

# Article • The Extensive Relationship Between Eyes and Mind: Understanding the Psychology Behind Your Vision

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## ABSTRACT

The perception of sight, commonly regarded as a direct and objective interpretation of reality, is, in fact, a deeply subjective process actively modulated by an individual's psychological state. This article explores the burgeoning field of psychosomatic ophthalmology, which investigates the profound impact of human psychology on visual health and perception. It synthesizes evidence from ophthalmology, neuroscience, and psychology to argue for a holistic, mind-body approach to eye care.

The article details the neurobiological pathways through which psychological distress, particularly chronic stress and anxiety, adversely affects ocular health. It elaborates on the role of the hypothalamic-pituitary-adrenal (HPA) axis and the sustained release of cortisol, which can impair blood flow, increase inflammation, and disrupt the blood-retinal barrier. These mechanisms are discussed as contributing factors in the progression of sight-threatening diseases such as glaucoma, age-related macular degeneration (AMD), diabetic retinopathy, and dry eye disease.

Furthermore, the review examines how transient emotional states and cognitive processes like attention actively shape visual perception. Evidence is presented demonstrating that mood can alter the perceived saturation of color, while attentional biases, influenced by fears and desires,

can change how we interpret visual scenes and even perceive physical space. The influence of stable personality traits, such as neuroticism and optimism, on perceptual biases and long-term visual health outcomes is also considered.

**Keywords:** brain, eye psychology, perception, visual psychology

## Introduction

The act of seeing, for most of us, feels effortless and immediate. We open our eyes, and the world simply appears, a faithful, high-definition stream of reality delivered directly to our consciousness. But this perception of an unvarnished truth is a masterfully constructed illusion. A growing and compelling body of scientific evidence reveals that our vision is not a passive reception of light, but an active, dynamic process deeply intertwined with our psychological landscape. The intricate workings of our minds—our stress levels, emotional states, attentional focus, and even our core personality traits—profoundly shape, tint, and, at times, fundamentally transform what we see. This emerging understanding, situated at the crossroads of both optometry and ophthalmology and its inter-disciplinary relations to neuroscience and the subject of psychology itself, is ushering in a new era of “psychosomatic ophthalmology,” demanding a more holistic and integrated approach to preserving the precious gift of sight.<sup>1</sup>

The term psychosomatic ophthalmology was first mentioned in the literature in 1947 by Harrington.<sup>2</sup> Interestingly, there are approximately 20 articles published on this topic up to 2012, and from 2012 to 2025, approximately 325 articles were found on online databases like Pubmed and the Cochrane Library.

## The Stressed-Out Synapse: Neurobiological Pathways from Mind to Eye

The connection between psychological distress and vision is not merely circumstantial; it is engraved into our very neurobiology. When we experience chronic stress or anxiety, our body's ancient

survival mechanisms are thrown into overdrive. The hypothalamic-pituitary-adrenal (HPA) axis, our central stress response system, floods the body with glucocorticoids, most notably cortisol.<sup>3</sup> While essential for short-term survival, sustained high levels of cortisol can be profoundly damaging to the delicate and highly vascularized structures of the eye. This stress-induced hormonal cascade can impair blood flow to the retina and optic nerve, increase inflammation, and disrupt the function of the blood-retinal barrier, a critical structure that protects the eye's sensitive neural tissue.<sup>1</sup>

This process is a key suspect in the progression of several sight-threatening conditions. In glaucoma, a disease characterized by damage to the optic nerve, elevated cortisol has been shown to correlate with increased intraocular pressure, a primary risk factor for the disease.<sup>4</sup> The autonomic nervous system, perpetually in a "fight-or-flight" state under chronic stress, further constricts blood vessels, potentially starving the optic nerve of vital oxygen and nutrients and accelerating nerve fiber degeneration.<sup>5</sup>

Stress impacts more than glaucoma.<sup>6</sup> Research links stress and depression to increased risk of advancing from dry to wet age-related macular degeneration, which involves new, abnormal blood vessel growth.<sup>7</sup> Stress-driven inflammation is likely key in this shift. In diabetic retinopathy, psychological distress can worsen the disease by harming glycemic control and causing inflammation that damages retinal vessels.<sup>8</sup> Even dry eye discomfort rises with stress and anxiety, likely through changes in tears and surface inflammation.

