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RETURN TO TABLE OF CONTENTS

Summer 2001

Visual Dysfunction in Chronic Fatigue Syndrome

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There are few references in the literature to visual and/or ocular disturbances in chronic fatigue syndrome (CFS), even though visual symptoms are common. Ocular symptoms have been quantified, and are significantly more common than in control groups.¹

The ocular signs and symptoms of CFS have not been considered to be a major part of this condition in the past, yet it becomes very obvious when working with these patients that the ocular system is very much affected by, and in turn affects, this systemic condition.

Symptom histories of 141 CFS patients referred to my practice are summarized in the accompanying table. The majority had complained to the referring doctor of bothersome visual complaints, but some had not considered their visual problems to be significantly affecting their day-to-day function, or may not have mentioned any visual problems at all.

Visual symptoms

The visual symptoms typically encountered with CFS patients include:

- Blurred or foggy distance and/or near vision. Blur tends to fluctuate according to the state of the fatigue at the time;
- Difficulty focusing from distance to near and/or near to distance;
- Slowness or inability to focus on objects, particularly at near;
- Difficulty tracking lines of print. Patients seem confused and distracted by the lines of print above and below where they are reading;
- Poor short-term memory and concentration (generally) with reading being markedly affected;
- Diplopia or ghosting of images;
- Problems with peripheral vision; patients complain of not seeing objects in their side vision and of continually bumping into things and veering. Some say they feel like they have tunnel vision;
- Misjudging distances, clumsiness, poor balance and coordination. Difficult driving due to problems judging distances;
- Dizziness and inability to tolerate looking at moving objects;
- Spots, flashes of light, floaters and halos;
- Intolerance to light (glare);
- Grittiness, burning, dryness or itchiness. Patients complain of sore eyes usually becoming worse as the day progresses;
- Headaches often increasing when reading, concentrating visually and driving.

In many cases almost all of these symptoms occur, producing varying degrees of disability. These patients have sensory intolerance and appear to have a degree of inability to suppress background sensory events from reaching a distracting level in consciousness.

Objective Ocular Findings

Upon examination, findings may include:

- Poor oculomotor control. This is evident when observing motilities, particularly saccadic eye movements. Saccades, normally quick eye movements, are very slow, with marked jerkiness. Conscious effort goes into changing visual fixation, as if it is hard to let go of looking at an object once vision is fixed on it. Pursuits (tracking an object) are not smooth and cannot be done quickly. Discomfort and often nausea is associated with saccadic and pursuit eye movements;
- Exophoria, the tendency for one eye to diverge or turn outward when the other eye is covered, is often greater at near in these patients, usually with a slow recovery. However, the exophoria may not appear high due to a long-term compensation process. CFS patients often adopt a typical posture associated with exophoria-sitting well forward on the chair with their shoulders halfway down the chair back in a semi-reclined position;
- Remote nearpoint of convergence, where both eyes converge on the same close-in location at the same time, is usually observed, with slow recovery. This test may be quite painful;
- Reach/grasp/release tests that require the patient to reach out and touch or grasp an object, shows a marked decrease in the patient's ability to reach and grasp after release. One eye usually diverges without the patient being aware. Patients often complain of nausea, significant discomfort or dizziness when performing this test;
- Near/far/near fixations commonly show poor convergence at near with one eye usually diverging. Such vergence changes are typically very slow and often uncomfortable to execute, with sometimes an associated tendency to use raised eyebrows and wide open eyes to assist in changing to far;
- Constricted peripheral fields. In my experience, treatment with lenses and vision therapy produces marked improvements in field. In my opinion there are probably several factors involved, including improved central/peripheral processing and sensory-motor coordination, and hence heightened attention;
- Staring appearance; low blink rate and incomplete blinking;
- Small pupils;
- Sensitivity to lights;
- Tear film and ocular surface abnormalities. Low tear break-up time, related to inadequate production of the oil or mucus layer in tears, is frequently observed. So is rose bengal corneal staining, which reveals cell death in the cornea due to dryness;
- Low grade chronic allergic conjunctivitis;
- Visual midline shift in these patients, particularly if the patient has been diagnosed with fibromyalgia.

Management of the CFS patient

Behavioral optometric management of the visual manifestations of CFS should utilize the following treatment options:

- Best subjective correction for distance and near. Patients respond favorably to low plus lenses at near.
- Prisms ground into prescription lenses. Base-in prisms, where the thickest part is placed nearest to the nose, often provides immediate relief. This is particularly true for near vision, but base-in prisms can also greatly reduce the severity of visuo-spatial symptoms, sometimes completely. Patients generally report things look brighter, they can see more, concentrate better, and neck pain and tension, including headaches, have been relieved. They often say the foggy or cloudy feeling in their head has gone and that they can read for longer periods. Yoked prisms, where the base ends of the prisms are placed in the same position for each eye, can also produce dramatic changes in some patients.
- Progressive lenses are my choice for CFS patients. I use them as supportive lenses to reduce the effort of focusing from distance to near, providing progressive clear vision.
- Tints are regularly used because of the increased sensitivity to light.

