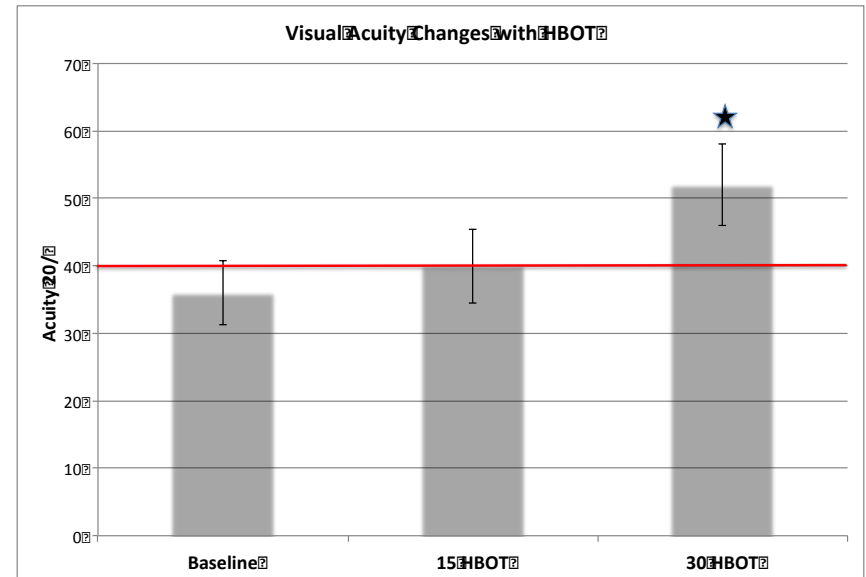
- Baseline – before starting any HBOTs
- After 15, 30, and 40 HBOTs
- When patients reported a change in their vision

Testing took about 10 minutes.

