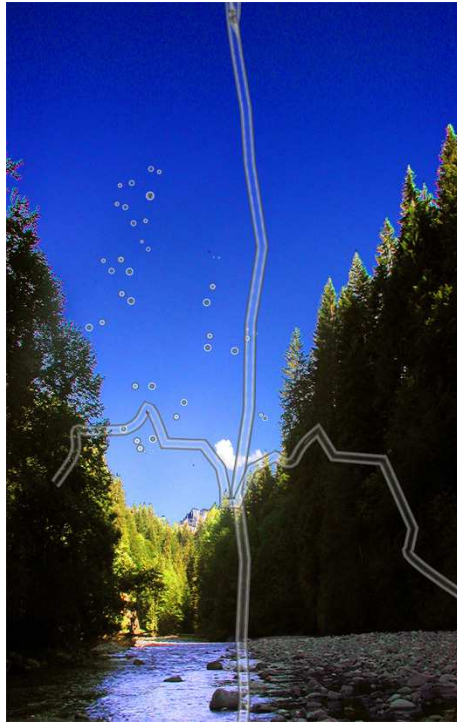


Bibliography

Mouches volantes Eye (vitreous) floaters



**Spirituality, arts, humanities and psychology, alternative medicine,
ophthalmology, medicine history**

(June 2014)



This bibliography was compiled by Floco Tausin. The author does not lay claim to completeness. Actualised versions can be obtained from www.mouches-volantes.com and www.eye-floaters.info. The entries are classified according to date. The cover picture is the cover of the spiritual fiction „Mouches Volantes. Die Leuchtstruktur des Bewusstseins“ (English: „Mouches Volantes. Eye Floaters as Shining Structure of Consciousness“) by Floco Tausin.

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The spiritual dimensions of eye floaters

Monographs, anthologies, articles and websites treating the phenomenon of eye floaters from a spiritual perspective.

Monographs and anthologies

Title: **Mouches Volantes. Die Leuchtstruktur des Bewusstseins**
Author(s): Tausin, Floco
Publisher: Bern: Leuchtstruktur Verlag 2010 (2004)
Language: German
Abstract: Floco Tausin erzählt die Geschichte seiner Lehrzeit bei Nestor, einem im Schweizer Emmental lebenden Seher. Im Zentrum der mystischen Lehre Nestors stehen die bekannten, aber einseitig interpretierten Punkte und Fäden in unserem Blickfeld, „fliegende Mücken“ oder „Mouches volantes“ genannt. Während Mouches volantes in der Augenheilkunde als harmlose Glaskörpertrübung gelten, lernt der Autor sie als Meditationsobjekt einzusetzen und erfährt ihre Transformation hin zur leuchtenden Bewusstseinsstruktur. Dieses Buch ergründet das Thema der fliegenden Mücken in der Verbindung von wissenschaftlicher Forschung, esoterischer Philosophie und praktischer Bewusstseinsentwicklung und beschreibt die Auswirkungen der Arbeit mit Mouches volantes für die individuelle Spiritualität.

Title: **Mouches Volantes. Eye Floaters as Shining Structure of Consciousness**
Author(s): Tausin, Floco
Publisher: Bern: Leuchtstruktur Verlag 2009
Language: English
Abstract: Floco Tausin tells the story about his time of learning with spiritual teacher and seer Nestor, taking place in the hilly region of Emmental, Switzerland. The mystic teachings focus on the widely known but underestimated dots and strands floating in our field of vision, known as eye floaters or *mouches volantes*. Whereas in ophthalmology, floaters are considered a harmless vitreous opacity, the author gradually learns about them to see and reveals the first emergence of the shining structure formed by our consciousness. »Mouches Volantes« explores the topic of eye floaters in a much wider sense than the usual medical explanations. It merges scientific research, esoteric philosophy and practical consciousness development, and observes the spiritual meaning and everyday life implications of these dots and strands.

Title: **Klares Sinn-Sehen oder trüber Sehsinn?**
Author(s): Tausin, Floco
Publisher: Wiesendanger, Dr. Harald (ed.): Sinn finden. Spirituelle Antworten auf letzte Fragen, Schönbrunn: Lea Verlag 2005
Language: German

Articles

- Title:** **Mouches-volantes-Strukturen in Nordamerika – 3 Teile**
Author(s): Tausin, Floco
Journal: Teil 1: Bewusstseinsaugen und Weltenportale (Eskimo, Nordwestküsten-Indianer): Virtuelles Magazin 2000 (67/2013). <http://vm2000.net/67/flocotausin/teil1-bewusstseinsaugenundweltenportale.html> (28.7.13)
Language: German
Abstract: Die Betrachtung bildlichen Materials aus früheren und aussereuropäischen Kulturen offenbart immer wieder abstrakte Symbole, die den typischen Strukturen der subjektiven Punkte und Fäden im Blickfeld bzw. Mouches volantes ähneln. Die visuelle Wahrnehmung sowie die Bedeutung der Mouches volantes könnte daher Dimensionen aufweisen, die unserer Kultur bis heute verborgen blieben. Dies eröffnet Raum für einen alternativen und spirituellen Umgang mit unseren Punkten und Fäden. In diesem Artikel werden zuerst die Kulturräume und der Schamanismus in Nordamerika vorgestellt. Es folgt die nähere Betrachtung der Kunst der Eskimo und der Nordwestküsten-Indianer.
- Title:** **Floaters and the I Ching**
Author(s): Tausin, Floco
Journal: A Spiritual Voice (March 2013). <http://new-age-spirituality.com/wordpress/content/2703> (20.3.13)
Language: English
Abstract: In China, the Book of Changes (I Ching) is one of the most important books used for divination and self-realization. Its principle may have been developed from the perception of eye floaters during altered states of consciousness.
- Title:** **The Shining Sphere at the End of the Tunnel – Eye Floaters and Near-Death Experiences**
Author(s): Tausin, Floco
Journal: Unexplained Mysteries, 4.11.12. <http://www.unexplained-mysteries.com/column.php?id=237145> (5.11.12)
Language: English
Abstract: Persons who were revived after being clinically dead often report unusual and profound perceptions they had in the state of near-death. These experiences defy scientific and religious thinking alike. Some visual elements of near-death experiences (NDE) resemble one particular type of eye floaters, the ‘shining structure floaters’. The thesis of this article is that floaters and other entoptic phenomena are phenomena of consciousness which continue to exist in states of near-death – and possibly even beyond death.
- Title:** **Shamash, Ishtar and Igigi – Floater structures in ancient Mesopotamia**
Author(s): Tausin, Floco
Journal: Ufodigest, 6.8.12. <http://www.ufodigest.com/article/shamash-ishtar-and-igigi-floater-structures-ancient-mesopotamia> (19.8.12)
Language: English
Abstract: In Western culture, the phenomenon of eye floaters (or muscae volitantes) is primarily understood in line with modern ophthalmology as “vitreous opacities”. However, the review of mythical and spiritual visual arts from former and non-

Western cultures disclose abstract symbols that resemble the typical structures of shining structure floaters. This suggests that floaters have been widely interpreted as a mythical or spiritual phenomenon; and that there might be a perceptual dimension of floaters that is hardly known to modern man. This article provides a trip to the visual worlds of Mesopotamia and suggests that floaters have found their way into the art and imagination of this ancient civilization.

Title: **Mouches-volantes-Strukturen in den Veden (3 Teile)**

Author(s): Tausin, Floco

Journal: Teil 1: Ganzheitlich Sehen 2/2012. <http://www.mouches-volantes.com/news/news.htm#1> (22.5.12); Teil 2 (Götter, Sonne, Vimanas, der Kosmos und Atman/Brahman): Virtuelles Magazin 2000, Nr. 65. <http://vm2000.net/65/FlocoTausin/Mouches-volantes-Strukturen-in-den-Veden-Teil2.html> (23.12.12); Teil 3 (Opfersäule, Weltenbaum, Indras Netz und Nadis als Faden- und Röhrenstrukturen): Virtuelles Magazin 2000, Nr. 66. <http://vm2000.net/66/FlocoTausin/Mouches-volantes-Strukturen-in-den-Veden-Teil3.html> (24.3.13)

Language: German

Abstract: Das Phänomen der Mouches volantes wird in unserer Kultur vorwiegend im Einklang mit der modernen medizinischen Sicht verstanden, wo es als „Glaskörpertrübung“ gilt. Aussereuropäische und frühere religiöse Traditionen geben hingegen Hinweise darauf, dass Mouches volantes als spirituelles oder kosmisches Phänomen gedeutet wurden. Ihre Bilder, Mythen und Symbole zeigen immer wieder dieselben Strukturen, wie sie für die Punkte und Fäden in unserem Blickfeld typisch sind. Das Sehen von Mouches volantes könnte somit vielfältiger sein, als uns heute bewusst ist. In diesem Artikel werden die indischen Veden auf Mouches-volantes-Formen untersucht.

Title: **Lights from the Other World - Floater structures in the visual arts of modern and present-day shamans**

Author(s): Tausin, Floco

Journal: Ovi Magazine, May 2012. <http://www.ovimagazine.com/art/8648> (22.5.12)

Language: English

Abstract: This article is based on the assumption that prehistoric shamanic rituals include the perception, interpretation and depiction of what we today call “eye floaters” (muscae volitantes). It is suggested that, together with other shamanic symbols, floaters continue to be experienced and depicted in later shamanic societies up to the present day. The present article supports this thesis from the examples of modern Siberian and contemporary Tukanos shamans. A closer look at their visual arts reveals geometric structures and characteristics that are typical of eye floaters.

Title: **Mouches-volantes-Strukturen in der Industriel-Kultur**

Author(s): Tausin, Floco

Journal: Ganzheitlich Sehen 1/2012. <http://www.mouches-volantes.com/news/news%281-12%29.htm#1> (22.5.12)

Language: German

Abstract: Das Phänomen der Mouches volantes wird in unserer Kultur vorwiegend im Einklang mit der modernen medizinischen Sicht verstanden, wo es als „Glaskörpertrübung“ gilt. Die Betrachtung bildlichen Materials aus früheren und aussereuropäischen Kulturen offenbart jedoch immer wieder abstrakte Symbole, die den typischen Strukturen der Mouches volantes ähneln. Mouches volantes könnten als mythologisches und spirituelles Phänomen gedeutet worden sein. Dies lässt darauf schliessen, dass die visuelle Wahrnehmung der Punkte und Fäden Dimensionen aufweist, die bis heute kaum bekannt sind. In diesem Artikel werden Mouches-volantes-Formen in der Bilderwelt der Industal-Kulturen in Pakistan und Indien vorgestellt.

Title: **In the Eye of Ra – Floater Structures in the Visual Arts of Ancient Egypt**

Author(s): Tausin, Floco

Journal: Phenomena. The Scientific Investigation of the Unexplained, 36 (April 2012). <http://www.phenomenamagazine.co.uk> (9.4.12): 19-21

Language: English

Abstract: In Western culture, the phenomenon of vitreous floaters (or muscae volitantes) is primarily understood in line with modern ophthalmology as “vitreous opacities”. The review of visual arts from former and non-Western cultures representing mythical and spiritual ideas, however, discloses abstract symbols that resemble the typical structures of eye floaters. This suggests that floaters have been widely interpreted as a mythical or spiritual phenomenon; and that there might be a perceptual dimension of floaters that are hardly known to date. This article provides a trip to the visual worlds of Pharaonic Egypt and suggests that vitreous floaters have found their way into the art and imagination of this ancient civilization.

