# Medically Unexplained Symptoms In Ophthalmology

Linda Verduijn

S344897

Clinical Psychology Section

Tilburg University, Tilburg

## Abstract

In this article, medical unexplained symptoms in ophthalmology are discussed. There are several types of functional problems, depending on the symptoms reported by the patient, and depending on whether the patients intentionally produces the symptoms or not. Several factors can play a role in (developing) medically unexplained symptoms (for example psychological problems or physical trauma).

Several methods for examining patients with functional visual problems and/or malingering patients are available. Regular ophthalmologic tests (for example perimetry), several electrophysical tests (for example VECP), as well as more indirect forms of testing (for example a statistical analyse of the test results and observation of the behaviour of the patient) can be used.

Treatment depends on the diagnosis. Possible organic problems (accompanying the functional problems) should be treated first. Psychological or psychiatric help is usually necessary, because functional visual problems are complicated to deal with. The prognosis of functional visual problems is usually good.

## Introduction

Symptoms and diseases that are medically unexplained are common in all medical specialisms (Escobar, Hoyos-Nervi, & Gara, 2002). The term somatization is used to describe this phenomenon, although the exact definition has changed over time (Lipowski, 1988). For people with a somatization disorder, the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, or DSM-IV (Comer, 2005) describes several different symptoms like pain, gastrointestinal problems, sexual problems or neurological symptoms (for example paralysis) (Comer, 2005). Patients with functional problems are usually convinced that their symptoms have an organic cause and resist to possibility that there is a psychological cause for their problems (Mojon & Schläpfer, 2001). This thesis will focus on functional problems in ophthalmology.

Visual problems without a clear organic cause are quite common: e.g., in one study, it was found that about 5% of the patients in a general ophthalmology practice have functional visual loss (Bose & Kupersmith, 1995). In a university neuro-ophthalmology practice, the number of these patients increases to 12% (Scott & Egan, 2003). There are several forms of functional visual problems, and research found that a decrease in visual acuity (in some cases

accompanied by loss of visual field) is reported most often: 36-80% of the cases in functional visual loss. Separate loss in visual field, without visual acuity problems, (14-20%) is less common. (Sletteberg, Bertelsen & Hovding, 1989; Barris, Kaufman & Barberio, 1992).

An illustration of a patient with functional visual problems is a case of a 16-year-old boy, described by Purvin and Maturi (2004). This patient was involved in a car accident and complained about blurred vision 24 hours after the accident. It was found that the patients had central scotomas (distinctive areas in the visual field with loss of vision or impairment in vision) in both eyes, but neither eye examination nor neuro-imaging found an explanation for these problems.

The aim of this review is to obtain insight into the nature and the course of visual problems without an organic cause. It will also provide the professionals with some practical information. The attempt is to get a clearer picture, so that dealing with patients with these problems will be easier: extensive knowledge about the phenomenon will simplify recognizing the symptoms and choosing an adequate solution for the problems of the patient.

The outline of the thesis is as follows: first, a definition of this phenomenon will be formed. Subsequently, the causes and possibilities for diagnosis will be discussed: how can one recognize functional problems? What is known about risk factors? Finally, the possibilities for treatment of patients with functional visual problems and the prognosis will be addressed: how should functional problems be treated? Is relapse prevention possible and necessary?

**Definition**

The first problem here is that there is no single term for visual symptoms without clear organic causes: several terms are used. The most common terms are: functional visual loss, hysterical loss, non-organic loss, malingering, conversion disorder of vision, factitious visual loss and psychogenic visual loss (Egan, 2004). These terms are not all inter-exchangeable. In both malingering and factitious disorder, the patient deliberately 'produces' the symptoms (Comer, 2005): the patient reports vision problems but does not experience them. This is not the case in patients with functional problems, where the symptoms are not consciously produced (Weller & Wiedemann, 1989). Even though functional symptoms have a clear psychogenic component, it is also stated that this component can actually cause organic changes or problems (Weller & Wiedemann, 1989; Comer, 2005). It was also found that some patients with functional problems are quite suggestible, and that patients with malingering

usually have their own specific ideas of their disorder and their symptoms (Weller & Wiedemann, 1989).

In the DSM-IV, both hysteria, malingering and factitious disorder are somatoform disorders. However, the DSM-IV also uses hysterical somatoform disorders (which includes conversion disorder, somatization disorder and pain disorder associated with psychological factors) to describe disorders with actual physical changes, and distinguishes these somatoform disorders from malingering and factitious disorder (with no actual symptoms) (Comer, 2005). The difference between malingering and factitious disorder is that in malingering, the patient is motivated to produce the symptoms in order to get more or less tangible goals like money or to get out of military service, whereas in factitious disorder the goal of the patient is more psychological: these patients want to get attention and want to take on the sick role (Weller & Wiedemann, 1989; Turner, 1997; Aghabeigi, Manisali, Suhr, Feinmann & Harris, 1998; Comer, 2005; Feldman, Eisendrath & Tyerman, 2008). In many cases, the patient with factitious disorder is not even consciously aware of his or her goal (Feldman, Eisendrath & Tyerman, 2008).