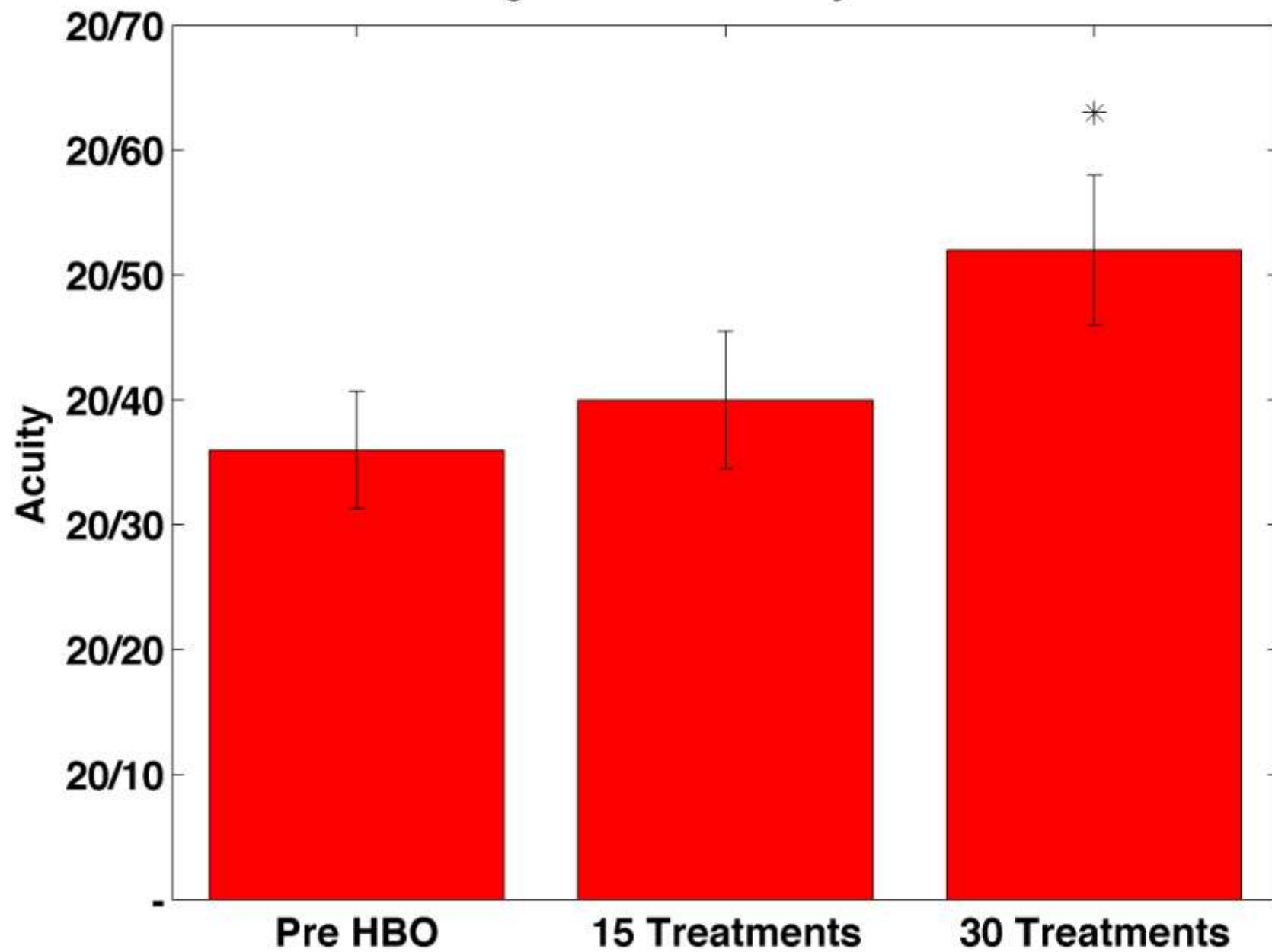


What we found

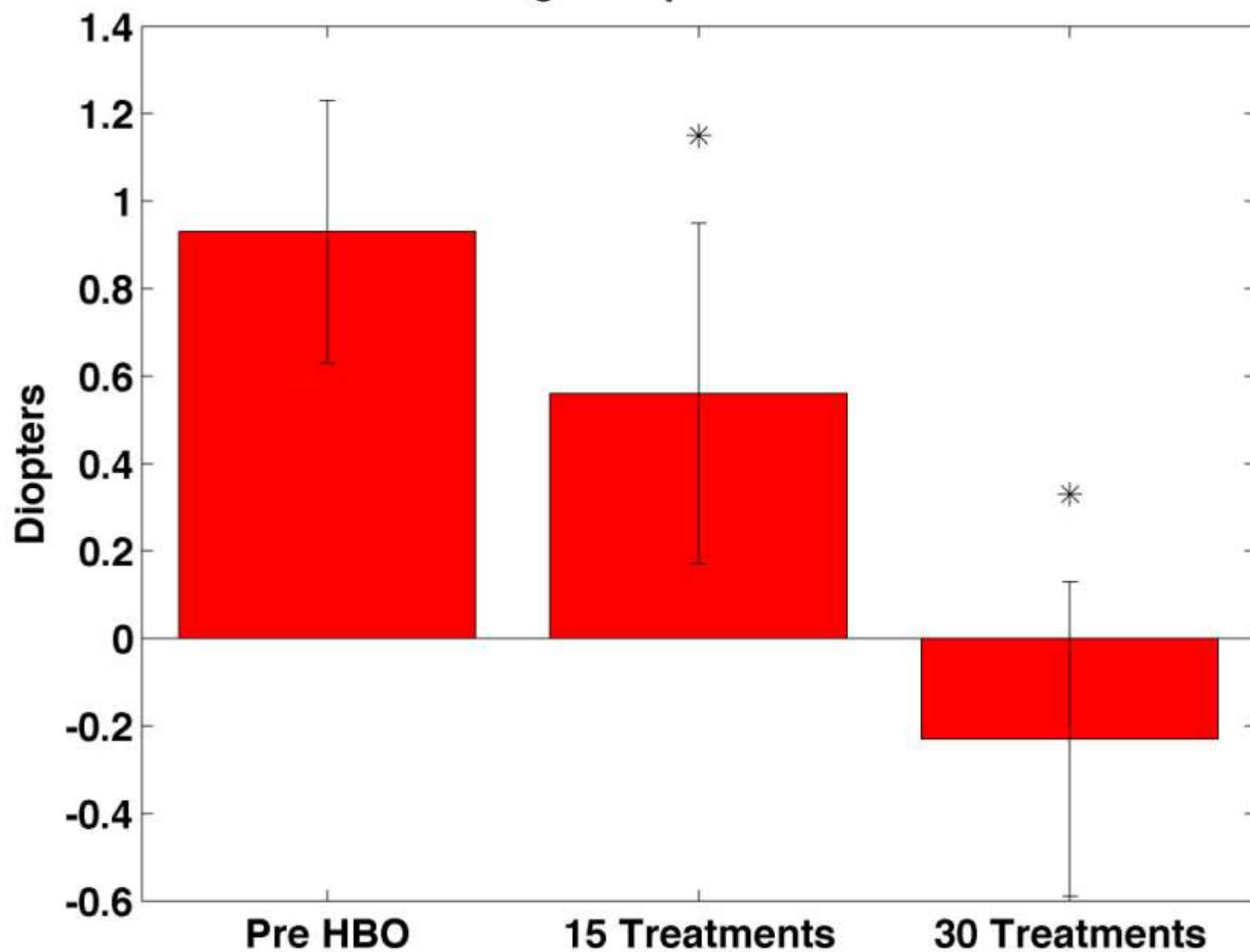
- Patients became more myopic.
- Significant changes were detectable after 15 HBOTs.