Title: **Vitreous opacity vs. nervous system - Do eye floaters arise from the visual nervous system?**

Author(s): Tausin, Floco

Journal: New-Age-Spirituality, November 3, 2011. <http://new-age-spirituality.com/wordpress/content/1777> (4.11.11)

Language: English

Abstract: For centuries, scholars have found different explanation for eye floaters, the mobile, scattered and transparent spheres and strings in our visual field. Early on, the origin was thought to be in the eye and the phenomenon was considered a disorder or degeneration somewhere between pupil and retina. Today, eye floaters are believed to be an opacity of the vitreous. However, careful observation of floaters reveal regular structures that call the degeneration thesis into question. These structures strikingly resemble the morphological and functional structures of receptive fields of the visual nervous system. Thus the hypothesis of this article: so-called “idiopathic” (harmless) eye floaters are a visible expression of neuronal processes.

Title: **Yin und Yang, Bi und Cong – Mouches-volantes-Strukturen im alten China**

Author(s): Tausin, Floco

Journal: Ganzheitlich Sehen 3/2011. <http://www.mouches-volantes.com/news/news%283-11%29.htm> (22.3.13)

Language: German

Abstract: Das Phänomen der Mouches volantes wird in unserer Kultur vorwiegend im Einklang mit der modernen medizinischen Sicht verstanden, wo es als „Glaskörpertrübung“ gilt. Die Sichtung bildlichen Materials aus früheren und aussereuropäischen Kulturen offenbart jedoch immer wieder abstrakte Zeichen, die den typischen Strukturen der Mouches volantes ähneln. Dass Mouches volantes womöglich als spirituelles Phänomen gedeutet wurde, lässt auf eine Wahrnehmungsdimension des Phänomens schliessen, für die die moderne Medizin bis heute kein Interesse zeigt. In diesem Artikel werden Mouches-volantes-Formen in der Bilderwelt des alten China vorgestellt.

Title: Schamasch, Ischtar und Igigi –
Mouches-volantes-Strukturen im antiken Mesopotamien

Author(s): Tausin, Floco

Journal: Ursache.at. <http://www.ursache.at/bewusstsein/leben/270-schamasch-ischtar-und-igigi-> (11.8.11)

Language: German

Abstract: Das Phänomen der Mouches volantes wird in unserer Kultur vorwiegend im Einklang mit der modernen medizinischen Sicht verstanden, wo es als „Glaskörpertrübung“ gilt. Die Sichtung bildlichen Materials aus früheren und aussereuropäischen Kulturen offenbart jedoch immer wieder abstrakte Zeichen, die den typischen Strukturen der Mouches volantes ähneln. Dass Mouches volantes womöglich als spirituelles Phänomen gedeutet wurde, lässt auf eine Wahrnehmungsdimension des Phänomens schliessen, für die die moderne Medizin bis heute kein Interesse zeigt. In diesem Artikel werden *Mouches-volantes-Formen in der Bilderwelt Mesopotamiens* vorgestellt, der Wiege der Zivilisation in Vorderasien.

Title: **In-depth observations on eye floaters – a challenge to ophthalmology**

Author(s): Tausin, Floco

Journal: Phenomena Magazine 30 (October 2011)

Language: English

Abstract: For centuries, scholars try to find an explanation for the mobile, scattered and transparent spheres and strings in our visual field. Early on in ophthalmological tradition, the origin was thought to be in the eye. The phenomenon was considered a disorder or degeneration somewhere between cornea and retina. Today, eye floaters are believed to be an opacity of the vitreous. However, careful observation of floaters reveals properties that challenge this dominant view and call for a reconsideration of the ophthalmological explanation.

Title: **Die Leuchtkugel am Ende des Tunnels – Mouches volantes und Nahtoderfahrung**

Author(s): Tausin, Floco

Journal: XUN Magazin 28 (Mai 2012)

Language: German

Abstract: Menschen, die klinisch tot waren und wiederbelebt werden konnten, berichten oft von aussergewöhnlichen und tiefgreifenden Erfahrungen im Zustand der Todesnähe – Erfahrungen, die wissenschaftliches und religiöses Denken gleichermaßen herausfordern. Einige Elemente von Nahtoderfahrungen weisen Ähnlichkeiten mit der alltäglichen Wahrnehmung von Mouches volantes auf. Die These dieses Artikels ist es, dass wir in den Mouches volantes und anderen

entoptischen Erscheinungen Bewusstseinsphänomene haben, deren Existenz sich in Nahtodzuständen – und möglicherweise über den Tod hinaus – in intensiverer Form fortsetzt.

Title: **Im Auge des Re. Mouches volantes Strukturen in der Symbolik des antiken Ägyptens**
Author(s): Tausin, Floco
Journal: Virtuelles Magazin 2000. <http://vm2000.net/index58.html> (14.2.11)
Language: German
Abstract: Das Phänomen der Mouches volantes wird in unserer Kultur vorwiegend im Einklang mit der modernen medizinischen Sicht verstanden, wo es als „Glaskörpertrübung“ gilt. Die Sichtung bildlichen Materials aus früheren und aussereuropäischen Kulturen offenbart jedoch immer wieder abstrakte Zeichen, die den typischen Strukturen der Mouches volantes ähneln. Dass Mouches volantes womöglich als spirituelles Phänomen gedeutet wurde, lässt auf eine Wahrnehmungsdimension des Phänomens schließen, für die die moderne Medizin bis heute kein Interesse zeigt. In diesem Artikel legt ein Ausflug in die Bilderwelt des pharaonischen Ägyptens nahe, dass Mouches volantes Eingang in die Kunst und Vorstellungswelt dieser antiken Hochkultur gefunden haben.

Title: **The Eye Floater Phenomenon (between Science and Religion)**
Author(s): Tausin, Floco
Journal: Edge Science 6, January-March 2011: 14-17.
http://www.scientificexploration.org/edgescience/edgescience_06.pdf (16.2.11)
Language: English
Abstract: The aim of this article is to consider the meaning of the subtle characteristics of eye floaters, as conveyed by mystic and seer Nestor. Suggesting that floaters can be relevant not only for individual spirituality, but for society and ophthalmology as well, I address the following questions: How do floaters relate to entoptic phenomena which are known to have spiritual relevance in some indigenous shamanic societies? Does Nestor's claims about floaters require a modified ophthalmological interpretation? And: To what extent is it reasonable to think of floaters as a spiritual phenomenon?

Title: **Lichter in der Anderswelt. Mouches volantes in der darstellenden Kunst moderner Schamanen**
Author(s): Tausin, Floco
Journal: Ganzheitlich Sehen 2/2010. <http://www.mouches-volantes.com/news/newsjuni2010.htm#1> (13.12.10)
Language: German
Abstract: Die darstellende Kunst ist in den oft schriftlosen schamanischen Gesellschaften ein wichtiges Ausdrucksmittel. Die Malereien, Schnitzereien und Gravierungen auf Wänden, Alltagsgegenständen, Waffen, Musikinstrumenten und Schmuck widerspiegeln die indigenen Vorstellungen über die kosmische, die natürliche und die soziale Ordnung. Unter den Motiven befinden sich oft Kreisgebilde, die der Struktur der Mouches volantes ähneln – einiges spricht dafür, dass die Punkte und Fäden in der Welt sibirischer und südamerikanischer Schamanen eine spirituell-ekstatische Bedeutung erfahren haben.

- Title:** Entoptic phenomena as universal trance phenomena
Author(s): Tausin, Floco
Journal: Paranormal Underground Vol 3, Issue 11 (November 2010).
http://issuu.com/paranormalunderground/docs/november_2010_paranormal_underground (15.12.10)
Language: English
Abstract: In many ages and cultures, entoptic phenomena were seen and interpreted by spiritual women and men during altered states of consciousness. This article presents facts and thoughts about the scientific study of Palaeolithic and contemporary shaman art which is suggested to be inspired by entoptic phenomena.
- Title:** Eye Floaters. Floating spheres and strings in a seer's view
Author(s): Tausin, Floco
Journal: Holistic Vision 2/2010. <http://www.eye-floaters.info/news/news-june2010.htm> (15.12.10)
Language: English
Abstract: This article summarizes the extraordinary and fascinating visual theory of Nestor, an Emmmental seer known to the author personally. The theory focuses on the phenomenon of eye floaters, moving dots and strings in our visual field. Being starting point, concentration object and realization object at the same time, floaters are much more than modern ophthalmology tries to make us believe.
- Title:** Reine Magie: Was Augen sehen wenn sie nicht sehen
Author(s): Tausin, Floco
Journal: Freie Allgemeine, 12.7.10. <http://www.freie-allgemeine.de/artikel/news/reine-magie-was-augen-sehen-wenn-sie-nicht-sehen/> (12.7.10)
Language: German
Abstract: Sie schwirren und huschen durch unser Blickfeld: kleine Sternchen, transparente Kreise und schlängelnde Fäden. Am besten lassen sich diese sogenannten entoptische Phänomene mit dem Blick durch ein Mikroskop auf Kleinstlebewesen vergleichen. Unter Künstlern wird diese optische Erscheinung als Inspiration für ihre Werke genutzt, für andere sind sie ein Instrument der Meditation. Sind diese visuellen Erscheinungen ein interessantes Bindeglied zwischen Wissenschaft und Spiritualität, oder sind die schwirrenden Erscheinungen nur eine wissenschaftlich zu erklärende Illusion?
- Title:** Cocoons and fibers. Eye floaters as a source of inspiration for Carlos Castaneda?
Author(s): Tausin, Floco
Journal: Journal of Spirituality and Paranormal Studies (JSPS) 33, 4: 184-194.
http://www.aspsi.org/pubs/jsps_journal_index.php
Language: English
Abstract: The late anthropologist and cult writer Carlos Castaneda has substantially contributed to the emergence of a Western New Age shamanism. His books are, among other things, reports about various subjective visual phenomena, perceived during extraordinary states of consciousness. This article is an investigation of these significantly abstract and geometrical phenomena, resembling entoptic

phenomena like eye floaters. It discusses the similarities of Castaneda's bubbles, cocoons, lines and fibers, on the one hand, and floaters on the other, and asks about the possibility of Castaneda being inspired by eye floaters.

Title: **Mouches volantes – Glaskörpertrübung oder Nervensystem?**
Author(s): Tausin, Floco
Journal: ExtremNews.
<http://www.extremnews.com/berichte/gesundheit/e01c12cc1d3c89f> (22.12.09)
Language: German
Abstract: Seit Jahrhunderten versuchen Gelehrte, eine Erklärung für die beweglichen Punkte und Fäden im Gesichtsfeld zu finden. Schon früh dachte man sich die Ursache im Auge und verstand das Phänomen als eine Störung oder Degeneration irgendwo zwischen Pupille und Netzhaut – heute gelten Mouches volantes als Trübung des Glaskörpers. Genaue Beobachtungen aber enthüllen geordnete Strukturen und lassen die Degenerationsthese fragwürdig erscheinen. Im Nervensystem des Sehens befinden sich ähnliche Strukturen – was zur Vermutung führt, dass die fliegenden Mücken dort ihren Ursprung haben.

Title: **Open Eye Meditation – The visual way to the development of the inner sense**
Author(s): Tausin, Floco
Journal: The International Journal of Healing and Caring (IJHC), Vol. 9, No. 3 (September 2009), <http://www.wholistichealingresearch.com/ijhchome> (28.8.09)
Language: English
Abstract: What is the inner sense and how do we develop it? This article deals with an open eye meditation method which involves the concentration on both material and subtle objects. As an example of a subtle object, I present the meditation practice on eye floaters (muscae volitantes) according to the four steps of meditation in the Yoga sutras by the Indian philosopher Patanjali.