In the present article, the term functional will be used to describe symptoms or diseases without a clear pathological cause, and without the patient consciously faking the symptoms. Since the term hysterical is considered by the writer to be stigmatizing, this term will mostly not be used in this article. Malingering and factitious disorder will be used to refer to the symptoms that are deliberately produced by the patient. Symptoms and diseases which have a medical cause will be defined as organic.

**Phenomenology**

Patiënts with functional visual problems can have several different sight problems. There can be vision loss in one or both eyes, double vision (diplopia), involuntary closing of the eye lids (blepharospasm) and drooping eye lids (ptosis) (Egan, 2004). One of the most common ocular somatoform problems is functional amblyopia, or lazy eye (Kathol, Cox, Corbett & Thompson, 1983). Functional visual loss is common in both children and adults, in particular in women (Lim, Siatkowski & Farris, 2005) and girls (Taich, Crowe, Kosmorsky & Traboulsi, 2005). It is not known under which circumstances the eye is ‘chosen’ to be the subject of functional problems, but previous organic eye problems increases the chance that functional problems, should they develop later in life, will be visual (Weller & Wiedemann, 1989; Aghabeigi, Manisali, Suhr, Feinmann & Harris, 1998). In both adults and children, functional visual loss can accompany organic disease (Rada et al., 1973; Keltner et al., 1985).

Two kinds of functional visual loss are distinguished: afferent and efferent visual loss. Afferent functional visual loss is described as decreased or blurred vision in one or both eyes. It can be mild or severe, up to complete blindness (Egan, 2004). Efferent functional visual loss is characterised by double vision, involuntary blinking, ptosis or problems with tracking objects. Other researchers prefer the following classification: monocular visual loss, binocular visual loss and monocular visual decrease (Chen, Lee, Karagiannis, Crompton & Selva, 2007). Binocular functional visual problems are the most common problems, both in adults (Beatty, 1999) and children (Taich, Crowe, Kosmorsky & Traboulsi, 2004). Aghabeigi, Manisali, Suhr, Feinmann and Harris (1998) distinguish sensory functional ocular problems (for example ambyoplia and diplopia) from motor functional ocular problems (like blepharospasm and ptosis) and point out that motor functional problems are not common and therefore professionals should not diagnose their patients with motor functional problems too easy.

Another phenomenon is functional loss of visual field. This is usually experienced in combination with a decrease of visual acuity (Sletteberg, Bertelsen & Hovding, 1989; Barris, Kaufman & Barberio, 2005). Tunnel vision or loss of peripheral vision is the most frequently described form (Smith & Baker, 1987).

**Antecedents**

In order to get a more complete understanding of the concept of functional visual problems, several studies have concentrated on possible factors that play a role in (developing) functional visual problems. A minority of patients with functional visual loss have psychiatric illnesses or problems (Egan, 2004; Lim, Siatkowski & Farris, 2005), and this is twice as likely in adults as in children (Lim, Siatkowski & Farris, 2005). Many patients also display depression and anxiety (Holder-Perkins & Wise 2001; Lim, Siatkowski & Farris, 2005). Depression and anxiety are not necessarily the (only) causes of functional problems though (Waal, de, Arnold, Eekhof & Hemert, van, 2004; Sharpe & Mayou, 2004). Stress can play a role, and another factor is migraine, which is quite common among patients with functional visual loss (Lim, Siatkowski & Farris, 2005). In some cases, functional visual loss occurs after traumas. Especially closed head trauma is strongly associated with functional visual loss. However, caution is needed here: Aghabeigi, Manisali, Suhr, Feinmann and Harris (1998) emphasize that functional visual problems that occur after facial trauma can be a result of the traumatic experience, but it can also be an expression of underlying psychiatric problems that were already present before the trauma. According to Kramer, La Piana and Appleton (1979),

a recent ocular problem in malingering patients is common too. In children, problems at school or in the family can play a role in developing functional visual problems, whereas in adults physical trauma can have an influence (Egan, 2004; Lim, Siatkowski & Farris, 2005).

**Functional visual problems in children**

Research by Wynick, Robson and Barry Jones (1997) showed that children who had developed functional visual problems were more likely than children with organic visual problems to have had problems at school or lost a loved one at the time of their visual problems. They were also bullied more often. The same study also found that the parenting style could also be related to functional visual problems in children: children with functional visual problems and their parents both reported an over-protective parenting style more often than the control group (children with organic visual problems) did. These children experienced more adjusting problems in their adolescence too.

Other researchers focussed on suggestibility as an important factor: this can play a role in the development (Kathol, Cox, Corbett & Thompson, 1983) and treatment (Abe & Suzuki, 2000) for functional visual problems. For example, research showed that functional problems in children often followed mild head or face trauma, or eye pain. Monocular functional visual problems often followed mild trauma on the same side of the face or the head: children. It was also found that the onset of functional visual problems in children peaks at the age of eight or nine years and this corresponds with the peak of suggestibility in children at that age (Abe & Suzuki, 2000). These results support the idea that suggestibility is an important factor in developing functional visual problems. Cases of physical or sexual abuse in children with functional visual problems are rare, but this should always be taken into consideration (Keltner et al. in Beatty, 1999).

