https://doi.org/10.5114/oku/207088 (Research Paper)

Received: 10.04.2025 Accepted: 24.04.2025

The Role of Nutritional Supplementation and Lifestyle Modification in Patients with Vitreous Floaters

Aleksandra Burakowska, Anna Święch

Department of Retinal and Vitreous Surgery
University Clinical Hospital No. 1
Medical University of Lublin, Poland
Head: Professor Jerzy Mackiewicz, PhD, MD

Summary: Vitreous floaters are a common condition resulting from the physiological ageing process and degenerative changes that lead to the liquefaction and loosening of the vitreous body structure. Although they usually do not threaten visual acuity, they can significantly reduce visual comfort. Diagnostic methods include optical coherence tomography and ultrasound examinations. Surgical treatments, such as vitrectomy or laser vitreolysis, carry risks of complications, so conservative approaches are increasingly emphasized. A healthy lifestyle, protection against oxidative stress, and the use of dietary supplements containing antioxidants, vitamins, and minerals that support eye health are recommended.

Key words: vitreous floaters, vitreous body, posterior vitreous detachment (PVD).

Introduction

The vitreous body is a transparent, gel-like structure filling the inside of the eye. With age, its composition changes, leading to the aggregation of protein fibers and the scattering of light before it reaches the retina. Patients perceive these changes as moving shadows in their field of vision, clinically termed floaters.

Currently, several approaches exist for managing vitreous floaters, including surgical interventions such as Nd:YAG laser vitreolysis and vitrectomy. Adjunctive approaches like maintaining a healthy lifestyle, psychological support, and vitamin/antioxidant supplementation are also recommended.

The selection of an appropriate therapeutic strategy should always take into account patients' preferences, as they are the best experts on their own health and quality of life [1].

Aim

The aim of this paper is to explore the medical condition, including its etiology, symptoms, and available treatment methods; to examine the relationship between the occurrence of floaters and the psychological well-being of patients; and to present the effectiveness of dietary supplementation and the role of a healthy diet in the treatment of vitreous floaters, based on scientific research.

Structure and functions of the vitreous body

The vitreous body is a transparent, gel-like structure that occupies approximately 80% of the eye's volume, situated between the lens at the front and the retina at the back. It is composed of about 98–99% of water. The remaining components are collagen, hyaluronic acid, proteoglycans, and a small number of hyalocytes responsible for matrix metabolism. The structure of the vitreous body is maintained by collagen fibers, which form a delicate network stabilized by hyaluronic acid, giving it elastic and viscoelastic properties. Under physiological conditions, the vitreous body performs key biomechanical and optical functions. It provides support for the retina, maintains the spherical shape of the eye, and ensures proper transmission of light rays while minimizing optical aberrations. Additionally, it participates in the metabolism of the retina and lens by transporting nutrients and removing metabolic waste products. With age, its structure gradually degenerates, potentially leading to pathological changes such as vitreous floaters (myodesopsia) or posterior vitreous detachment, which may increase the risk of retinal detachment.

Diagnostic process and clinical presentation of vitreous opacities

Vitreous liquefaction results from molecular changes that cause collagen to dissociate from hyaluronic acid, leading to the aggregation of collagen fibers into larger structures. The process increases light scattering, resulting in symptomatic floaters. Patients often describe them as grayish, hair-like, or resembling specks or small cobwebs, which become more noticeable against bright backgrounds. Age-related vitreous liquefaction combined with the weakening of vitreoretinal adhesions ultimately results in posterior vitreous detachment (PVD). Following PVD, the posterior cortical part of the vitreous body exhibits increased density of collagen fibers, which frequently intensifies symptoms.

Most patients seek ophthalmological care for floaters after experiencing PVD. According to studies, PVD occurs in 10% of patients under the age of 50, in 27% of those aged 60 to 69, and in as many as 63% of individuals over the age of 70 [2].

Vitreous floaters can also develop in patients with myopia, eye inflammations (such as uveitis), vitreous hemorrhages, eye injuries, or after ophthalmic surgeries.

A survey conducted among 603 patients, with fewer than 5% aged over 50, revealed that as many as 76% reported noticing floaters in their visual field, and 33% stated that these caused a subjective deterioration in vision. This highlights the scale of the problem associated with the condition [3].