Title: **Awakening the Inner Sense – Some Methods and Meditation Objects**
Author(s): Tausin, Floco
Journal: - Talent Development Resources – Information and inspiration to enhance creative expression and personal development,
<http://talentdevelop.com/articlelive/articles/982/1/Awakening-the-Inner-Sense--Some-Methods-and-Meditation-Objects/Page1.html> (24.8.09)
- Ovi Magazine – Finlands English Online Magazine,
<http://www.ovimagazine.com/art/4777> (28.8.09)
- hEyOkA mAgAzInE,
http://www.heyokamagazine.com/heyoka_magazine.32.flocoinnersense.htm (12.9.09)
- Saptarishis Astrology, <http://www.saptarishisastrology.com/> (i.E.)
- Wellsphere. Health knowledge made personal.
<http://www.wellsphere.com/happiness-article/awakening-the-inner-sense-some-methods-and-meditation-objects/778693> (20.11.09)
- The Spirit of Ma'at. MA'AT MAGAZINES.
http://www.spiritofmaat.com/oct09/awakening_the_inner_sense.html (1.10.09)
- The Masculine Heart. <http://masculineheart.blogspot.com/2009/08/awakening-inner-sense-some-methods-and.html> (27.8.09)

- Writing Raw. The Next Step in the Evolution of Reading Literature.
<http://writingraw.com/files/Awakening%20the%20Inner%20Sense.pdf>
(20.11.09)

Language: English

Abstract: Is there more to human sense activity than touching, seeing, hearing, smelling and tasting? There is, according to many cultures and religions where we find the notion of an inner sense. An article about this subtle inner sense, its development and some of its subtle objects, the so-called entoptic phenomena.

Title: **Das holografische Weltmodell zwischen Wissenschaft und Sehen**

Author(s): Tausin, Floco

Journal: VM – Virtuelles Magazin 2000, 49/2008.

<http://www.vm2000.net/49/flocotausin/holografischesmodell.html> (12.12.08)

Language: German

Abstract: Das intellektuelle Denken basiert stets auf grundlegenden metaphysischen Annahmen. Momentan befinden wir uns in einem Wandel, der die mechanische Weltsicht durch das holografische Modell ablöst. Wie es zu diesem Paradigmenwechsel gekommen ist, was er bereits ausgelöst hat und weshalb das holografische Modell auch entoptische Erscheinungen wie die Mouches volantes besser beschreiben kann.

Title: **Mouches volantes – Open Eye Meditation (Workshop)**

Author(s): Tausin, Floco

Journal: n/a

Language: English

Abstract: Ein Workshop zum Thema Mouches volantes und Meditation mit offenen Augen (Indien 2007).

Title: **Entoptische Erscheinungen als universelles Phänomen der Trance**

Author(s): Tausin, Floco

Journal: SpiritualTimes (2. Artikel der Serie: „Zwischen Innenwelt und Aussenwelt“;

<http://www.s-t.net/index.php?t=4&id=410> (13.12.07)

Language: German

Abstract: Entoptische Phänomene wurden von heiligen Frauen und Männern zu allen Zeiten in allen Weltgegenden während erweiterten Bewusstseinszuständen wahrgenommen und religiös gedeutet. Dieser Artikel präsentiert Fakten zur wissenschaftlichen Untersuchung altsteinzeitlicher wie aktueller schamanistischer Kunst, die als inspiriert durch entoptische Erscheinungen gilt.

Title: **Mouches volantes. Bewegliche Kugeln und Fäden aus der Sicht eines Sehers**

Author(s): Tausin, Floco

Journal: Schlangentanz (4/2006); Jenseits des Irdischen (2/2007); Q'Phaze. Realität ... Anders! (4/2006); Sternbild. Astrologisches Monatsmagazin (Februar 2007)

Language: German

Abstract: Dieser Artikel fasst die aussergewöhnliche Sehtheorie des dem Autor persönlich bekannten „Sehers“ Nestor zusammen: Mouches volantes, die beweglichen

Punkte und Fäden in unserem Blickfeld, sind weit mehr, als uns die Augenheilkunde glauben machen will

Title: **Entoptic Art – Entoptische Erscheinungen als Inspirationsquelle in der zeitgenössischen bildenden Kunst**
Author(s): Tausin, Floco
Journal: Extremnews
(<http://www.extremnews.com/berichte/vermishtes/396b116f79905e4>), 29.1.07
Language: German
Abstract: Entoptische Erscheinungen sind Phänomene, die innerhalb des menschlichen Sehsystems verursacht werden, die der Betrachter aber ausserhalb von sich zu sehen glaubt. Während die moderne westliche Schulmedizin solche Erscheinungen auf physiologische Vorgänge reduziert und ihnen damit keinerlei kulturelle und spirituelle Bedeutung beimisst, haben Künstlerinnen und Künstler ein viel kreativeres und produktiveres Verhältnis zu dem, was stets da ist, obwohl wir es häufig nicht sehen – und nach gängigen Idealen auch keinen Anreiz haben sollten, es anzuschauen. Dies liegt in der Natur von entoptischen Erscheinungen. Sie gehen Hand in Hand mit einer Kunst, die alternative Perspektiven und Wahrnehmungen vermitteln will. Ein Überblick über bildende Künstler, die sich durch entoptische Phänomene inspirieren liessen.

Title: **Wenn das UFO dem Blick folgt. Können unidentifizierte Flugobjekte entoptische Phänomene sein?**
Author(s): Tausin, Floco
Journal: JUFOF (Journal für UFO-Forschung), Nr. 167 (5/2006)
Language: German
Abstract: Welchen Stellenwert haben entoptische Erscheinungen in der Erklärung von unidentifizierten Flugobjekten (UFO)? Welches sind die Bedingungen, dass Nachbilder, Sternchen und Mouches volantes mit UFOs verwechselt werden?

Title: **Mouches volantes und Trance. Ein universelles Phänomen bei erweiterten Bewusstseinszuständen früher und heute**
Author(s): Tausin, Floco
Journal: Jenseits des Irdischen (3/2006)
Language: German
Abstract: Entoptische Phänomene wurden von heiligen Frauen und Männern zu allen Zeiten in allen Weltgegenden während erweiterten Bewusstseinszuständen wahrgenommen und religiös gedeutet. Dieser Artikel präsentiert Fakten zur wissenschaftlichen Untersuchung altsteinzeitlicher wie aktueller schamanistischer Kunst, die als inspiriert durch entoptische Erscheinungen gilt. Schliesslich wird die Sonderstellung der Mouches volantes unter diesen Erscheinungen diskutiert.

Title: **Zwischen Innenwelt und Aussenwelt. Entoptische Phänomene und ihre Bedeutung für Bewusstseinsentwicklung und Spiritualität**
Author(s): Tausin, Floco
Journal: Einklang (Vereinszeitschrift Lichtplattform e.V.) (September 2006); JUFOF (Journal für Ufo-Forschung), Nr. 166 (4/2006); Schlangentanz (3/2006);

Extremnews (<http://www.extremnews.com/berichte/wissenschaft>), 4 Teile, 6.-9.12.06

Language: German

Abstract: In diesem allgemein gehaltenen Artikel werden vier subjektive visuelle Phänomene vorgestellt: Nachbilder, Mouches volantes, Sternchen und geometrische Muster. Bei all diesen handelt es sich um sogenannte entoptische (innerlich verursachte) Erscheinungen, welche unsere Innenwelt und Aussenwelt miteinander verbinden. Als subjektive visuelle Phänomene bilden sie den Schnittpunkt sowohl von wissenschaftlichen Erklärungen wie von spirituell-esoterischen Bedeutungen.

Title: **Meditation mit offenen Augen. Der visuelle Weg zur Entwicklung des inneren Sinns**

Author(s): Tausin, Floco

Journal: Lebens(t)räume. Das Magazin für Gesundheit und Bewusstsein (4/2006); Q'Phaze. Realität ... Anders! (6/2007); Webmagazin von Rainbow Spirit (http://www.rainbow-spirit.de/Magazin_03.html/inhalt_web.html)

Language: German

Abstract: Was ist der innere Sinn und wie entfalten wir ihn? Dieser Artikel handelt von einer Meditationsmethode mit offenen Augen, die sowohl grobstoffliche wie subtile Objekte verwendet. Als Beispiel eines subtilen Objekts wird die Meditation über die Mouches volantes gemäss den vier Stufen der Meditation bei Patanjali erläutert.

Title: **Paranormale visuelle Phänomene. Orbs, Aura, Mouches volantes und „Sternchen“ im Vergleich**

Author(s): Tausin, Floco

Journal: Parawelten. Grenzwissenschaften – UFOs – Paraphänomene. Publikation der Interessensgruppe für Grenzwissenschaften & Paraphänomene, 3. Jahrgang, Ausgabe 1/2007 und 2/2007; Transwelten (<http://www.transwelten-parafotos.de/orbs.htm>), Januar 07

Language: German

Abstract: Ein Vergleich von verschiedenartigen visuellen Phänomenen, ihre wissenschaftliche Erklärung und spirituelle Bedeutung.

Title: **Kokons und Fasern – Leuchtkugeln und Leuchtfäden. Mouches volantes als Inspirationsquelle für Carlos Castaneda?**

Author(s): Tausin, Floco

Journal: AHA Magazin, Nr. 5 (Okt/Nov 2006); Q'Phaze. Realität ... Anders! (7/2007)

Language: German

Abstract: Ein Vergleich zwischen der Lehre des Don Juan sowie des mir bekannten Sehers Nestor. Ausgangspunkt ist die Wahrnehmung und Interpretation der subjektiven visuellen Phänomene, wie sie bei Castaneda und in meinem Buch „Mouches Volantes“ beschrieben werden. Entsprechende Hinweise in Castanedas Büchern nähren die Vermutung, dass seine fantastischen Berichte über nicht-alltägliche Bewusstseinszustände teilweise durch die Wahrnehmung des Phänomens der Mouches volantes inspiriert ist.

Websites

- Title:** Mouches Volantes
URL: <http://www.mouches-volantes.com>
Language: German
- Title:** Bewusstsein Sehen
URL: <http://www.bewusstsein.ws>
Language: German
- Title:** Mystik und Religion
URL: <http://www.mystik.name>
Language: German
- Title:** Eye Floaters
URL: <http://www.eye-floaters.info>
Language: English
- Title:** Some floaters are visible etheric matters
URL: <http://www.gperera.pwp.blueyonder.co.uk/floaters.html>
Language: English
- Title:** Bewusstsein Sehen (Forum von Floco Tausin)
URL: <http://floaters.communityhost.de/>
Language: German
- Title:** Love Eye Floaters
URL: <http://love-eye-floaters.blogspot.ch/>
Language: English
- Title:** Leuchtpunkte
URL: <http://www.leuchtpunkte.ch/>
Language: German

Eye floaters in the arts

Only a few of the following pieces of art are made to openly and directly examine eye floaters. More commonly, artists are inspired by floaters, or take floaters as a metaphor for other issues.

Fiction

Title: **Muscae Volitantes**
Author(s): Williamson, Chet
Publisher: Monteleone, Thomas F. (Ed.): Borderlands, Stonegate: White Wolf 1992
Language: English

Poems

Title: **Zahme Xenien, VI**
Author(s): Johann Wolfgang von Goethe
Publisher: Gedichte (Ausgabe letzter Hand. 1827), S. 941
Language: German

Paintings

Title: **Mouches Volantes**
Medium: n/a
Artist(s): Hörmann, Erich
Year: n/a
URL: <http://www.hoermann-kunst.at/mouchesvolantes.html>

Title: **Nr. 14 der „Sommets Series“**
Medium: Ink on paper
Artist(s): Russo, Maurizio
Year: ??