Taich, Crowe, Kosmorsky and Traboulsi (2004) found that children with functional visual problems can both be malingerers or cases of functional eye problems: some children claim vision problems in order to get (more or less innocent) secondary gains, like for example glasses. However, the majority of the children in their research deed not seem to consciously produce the symptoms.

**Diagnosis**

Because there is no objective basis for the diagnosis of functional visual loss and because there is always the possibility of missing an organic cause for the problems, ophthalmologists are reluctant to use the diagnostic label of functional visual loss (Lim, Siatkowski & Farris,

2005). For example, patients who display clear functional visual loss but also show a central scotoma, often have an organic disorder (Egan, 2004). Most professionals start by excluding possible organic causes for the problems of the patients. MRI and other brain imaging techniques can be used to discover whether there are any problems in de visual pathway. If no organic cause can be found or if the organic disorder does not fully cover the symptoms, the possibility of any functional problem becomes more likely. Many methods for detecting functional visual problems have been developed.

Different methods are available for testing afferent and efferent functional visual loss. Afferent functional visual loss is easier to diagnose if it is one-eyed and severe. Perimetry, with which the visual field and visual acuity are systematically measured, has been proven useful by presenting stimuli of varying brightness and at different locations in the visual field. The results of this test are presented as 'patterns' (or isopters) on special screens, representing the visual field. Goldmann type of perimetry is often used here (fig.1): in this case, a trained professional moves the stimulus. Automated perimetry, which uses a computer program, is a less useful tool in detecting functional visual problems, because the computer fails to identify several details of typical patterns in visual field testing (Scott & Egan, 2003). Automated perimetry is therefore not able to distinguish between organic or functional abnormalities (Beatty, 1999).

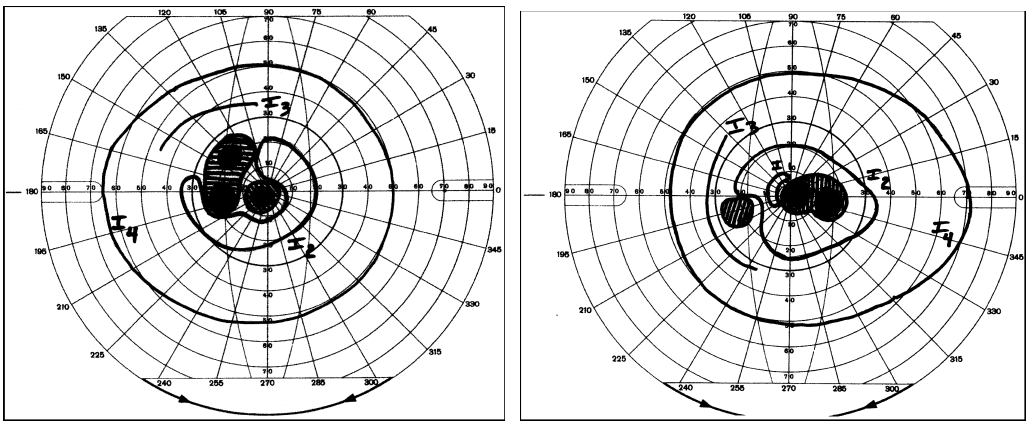

Figure 1: An example of the results of Goldmann perimetry. Source: *Sprint Car Visual Loss. Purvin, V. & Maturi, R. (2004)*

Examining the visual acuity in patients with only one bad eye can be done via the crossed cylinder tests or the prism dissociation test. Propioception tests, which are usually well performed by patients with organic visual loss, can be useful too: research has demonstrated that patients with functional visual problems usually perform relatively bad on this test (Beatty, 1999; Egan, 2004; Villegas & Ilsen, 2007; Chen, Lee, Karagiannis, Crompton & Selva, 2007). Other studies have provided evidence that this performance is specifically

typical for malingering (Beatty, 1999; Villegas & Ilsen, 2006). For example, if the patient is asked to put their fingers to their nose or tip two fingers of both hands together, patients with actual vision problems are usually very able to do this, whereas the malingering patient often fakes difficulties performing this test.

Efferent functional visual loss can be detected using other tests (Egan, 2004). First of all, a phenomenon called convergence spasm can be noticed by watching the pupils during the convergence movement: they become smaller (Egan, 2004). Patients with functional ptotis usually also display eye brow ptosis: in order to have a drooping eye lid, they are pushing down the eye lid with the eye brow (Mojon & Schläpfer, 2001; Egan, 2004). Examining the eye lid after lifting the eye brow can therefore be useful here. Functional blepharospasm is hard to diagnose, but information about its onset can provide a clue: functional blepharospasm usually has a sudden onset, whereas organic blepharospasm starts slowly and gradually. Organic blepharospasm can also be accompanied by other facial involuntary movements (Egan, 2004).

