TRAUMATIC BRAIN INJURY & HIDDEN VISUAL PROBLEMS by Optometric Extension Program, a non-profit organization.

Often visual problems resulting from Traumatic Brain Injury are overlooked during initial treatment of the injury. Frequently these problems are hidden and neglected, lengthening and impairing rehabilitation. Vision is the most important source of sensory information. Consisting of a sophisticated complex of subsystems, the visual process involves the flow and processing of information to the brain. Because there is a close relationship between vision and the brain, Traumatic Brain Injury can disrupt the visual process, interfering with the flow and processing of information. The result is a vision problem. Symptoms indicating a vision problem are:

- Blurred vision
- Sensitivity to light
- Reading difficulties; words appear to move
- Comprehension difficulty
- Attention and concentration difficulty
- Memory difficulty
- Double vision
- Aching eyes
- Headaches with visual tasks
- Loss of visual field

GOOD VISUAL SKILLS -- GOOD VISION

Good visual skills are necessary for efficient information processing. When processing visual information is difficult, one may "try harder," straining without even knowing it because the effort is subconscious. If the visual system is inefficient, every task can seem difficult, using more energy than required. Visual skills affected by Traumatic Brain Injury include:

Tracking:
The ability of the eye to move smoothly across a printed page or while following a moving object.

Fixation:
Quickly and accurately locating and inspecting a series of stationary objects, such as words while reading.

Focus Change:
Looking quickly from far to near and back without blur.
Depth perception:
judging relative distances of objects -
how far or near they are.

Peripheral vision:
monitoring and interpreting what is
happening in the surrounding field of
vision

Binocularity:
using both eyes together as a team -
smoothly, equally and accurately.

Maintaining attention:
keeping focused on a particular activity
while interference, such as noise, is
present.

Visualization:
accurately picturing images in the
"mind's eye," eye retaining and storing
them for future recall.

Near vision acuity:
clearly seeing, inspecting, identifying
and understanding objects viewed within
arm's length.

Distance acuity:
clearly seeing, inspecting, identifying and
understanding objects viewed at a
distance.

Vision perception:
understanding what is seen.

OPTOMETRY AND REHABILITATION

Very few in the health care professions,
including head trauma rehabilitation centers,
are adequately aware of visual problems
resulting from Traumatic Brain Injury and the
visual-perception consequences. Unfortunately,
this creates a gap in rehabilitative services,
resulting in incomplete treatment and frustration
for the patient, family and treatment team.

The vision care professional can play an
important role in the rehabilitation effort.
Through vision therapy and the proper use of
lenses, a behavioral or developmental
optometrist specifically trained to work with
Traumatic Brain Injury patients can help
improve the flow and processing of information
between the eyes and the brain.

Vision therapy can be a very practical and
effective. After evaluation, examination and
consultation, the optometrist determines how a
person processes information after an injury
and where that person's strengths and
weaknesses lie. The optometrist then
prescribes a treatment regimen incorporating
lenses, prisms, low vision aides and specific
activities designed to improve control of a
person's visual system and increase vision
efficiency. This in turn can help support many
other activities in daily living.
WHAT IS BEHAVIORAL OPTOMETRY OR DEVELOPMENTAL OPTOMETRY?

Behavioral optometry is based upon the core principle that vision is a learned process and can be developed or enhanced at any age. Optometrists practicing this method have continued their education beyond the basic Doctor of Optometry (O.D.) degree. This continuing education emphasizes the use of lenses, prisms, and vision therapy to enhance a patient's visual capabilities, reduce visual stress, prevent and rehabilitate vision problems. As a member of the rehabilitative team, behavioral optometrists have extensive experience treating the vision problems stemming from Traumatic Brain Injury.

Not all optometrists practice behavioral optometry. To locate a behavioral optometrist in your area, go to Find a Doctor.