

Fitting prisms for homonymous hemianopia

Note that hands-on materials to practice are available for appr. 25 persons, others are welcome to watch.

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Dr. Peli's principal research interests are image processing in relation to visual function and clinical psychophysics in low vision rehabilitation with special emphasis on mobility and driving, image understanding and evaluation of display-vision interaction. He also maintains an interest in oculomotor control and binocular vision. Dr. Peli is a consultant to many companies in the ophthalmic instrumentation area and to manufacturers of head mounted displays (HMD). He served as a consultant on many national committees, including the National Institutes of Health, NASA AOS, Aviation Operations Systems advisory committee, US Air Force, Department of Veterans Affairs, US Navy Postdoctoral Fellowships Program, US Army Research Labs, and US Department of Transportation, Federal Motor Carrier Safety Administration. For 33 years he has been providing vision rehabilitation services at Tufts Medical Center in Boston.

Workshop outline

Theoretical basis and background information about the peripheral prism is covered. The clinical trials and laboratory experiments with the device are described. Advanced knowledge about secondary aspects and side effects of the prisms is addressed. Novel fitting options and designs is introduced. Hands-on experience in fitting the press-on version of the peripheral prisms and in fitting and ordering the permanent high power prisms is provided, as well as training patients in prisms use, measuring the field expansion. Practice with actual patients provided.

The workshop will start with a lecture presenting the background for fitting prisms for hemianopia, reviewing the main prior techniques, their effects and limitations, and presenting the motivation and rationale for the peripheral prism designs, as well as a brief review of the evidence base for their use from a growing body of clinical studies. The lecture part will include a demonstration of the interactions with patients from fitting to evaluation of posture and to training procedure and confrontation fields demonstrations of the effects and limitations. The second portion of the workshop is composed of hands on practice of the procedures and techniques demonstrated in the second part as described below.

Participants will be instructed in the fitting of the press-on prisms; first on each other, giving them an opportunity to practice the procedure and appreciate firsthand the optical “image-shift” effect of the prisms. Participants will walk with the prisms and will be able to notice the positive effect as well as possible side effects of the prism and appreciate the need for adaptation. Volunteer patients with hemianopia will be recruited to provide the participants with an opportunity to measure and appreciate the field expansion effect using confrontation and other perimetric techniques. The effects of the horizontal and oblique designs will also be compared. Finally “reach and touch” training exercises for in-office and home use will be taught. Participants will first practice these exercises on each other (from the perspective of both the practitioner and patient) and then with the volunteer patients. The interaction with actual patients is an invaluable contribution to the experience of the participants and in all prior workshops, we were able to recruit at least 2 patients to participate, and as many as 5.

Chadwick Optical will provide pre-cut press-on prisms and a fitting template for the permanent prisms, as well as additional accessories (frames and frame adjustment tools) needed. Participants will be provided with a complete fitting protocol for the press-on and permanent prisms, as well as written details of the training procedures.

Timetable

50 min Lecture: Introduction to peripheral prisms for Hemianopia, and fitting of prism to patients

5 min Introduction to activities

30 min Do-it-yourself: Fitting the prism to available hemianopic patients and to each other

5 min Discussion & wrap-up

Disclosures:

Dr. Peli has a USA patent for the peripheral prisms assigned to the Schepens and licensed to Chadwick Optical. Dr. Peli received modest research support from Chadwick Optical and from Multi Optical.