Title: **Mouches volantes**
Medium: Gouache and ink on paper
Artist(s): Christi
Year: 2006

Title: **To be continued**
Medium: Gouache and ink on paper
Artist(s): Christi
Year: 2006

Installations

Title: Floatertattoo
Artist(s): Wyss, Fabian
Publisher: Hochschule der Künste, Bern (BA-Thesis 2009)
URL: <http://www.hkb.bfh.ch/de/studium/bachelor/baviskom/ba-thesis-09/wyss-fabian/>

Title: Myodesopsies
Artist(s): Dekynt, Edith
Year: 2001 ongoing
URL: <http://www.edithdekyndt.be/beforelife.html>

Title: Mouches volantes
Artist(s): Temp, Niek
Publisher: Exhibition: „A Distant View: One Aspect of Recent Art from Belgium, France, Germany and Holland”, New York 1986

Exhibitions

Title: fliegende Fliegen
Curator: Jasmin Makk (smax Kuratoren-Ausstellung)
Location: Schloss Ringenberg, Hamminkeln (Germany)
Artist(s): Natalie Czech, Benjamin Houlihan, Eva-Maria Kollischan, Sarah van Sonsbeeck
Year: 2012
URL: http://www.schloss-ringenberg.de/archiv/projekte_schloss_ringenberg_.php

Music

Title: Muscae Volitatantes
Style: Instrumental/Ambient
Medium: Track on digital album „Amalgamation“
Artist(s): Hugo Martinez (2012)
URL: <http://hugomartinez.bandcamp.com/album/amalgamation>

Title: Floater in the Left Eye
Style: Instrumental
Medium: Digital track
Artist(s): Rob Ward (2010)
URL: <http://www.robward.com/>

Title: Mouches volantes
Style: Electronic

Medium: CD
Artist(s): Jørgensen, Ole Ivar / Arntzen, Jakob (2006)
URL: www.myspace.com/mouchesvolantes

Title: **Mouches volantes**
Style: Electronic
Medium: CD
Artist(s): Wouter Blok / Thijs Geritz
URL: <http://www.mouches-volantes-music.com>

Film / TV

Title: **Family Guy (7. Staffel, 7. Folge: Ocean's three and a half)**
Direction: MacFarlane, Seth
Cast: n/a
Duration: n/a
Year: 2009

Title: **Mouches Volantes (Elective Affinities II)**
Direction: Gottheim, Larry
Cast: n/a
Duration: 69 Min.
Year: 1976
Abstract: Elective Affinities is a series of four feature-length films Gottheim started in the early 1970s and completed in 1981 with Tree of Knowledge; the series explores not only images and their relationship to sound and time (a recurring theme in his work), they also examine issues such as family, psychology, education, freedom, and the theme of nature in art.
In Mouches Volantes... three elements... were brought together: the suggestive title...; a narration by Angelina Johnson of the story of the life of her husband, Blind Willie Johnson; and groups of visual material, light fragments from my own personal world of occupations.... As in all my films, the basic processes of cinema, the exposing of film stock to light, here the stringing together of linear patterns of sound and image, become metaphors, embodiments of acts of coming to feel, coming to know.

Dance

Title: **Mouches volantes (Video)**
Direction: Gaudernak, Lukas
Music: Hayasaka, Sachi (u.a.)
Cast: Jauregui, Mikel (u.a.)
Publisher: Wien, 2004

Humanities and psychology

Publications examining eye floaters as a major or minor subject from the point of view of the humanities and psychology.

Monographs and anthologies

Title: How to use your Eyes
Author(s): Elkins, James
Publisher: Routledge, 2008
Language: English

Title: Ungeahnte Bilder. Über Wahrnehmungen zusätzlicher Seheindrücke
Author(s): Kluxen, G.
Publisher: Heidelberg: Kaden 1992
Language: German

Title: Anleitung zum Unglücklichsein
Author(s): Watzlawick, P.
Publisher: München: R. Piper GmbH & Co. KG 1988
Language: German

Articles

Title: A Psychological Perspective of Eye Floaters
Author(s): Cipolletta, Sabrina et al.
Journal: Qualitative Health Research (2012) 22(11) 1547-1558
Language: English
Abstract: Patients experiencing flashes and spots in their perceptive fields often resort to consulting an ophthalmologist without finding an answer, mainly because these symptoms are not necessarily associated with pathology of the eye. The purpose of our research study was to understand the experience of these patients, differentiate among them, and propose different ways of treating them. We carried out an eye examination and echography, individual semistructured interviews, and dependency grids with 11 patients at the ophthalmology department of a public hospital in northern Italy. We found that individuals' ways of experiencing and reacting to eye floaters might be different and might depend on the perception of the disease, the personal explanation, the solutions tried, the trust placed in medicine, selfconstruction, and the dispersion of dependency. Understanding the experiences of patients suffering from eye floaters might help health care professionals to personalize their approaches to these patients.

Title: Floaters: A potential confound in the assessment of perceptual abnormalities

Author(s): Mittal, V. A./Willhite, R./Cannon, T.D.
Journal: Schizophrenia Research, 25. Okt. 2007
Language: English

Eye floaters in the alternative and complementary medicine

Various texts from the field of alternative and complementary medicine that deal with floaters mainly or casually. The quality of these texts ranges from health professionals to quack doctors.

Monographs and anthologies

Title: Eye Floaters Cure
Author(s): Gray, William
Publisher: Amazon Digital Services Inc., 2013
Language: English

Title: Eye Floaters Cure
Author(s): Kanaj, Enck
Publisher: eBookIt.com, 2013
Language: English

Title: DIE LOSUNG Mouches volantes
Author(s): Romy, Chantal
Publisher: All Star Press, 2012
Language: German

Title: The Eye Floater Solution. 5 Steps including the ‚secret weapon‘ to eliminating those little buggers.
Author(s): Romy, Chantal
Publisher: All Star Press, 2010
Language: English

Title: A Materia Medica for Chinese Medicine. Plants, Minerals and Animals Products
Author(s): Hempen, Carl-Hermann; Fischer, Toni
Publisher: Elsevier, 2009
Language: English

Title: Healing Your Eyes with Chinese Medicine: Acupuncture, Acupressure, & Chinese Herbs
Author(s): Rosenfarb, Andy; Grossman, Marc
Publisher: North Atlantic Books, 2007
Language: English

Title: Was soll ich noch glauben?
Author(s): Brehl, Jens
Publisher: Lerato-Verlag 2007
Language: German

Title: **Textbook of Ayurveda**
Author(s): Lad, Vasant
Publisher: The Ayurvedic Press, 2007
Language: English

Title: **Diagnosis in Chinese Medicine. A Comprehensive Guide**
Author(s): Maciocia, Giovanni
Publisher: Churchill Livingstone, 2004
Language: English

Title: **Essential subtleties on the silver sea. The Yin-hai jing-wei. A Chinese classic on ophthalmology**
Author(s): Kovacs, Jürgen; Unschuld, Paul
Publisher: Berkeley/L.A.: University of California Press, 1998
Language: English

Title: **The Cure of Imperfect Sight By Treatment without Glasses**
Author(s): Bates, William H.
Publisher: New York, 1920
Language: English

Title: **Ayurveda Revolutionized. Integrating Ancient and Modern Ayurveda**
Author(s): Tarabilda, Edward
Publisher: Lotus Press, 1997
Language: English

Articles

Title: **Sanftes Fliegenmittel. Mouches volantes in der alternativen Augenheilkunde**
Author(s): Tausin, Floco
Journal: VM – Virtuelles Magazin 2000, 53/2009.
<http://www.vm2000.net/53/FlocoTausin/FlocoTausin.html> (18.11.09)
Language: German
Abstract: Mouches volantes sind harmlose und unbedeutende Glaskörpertrübungen, sagen die Augenärzte. Mouches volantes sind erste Erscheinungen einer alles ausfüllenden leuchtenden Bewusstseinsstruktur, sagen die Seher. Was sagt eigentlich die moderne alternative Augenheilkunde zu den Mouches volantes und wie ist diese Sicht aus der spirituellen Perspektive zu bewerten?

Websites

Title: Yoga for Eye Floaters

URL: <http://www.ctds.info/yoga-floaters.html>

Language: English

Title: Floaters and Their Treatment with Chinese Herbs

URL: <http://www.itmonline.org/arts/floaters.htm>

Language: English

Title: Eye Floaters (Natural Eye Care)

URL: http://www.naturaleyecare.com/diseases.asp?d_num=6

Language: English

Title: Yoga Therapy For Eye Problem (floaters)

URL: <http://fabulouslyyoga.blogspot.com/2009/03/yoga-therapy-for-eye-problem-floaters.html>

Language: English

Ophthalmology

Books from the field of modern ophthalmology with chapters on eye floaters; articles with clinical studies about the nature and treatment of eye floaters.

Monographs and anthologies (from 1950)

Title: **The Wills Eye Manual : Office and Emergency Room Diagnosis and Treatment of Eye Disease (5th ed.)**

Author(s): Ehlers, Justis P. et al. (Ed.)

Publisher: Lippincott Williams & Wilkins, 2008

Language: English

Title: **How to understand Eye Floaters**

Author(s): n/a

Publisher: Quick Easy Guides, 2008

Language: English

Title: **Klinik der menschlichen Sinne**

Author(s): Stoll, Wolfgang (ed.)

Publisher: Wien: Springer-Verlag, 2008

Language: German

Title: **Vitreo-retinal Surgery (Essentials in Ophthalmology, ed. G. K. Kriegelstein; R. N. Weinreb)**

Author(s): Kirchhof, B.; Wong, D. (ed.)

Publisher: Berlin/Heidelberg: Springer, 2007

Language: English

Title: **Laser Treatment of Eye Floaters**

Author(s): Karickhoff, John R.

Publisher: Washington Medical Publishing, 2006

Language: English

Title: **Ophthalmology at a Glance**

Author(s): Olver, Janes; Cassidy, Lorraine

Publisher: Blackwell Science Ltd., 2005

Language: English

Title: **Anti-aging therapeutics, Vol. 6**

Author(s): Klatz, Ronald; Goldman, Bob (ed.)

Publisher: American Academy of Anti-Aging Med, 2004

Language: English

Title: **Clinical Ophthalmology. A Systematic Approach (5th ed.)**
Author(s): Kanski, Jack J.
Publisher: Butterworth-Heinemann, 2003
Language: English

Title: **Ophthalmology. A Short Textbook**
Author(s): Lang, Gerhard K. (Ed.)
Publisher: Stuttgart/New York: Thieme, 2000
Language: English

Title: **Floater: The vitreous reality**
Author(s): Schnite, Suzanne
Publisher: Schmartens Co. (?), 1999
Language: English

Title: **Taschenbuch der Augenheilkunde**
Author(s): Küchle, Hans Joachim
Publisher: Bern: Verlag Hans Huber, 1998
Language: German

Title: **Ophthalmologie**
Author(s): Grabitz, Matthias
Publisher: Weinheim: Chapman and Hall, 1997
Language: German

Title: **Vision problems : How to cure cataracts, glaucoma, floaters, and other eye disorders**
Author(s): Biser, Sam
Publisher: 1995
Language: German

Title: **Ergebnisse der Pars-plana-Vitrektomie bei nicht diabetischer Glaskörpertrübung, Macular pucker und perforierender Augenverletzung**
Author(s): Schick-Ballmann, Silvia
Publisher: Mainz, 1994
Language: German

Title: **Augenheilkunde**
Author(s): Leydhecker, Wolfgang
Publisher: Berlin: Springer, 1993
Language: German

Title: **Ophthalmologie**

Author(s): Bonafonte, Sergio
Publisher: Stuttgart: Schwer, 1990
Language: German

Title: **Der Augenarzt, Vol. III, VI, X**
Author(s): Velhagen, K.
Publisher: Leipzig, 1975 (1960)
Language: German

Title: **Observationes I**
Author(s): Platter, F.
Publisher: Buess, H. (Ed.); Huber: Bern, 1963
Language: German

Title: **System of Ophthalmology (Vol VII)**
Author(s): Duke-Elder, Sir St. (Ed.)
Publisher: H. Kimpton: London, 1962
Language: English

Articles

Title: **Reassessing the Surgical Treatment of Floaters**
Author(s): Sebag, J.
Journal: Retina Today, March 2014
Language: English
Abstract: Background Primary vitreous floaters can be highly bothersome in some patients. In the case of persistently bothersome floaters, pars plana vitrectomy may be the most effective treatment. The aim of this study is to evaluate the incidence of complications, and patient satisfaction, after pars plana vitrectomy for disabling primary vitreous opacities. Methods We included a total of 110 eyes that underwent pars plana vitrectomy between February 1998 and August 2010. Fifty-seven eyes (51.8 %) underwent 20-gauge vitrectomy, whereas 53 eyes (48.2 %) underwent 23-gauge vitrectomy. In a retrospective manner, we assessed intraoperative and postoperative complications. There was a considerable range of time between surgery and questionnaire (range: 4–136 months). Patient satisfaction was assessed by a questionnaire based on a modified NEI VFQ-25 questionnaire. Results A retinal detachment occurred in 10.9% of cases, and the incidence did not differ significantly between the 20-gauge and 23-gauge vitrectomy groups. In 4.5% of the eyes, a retinal detachment developed within the first 3 months, and 6.4 % occurred later in the postoperative period. Cystoid macular edema occurred in 5.5 %, and an epiretinal membrane was seen postoperatively in 3.6 % of cases. Development of glaucoma requiring glaucoma surgery, a macular hole, and postoperative scotoma, each occurred in 0.9 % of cases. No cases of endophthalmitis occurred. Eighty-five percent of patients were satisfied or very satisfied with the results of the vitrectomy. Eighty-four percent of all patients were completely cured from their troublesome vitreous floaters, and an additional

9.3% of patients were less troubled by vitreous floaters. Ten patients (9.3%) were dissatisfied, and six of these patients (5.6 %) had a serious complication that resulted in permanent visual loss. Conclusions Pars plana vitrectomy is an effective approach to treat primary vitreous floaters, resulting in a high rate of patient satisfaction. Postoperative complications may be more frequent than previously reported, so patients should be well-informed about the complication rate before reaching informed consent about this surgical intervention. Additional preventive measures should be considered to reduce this complication rate.