The diagnosis of vitreous floaters relies on modern imaging methods that enable the evaluation of their structure and impact on visual quality. Ocular ultrasound, particularly in B-scan mode, is useful for imaging significant vitreous opacities that prevent a clear assessment of the fundus during ophthalmoscopic examination. The examination allows for the identification of posterior vitreous detachment and the evaluation of retinal abnormalities.

ISSN 1505-2753

Optical coherence tomography (OCT) provides a detailed visual representation of vitreoretinal interactions, which is essential for distinguishing floaters caused by posterior detachment from those resulting from other conditions (Fig. 1–3). Dynamic light scattering (DLS) is an innovative technique used to assess the size and distribution of collagen aggregates in the vitreous body, which can aid in the quantitative evaluation of vitreous liquefaction and the severity of opacities. The combination of these diagnostic techniques enables a comprehensive assessment of patients with symptomatic floaters and the selection of an optimal therapeutic strategy.

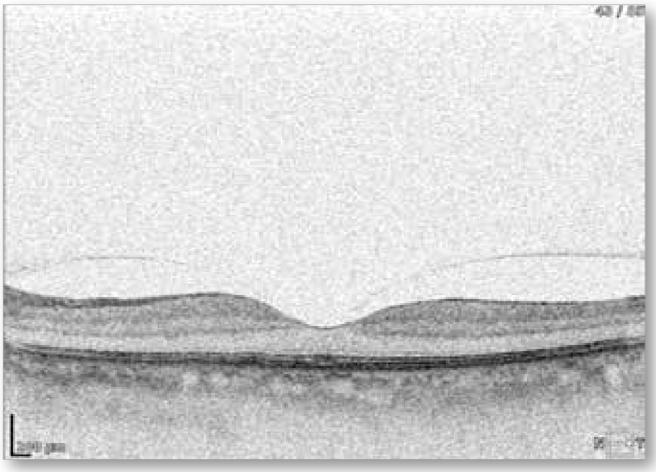

Fig. 1. Stage 1 of posterior vitreous detachment – focal area of vitreous adhesion to the macula.

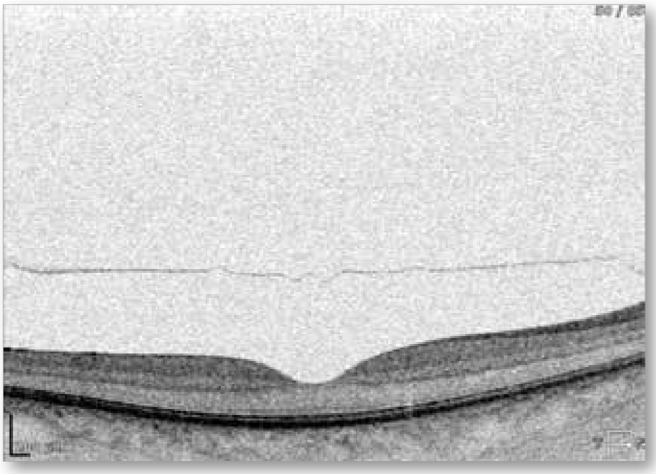

Fig. 2. Stage 2 of posterior vitreous detachment – complete release of vitreous adhesions in the macular region.

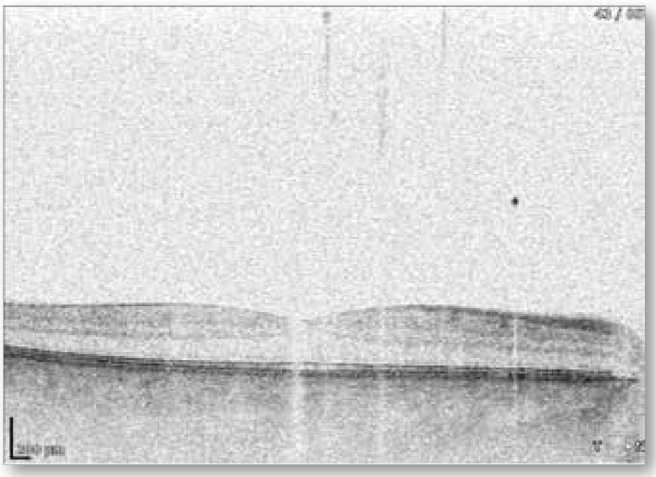

Fig. 3. Mild vitreous hemorrhage in the course of acute posterior vitreous detachment – red blood cells and streaks of hemorrhage into the vitreous body.