Many studies have also suggested potential correlations between psychological stress,<sup>9</sup> psychoneuroimmunology,<sup>10</sup> and female hormones,<sup>11</sup> all of which might directly or indirectly affect vision and visual function.

### **The Colors of Emotion and the Focus of Attention**

Beyond the progression of disease, our psychological state can alter the very fabric of our moment-to-moment visual experience. Our emotions, for instance, act as a filter, subtly tinting our perception of the world. Pioneering studies have demonstrated that sadness can genuinely dull our perception of color, making the world appear more gray and less vibrant. This phenomenon, which has been linked to alterations in the brain's processing of chromatic information along the blue-yellow axis, suggests that our emotional state can directly

modulate the neural signals that constitute our experience of color.<sup>8</sup> Conversely, a positive mood can enhance the saturation of colors, making them appear richer and more vivid, a perceptual echo of our inner joy.<sup>12</sup>

This subjective experience is powerfully shaped by the cognitive process of attention. Our visual system is constantly inundated with an overwhelming amount of information, far more than we can consciously process. Attention acts as a crucial gatekeeper, a spotlight that selects and prioritizes information deemed relevant by our brain.<sup>12</sup> This selection is not always a conscious choice; it is heavily influenced by our goals, fears, and desires. An individual with arachnophobia, for example, will have an attentional system primed to detect the faintest hint of a spider's leg in a cluttered room, often spotting it before anyone else.<sup>13</sup>

This "motivated perception" extends beyond our fears. In a fascinating study, researchers found that desired objects, such as a bottle of water to a thirsty person, are perceived as being physically closer than less-desired objects, a phenomenon dubbed "wishful seeing."<sup>14</sup> Our minds, it seems, bend the rules of visual space to bring our goals within perceived reach. This highlights a critical truth: we do not see the world as it is, but as it is useful for us to see it. This has profound implications for everything from eyewitness testimony, where emotional trauma can drastically alter the memory of what was seen, to the everyday interpretation of ambiguous social cues.

### **The Anxious Eye and the Optimist's Gaze**

Our deep-seated personality traits also cast a long shadow over our visual world. Individuals high in neuroticism, a trait characterized by a tendency toward anxiety, worry, and negative emotions, are more likely to interpret neutral or ambiguous visual stimuli in a threatening way.<sup>15</sup> Their perceptual systems are, in a sense, biased toward detecting danger, a trait that may be evolutionarily advantageous but can contribute to a state of chronic hypervigilance and stress.

In contrast, optimism appears to confer a degree of perceptual resilience. Optimists are more likely to direct their attention away from negative or threatening images and toward positive ones. This attentional bias may not only contribute to their emotional well-being but could also have long-term benefits for physical health, potentially by mitigating the physiological cascade of the stress response.<sup>16</sup>

While more research is needed, it is plausible that an optimistic disposition could be a protective factor against the psychosomatic components of eye diseases.

### Healing the Mind to Heal the Eye: A New Therapeutic Frontier

The profound connection between mind and vision opens up a new and vital therapeutic frontier. If psychological distress can cause and exacerbate eye disease, then psychological interventions should be a core component of comprehensive eye care. This moves beyond simply acknowledging the emotional burden of vision loss and toward actively using psychological tools to protect and improve visual health.

Mindfulness-based stress reduction (MBSR), a structured program that teaches patients to cultivate present-moment awareness, has shown remarkable promise. In a randomized controlled trial involving patients with glaucoma, an eight-week MBSR program resulted in significant reductions in intraocular pressure and lower levels of stress biomarkers, such as cortisol and pro-inflammatory cytokines, compared to a control group.<sup>17</sup> These findings provide powerful evidence that training the mind can induce measurable physiological changes in the eye.