Monocular functional visual loss is often tested via the fogging test: a lens is placed in front of the 'good' eye, and the patient is asked to read out loud a line or from a chart. The strength of the lens in front of the 'good' eye is gradually increased, until the vision in the 'good' eye is so bad, that the patient must be reading with the 'bad' eye (Beatty, 1999; Chen, Lee, Karagiannis, Crompton & Selva, 2007). Other methods to detect this type of functional visual loss are the prism shift test (which induces eye movements that are very hard to suppress), the reading bar test (in which the patients reads a line with a bar placed 14-16 inches in front of them: in order to be able to read the line, both eyes should function) and the polarizing lens tests: this test, using special lenses, makes it possible to show the patient a stimulus to only one eye (the bad one), without the patient being aware of this fact: the patient is suddenly able to read with his or her bad eye (Mojon & Schläpfer, 2001). The disadvantage of this test is that this technique does always not work, for example because the glasses with the polarizing lenses are worn leaning over a little to one side. One can also use coloured lenses and charted in order to determine which eye the patient uses while performing the test (Beatty, 1999): coloured lenses are put in front of the patient, and the patient has to read out loud coloured charts. With coloured lenses, the patient should not be able to read words written in a complementary colour. This way, one can test whether only one eye (as the patient claims) or actually both eyes are used, depending on the words that the patient reads. This is an advantage compared to the polarizing lenses test, because here it is not possible to see all the stimuli with only one eye (Mojon & Schläpfer, 2001).

Testing visual acuity in both eyes can be done via stereoscopic tests, even though measuring stereoscopic acuity does not suffice to determine functional visual loss. The preferential looking method can be used for both monocular and binocular functional visual loss, but usually is not useful in testing patients who claim to be completely blind (Beatty, 1999). One can also test the papillary reactions, because these should be normal in both patients with functional visual loss and malingerers (Weller & Wiedemann, 1989).

Loss of visual field can be detected via Goldmann perimetry and a tangent screen test: when the professional shows the same stimulus clockwise (or the other way around) and does this multiple times, the patient with organic visual field problems should be able to see this stimulus every time at the same location. In patients with functional visual field problems, the Goldmann perimetry results show inconsistencies: often a spiral or crossed pattern (or isopter, fig.2) (Mojon & Schläpfer, 2001; Egan, 2004). As has been outlined before, automated perimetry is less useful in testing functional visual field problems (Beatty, 1999; Scott & Egan, 2003). In the tangent screen test, the patient is examined at different distances. If the patient is placed at a greater distance, the visual field expands. In patients with functional visual field problems, the visual field often stays the same (Mojon & Schläpfer, 2001; Egan, 2004).

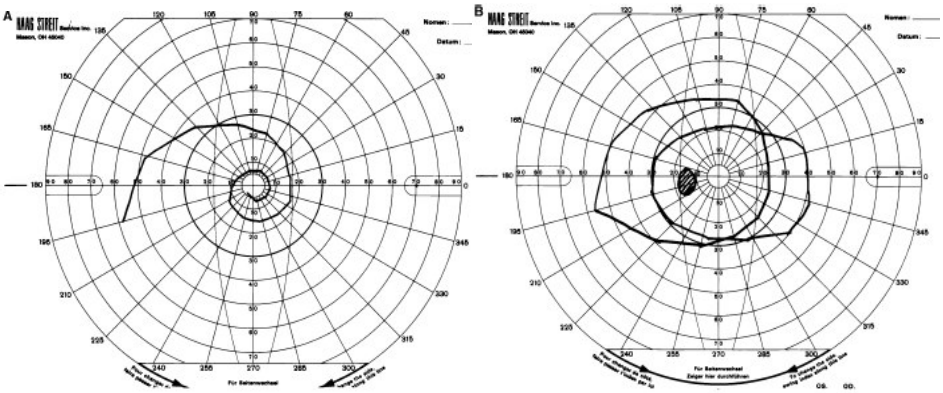

Figure 2: Goldmann perimetry results in functional visual field problems: A shows a spiral pattern, B shows a crossed pattern. Source: *Functional Visual Loss. Egan, R.A. (2004)*

*Testing for malingering*

When it is clear that the symptoms of the patient do not have an organic cause, another distinction needs to be made: does the patient really experience vision problems (functional/hysterical visual loss) or are the symptoms faked by the patient (malingering or factitious disorder)? In order to test malingering, one can use the preferential looking or the forced choice test. Patients with malingering often deliberately perform bad on this test and do

not put much effort in it (Guilmette, Whelihan, Hart & Sparadeo, 1996). Statistical examination of the test results will provide useful information here: if the patient really experiences his or her symptoms (and not only reports them, as in malingering), and is forced to choose between two options, about 50% of the answers on the forced choice tests will be correct, because the patients decision is based on chance. Other results (for example, many more false answers than expected) may indicate that the patient intentionally produces invalid answers (Gräf, 1999; Beatty, 1999). Another example: in a forced choice test with four options and 32 trials, about 8 answers (25%) should be correct, if the patient truly does not see anything and guesses all the trials. If only 2 out of 32 trials are correct, it is unlikely that this result is based on chance: the professional can therefore assume that the patients actually is able to see the trial, with an error chance of 0,6% (Gräf, 1999). The forced choice test is not useful when the patient claims to be completely blind (Fahle & Mohn, 1989). Another test based on this principle was developed by Graf & Roesen (2002): they used plates that showed the optotype Landolt C (a standardized symbol to test vision, fig. 3) and the patient was asked to identify the position of the gap. It was a forced choice test. Visual acuity was tested based on the number of correct answers: the test was passed if the patient provided a minimum of correct answers. Possible malingering was tested at the same time, based on rare test results like a very low number of correct answers (much lower than one would expect, based on chance). Another indicator used by these researches was an unusually high number of opposite answers (for example, choosing the right side if the gap was left). Not only the results, but also the reactions of the patients provided useful information: if there was no gap in the Landolt C, malingerers usually hesitated or started a discussion, whereas the control group usually only laughed.