Title: Pars plana vitrectomy for disturbing primary vitreous floaters: clinical outcome and patient satisfaction

Author(s): De Nie, Karlijn F. et al.

Journal: Graefes Arch Clin Exp Ophthalmol (2013) 251:1373–1382

Language: English

Abstract: Background Primary vitreous floaters can be highly bothersome in some patients. In the case of persistently bothersome floaters, pars plana vitrectomy may be the most effective treatment. The aim of this study is to evaluate the incidence of complications, and patient satisfaction, after pars plana vitrectomy for disabling primary vitreous opacities. Methods We included a total of 110 eyes that underwent pars plana vitrectomy between February 1998 and August 2010. Fifty-seven eyes (51.8 %) underwent 20-gauge vitrectomy, whereas 53 eyes (48.2 %) underwent 23-gauge vitrectomy. In a retrospective manner, we assessed intraoperative and postoperative complications. There was a considerable range of time between surgery and questionnaire (range: 4–136 months). Patient satisfaction was assessed by a questionnaire based on a modified NEI VFQ-25 questionnaire. Results A retinal detachment occurred in 10.9% of cases, and the incidence did not differ significantly between the 20-gauge and 23-gauge vitrectomy groups. In 4.5% of the eyes, a retinal detachment developed within the first 3 months, and 6.4 % occurred later in the postoperative period. Cystoid macular edema occurred in 5.5 %, and an epiretinal membrane was seen postoperatively in 3.6 % of cases. Development of glaucoma requiring glaucoma surgery, a macular hole, and postoperative scotoma, each occurred in 0.9 % of cases. No cases of endophthalmitis occurred. Eighty-five percent of patients were satisfied or very satisfied with the results of the vitrectomy. Eighty-four percent of all patients were completely cured from their troublesome vitreous floaters, and an additional 9.3% of patients were less troubled by vitreous floaters. Ten patients (9.3%) were dissatisfied, and six of these patients (5.6 %) had a serious complication that resulted in permanent visual loss. Conclusions Pars plana vitrectomy is an effective approach to treat primary vitreous floaters, resulting in a high rate of patient satisfaction. Postoperative complications may be more frequent than previously reported, so patients should be well-informed about the complication rate before reaching informed consent about this surgical intervention. Additional preventive measures should be considered to reduce this complication rate.

Title: Prevalence of vitreous floaters in a community sample of smartphone users

Author(s): Webb, Balke F. et al.

Journal: International Journal of Ophthalmology 6, no. 3 (2013): 402-405

Language: English

Abstract: AIM: To estimate the prevalence and risk factors for vitreous floaters in the general population. METHODS: An electronic survey was administered through a

smartphone app asking various demographic and health questions, including whether users experience floaters in their field of vision. Multivariate logistic regression analysis was used to determine risk factors. RESULTS: A total of 603 individuals completed the survey, with 76% reporting that they see floaters, and 33% reporting that floaters caused noticeable impairment in vision. Myopes were 3.5 times more likely ($P=0.0004$), and hyperopes 4.4 times more likely ($P=0.0069$) to report moderate to severe floaters compared to those with normal vision. Floater prevalence was not significantly affected by respondent age, race, gender, and eye color. CONCLUSION: Vitreous floaters were found to be a very common phenomenon in this non-clinical general population sample, and more likely to be impairing in myopes and hyperopes.

Title: **The impact of persistent visually disabling vitreous floaters on health status utility values**
Author(s): Zou, Haidong et al.
Journal: Qual Life Res (2013) 22:1507–1514
Language: English
Abstract: Purpose To assess the time trade-off (TTO) utility values in patients with persistent visually disabling vitreous floaters (DVF) and to determine the reliability and validity of TTO methods in DVF patients. Methods Prospective cross-sectional questionnaire survey: Eligible patients with persistent DVF referred to the Shanghai First People's Hospital outpatient service between January 2006 and February 2010, and randomly selected normal vision general population residents, were enrolled. All participants underwent TTO utility value evaluation. After 4–5 weeks, the patients were asked to undergo second TTO utility value evaluation during the follow-up interview. Results The mean initial utility values of the 107 persistent DVF patients were 0.904 ± 0.054 . Regression analyses revealed that length of education, visual acuity in the poorer-vision eye and employment status were associated with utility values (all $P < 0.01$). All patients took part in the follow-up interview; the intra-class correlation coefficient for TTO utility values at the initial and follow-up interviews was 0.855. In the 91 general population residents, the mean utility value was 0.923 ± 0.032 , which was statistically higher than that of active study patients ($t = 3.01$, $P < 0.01$). Conclusions Persistent DVF can substantially diminish the patients' perception of their life, and can be measured by TTO utility values with high reliability and construct validity.

Title: **Longterm follow-up of pars plana vitrectomy for vitreous floaters: complications, outcomes and patient satisfaction**
Author(s): Schulz-Key, Steffen et al.
Journal: American Journal of Ophthalmology (2011) 152, no. 1: 60-65
Language: English
Abstract: Purpose: Floaters caused by degenerative or postoperative changes in the vitreous can interfere with all aspects of visual functioning. The aim of this study is to report the longterm outcome of pars plana vitrectomy (PPV) for persistent vitreous opacities. Methods: In a retrospective, non-randomized, interventional case study we reviewed all cases of vitreous floaters that were vitrectomized at our department between 1997 and 2006. Patient complaints and satisfaction were assessed by a questionnaire administered at the end of follow-up. Results: Seventy-three consecutive cases were included (61 patients). Mean Snellen best corrected visual acuity (BCVA) before surgery was 0.81. Overall, 85% of patients

complained of severe or very severe difficulty caused by floaters. A total of 42% of eyes were pseudophakic, four of which were operated with combined PPV and phacoemulsification. Mean follow-up time was 37 months. Of the phakic eyes, 60% were operated for cataract during followup. One retinal detachment (RD) occurred immediately postoperatively (1.3%) and another four eyes developed RD during longterm follow-up 24–44 months after PPV (5.5% of cases). Postoperative BCVA remained mostly unchanged. Overall, 88% of patients were satisfied with the results of the operation. Conclusions: Some patients make considerable complaints as a result of vitreous opacities and their distress does not correlate with visual acuity. Vitrectomy is a safe and effective procedure with which to help these patients. Patients should be informed about the risk of cataract progression, unexpected inflammatory reaction and an increased risk for RD several years after PPV (5.5%).

Title: Utility Values Associated With Vitreous Floaters
Author(s): Wagle, Ajeet M. et al.
Journal: American Journal of Ophthalmology (2011) 152, no. 1: 60-65
Language: English
Abstract: PURPOSE: To ascertain the health-related quality of life associated with symptomatic degenerative vitreous floaters. DESIGN: Cross-sectional questionnaire survey. METHODS: In this institution-based study, 311 outpatients aged 21 years and older who presented with symptoms of floaters were enrolled. Data from 266 patients (85.5%) who completed the questionnaire were analyzed. Utility values were assessed using a standardized utility value questionnaire. The time trade-off (TTO) and standard gamble (SG) for death and blindness techniques were used to calculate the utility values. Descriptive, univariate, and multivariate analyses were performed using Stata Release 6.0. RESULTS: The mean age of the study population was 52.9 ± 12.02 years (range, 21–97). The mean utility values were 0.89, 0.89, and 0.93 for TTO, SG (death), and SG (blindness), respectively. Patients aged <55 years reported significantly lower SG (blindness) utility values when compared with patients above 55 years of age (age <55 ± 0.92, age >55 ± 0.94, *P* = .007). Utility measurements did not demonstrate significant relationship with any of the other socio-demographic variables examined in this study. The utility values did not demonstrate any significant relationship with other ocular characteristics such as duration of symptoms, presence of a posterior vitreous detachment, and presence or severity of myopia. CONCLUSIONS: Symptomatic degenerative vitreous floaters have a negative impact on health-related quality of life. Younger symptomatic patients are more likely to take a risk of blindness to get rid of the floaters than older patients.

Title: Pars Plana Vitrectomy for Visually Disturbing Vitreous Floaters in Pseudophakic Eyes
Author(s): Stoffelns, B.M. et al.
Journal: Klinische Monatsblätter der Augenheilkunde 2011; 228: 293–297
Language: English
Abstract: Background: The aim of this study was to evaluate the role of vitrectomy in patients with visually disturbing vitreous opacities. Patients and Methods: A retrospective analysis of the patient characteristics and the outcome of all pseudophakic eyes, which consecutively received in the decade 1996 to 2005 20 G pars plana vitrectomy for visually disturbing floaters, was carried out at the Mainz

University Eye Clinic. Results: Forty-one eyes of 32 patients (63% university graduates, median age: 64 years) were included in the study. The mean axial length of the globe was 25.3mm (range: 22.8 to 28.9 mm). Additional pathologies having influence on the vitreous condition were history of laser or cryo retinopexy (12 ×), buckle surgery (5 ×), complicated cataract surgery (16 ×) and Nd:YAG laser capsulotomy (4 ×). Vitreous floaters were considered to be the result of posterior vitreous detachment alone in 61%, of asteroid hyalosis accompanied by posterior vitreous detachment in 17%, and vitreous syneresis in 15% of the eyes. Intraoperatively retinopexy with endolaser or cryo was performed in 6% of cases. A secondary retinal detachment occurred in one eye (2%). Thirty-one of 32 patients reported to be very satisfied with the postoperative result. Objectively, their visual acuity was better than or equal to preoperative acuity in 95% of the eyes. Conclusion: Pars plana vitrectomy provides a highly effective treatment for visually disturbing vitreous floaters. In an era in which the expectations and demands of individuals on the quality of vision and life have increased significantly, with careful case selection the benefits of the surgical intervention may outweigh the surgical risks.

Title: Safety of vitrectomy for floaters

Author(s): Tan, Stevie H. et al.

Journal: American Journal of Ophthalmology (2011) 151, no. 6: 995-98

Language: English

Abstract: -

Title: Longterm follow-up of pars plana vitrectomy for vitreous floaters: complications, outcomes and patient satisfaction

Author(s): Schulz-Key, Steffen et al.

Journal: Acta Ophthalmologica (2011) 89: 159-165

Language: English

Abstract: -

Title: Essential ophthalmic facts: floaters, flashing & posterior vitreous detachment (pvd)

Author(s): Delshad-Aghdam, H; Mohammadi, S; Lashay, A

Journal: Insight: The Journal of the American Society of Ophthalmic Registered Nurses 35 (3): 31-2 (2010)

Language: English

Abstract: -

Title: Risk factors for retinal breaks in patients with symptom of floaters

Author(s): Singalavanija, A et al.