Change in Visual Acuity with HBO



Change in Sphere with HBO



20/200	E	1
20/100	F P	2
20/70	T O Z	3
20/50	L P E D	4
20/40	P E C F D	5
20/30	E D F C Z P	6
20/25	FELOPZD	7
20/20	DEFPOTEC	8
	LEFOPCT	9
	PDPYCRD	10
	DEALPTD	11



1D



2D



3D

Solution

- Patients who reported a vision change that interfered with their daily life were offered adjustable lens glasses.
- 4 patients accepted the glasses.
 - These patients later completed a questionnaire about their experience with the glasses



The glasses worked

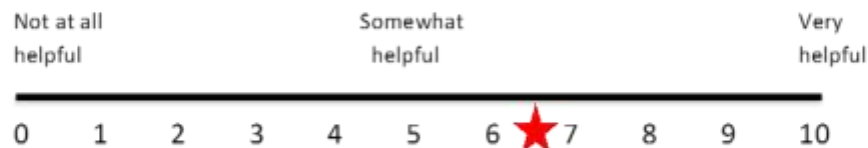
- 3 patients used them to improve distance vision
- 1 used them for computer work and reading.
- Major drawback with this model were aesthetics and comfort.



Mean answers to questionnaire about their experience with Adlens glasses.

How many weeks did you use the Adlens glasses? **5.5** weeks

Were the Adlens glasses helpful?



Please rate your agreement with the following statements, where 1 indicates strong disagreement and 10 indicated strong agreement.

	Disagree	Agree
I was able to adjust the lens to correct my vision.	1 2 3 4 5 6 7 8 9 10	
The Adlens glasses were comfortable.	1.5 2 3 4 5 6 7 8 9 10	
The Adlens glasses caused headaches.	1 2 3 4 5 6 7 8 9 10	
The Adlens glasses were fashionable.	1 2 3 4 5 6 7 8 9 10	

How often did you wear the Adlens glasses?

2 every day

1 1 to 3 days a week

4 to 6 days a week

Approximately how many times a day did you adjust the lenses on your Adlens glasses? **2**

Were the glasses easy to adjust? **Yes** No

Summary/Conclusions

- Significant visual changes commonly occur with HBOTs.
 - Many patients are either not aware of them or don't feel they are significant enough to require action.
- Adjustable lens glasses are able to correct vision in this setting. This is important for patients with jobs and in situations that require good visual acuity.