Cognitive behavioral therapy (CBT) is another powerful tool. CBT helps individuals identify and reframe the negative thought patterns and behaviors that contribute to stress and anxiety. For a patient struggling with the diagnosis of a progressive eye disease, CBT can help them manage their fears, improve coping strategies, and reduce the very stress that might be accelerating their condition.<sup>18</sup> Biofeedback techniques, which allow patients to gain conscious control over physiological processes like muscle tension and heart rate, can also be employed to help patients manage the physical manifestations of anxiety that impact vision.<sup>5</sup>

The future of both optometry and ophthalmology lies in embracing this integrated mind-body model. It calls for greater collaboration between eye care professionals and mental health specialists, mainly with psychologists and therapists. It means that screening for depression and anxiety in all optometry and ophthalmology clinics should become as routine as measuring intraocular pressure. It suggests that prescribing stress-management techniques alongside eye drops is not alternative medicine, but

evidence-based, personalized care, and can lead to very satisfied patients.<sup>19</sup>

The journey of a photon from an object to the back of our retina is only the first step in the complex miracle of sight. The final image we perceive is a collaborative masterpiece, co-authored by our eyes and our minds. By understanding and respecting the profound influence of our psychology—from the neurochemical storms of stress to the subtle biases of our personality—we can move beyond a purely mechanistic view of vision. We can begin treating the whole person, fostering not only healthier eyes but also a calmer, more resilient mind capable of seeing the world in its fullest, most vibrant light. There is a strong need for an interdisciplinary approach to the treatment of these patients, and eye care professionals should play a leading role.