Journal: Journal of the Medical Association of Thailand (Chotmai-het Thangphaet) (2010) 93 (6): 708-13

Language: English

Abstract: -

Title: Current Treatment for Vitreous Floaters

Author(s): Sendrowski, David P; Bronstein, Mark A.
Journal: Optometry (2010) 81: 157-161
Language: English
Abstract: Vitreous floaters are a common complaint in the ophthalmic care setting. Patients seek explanation and advice regarding possible treatment options. Because the condition is considered benign, ophthalmic care practitioners have little to offer regarding treatment options. The majority of cases encountered are managed with patient education and reassurance. Although almost all patients accept the conservative management option, there is a small subset of patients who may desire a more aggressive treatment intervention for resolution of their visual symptoms. Information with regard to treatment options is readily available to patients through Internet searches and non-peer reviewed educational Web sites. The risks and benefits for these treatment options are not fully covered. Management of floaters should include education regarding “off-label” procedures as well as discussion about benefits and risks associated with such treatment options. It is vital that eye care practitioners advise and counsel patients with symptomatic floaters for optimum ocular health care. This article reviews the current conventional and “off-label” treatment options for symptomatic patients with vitreous floaters.

Title: **Acute-Onset Floaters and Flashes. Is This Patient at Risk for Retinal Detachment?**

Author(s): Hollands, Hussein et al.
Journal: JAMA (2009) 302 (20): 2243-2249
Language: English

Title: **Therapie von Glaskörpertrübungen – eine Übersicht**

Author(s): Krepler, K. ; Binder, S.
Journal: Spektrum der Augenheilkunde (2009) 23: 236-239
Language: German
Abstract: Glaskörpertrübungen treten in Zusammenhang mit der im Laufe des Lebens fortschreitenden Glaskörperdestruktion, oder der daraus resultierenden hinteren Glaskörperabhebung auf. Für einen kleinen Teil der Betroffenen können sie selbst bei Vorliegen einer vollen Sehschärfe zu einer subjektiv starken Beeinträchtigung des Sehvermögens und damit zu einer Reduzierung der Lebensqualität führen. Inwieweit bei diesen Patienten eine Therapie durchgeführt werden sollte, kann nach sorgfältiger Anamnese, Untersuchung, und Beratung nur im Einzelfall entschieden werden. Als Basis für ein solches Vorgehen werden in einer Übersicht die zur Verfügung stehenden Therapiemöglichkeiten, Lasertherapie mittels Nd:YAG Laser, sowie pars plana Vitrektomie hinsichtlich Wirksamkeit und möglicher Risiken diskutiert.

Title: **Vitreous Floaters: When a Minor Nuisance Becomes a Serious Issue**

Author(s): Polkinghorne, Philip J.
Journal: Retinal Physician. 6 (4): 42, 44-45, May 2009
Language: English

Title: **The pathologist’s perspective on vitreous opacities**

Author(s): Coupland, SE
Journal: Eye (2008) 22, 1318–1329
Language: English
Abstract: Background Vitreous opacities are diverse in nature. Many underlying diseases are sightthreatening and several are also lethal. This review presents the pathologist's perspective of vitreous opacities, correlates laboratory findings with the underlying disease and recommends safe methods for handling specimens. An aetiological classification of vitreous opacities is also proposed. Methods A gentle fixative such as Cytolyt or HOPE-fixation is required, unless delivery of the vitreous biopsy specimen to the laboratory can be guaranteed within two hours. Cells and other material are precipitated onto slides or into cell blocks by centrifugation. Light microscopy with the May-Grunewald Giemsa stain is enhanced, as necessary, by the use of special stains, such as Congo red for amyloid, Perl's for iron, Periodic Acid-Schiff for microorganisms, and several others. Immunocytological methods enable cell typing, using labels such as CD3 for T-cells in reactive inflammation; CD20 for B-cells in retinal lymphoma; CD34 and myeloperoxidase for myeloid leukaemic cells. The polymerase chain reaction enhances the identification of organisms in endophthalmitis and of immunoglobulin rearrangements in lymphoma. Results Acquired vitreous opacities can be classified according to their aetiology as: genetic; inflammatory non-infectious; inflammatory infectious; inflammatory iatrogenic; degenerative, traumatic; neoplastic and idiopathic. Non-diagnostic vitreous biopsies, unfortunately, still do occur with the main causes of failure including small sample size; sampling error; inadequate fixation; and leakage from container during transport. Conclusions Vitreous biopsy can profoundly influence the outcome in patients with vitreous opacities. Success depends on close collaboration between clinicians, pathologists and microbiologists. Vitreous samples require proper handling and expert application of a wide range of specialized techniques.

Title: „Floaterektomie“ – Pars-Plana-Vitrektomie wegen Glaskörpertrübungen
Author(s): V. Weber-Varaszegi, P. Senn, V. N. Becht, M. K. Schmid
Journal: Klinisches Monatsblatt Augenheilkunde 225, 2008, S. 366-369
Language: German
Abstract: *Hintergrund:* Bei Patienten mit störenden Glaskörpertrübungen besteht oft eine Diskrepanz zwischen gutem Visus und subjektiven Beschwerden. Die schlechte Objektivierbarkeit erschwert die Indikationsstellung zur Pars-Plana-Vitrektomie (PPV). *Patienten und Methoden:* Das Resultat nach PPV wegen Glaskörpertrübungen an 90 Augen (67 Patienten, Alter 20 - 86 Jahre, Mittel 60 ± 13) wurde retrospektiv analysiert. Die Nachbeobachtungszeit betrug 6 - 40 Monate (Mittel 19 ± 9). Visusrelevante Zusatzdiagnosen (exklusive Katarakt) lagen in 33 % vor (Uveitis 8 %, prämakuläre Membran 10 %, andere 15 %). Die Technik bestand in einer Standard-PPV (44 % 25-Gauge-, 56 % 20-Gauge-Zugänge). In 78 % wurde eine kombinierte PPV mit Hinterkammerlinsenimplantation durchgeführt. *Ergebnisse:* Der mediane Visus stieg von 0,6 auf 1,0 (+ 2,3 Zeilen, $p < 0,0001$). Lediglich ein Auge verlor 2 Zeilen. Intraoperativ kam es in 11 % zu peripheren Netzhautdefekten. Langzeitkomplikationen (12 - 31 Monate) waren prämakuläre Membran (1) und IOL-Kapselsackluxation (1). Sekundäreingriffe umfassten YAG-Kapsulotomien (4) und Glaukom-OP (1). 94 % aller Patienten (98 % der Gruppe ohne Zusatzdiagnosen) waren mit dem Resultat zufrieden. *Schlussfolgerungen:* Bei sorgfältiger Patientenselektion ist die PPV für störende Glaskörpertrübungen sicher und erfolgversprechend.

Title: Evaluation of Internet websites about floaters and light flashes in patient education

Author(s): Barbosa, Andréa Lima et al.

Journal: Arquivos Brasileiros de Oftalmologia 70, no. 5 2007.

Language: English

Abstract: **PURPOSE:** Flashes of light and floaters are most commonly caused by posterior vitreous separation but may be associated with sight-threatening disorders. Prevention of severe sequelae requires prompt dilated eye examination. Thus, information dissemination is crucial. This study aimed to evaluate the quality of information about floaters and light flashes available for patients on the Internet. **METHODS:** Cross-sectional study. In July 2005 we evaluated information available on the Internet regarding floaters and light flashes, using two search engines (MetaCrawler and MSN) and three key terms ("floaters", "dark spots eye", and "light flashes eye"). The quality of each website was evaluated using a score system. The sites were classified as academic, organizational or commercial. Readability, general quality of the website (based on: ownership, purpose, authorship, author qualification, attribution, interactivity, and currency) and quality of the specific content (definition, causes, epidemiology, diagnosis, treatment, and prognosis) were analyzed. **RESULTS:** Of 145 websites evaluated, 49 were included. Four sites (8.2%) were academic, 9 (18.4%) organizational, and 36 (73.4%) commercial. In the majority of the sites (53.0%) information was poor and quality was not correlated with website classification. **CONCLUSIONS:** Information about floaters and light flashes available on the Internet is poor.

Title: Floaterectomy Versus Conventional Pars Plana Vitrectomy For Vitreous Floaters

Author(s): Goldsmith, Craig et al.

Journal: Digital Journal of Ophthalmology 2007.
<http://www.djo.harvard.edu/site.php?url=/physicians/oa/1004>

Language: English

Abstract: We compared floaterectomy to conventional vitrectomy in two case series. 11 phakic eyes of 8 patients, average age 61, underwent phacoemulsification, posterior curvilinear capsulorhexis, deep anterior vitrectomy, and posterior chamber intraocular lens insertion. 20 phakic eyes of 20 patients, average age 64, underwent conventional vitrectomy surgery. Floaterectomy and pars plana vitrectomy were both 100% successful in removing symptomatic floaters. There was 1 retinal detachment in the floaterectomy group and 2 in the conventional vitrectomy group. One patient had cystoid macula oedema after floaterectomy which resolved. Floaterectomy offers a new approach to the removal of vitreous floaters but may carry as many risks as benefits over pars plana vitrectomy.

Title: Floaters: A potential confound in the assessment of perceptual abnormalities (Letter to the Editors)

Author(s): Mittal, Vijay, A. et al.

Journal: Schizophrenia Research 2007, n/a

Language: English

Title: **Vitreous floaters**
Author(s): E.D. Roufail, P. Polkinghorne
Journal: Comprehensive Ophthalmology Update, 7(4), Jul-Aug 2006, S. 171-7
Language: English
Abstract: Floaters are a common presenting ophthalmic symptom that may accompany sight-threatening disorders. In most cases, they are often secondary to benign, degenerative changes in the vitreous. In this review, we briefly examine the anatomy of the vitreous and describe how degenerative vitreous change contributes to the development of floaters. The causality of floaters in the presence and absence of a posterior vitreous detachment is reviewed, as is the clinical significance of these symptoms and signs in relation to their predictive value for determining the presence of sight-threatening retinal tears and/or detachment. Finally, a brief review of management options for debilitating floaters is presented.

Title: **Hunter Syndrome (MPS II-B): A Report of Bilateral Vitreous Floaters and Maculopathy**
Author(s): M.A. Anawis
Journal: Ophthalmic Genet. 27(2); Jun 2006, S. 71-2.
Language: English
Abstract: Purpose: To describe bilateral vitreous opacities and maculopathy in a child with Hunter syndrome. Methods: A case involving fundus examination, photography, and optical coherence tomography. Medline and Embase searches found no reference to vitreous or macular abnormalities in Hunter syndrome. Results: A two-year-old boy with Hunter syndrome was found to have asymmetric, bilateral, free-floating vitreous opacities that remained stable over six years. Amblyopia and exotropia improved with occlusion therapy and spectacle correction. Visual acuity decreased when bilateral maculopathy supervened. Conclusion: Screening for vitreous abnormalities and maculopathy may be important in diagnosing, treating, and explaining visual loss in Hunter syndrome.