A new imaging technique, infrared imaging (IR), enables dynamic visualization of vitreous opacities. This imaging method can provide a qualitative assessment of the severity of symptoms experienced by the patient based on the location, density, and movement of vitreous opacities visible in the recording during the examination [4].

In one study using infrared imaging of vitreous opacities, four characteristics of these opacities were shown to correlate with the presence of symptoms in patients:

- size – the larger the opacity, the more severe the symptoms;
- location – opacities located in the premacular area during steady fixation were more symptomatic;
- movement – transient opacities covering the center of the macula during refixation after saccadic eye movements were associated with greater symptom severity;
- density – the greater the density of opacities, the more pronounced the retinal shadowing observed in videos and OCT B-scan cross-sections [4].

Therapeutic methods

Treatment options for vitreous opacities can be divided into invasive and conservative approaches. Invasive methods include Nd:YAG laser vitreolysis and pars plana vitrectomy.

According to a 2010 study evaluating the effects of laser vitreolysis, the procedure demonstrated the highest efficacy – approximately 90% – in removing the Weiss ring, mild agglutinates, and minimally mobile opacities [5]. However, it should be noted that the effectiveness of the procedure may depend on various factors, such as the characteristics of the floaters, their location, and the patient's individual anatomical features. Despite the relative safety of this intervention, complications can arise, including an increase in the number of floaters due to the fragmentation of large opacities, lens or retinal damage, and a temporary rise in intraocular pressure. Before deciding on the procedure, it is recommended to consult an experienced ophthalmologist for a thorough assessment of indications and potential benefits.

Pars plana vitrectomy is the most effective method for treating severe cases of vitreous opacities. However, the procedure carries the highest risk of complications, such as cataract, retinal detachment, or intraocular infections.

Conservative methods include observation, lifestyle changes, appropriate eye hygiene, and supplementation. In most cases, floaters do not require treatment, as the central nervous system adapts to their presence, and over time, patients stop noticing them. However, if the patient's symptoms are significant and they choose not to undergo invasive treatment, it is advisable to incorporate dietary supplements and educate the patient on the importance of a diet rich in vitamins and antioxidants, as well as proper hydration.

Role of supplementation in ophthalmology

Oxidative stress, defined as a state in which reactive oxygen species (ROS) prevail over the body's antioxidant mechanisms, plays a key role in the degenerative processes occurring in the vitreous body. Reactive oxygen species, such as hydrogen peroxide, superoxide anion radical, and hydroxyl radical, can damage cellular structures and components of the extracellular matrix, leading to the degradation of the main components of the vitreous body – type II collagen and hyaluronic acid [6]. Oxidative modifications of collagen proteins lead to their aggregation, resulting in visible floaters in the form of irregular fibers and densities. At the same time, the degradation of hyaluronic acid leads to a loss of viscosity and transparency of the vitreous body, promoting its liquefaction (syneresis) and, consequently, causing collagen separation and the formation of protein aggregates [7, 8]. Oxidative stress may also induce apoptosis of hyalocytes – the cells responsible for maintaining the homeostasis of the vitreous body. Their cellular death leads to a decrease in the production of matrix components and a weakening of repair mechanisms, which accelerates the degenerative process [9]. With age, the eye's ability to neutralize free radicals declines, making oxidative stress one of the main factors in the pathogenesis of floaters associated with the ageing process. The phenomenon may be further exacerbated by external factors such as UV radiation, smoking, diabetes mellitus, or chronic inflammations [10].

Vitamins, minerals, and antioxidants can support eye health by reducing oxidative stress and slowing down degenerative processes in the retina and vitreous body. Lutein and zeaxanthin have the most well-documented effects, protecting the macula from damage caused by blue light and free radicals, and thereby reducing the risk of age-related macular degeneration (AMD). Carotenoid supplementation may reduce the impact of oxidative stress on the retina, decreasing the intensity of blue light exposure by up to 90%. Under physiological conditions, the natural protection of the retina against the harmful effects of this light is approximately 40% [11].