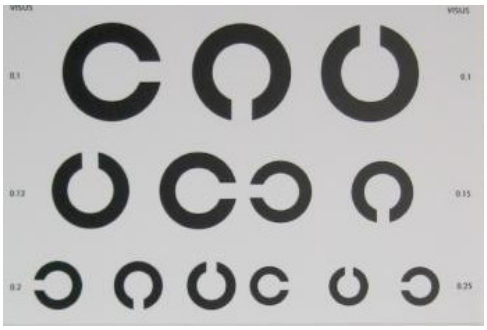

Figure 3: The Landolt C. Source: *www.mediost.com*

An alternative is using a visual test, starting with very small optotypes which are not visible to any person. When the patient claims not to see these optotypes, the professional reacts with surprise. Then, increasingly bigger optotypes will be shown, and after a while, the patient usually reads out the optotype (Mojon & Schläpfer, 2001).

Besides analyzing the test results, there are also other methods to find out whether the patient is actually able to see and fakes his or her symptoms. First of all, one can observe the patient when he is not aware of this: for example, patients with ptosis, did not display these symptoms when the patients thought to be alone (Mojon & Schläpfer, 2001). Another way is trying to distract the patient. One can for example deliberately drop something and examine whether the patient reaches out to catch it or not. One can also present a threat like a closed fist in front of the patient and wait for a reaction like blinking. A third example is reaching out a hand when greeting the patient and see if the patient shakes it (Chen, Lee, Karagiannis, Crompton & Selva, 2007). As has been stated before, there are other signs, besides the test results, that can alert the ophthalmologist that the patient might be faking the symptoms. According to Kramer, La Piana and Appleton (1979) malingering patients are often pressured by issues regarding their work or military service. For example, it should be checked whether the patient is involved in a legal process in order to get monetary compensation (e.g. from their employer because of an accident at work) and therefore benefits from being ill. Malingering patients usually fake their symptoms in order to get a secondary gain, so this information can therefore be an important indicator for malingering. There is also another reason for the ophthalmologist to be alert for signs of possible malingering: an incorrect diagnosis (concluding that the patients actually has vision problems) could be used by the malingering patient to unjustly get a secondary gain (for example money) and one does not want to be part of a possible fraud (Baer, 1997; Gherghel, 2003). Another indicator to distinguish between faked symptoms and functional symptoms that are really experienced by the patient is a phenomenon called ‘La belle indifférence’: patients are extremely calm and indifferent about their condition, despite the serious and distressing symptoms or diseases they have. This is a sign of functional problems and obviously not of malingering: malingering patients are trying to achieve their specific goal with there symptoms and will therefore not be indifferent at all (Weller & Wiedemann, 1989). Other indicators of malingering are professional issues (for example problems with their employer, involvement in law suits, ect.) and avoidance behaviour (Weller & Wiedemann, 1989).

*Electrophysical testing*

Electrophysiological methods can be used for detecting functional visual problems too. One example of this kind of methodology concerns visual(ly) evoked potentials (VEP), sometimes referred to as visual(ly) evoked cortical potentials (VECP). The evoked potentials are caused by sensory stimulation of the visual sense. VEC potentials probably originate from the occipital cortex and are used to examine the functioning of the retinogeniculostrate pathway (Beatty, 1999). Normal test results despite the visual problems reported by the patient can be a clue that the problems may be functional (Beatty, 1999; McBain, Robson, Hogg & Holder, 2007). The method can also be used to determine the amount of actual organic visual problems that possibly accompany functional visual problems (McBain, Robson, Hogg & Holder, 2007). There are several kinds of VECP tests, which use different kind of stimuli: some examples used in examining visual problems are pattern VECP, pattern onset VECP and pattern reversal VECP. Research by McBain, Robson, Hogg and Holder (2007) found that especially pattern onset VECP is a useful tool in determining functional visual problems. Other research states that pattern VECP has an advantage in assessing functional visual problems (Xu, Meyer, Yoser, Mathews & Elfervig, 2001). However, Beatty (1999) lists several disadvantages of this technique. First, (almost) normal potententials can also be produced without a properly functioning occipital cortex. Second, VECPs can be modified voluntarily by the patients, and this can be the case in malingering patients (Beatty, 1999; Xu, Meyer, Yoser, Mathews & Elfervig, 2001). Eye movements and eccentric fixation can also cause invalid test results. Third, this method alone is not a sufficient way to detect functional visual problems: other tests are needed too (Beatty, 1999). Another limitation of VECP is that patients with occipital (thus organic) blindness sometimes do not have a reduced VECP and therefore can incorrectly be diagnosed with functional visual problems (Aldrich, Alessi, Beck, Gilman, 1987).