Title: **Pars-plana-Vitrektomie bei idiopathischen Glaskörpertrübungen**
Author(s): M. Roth, P. Trittbach, F. Koerner, G. Sarra
Journal: Klinische Monatsblätter der Augenheilkunde Nr. 222, 2005, S. 728-732
Language: German
Abstract: **Background:** The aim of this study was to evaluate the role of pars plana vitrectomy (PPV) in patients with persistent vitreous floaters (VF) in phakic (56.7 %) or pseudophakic (43.3 %) eyes. **Subjects and Methods:** A retrospective study of 24 consecutive patients (30 eyes) who underwent a 2-port-PPV using indirect ophthalmoscopy between 1992 and 2003 was carried out. Main outcome measures were postoperative visual acuity (PVA), incidence of postoperative complications and patient satisfaction, which has been assessed retrospectively using a detailed questionnaire **Results:** Symptoms resolved in all patients. PVA was significantly better (0.91 ± 0.2 vs. 0.84 ± 0.2 preoperative visual acuity) or equal in 25 patients (83.3 %). One pseudophakic patient (3.3 %) experienced a retinal detachment 48 months after surgery. In 5 of 17 phakic eyes (35 %) a cataract extraction had to be performed during the follow-up period. All patients were satisfied with their overall visual function. **Discussion:** This study shows PPV to be a safe and

effective primary treatment for visually disturbing VF. In spite of the small number of cases with a lower PVA (5 eyes/16.7 %), which in the most severe case corresponded to a reduction of VA from 1.0 to 0.6 due to a nuclear sclerosis of the lens, all patients were satisfied. As vitreoretinal complications may occur, a critical patient selection and a careful preoperative assessment of specific risks of vitrectomy are mandatory.

- Title:** **Symptoms and Findings Predictive for the Development of new Retinal Breaks**
- Author(s):** Koen A. van Overdam, MD; Marijke Wefers Bettink-Remeijer, MD; Caroline C. Klaver, MD; Paul G. Mulder, PhD; Annette C. Moll, MD; Jan C. van Meurs, MD
- Journal:** Arch Ophthalmol. 2005 Apr;123(4):479-84.
- Language:** English
- Abstract:** **Objective:** To validate the conclusion of our previous prospective study of 250 patients with isolated posterior vitreous detachment: follow-up visits are only necessary if patients mention symptoms of flashes in combination with multiple floaters or a curtain or cloud at the initial examination, or an increase in number of floaters after the initial examination. **Methods:** Prospective study of 270 consecutive patients with symptomatic isolated posterior vitreous detachment. All patients completed a questionnaire detailing their symptoms and had a full eye examination at the initial examination and at follow-up visits. Logistic regression with backward elimination was used for statistical analysis. We also performed pooled analysis of our previous and present study data. **Results:** New retinal breaks developed in 10 patients (3.7%). Multiple floaters, a curtain or cloud, hemorrhages (retinal or vitreous) at the initial examination, and an increase in the number of floaters after the initial examination were found to be predictive factors for the development of new retinal breaks. These factors were also the only significant predictors after pooled analysis of both studies (520 patients, 23 breaks). **Conclusions:** We assume we can formulate a safe policy for scheduling patients with isolated posterior vitreous detachment: only patients with multiple floaters, a curtain or cloud, or hemorrhages (retinal or vitreous) at the initial examination should be scheduled for reexamination. All other patients should return only if the number of floaters increases.

- Title:** **Posterior Vitreous Detachment. How to Approach sudden-onset Floaters and Flashing Lights**
- Author(s):** Margo, C. E.; Harman, L. E.
- Journal:** Postgraduate Medicine, 2005 Mar; 117(3):37-42.
- Language:** English
- Abstract:** Symptomatic PVD is a common age-related problem that in some patients is associated with retinal tear and retinal detachment. Thorough ocular examination of patients with unilateral floaters and photopsias is needed to identify those at greatest risk for vision loss. Patients without retinal pathologic findings on initial examination need to be given careful instructions on what to expect and do should symptoms of retinal tear or detachment occur.

- Title:** **Analysis of Symptoms Associated with Rhegmatogenous Retinal Detachments**

Author(s): Polkinghorne, P. J.; Craig, J. P.
Journal: Clinical and Experimental Ophthalmology 32 (6): 603-606 Dec 2004
Language: English
Abstract: **Aim:** The symptoms associated with rhegmatogenous retinal detachments are variable and can be associated with other vitreoretinal and neuro-ophthalmic entities. The present study sought to determine the frequency and type of symptoms associated with rhegmatogenous retinal detachment (RRD), and analyse any relationships with the premorbid state.
Methods: An observational case series was undertaken. A patient questionnaire together with clinical data was collected for patients presenting with RRD.
Results: The data on 141 patients presenting with RRD were evaluated prospectively. More than 90% of patients reported a variety of symptoms including visual loss, **floaters** and flashes. The speed of visual loss was not associated with the extent of retinal break. Rather unexpectedly, patients with a history of retinal pathology were not any more likely to be symptomatic either in their presenting or fellow eye. The absence of symptoms was not associated with age, high myopia or previous cataract surgery.
Conclusion: Both patients and physicians need to be aware of the importance of the symptoms associated with RRD.

Title: **Time Course of Development of Posterior Vitreous Detachment in the Fellow Eye after Development in the First Eye**
Author(s): Hikichi, T.; Yoshida, A.
Journal: Ophthalmology 111 (9): 1705-1707 Sep 2004
Language: English
Abstract: **Purpose:** To determine when posterior vitreous detachment (PVD) develops in the fellow eye after development in the first eye.
Design: Prospective, observational case series.
Participants: Fifty-one patients with acute unilateral PVD participated in the study.
Methods: All patients underwent a comprehensive ocular examination, including a dynamic vitreous examination using biomicroscopy with and without a preset lens and retinal examination with scleral depression, every 3 months at least until PVD developed in the fellow eye.
Results: Posterior vitreous detachment developed in 4 eyes (8%) within 6 months, 12 eyes (24%) within 1 year, 24 eyes (47%) within 18 months, 33 eyes (65%) within 2 years, 41 eyes (80%) within 30 months, and 46 eyes (90%) within 3 years. In 5 eyes (110%), PVD did not develop during the follow-up period of more than 3 years.
Conclusions: Posterior vitreous detachment develops frequently in the fellow eye from 6 months to 2 years after development in the first. These findings are useful for the management of patients with unilateral PVD.

Title: **Place de la vitrectomie dans le traitement des corps flottants intravitréens (Vitreotomy for Floaters)**
Author(s): Quintyn, J. C.; Brasseur G.
Journal: Journal Français d'Ophthalmologie 27 (5): 491-495 May 2004
Language: French
Abstract: **Purpose:** To clarify vitrectomy indications in the treatment of **vitreous floaters**.

Methods: This is a retrospective study of four patients, four eyes (age, 42-65 years), who underwent vitrectomy for the treatment of **vitreous floaters**. Two patients had a total posterior vitreous detachment. All patients were required to think about the intervention for several months before consenting.

Results: Preoperative visual acuity ranged from 20/40 to 30/30 and after the operation it ranged from 20/40 to 10/10. Minimum follow-up was 1 year. Visual acuity did not decrease after treatment in any patients. All patients expressed satisfaction with their postoperative visual function.

Discussion-conclusion: Visual acuity measures do not always accurately reflect patients' visual discomfort. Vitrectomy has been known for many years. It can be proposed as a last resort after thorough retina examination, after patients have received adequate information and they are psychologically ready for the procedure.

Title: **Vitreous Body Floaters and Vitrectomy with full Visual Acuity?**

Author(s): Hoerauf, H.; Müller, M.; Laqua, H.

Journal: Ophthalmologie 100 (8): 639-643 Aug 2003

Language: German

Abstract: **Purpose.** To evaluate the role of vitrectomy in patients with visually disturbing vitreous body **floaters** and full visual acuity (VA).

Methods. A total of 9 eyes from 8 patients (2 female, 7 male, median age 57 years) with a preoperative VA of 1.0 were analysed retrospectively. The median duration of symptoms was 12 months. In all eyes a pars plana vitrectomy was performed. The median follow-up period was 13 months.

Results. No intraoperative or postoperative complications were observed. In all patients vision improved subjectively and objective VA remained unchanged. In 2 out of 5 phacic patients a cataract extraction was performed during the follow-up period.

Conclusions. In a selected group of patients vitrectomy can improve subjective vision even in eyes with full objective VA. A critical patient selection with respect to psychological criteria and the individual risk of vitrectomy is extremely important.

Title: **Vitreoretinal Alterations Following LASIK: Clinical Study**

Author(s): Nassaralla, J. J.; Nassaralla, B. A.

Journal: ARVO Annual Meeting Inhalt Search and Program Planner 2003 : Inhalt No. 2969 2003 (Annual Meeting of the Association for Research in Vision and Ophthalmology, May 04-08, 2003, Fort Lauderdale, FL, USA)

Language: English

Abstract: **Purpose:** To evaluate the presence of vitreoretinal changes following myopic laser in situ Keratomileusis (LASIK). **Methods:** 240 myopic eyes of 120 patients were prospectively evaluated before and 30 days after LASIK, in order to identify the presence of newly recognized entopic phenomena (**vitreous floaters**, light flashes or both) or vitreoretinal changes using, indirect depressed fundus examination, with +90 D preset lens, Goldman three-mirror contact lens, and ultrasound. According to the preoperative spherical equivalent (SE) the eyes were divided into 3 groups: Group 1 (G1) 80 eyes with SE (<-4.00 D), Group 2 (G2) 80 eyes with SE from -4.00D to -8.00D, and Group 3 (G3) 80 eyes with SE > -8.00 D. Patients with previous partial or total posterior vitreous cortex detachment (PVD) were excluded. **Results:** Positive perception of postoperative **vitreous floaters** was

found in 8 eyes (10%) from G1, 24 eyes (30%) from G2 and 40 eyes (50%) from G3. Light flashes were noted only in 2 eyes (2.5%) from G2 and 12 eyes (15%) from G3. Partial or total posterior vitreous cortex detachment was detected by biomicroscopy in 2 eyes (2,5%) from G1, 5 eyes (6.25%) from G2 and 15 eyes (18.75%) from G3 and by ultrasound, in 2 eyes (4%) from G1 and in 24 eyes (30%) from G3. **Conclusions:** Vitreoretinal changes after LASIK were clinically found mainly by ultrasound in the high myopic patients.

Title: Nd : YAG Vitreolysis as a Treatment for Vitreous Floaters
Author(s): Gandhi, J. S.
Journal: Eye 17 (1): 113-113 Jan 2003
Language: English

Title: Nd : YAG Vitreolysis as a Treatment for Vitreous Floaters – Reply
Author(s): Benjamin, L.
Journal: Eye 17 (1): 113-113 Jan 2003
Language: English

Title: Nd : YAG Vitreolysis as a Treatment for Vitreous Floaters – Reply
Author(s): Rennie C. A.; Newman, D. K.; Snead, M. P.; Flanagan, D. W.
Journal: Eye 17 (1): 114-114 Jan 2003
Language: English

Title: Flashes and Floaters. Eye series--9
Author(s): Hodge, C.; Roberts, T.
Journal: Australian family physician, 2003 Oct, 32(10):851-2
Language: English

Title: Vitreous Floaters following use of Dermatologic Lasers
Author(s): Alam, M.; Chaudhry, N. A.; Goldberg, L. H.
Journal: Dermatologic Surgery 28 (11): 1088-1091 Nov 2002
Language: English
Abstract: **Background.** Laser eye protection has been designed to protect operators and patients from severe eye injuries.
Objective. To describe two cases in which lasers used for cutaneous therapy may have been associated with the induction of **vitreous floaters**, a subacute eye injury, in physicians operating these devices, and to review the theoretical feasibility of such injuries, prior reports of the same, and strategies for minimizing risk.
Methods. Report of two cases and review of the literature.
Results. Given the circumstantial evidence, it is possible that subacute vitreous injuries may be sustained by the operators of dermatologic lasers. Ex vivo experiments and previous case reports have demonstrated the possibility of laser-induced vitreous injury, including changes in vitreous conformation and vitreous hemorrhage, in the absence of permanent retinal deficits. It may be speculated that **vitreous floaters** are a milder manifestation of such subacute injuries.

Conclusion. To the extent that **vitreous floaters** can multiply and presage the onset of severe retinal injury, the risk of their induction by dermatologic lasers should be minimized. Simple strategies and further research can help achieve this goal.