L-lysine plays a key role in collagen synthesis, which is a fundamental component of ocular structures such as the cornea, sclera, and vitreous body. Deficiencies in L-lysine may contribute to the weakening of collagen fibers, which could potentially be linked to vitreous degeneration and the formation of floaters. For this reason, ensuring sufficient intake through diet or supplementation may help maintain the health of ocular connective tissue and reduce the risk of certain degenerative changes. It may also contribute to reducing oxidative stress, which plays a significant role in the pathogenesis of eye diseases such as AMD and diabetic retinopathy (DR).

Non-enzymatic protein glycation processes and the accompanying glycoxidation play a significant role in the degeneration of vitreous body structures. Prolonged exposure of proteins – such as type II collagen – to glucose molecules leads to the formation of advanced glycation end-products (AGEs). These compounds lead to the stiffening, cross-linking, and aggregation of collagen fibers, which disrupts their spatial organization and promotes the formation of opaque clusters – clinically manifesting as floaters [12]. In a 2003 study, glycation and glycoxidation were examined in vitro on isolated human vitreous collagen. It was shown that lysine, inositol, and aminoguanidine exhibited anti-glycation activity. Of these three substances, lysine demonstrated the highest effectiveness, with anti-glycation activity assessed at 76% [13].

Hesperidin is a natural flavonoid from the flavanone group, primarily found in citrus fruits such as oranges, lemons, tangerines, and grapefruit. It is recognized for its strong antioxidant, anti-inflammatory, and blood vessel-strengthening properties. According to a 2021 study, hesperidin reduces apoptotic cell count, prevents premature symptoms of cataract, preserves lens elasticity, and increases the expression of mRNA for antioxidant enzymes in the plasma and lens of rats with selenite-induced cataract, thereby delaying nuclear cataract formation [14].

Antioxidant substances play a very important role in supporting eye health. Incorporating them into the diet is a simple yet effective strategy that can aid in prevention and help slow the progression of certain ophthalmic conditions, thereby contributing to better vision protection [15].

These include, among others, vitamin C (ascorbic acid). It supports the immune system and plays a role in collagen synthesis, contributing to overall health. Regarding its direct impact on eye health, vitamin C reduces the risk of cataract development, strengthens retinal blood vessels, participates in collagen synthesis (a component of the vitreous body, cornea, sclera, and ocular blood vessels), and may help regulate intraocular pressure. It has also been demonstrated that lower dietary intake of vitamin C is linked to an elevated risk of age-related vitreous degeneration and heightened oxidative stress within the eye's structures [16].

Zinc is a key trace element essential for the proper functioning of ocular structures. It is found in high concentrations in the retina and plays a role in converting vitamin A into rhodopsin, a pigment that enables vision in low-light conditions. It is present in high concentrations in the retina, particularly in the macula, where it acts as a cofactor for numerous antioxidant enzymes, such as superoxide dismutase (SOD) [17]. As a component of antioxidant enzymes, zinc helps neutralize free radicals that can damage ocular structures – including the vitreous body – potentially leading to the formation of floaters. A 2014 study demonstrated that zinc is involved in inhibiting complement activation, which increases the antioxidant capacity of the retina. This may be important in the prevention of age-related macular degeneration [18]. The evidence also indicates that lower dietary zinc intake is linked to a higher likelihood of subretinal fluid accumulation [19].

Polyphenols are natural chemical compounds found in plants (such as in tea, coffee, and grape seeds), known for their strong antioxidant and anti-inflammatory properties. Thanks to their antioxidant effects, polyphenols play a crucial role in protecting eye cells from oxidative stress, which is a major factor leading to the degeneration of vitreous body structures and the formation of floaters. They neutralize free radicals, which can cause cell damage and accelerate the aging process. Polyphenols are also linked to numerous health benefits, such as protecting the cardiovascular system, improving brain function, and supporting eye health [20].

Comprehensive patient care in ophthalmology

A healthy lifestyle, balanced nutrition, and targeted supplementation with vitamins and antioxidants provide systemic benefits that extend beyond ocular health to overall physiological function. This holistic therapeutic approach may also support the psychological well-being of patients – an essential consideration in vitreous opacity management, where additional attention and care are often required.