A final useful and frequently applied test is pattern electroretinogram, which measures the functioning of the retina and the optic nerve. This way, the ophthalmologist is able to rule out some organic visual problems and helps to determine whether the complaints of the patients are functional or not. The combination of these two tests has been shown to be useful in diagnosing functional visual problems (Rover & Bach, 1987).

**Management/Treatment/Prognosis**

The treatment of functional visual problems is dependent on the diagnosis. If the functional problems are accompanied by organic problems, these organic problems must be treated first. In some cases, curing the organic component of the problems also helps to relief the

functional problems (Egan, 2004). Scott and Egan (2003) demonstrated that the combination of organic and functional problems is not uncommon: in 53% of their cases, patients with functional visual loss actually showed abnormalities in their neuro-ophthalmological tests. There is no pattern of functional visual loss that has a strong link with organic problems compared to the other patterns, except for central scotoma (Scott & Egan, 2003). These researchers therefore strongly suggest that the professional should have an open mind for possible organic problems, even after the diagnosis of functional visual problems, There is always a possibility of an accompanying organic factor, and patients with functional visual problems should be tested more then once, also after the diagnosis (Mojon & Schläpfer, 2001).

Psychological or psychiatric expertise is usually necessary to help these patients, but ophthalmologist are able to contribute to the treatment of functional problems too (Mojon & Schläpfer, 2001). For example, patients who receive the diagnosis of functional visual problems often feel that they are not taken seriously. Therefore, it is important that the professional (both the ophthalmologist and the possible psychological or psychiatric professional) treats the patients with understanding and a serious attitude. Confrontation is usually not a good approach (Gross & Sloan, 1971). Many studies have found that reassurance can be a very helpful tool in the treatment (Barris, Kaufman & Barberio, 1992; Beatty, 1999; Egan, 2004; Lim, Siatkowski & Farris, 2005; Stone, Carson & Sharpe, 2005). It should be emphasized that the eyes are perfectly healthy and that the patient will probably recover very well and quickly (Beatty, 1999). In the case of malingering, dealing with the patient can be very difficult; malingering patients can be uncooperative (Feinsilver, 1992; Gherghel, 2003). If the patient is told that there is a good prognosis, he may resist to this news (Feinsilver, 1992). On the other hand, emphasizing a good prognosis can also give the patient ‘a way out’ (Chen, Lee, Karagiannis, Crompton & Selva, 2007).

Prognosis of functional visual problems is usually very good. Patients have a better chance of recovering if they are young and do not have any psychiatric problems (Sletteberg, Bertelsen & Hovding, 1989; Barris, Kaufman & Barberio, 1992). However, it is hard to predict how much time recovery will take: the time needed to recover varies from only several days to several years (Barris, Kaufman & Barberio, 1992).

Factitious disorder in ophthalmology is rare (Feldman, Eisendrath & Tyerman, 2008). However, since these patients are at risk to actually harm themselves (Villegas & Ilsen, 2007), it is important that the possibility of factitious disorder is seriously considered. For example, Feldman and Eisendrath (1996) report a case of a female patient who deliberately stared at the

sun after dilating her pupils, and used eye drops containing alkali chemicals in order to inflict actual blindness. Feldman, Eisendrath and Tyerman (2008) also suggest several approaches to treatment of factitious eye problems. First, the non-punitive confrontation can be used, in which the professional confronts the patient with the fact that he is faking the symptoms, without being judgemental, and offers psychological treatment. This approach does not seem to be very effective, because the patient can feel humiliated. Second, the professional can use a strategy called 'incomplete interpretation', in which the professional suggest psychological help in order to deal with the stress and feelings 'that accompany their serious condition'. In this way, confrontation is avoided and provides the patient with a legitimate reason to get additional psychological therapy (which is needed in people with factitious disorder). These researchers, however, warn that neither of these approaches has yet been empirically validated (Feldman, Eisendrath & Tyerman, 2008).

*Treatment of children*

Children with functional visual problems usually require another approach. Again, reassurance is important (Taich, Crowe, Kosmorsky & Traboulsi, 2004). It is also important to talk to the parents separately in order to convince them that there is nothing wrong with their childs eyes and that children with functional visual problems have a very good prognosis. The relation between functional visual complaints in children and possible stress should be made clear too, and a punitive approach should be discouraged (Catalano et al. in Beatty, 1999).

As has been stated before, suggestibility seems to be an important factor in functional visual problems (Abe & Suzuki, 2000; Taich, Crowe, Kosmorsky & Traboulsi, 2004). Abe and Suzuki (2000) asked children to read out loud figures (8-mm-high Arabic numerals) from a calendar, at a distance of approximately 2 meters: if the patient could read the figure, they were asked to try again from a further distance. The professional convinced the child that his or her eyes were fine, and praised for their improvement in the treatment (even if there was hardly any result). If the child reported a blurry vision while trying to read the figure, was convinced that the blurry vision would disappear very soon. It was found that visual acuity in children treated with this method improved more often than the control group (Abe & Suzuki, 2000). These researchers also emphasized the need for further research in order to get a clear picture on the long term results of the treatment and possible relapse (Abe & Suzuki, 2000).