- Ocular lubrication therapy is often needed to treat the dry eye problem and symptoms, and to eliminate the corneal staining. Warm compresses may also provide some relief. Many of these patients have significant allergy problems and I will also proffer advice on relief of allergic symptoms.

I find it interesting that in patients with fibromyalgia, a significant portion have a history of one or more of the following: strabismus, amblyopia, anisometropia, eye surgery for strabismus (often multiple), long-standing binocular vision problems, nystagmus, whiplash or closed head injury. All of these conditions have significant potential effects on body posture. The long-term effects of poor body posture on the overall health of the individual have been well documented, and visual dysfunctions appear to be a major contributing factor to poor body posture in CFS patients.

Because CFS is a real illness of increasing prevalence, and as fatigue itself becomes better understood, it is important that eye specialists are not only fully informed about the condition itself, but also cognizant of the ocular/visual disturbances for which we can play an important role in treatment and rehabilitation.

Reference

Potaznic W et al. Ocular manifestations of chronic fatigue syndrome and immune dysfunction syndrome. *Optom Vis Sci.* 1992; 69:811-814.

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Excerpted with permission from Visual Dysfunction in Chronic Fatigue Syndrome: Behavioural Optometric Assessment and Management. Journal of Behavioral Optometry. 1997; 8(6):149-153. Text has been edited for clarity.

Prevalence of Symptoms in 141 CFS Patients

Poor concentration

78.7%

Near blur

65.9%

Visuo-spatial balance/coordination

62.2%

Poor memory

59.6%

Headache

55.8%

Photophobia

53.9%

Distance blur

44.7%

Near/far/near blur

39.7%

Dizziness/difficulty with moving objects

38.3%

Sore eyes

35.5%

Stopped work

31.9%

Neck pain

26.9%

Spots/floaters/halos/flashes

20.6%

Stopped driving

12.6%

Diplopia

9.9%

The role of visual processing systems

Clinicians often send CFS patients who report vision problems to an optometrist or ophthalmologist for evaluation. But the specialists frequently find no abnormalities in the structure of the eyes, and treatment reaches an impasse.

In these cases, the source of the problem may lie in the brain and not the eyes themselves, according to William Padula, OD, neuro-optometrist and head of the Padula Institute of Vision Rehabilitation in Guildford, Conn.

"Persons with CFS have in essence suffered a neurological event that affects their vision similar to traumatic brain injury or multiple sclerosis, although that is not widely recognized by medical practitioners," Padula says.

Padula believes CFS patients may have dysfunction in the part of their brain that controls the ambient visual process, which lets us know where we are in space and provides information used for balance, coordination and posture.

Ambient visual nerve fibers from the peripheral retina are relayed to the midbrain, where they become part of the sensory-motor feedback loop. Even when the eye is fixed on an object in the visual field, the ambient process is feeding information from the peripheral vision to the brain to help it make sense of what it sees.

When the ambient visual system is damaged, patients' peripheral vision no longer helps them stabilize and orient images in the same way, and they have to rely more heavily on their focal processing system. The focal processing system uses only the macular area of the retina instead of the peripheral nerves. It feeds information to the brain about an object only if the eye is fixed directly on it.

Dr. Padula has named this condition post-traumatic vision syndrome (PTVS). Typical symptoms of PTVS include intermittent blurry vision, perceived movement of print or stationary objects, headaches, light sensitivity and seeing words and print run together.

"I have treated many patients with CFS who suffer from PTVS," Padula says. "The imbalance in their visual processing systems slows everything down and causes them to focus on a single object in the visual field at a time. They have difficulty re-focusing, tracking objects or isolating details."

He believes that some CFS patients may also suffer from visual midline shift syndrome (VMSS). In VMSS, a neurological event interferes with vision processing from only one side of the body. The ambient process attempts to create a relative balance in the visual field by expanding its concept of space on one side of the body compared to the other. This results in a shift in the individual's perception of where the midline of vision is, usually away from the affected side.

Individuals with VMSS often have poor posture and balance, and tend to lean to one side or the other. Dr. Padula reports that most of his CFS patients suffer from anterior/posterior VMSS, tending to lean forward or backward instead of right or left. This may lead to neck, back, and shoulder pain.

The Neuro-Optometric Rehabilitation Association (NORA) offers assistance in locating qualified professionals who can treat visual problems in CFS patients. Visit their Web site at www.nora.cc.