Mental well-being plays a significant role in alleviating subjective symptoms associated with the presence of vitreous opacities. In clinical practice, it is common to encounter patients with floaters whose stress levels are disproportionate to the actual changes in the vitreous body. In an exploratory study that analyzed the occurrence of floaters from a psychological perspective, the authors found that the ways individuals experience and respond to floaters may vary depending on their personality traits and the level of stress they experience [21].

A survey conducted in 2011 found that individuals experiencing visual floaters were willing to take extreme risks to eliminate the problem. Among the respondents, 11% declared a willingness to accept the risk of death, while 7% would accept the risk of complete blindness. On average, each participant would be willing to give up 1.11 years of life for every 10 years remaining. It was also shown that younger patients were more likely than older ones to risk blindness in order to eliminate visual field opacities [22].

Vitreous floaters undoubtedly have a negative impact on patients' mental health, contributing to increased levels of depression and anxiety. In a 2020 study, a total of 90 patients reporting floaters and 57 age- and gender-matched healthy controls were enrolled. Each participant underwent a comprehensive ophthalmologic examination, including fundus assessment and optical coherence tomography scan. Clinical and demographic data were also collected. All patients completed the Patient Health Questionnaire-9 (PHQ-9), the Zung Self-Rating Depression Scale (Zung SDS), and the Hospital Anxiety and Depression Scale

(HADS). No significant differences were found between the studied groups in terms of clinical and demographic data. Patients with vitreous opacities scored significantly higher on the previously mentioned depression assessment questionnaires compared to the control group [23].

Direct effect of dietary supplements on floaters

Several studies have demonstrated a direct, positive effect of supplementation on reducing symptoms associated with vitreous floaters.

One such study, a randomized, double-blind clinical trial published in 2021, showed a beneficial effect on reducing symptoms in patients with vitreous degeneration following supplementation (125 mg L-lysine, 40 mg of vitamin C, 26.3 mg of grapevine extract, 5 mg of zinc, and 100 mg of bitter orange). This clinical trial enrolled 61 patients with symptomatic vitreous floaters. They were randomly assigned to take either an active supplement or a placebo preparation daily for six months. At baseline in the treatment group, one patient (3.3%) reported stable condition (no functional impairment from floaters), 20 patients (66.7%) reported moderate discomfort due to the condition, and nine patients (30%) reported severe symptoms. After supplementation, 11 patients (36.7%) reported a stable condition, 17 patients (57.6%) reported moderate discomfort, and two (6.67%) reported severe symptoms. As a result, in the treatment group, reports of a stable condition increased by 33.3%, moderate symptoms decreased by 10%, and persistent symptoms decreased by 23.3%. A significant reduction in subjective visual discomfort, a decrease in the area of vitreous opacities, and an improvement in contrast sensitivity were demonstrated after six months of supplementation [24].

This means that the desired therapeutic effect was achieved in 66.6% of patients in the treatment group after six months of supplementation. In contrast, visual discomfort caused by floaters in the control group remained largely unchanged, showing no significant difference between the initial reports and the final evaluation [24].

According to the 2018 Polish BON (Brain and Ocular Nutrition) study, 463 patients with vitreous floaters underwent a three-month regimen of daily supplementation with a capsule containing L-lysine (125 mg), hesperidin from bitter orange extract (60 mg), proanthocyanidins from grape extract (23.75 mg), vitamin C (40 mg), and zinc (5 mg). Based on the survey, nearly 91% of patients reported an improvement in their symptoms, including 25.9% slight improvement, 27.6% moderate improvement, 28.4% significant improvement, and 8.7% very significant improvement. The impact on visual quality was greater in younger age groups, regardless of gender (19–29, 30–39 and 40–49 years) compared to older groups (50 years and above; $p<0.001$). The results confirmed the effectiveness of supplementation in patients with symptomatic vitreous degeneration [25].