## Discussion and Conclusion

Functional visual problems are complex: there are many different manifestations of this phenomenon, and little is known about its prevalence. There are also many factors that may contribute to these problems, but none of these influences stands out as a clear cause of the development of functional visual problems: it is not possible to predict whether a patient will develop functional (visual) problems, it is only possible to define some factors that often accompany or precede functional visual problems.

However, there are many ways to test for possible functional visual problems and therefore, the professional can collect a lot of information from varying sources. Several tests have been developed, but much important information about possible functional problems can also be gathered via observations and interacting with the patient: automated techniques have proved to be a useful tool in examining functional visual loss, but do not suffice to make an adequate diagnosis. VECP can contribute to diagnosing functional visual problems, but has some disadvantages too. Therefore, there is currently no consensus on how these test results should be interpreted in patients with suspected functional visual problems (Beatty, 1999; McBain, Robson, Hogg & Holder, 2007; Xu, Meyer, Yoser, Mathews & Elfervig, 2001). This controversy on test results and the interpretation of these results supports the view that mainly the alertness and open mind of the professional (in many cases the ophthalmologist, psychologist or psychiatrist) can detect functional visual problems: a real and trained person is needed to integrate information from the different sources and to be attentive to clues the computer or a test cannot register.

There is also no clear picture about the future of patients with functional visual problems yet: the outcomes of functional visual problems in general and research on the factors that play a role in a better (or worse) recovery of patients is badly needed (Beatty, 1999).

In conclusion, much is yet unknown about functional visual problems and future research is needed to obtain more insight into the determinants of this phenomenon. However, knowledge about these problems and the characteristics, and an open mind may help the ophthalmologist (or the psychologist or psychiatrist) to detect this common phenomenon and to adequately approach the patient, facilitating seeking the most appropriate treatment.

## References


Abe, K., & Suzuki, T. (2000). Functional Visual Loss in Childhood and Suggestibility [electronic version]. *Clinical Child Psychology and Psychiatry 5(2),* 239-246.

Aghabeigi, B., Manisali, M., Suhr, M., Feinmann, C., & Harris, M. (1998). Ocular psychiatric disorders in maxillofacial injuries [electronic version]. *Journal of Oral & Maxillofacial Surgey, 27,* 195-198.

Aldrich, M.S., Alessi, A.G., Beck, R.W., Gilman, S. (1987). Cortical blindness: etiology, diagnosis and prognosis. *Annals of Neurology, 21,* 149-158.

Baer, N. (1997). Fraud worries insurance companies but should concern physicians too, industry says. *Canadian Medical Association Journal, 156(2),* 251-256.

Barris, M.C., Kaufman, D.I., & Barberio, D. (1992). Visual impairment in hysteria [electronic version]. *Documenta Ophthalmologica, 82,* 369-382.

Beatty, S. (1999). Psychogenic medicine: Non-organic visual loss [electronic version]. *Postgraduate Medical Journal, 75,* 201-207.

Bose, S., Kupersmith, M.J. (1995). Neuro-ophthalmologic presentations of functional visual disorders. *Neurologic Clinics, 13(2),* 321-339.

Chen, C.S., Lee, A.W., Karagiannis, A., Crompton, J.L., & Selva, D. (2007). Practical clinical approaches to functional visual loss [electronic version]. *Journal of Clinical Neuroscience, 14,* 1-7.

Comer, R.J. (2005). *Fundamentals of Abnormal Psychology*. New York: Worth Publishers.

Egan, R.A. (2004). Functional visual loss [electronic version]. *Ophthalmology Clinics of North America, 17,* 321-328.

Escobar, J.I., Hoyos-Nervi, C., & Gara, M. (2002). Medically Unexplained Physical Symptoms in Medical Practice: A Psychiatric Perspective [electronic version]. *Environmental Health Perspectives, 110(4),* 631-636.

Fahle, M., & Mohn, G. (1989). Assessment of visual function in suspected ocular malingering [electronic version]. *British Journal of Ophthalmology, 73,* 651-654.

Feinsilver, D.L. (1992). Pseudosomatization. *Psychiatric Medicine, 10,* 93-104.

Feldman, M.D., Eisendrath, S.J. (1996). The spectrum of factitious disorders. Washington, DC: American Psychiatric Press Inc.

Feldman, M.D., Eisendrath, S.J., & Tyerman, M. (2008). Psychiatric and behavioral correlates of factitious blindness [electronic version]. *Comprehensive Psychiatry, 49,* 159-162.

Gherghel, D. (2003). The eye and the mind, psychiatric encounters in optometric practice. *Optometry Today, 21,* 38-41.

Gräf, M.H. (1999). Information from false statements concerning visual acuity and visual field in cases of psychogenic visual impairment [electronic version]. *Graefe's Archive for Clinical and Experimental Ophthalmology, 237,* 16-20.

Graf, M.H., & Roesen, J. (2002). Ocular Malingering A Surprising Visual Acuity Test [electronic version]. *Archives of Ophthalmology 2002, 120,* 756-760.