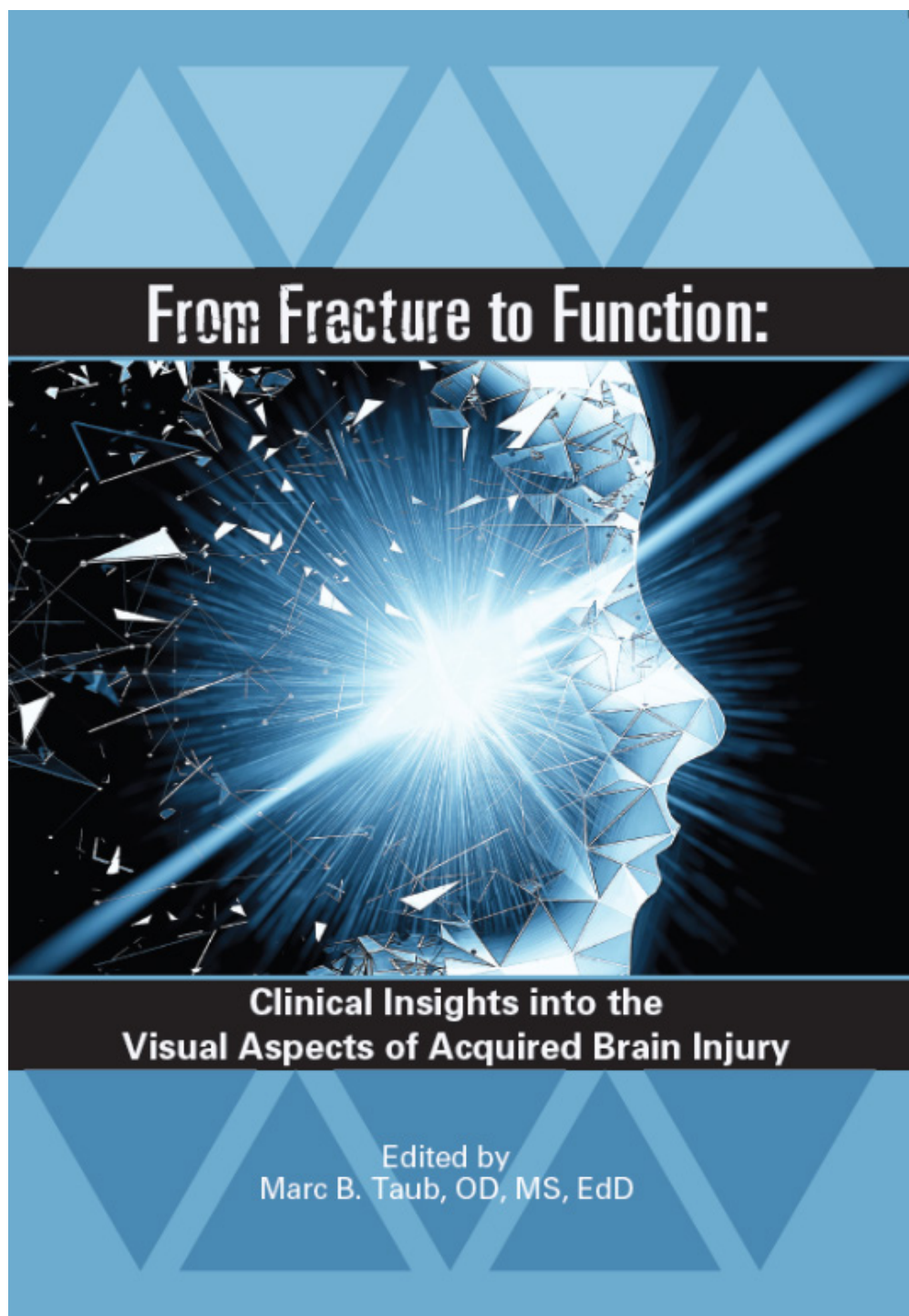
### References

1. Sabel BA, Sabel J. Mental stress as consequence and cause of vision loss: The dawn of psychosomatic ophthalmology for preventive and personalized medicine. *EPMA J* 2018;9(2):119-33.
2. Harrington DC. Psychosomatic manifestations: Ophthalmology. *Trans Am Acad Ophthalmol Otolaryngol* 1947;52:78-89.
3. Herman JP, McKlveen JM, Ghosal S, Kopp B, et al. Regulation of the hypothalamic-pituitary-adrenocortical stress response. *Comp Physiol* 2016;6(2):603-21.
4. Siesky B, Harris A. The relationship between stress and glaucoma. *J Glaucoma* 2021;30(8S):S1-2.
5. Dzaka-Dizdarevic J, Sisto C. The role of the autonomic nervous system in the pathogenesis of glaucoma. *Coll Antropol* 2019;43(1):53-7.
6. Rovner BW, Casten RJ, Massof RW. The impact of depression on vision function in age-related macular degeneration. *Invest Ophthalmol Vis Sci* 2018;59(1):178-84.
7. Trent MG, Clark MS. The impact of psychological stress on diabetic retinopathy. *J Diabetes Metab Disord* 2020;19(2):621-9.
8. Karakus S, Tunc M. The relationship between dry eye and psychological factors. *Curr Eye Res* 2019;44(8):819-25.
9. Spahn C, Wiek J, Burger T, Hansen L. Psychosomatic aspects in patients with central serous chorioretinopathy. *Br J Ophthalmol* 2003;87(6):704-8.
10. Ventura LM. Erratum: Psychoneuroimmunology: Application to ocular diseases. *J Ocul Biol Dis Inform* 2009;2(3):109-18.
11. Rowe AA, et al. Female sex hormones exacerbate retinal neurodegeneration. *Sci Adv* 2025;11:eadr6211.
12. Thorstenson CA, Pazda AD, Elliot AJ. Sadness impairs color perception. *Psychol Sci* 2020;31(6):725-33.
13. Hinojosa JA, Mercado F, Vázquez C. Positive mood enhances the perception of chromatic colors. *Sci Rep* 2020;10(1):1-10.
14. Carrasco M. Visual attention: The past 25 years. *Vision Res* 2011;51(13):1484-525.
15. Öhman A, Flykt A, Esteves F. Emotion drives attention: Detecting the snake in the grass. *J Exp Psychol Gen* 2001;130(3):466-78.

16. Balceris E, Dunning D. Wishful seeing: More desired objects are seen as closer. *Psychol Sci* 2010;21(1):147-52.
17. Chan SW, Derry FA. Neuroticism and interpretation bias for ambiguous stimuli: A review and meta-analysis. *J Affect Disord* 2019;245:1056-67.
18. Isaacowitz DM. The gaze of the optimist. *Pers Soc Psychol Bull* 2005;31(3):407-15.
19. Dada T, Mondal S, Midha N, Angmo D, Mahalingam K. Mindfulness-based stress reduction in glaucoma: A randomized controlled trial. *J Glaucoma* 2019;28(8):661-8.

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