The introduction of supplementation in patients requires an individual assessment of their health status, taking into account a detailed medical history, lifestyle, potential nutrient deficiencies, and possible allergies. A key stage in this process is conducting a thorough interview, including an analysis of dietary habits, chronic conditions, medications taken, and potential interactions between dietary supplements and pharmacotherapy. It is also advisable to account for factors such as age, physical activity, gut microbiota condition, and genetic predispositions, which may affect the absorption and metabolism of nutrients. Based on the collected information, the doctor or dietitian may recommend appropriate supplementation tailored to the individual needs of the patient, taking into account optimal doses and forms of the preparations. It is also important to educate patients about the potential benefits and risks of using supplements, emphasizing the importance of their rational use as a complement to a well-balanced diet rather than a substitute for a healthy lifestyle. Regular monitoring of the patient's condition and the effectiveness of supplementation allows for potential modifications and adjustment according to the body's changing needs.

Conclusions

The article explores the pathophysiology, current diagnostic methods, and treatment options for vitreous floaters. A comprehensive approach to the patient, taking into account both their mental and physical health, should ultimately guide the choice of treatment.

A holistic strategy for preventing and managing vitreous floaters focuses on improving the patient's overall health, which may positively affect the condition of the vitreous body and reduce visual complaints. A healthy, balanced diet rich in antioxidants, vitamins, and polyphenols is of key importance, as these nutrients aid in the regeneration of eye structures and contribute to reducing oxidative stress. Adequate hydration is equally important, since the vitreous body is largely composed of water, and a lack of it may contribute to the formation of floaters. Regular physical activity improves blood circulation, which promotes better oxygenation of ocular tissues. Moreover, practicing relaxation techniques like meditation or yoga can help alleviate stress, which plays a role in inflammatory processes and has an impact on overall eye health. Providing patients with education and access to psychotherapy is also crucial for supporting their mental health, as floaters may lead to frustration and anxiety, particularly in individuals who are highly sensitive to changes in their visual field. Such a holistic approach, combining physical, dietary, and psychological aspects, can effectively support both the prevention and treatment of vitreous floaters.

Current research on patients with vitreous floaters is focused on developing more effective and less invasive treatment methods, as well as gaining a better understanding of the mechanisms behind their formation. Increasing attention is being given to advanced eye imaging techniques, which could enable more accurate diagnostics and allow for more precise monitoring of changes in the vitreous body. A promising direction is the development of pharmacological therapies, such as the use of proteolytic enzymes or innovative nanoparticles, which could selectively break down opacities without the need for surgical intervention. At the same time, efforts are underway to refine laser vitreolysis to make it more precise and safer. Another key area of research is the exploration of the role of gut microbiota and its impact on the health of the vitreous body through its influence on inflammatory and metabolic mechanisms. Looking ahead, advancements in regenerative therapies – based on tissue engineering and cell therapy – could be crucial, as they may support the restoration of the proper structure of the vitreous body.

Disclosure
Conflict of interests: none declared
Funding: no external funding
Ethics approval: Not applicable.

References:

1. Gouliopoulos N, Oikonomou D, Karygianni F, et al.: *The association of symptomatic vitreous floaters with depression and anxiety*. Int Ophthalmol. 2024 May 7; 44(1): 218.
2. Uchino E, Uemura A, Ohba N: *Initial stages of posterior vitreous detachment in healthy eyes of older persons evaluated by optical coherence tomography*. Arch Ophthalmol. 2001 Oct; 119(10): 1475–1479.
3. Webb BF, Webb JR, Schroeder MC, et al.: *Prevalence of vitreous floaters in a community sample of smartphone users*. Int J Ophthalmol. 2013 Jun 18; 6(3): 402–405.
4. Marquez MA, Nadelson A, Magraner M, et al.: *Dynamic Infrared Imaging of Vitreous Floaters*. Clin Ophthalmol. 2023; 17: 1169–1177.
5. Sobolewski P: *Witreoliza laserowa – niedoceniona metoda leczenia zmętnień ciała szklistego*. Magazyn Lekarza Okulisty. 2011; 5(1).