Gross, M.P., Sloan, S.H. (1971). Patients with eye symptoms and no organic illness: an inter-disciplinary study. *Psychiatry in Medicine, 2,* 298–307.

Guilmette, T., Whelihan, W., Hart, K., Sparadeo, G. (1996). Order effects in the administration of a forced-choice procedure for detection of malingering in disability claimants' evaluations. *Perceptual and Motor Skills, 83*, 1007-1016.

Holder-Perkins, V., Wise, T.N. (2001). Somatization Disorder. In Philips, K. (ed.). *Somatoform and factitious disorder. Review of psychiatry, 20,* 1-26. Washington, DC: American Psychiatric Association.

Kathol, R.G., Cox, T.A., Corbett, J.J., Thompson, H.S. (1983). Functional visual loss. Follow up of 42 cases. *Archives of Ophthalmology, 101*, 729-735.

Keltner, J.L., May, W.N., Johnson, C.A., Post, R.B. (1985). The California syndrome: functional visual complaints with potential economic impact. *Ophthalmology 92,* 427–435.

Kramer, K.K., La Piana, F.G., & Appleton, B. (1979). Ocular Malingering and Hysteria: Diagnosis and Management [electronic version]. *Survey of Ophthalmology, 24(2),* 89-96.

Lim, S.A., Siatkowski, R.M., & Farris, B.K. (2005). Functional Visual Loss in Adults and Children: Patient Characteristics, Management, and Outcomes [electronic version]. *Ophthalmology 2005, 112,* 1821-1828.

Lipowski, Z.J. (1988). Somatization: the concept and its clinical application. *American Journal of Psychiatry, 145*, 1358-1368.

McBain, V.A., Robson, A.G., Hogg, C.R., & Holder, G.E. (2007). Assessment of patients with suspected non-organic visual loss using pattern appearance visual evoked potentials [electronic version]. *Graefe's Archive for Clinical and Experimental Ophthalmology, 245,* 502-510.

Mojon, D.S., & Släpfer, T.E. (2001). Nicht organische Störungen in der Ophthalmologie: Übersicht der Diagnostik und Therapie. *Klinische Monatsblätter für Augenheilkunde, 218,* 279-304.

Purvin, V. & Maturi, R. (2004). Sprint Car Visual Loss [electronic version]. *Survey of ophthalmology, 49(1),* 90-95.

Rada, R.T., Krill, A.E., Meyer, G.G., Armstrong, D. (1973). Visual conversion reaction in children. II. Follow up. *Psychosomatics, 14*, 271–276.

Rover, L., Bach, M. (1987). Pattern electroretinogram plus visual evoked potential: a decisive test in patients suspected of malingering. *Documenta Ophthalmologica*, *66*, 245–251.

Scott, J.A., & Egan, R.A., (2003). Prevalence of Organic Neuro-ophthalmologic Disease in Patients With Functional Visual Loss [electronic version]. *American Journal of Ophthalmology, 135(5),* 670-675.

Sharpe, M., Mayou, R. (2004). Somatoform disorders: a help or hindrance to good patient care? *The British Journal of Psychiatry,184,* 465-467.

Sletteberg, O., Bertelsen, T., Hovding G. (1989). The prognosis of patients with hysterical visual impairment. *Acta Ophthalmologica, 67*, 159–163.

Smith, T.J., Baker, R.S. (1987). Perimetric findings in functional disorders using automated techniques. *Ophthalmology, 94*,1562–1566

Stone, J., Carson, A., Sharpe, M. (2005). Functional symptoms in neurology: management. *Journal of Neurology Neurosurgery and Psychiatry, 76*(SI):i13-i21.

Taich, A., Crowe, S., Kosmorsky, G.S., & Traboulsi, E.I. (2004). Prevalence of Psychosocial Disturbances in Children With Nonorganic Visual Loss [electronic version]. *Journal AAPOS, 8(5),* 457-461.

Turner, M. (1997). Malingering. *The British Journal of Psychiatry, 171(11)*, 409-411.

Villegas, R.B., & Ilsen, P.F. (2007). Functional vision loss: A diagnosis of exclusion [electronic version]. *Optometry, 78,* 523-533.

Waal, de, M.W.M., Arnold, I.A., Eekhof, J.A., Hemert, van, A.M.(2004). Somatoform disorders in general practice: prevalence, functional impairment and comorbidity with anxiety and depressive disorders. *The British Journal of Psychiatry, 184*, 470-476.

Weller, M., & Wiedemann, P. (1989). Hysterical symptoms in ophthalmology [electronic version]. *Documenta Ophthalmologica, 73,* 1-33.

Wynick, S., Hobson, R.P., & Barry Jones, R.B. (1997). Psychogenic Disorders of Vision in Childhood ("Visual Conversion Reactions"): Perspectives from Adolescence: A Research Note. *Journal of child psychologyand psychiatry and allied disciplines: official organ of the Association of Child Psychology and Child Psychiatry, 38(3),* 375-380.

Xu, S., Meyer, D., Yoser, S., Mathews, D., & Elfervig, J.L. (2001). Pattern Visual Evoked Potential in the Diagnosis of Functional Visual Loss [electronic version]. *Ophthalmology 2001, 108,* 76-81.