6. Łuszczewski A, Matyska-Piekarska E, Trefler J i wsp.: *Reaktywne formy tlenu – znaczenie w fizjologii i stanach patologii organizmu*. Reumatologia. 2007; 45, 5: 284–289.
7. Sebag J: *The vitreous: structure, function, and pathobiology*. Springer. 2004.
8. Siegfried CJ, Shui YB, Holekamp NM, et al.: *Oxygen distribution in the human eye: relevance to the etiology of open-angle glaucoma after vitrectomy*. Invest Ophthalmol Vis Sci. 2010 Nov; 51(11): 5731–5738.
9. Winkler BS, Boulton ME, Gottsch JD, et al.: *Oxidative damage and age--related macular degeneration*. Mol Vis. 1999 Nov 3; 5: 32.
10. Shu DY, Chaudhary S, Cho KS, et al.: *Role of Oxidative Stress in Ocular Diseases: A Balancing Act*. Metabolites. 2023; 13(2): 187.
11. Krinsky NI, Landrum JT, Bone RA: *Biologic mechanisms of the protective role of lutein and zeaxanthin in the eye*. Annu Rev Nutr. 2003; 23: 171–201.
12. Stitt AW: *Advanced glycation: an important pathological event in diabetic and age related ocular disease*. Br J Ophthalmol. 2001 Jun; 85(6): 746–753.
13. Sulochana KN, Ramprasad S, Coral K, et al.: *Glycation and glycoxidation studies in vitro on isolated human vitreous collagen*. Med Sci Monit. 2003 Jun; 9(6): BR220–224.
14. Nakazawa Y, Aoki M, Doki Y, et al.: *Oral consumption of α-glucosyl-hesperidin could prevent lens hardening, which causes presbyopia*. Biochem Biophys Rep. 2020 Dec 26; 25: 100885.
15. Choo PP, Woi PJ, Bastion MC, et al.: *Review of Evidence for the Usage of Antioxidants for Eye Aging*. Biomed Res Int. 2022 Oct 3; 2022: 5810373.
16. Taylor A, Jacques PF, Nadler D, et al.: *Relationship in humans between ascorbic acid consumption and levels of total and reduced ascorbic acid in lens, aqueous humor, and plasma*. Curr Eye Res. 1991 Aug; 10(8): 751–759.
17. Ugarte M, Osborne N, Brown LA, et al.: *Iron, zinc, and copper in retinal physiology and disease*. Survey of Ophthalmology. 2013; Volume 58, Issue 6: 585–609.
18. Smailhodzic D, van Asten F, Blom AM, et al.: *Zinc supplementation inhibits complement activation in age-related macular degeneration*. PLoS One. 2014 Nov 13; 9(11): e112682.
19. Dharamdasani DH, Mitchell P, Russell J, et al.: *Dietary zinc intake is associated with macular fluid in neovascular age-related macular degeneration*. Clin Exp Ophthalmol. 2020 Jan; 48(1): 61–68.
20. Del Bo' C, Bernardi S, Marino M, et al.: *Systematic Review on Polyphenol Intake and Health Outcomes: Is there Sufficient Evidence to Define a Health-Promoting Polyphenol-Rich Dietary Pattern?* Nutrients. 2019 Jun 16; 11(6): 1355.
21. Cipolletta S, Beccarello A, Galan A: *A psychological perspective of eye floaters*. Qual Health Res. 2012 Nov; 22(11): 1547–1558.
22. Wagle AM, Lim WY, Yap TP, et al.: *Utility values associated with vitreous floaters*. Am J Ophthalmol. 2011 Jul; 152(1): 60–65.e1.
23. Gouliopoulos N, Oikonomou D, Karygianni F, et al.: *The association of symptomatic vitreous floaters with depression and anxiety*. Int Ophthalmol. 2024 May 7; 44(1): 218.
24. Emmanuel A, Green-Gomez M, Roche W, et al.: *Dietary Intervention With a Targeted Micronutrient Formulation Reduces the Visual Discomfort Associated With Vitreous Degeneration. Trans Vis Sci Tech.* 2021; 10(12): 19.
25. Sobol M, Osęka M, Kaercher T, et al.: *The effect of oral supplementation with L-lysin, hesperidin, proanthodyanidins, vitamin C and Zinc on subjects assessment of the quality of vision in patients with witreous floaters*. BON 2018, Warsaw Medical University of Poland. 10.3233/JAD-189006.

Reprint requests to:

Aleksandra Burakowska, MD (e-mail: burakowska.ola92@gmail.com)
Department of Retinal and Vitreous Surgery
University Clinical Hospital No. 1
Medical University of Lublin, Poland
Head: Professor Jerzy Mackiewicz, PhD, MD
Chmielna 1, 20-079 Lublin

 ISSN 1505-2753