Title: **Casebook: Flashes and Floaters**
Author(s): Murphy, C.; Hughes, E.
Journal: The Practitioner, 2002 Jul, 246(1636):483-6
Language: English

Title: **Optometrists' examination and referral practices for patients presenting with flashes and floaters.**
Author(s): Alwitry, A.; Chen, H.; Wigfall, S.
Journal: Ophthalmic & Physiological Optics : The Journal of the British College of Ophthalmic Opticians (Optometrists), 2002 May, 22(3):183-8
Language: English
Abstract: **Introduction:** Patients experiencing flashes and **floaters** commonly present to their optometrist. Some of these patients may have significant pathology, yet there is a great deal of variability with regard to examination technique and referral practice. **Methods:** A questionnaire survey was undertaken to determine the current management of patients presenting to their optometrist with flashes and **floaters**. All practising community optometrists within Southern Derbyshire received a questionnaire and 74 (56.9%) completed replies were received. **Results:** Optometrists estimated that an average of 14 patients per month per optometrist presented with symptoms of flashes and/or **floaters**. Mydriasis was utilised routinely for examination in approximately half of the patients. Mean relative confidence was 2.0 at identifying a vitreous haemorrhage and 6.5 for vitreous pigment (complete confidence = 0, complete lack of confidence = 10). Eight percent of responders were unfamiliar with the clinical sign of vitreous pigment, and 17% identifying this sign did not refer all such patients to the hospital services. **Conclusions:** Patients presenting to their optometrists with flashes and/or **floaters** make up a sizeable part of the community optometrist's workload and the management of these patients is highly variable. A large proportion of these patients are examined without mydriasis, even in the presence of various risk factors for retinal detachment. There is a relative lack of confidence amongst optometrists with regards the detection of vitreous pigment and the prognostic implications of this finding. Educational measures such as study days may help the level of understanding and heighten the appreciation of the implications of flashes and **floaters** and the various clinical signs encountered.

Title: **Floaterctomy: Combined Phacoemulsification and Deep Anterior Vitrectomy**
Author(s): Mossa, F.; Delaney, Y. M.; Rosen, P. H.; Rahman, R.
Journal: Journal of Cataract and Refractive Surgery 28 (4): 589-592 Apr 2002
Language: English
Abstract: We describe a 1-stage surgical technique to treat **vitreous floaters**. Phacoemulsification is combined with a deep anterior vitrectomy through a posterior curvilinear capsulorhexis followed by implantation of a posterior chamber intraocular lens. The technique was used in 10 eyes of 6 patients. Six

months postoperatively, 8 eyes had a best corrected visual acuity (BCVA) of 6/6 with complete resolution of symptoms. Two eyes of 1 patient developed cystoid macular edema that reduced final BCVA to 6/18 bilaterally. In this case, the **floaters** may have been the result of previously undiagnosed intermediate uveitis.

Title: Nd : YAG Vitreolysis and Pars Plana Vitrectomy: Surgical Treatment for Vitreous Floaters

Author(s): Delaney YM, Oyinloye A, Benjamin L

Journal: Eye 16 (1): 21-26 Jan 2002

Language: English

Abstract: **Purpose** of study to determine the efficacy of Nd:YAG vitreolysis and pars plana vitrectomy in the treatment of **vitreous floaters**.

Methods: This is a single centre retrospective study of 31 patients (42 eyes) who underwent 54 procedures, Nd:YAG vitreolysis or pars plana vitrectomy, for the treatment of **vitreous floaters** between January 1992 and December 2000. Main outcome measures were percentage symptomatic improvement following treatment and incidence of post-operative complications. Statistical analysis was performed using the Fisher exact test.

Results: Posterior vitreous detachment was the primary cause of **floaters** in all 42 eyes with co-existing vitreous veils in three eyes and asteroid hyalosis in two eyes. Thirty-nine of 42 eyes received Nd:YAG vitreolysis. Thirty-eight percent found Nd:YAG vitreolysis moderately improved their symptoms while 61.5% found no improvement. After an average of 14.7 months follow-up no post-operative complications were recorded. Fifteen eyes underwent a pars plana vitrectomy, one with combined phacoemulsification and posterior chamber implantation and 11 following unsuccessful laser vitreolysis. Pars plana vitrectomy resulted in full resolution of symptoms in 93.3% of eyes. One patient developed a post-operative retinal detachment which was successfully treated leaving the patient with 6/5 VA.

Conclusion: Patients' symptoms from **vitreous floaters** are often underestimated resulting in no intervention. This paper shows Nd:YAG vitreolysis to be a safe but only moderately effective primary treatment conferring clinical benefit in one third of patients. Pars plana vitrectomy, while offering superior results, should be reserved for patients who remain markedly symptomatic following vitreolysis, until future studies further clarify its role in the treatment of patients with **floaters** and posterior vitreous detachment.

Title: Efficacy of Hyaluronidaze in Reducing Vitreous Opacities--preliminary report

Author(s): Puchalska-Niedbal, L.; Millo, B.

Journal: Klinika oczna, 2002, 104(2):135-7

Language: Polnisch

Abstract: The aim of the work: the assessment of hyaluronidase as reducer of **floaters** in vitreous body. We present one patient with the **floaters** in vitreous body treated by subconjunctival injection with hyaluronidase. Research work was carried out on a rabbit, which had been given 10 subconjunctival injections of hyaluronidaze. After treatment we noted subjective and local improvement. By using biochemical tests we proved, that subconjunctival hyaluronidaze application is a good way, to obtain an effect in the vitreous.

Title: **Is it a Floater – or a Detached Retina?**
Author(s): N. N.
Journal: The Johns Hopkins Medical Letter Health After 50, 2001 Oct; 13(8):4-5.
Language: English

Title: **Vitreoretinal Alterations following Laser in situ Keratomileusis: Clinical and Experimental Studies**

Author(s): Luna, J. D.; Artal, M. N.; Reviglio, V. E.; Pelizzari, M.; Diaz, H.; Juarez, C. P.
Journal: Graefes Archive for Clinical and Experimental Ophthalmology 239 (6): 416-423
Jul 2001

Language: English

Abstract: **Background:** The presence of vitreoretinal changes following laser in situ keratomileusis (LASIK) in myopia is evaluated. **Methods:** Clinically, 50 patients (100 eyes) with marked anisometric myopia, 50 low-myopic eyes (<4.00 D) and 50 high-myopic eyes (>7.00 D) were prospectively evaluated pre- and postoperatively for the presence of newly recognized entoptic phenomena (**vitreous floaters**, light flashes, or both), and for vitreoretinal changes using indirect depressed fundus examination, a +90 D preset lens, Goldman three-mirror contact lens, and kinetic ultrasound (KU) before and after bilateral LASIK. Patients with previous partial or total posterior vitreous cortex detachment (PVD) were excluded. Experimentally, groups of adult pigs underwent KU, retinal fluorescein angiography (FA), and electroretinography (ERG) before and after applying the microkeratome suction ring, for 30 s. **Results:** Clinically, 8% (4 eyes) had positive perception of postoperative **vitreous floaters** in the low myopia group, and 32% (16 eyes) in the high myopia group. Postoperative light flashes were noted only in the high myopia group, in 12% of cases. Partial or total posterior vitreous cortex detachment was detected by biomicroscopy in 2% (1 eye) of the low and in 10% (5 eyes) of the high myopia group and by KU in 4% (2 eyes) of the low and in 24% (12 eyes) of the high myopia group. Experimentally, 2 pig eyes out of 12 developed partial PVD by KU, immediately after microkeratome suction ring application. All pig, eyes showed significantly diminished ERG amplitudes during and immediately after suction ring application. No FA changes or delays in retinal circulation time were noted during or immediately after removal of the suction ring. **Conclusions:** Vitreoretinal alterations after LASIK were demonstrated clinically mainly by KU in high myopes. Experimentally, PVD were also demonstrated. Diminished ERG recordings with normal retinal circulation following suction ring application may suggest some transient choroidal circulation abnormalities.

Title: **Ocular Manifestations of Central Nervous System Lymphoma**

Author(s): Buggage, R. R.; Chan, C. C.; Nussenblatt, R. B.
Journal: Current Opinion in Oncology, 2001 May;13(3):137-42

Language: English

Abstract: Primary intraocular lymphoma (PIOL) is a variant of primary central nervous system lymphoma in which lymphoma cells are initially present only in the eyes without evidence of disease in the brain or cerebrospinal fluid. Patients with PIOL are typically older adults who present with blurred vision and floaters. The ophthalmic examination characteristically shows a cellular infiltrate in the vitreous with or without the presence of subretinal infiltrates. Diagnostic evaluation for PIOL includes neuroimaging, cytologic examination of the cerebrospinal fluid, and

a diagnostic vitrectomy with special handling of the vitreous specimen, if the former is nondiagnostic. Molecular and cytokine analyses are useful adjuncts to cytology for the diagnosis of PIOL. Recent molecular studies demonstrating viral DNA in the ocular lymphoma cells suggest a role for infectious agents in the pathogenesis of PIOL. To date, the best mode for treatment of PIOL or recurrent primary central nervous system lymphoma involving only the eyes remains undefined.

Title: **Eligibility Criteria for ND-YAG Laser Treatment of highly Symptomatic Vitreous Floaters**

Author(s): Vandorselaer, T.; Van De Velde, F.; Tassignon, M. J.

Journal: Bulletin de la Soci t  Belge d'Ophtalmologie, 280, 2001, S. 15-19

Language: English

Abstract: Ten eyes of nine patients were treated for very disturbing **vitreous floaters** with the technique of Nd-YAG laser vitreolysis. The Scanning Laser Ophthalmoscope (SLO) was used to objectivate the position, the size and the motility of the **vitreous floaters** with respect to the patient's visual axis, which can be precisely located with the SLO. With this technique it was possible to define more precisely some eligibility criteria for Nd-YAG laser treatment of **vitreous floaters** and to classify the **vitreous floaters** in ill-suspended and well-suspended **floaters** in the vitreous body, the well-suspended **floaters** responding better to treatment compared to the ill-suspended **vitreous floaters**. The treatment was performed using the Q-Switched Nd-YAG Laser type Nanolas 15S of Alcon.

Title: **Pars Plana Vitrectomy for persistent, visually significant Vitreous Opacities**

Author(s): Schiff, W. M.; Chang, S.; Mandava, N.; Barile, G. R.

Journal: Retina – The Journal of Retinal and Vitreous Diseases 20 (6): 591-596 2000

Language: English

Abstract: **Purpose:** To evaluate the role of vitrectomy in patients with persistent, visually disabling vitreous opacities.

Methods: Six consecutive eyes of five men (age 58-66 years) with pseudophakia or aphakia and vitreous opacities resulting in visual symptoms for more than 1 year that underwent vitrectomy were retrospectively reviewed. Postoperative questionnaires regarding functional performance and quality-of-life issues were completed by the participants to assess subjective patient satisfaction.

Results: Postoperative Snellen visual acuity was improved or equal to preoperative acuity in all cases (8-44 month follow-up) and there were no surgical complications. All patients expressed high satisfaction with overall visual function. Analysis of the National Eye Institute Visual Function Questionnaire-39 indicated that general vision, near activities, distance activities, mental health, role difficulties, and peripheral vision were significantly improved ($P < 0.05$) following surgical intervention.

Conclusions: Vitrectomy may be indicated in a select group of patients with visually disabling **vitreous floaters**, although objective assessment of visual dysfunction from **vitreous floaters** requires further evaluation.

Title: **Slit-lamp Perimetry: A new Diagnostic Technique**

Author(s): Mojon, D. S.

Journal: Klinische Monatsbl tter f r Augenheilkunde 216 (5): 327-329 May 2000

Language: German

Abstract: **Aim of the Study:** To test a novel diagnostic technique, slit-lamp perimetry. **Patients and Methods:** Slit-lamp perimetry is performed during a normal slit-lamp examination by projecting a small, round light mark onto the fundus. The light mark is moved and consecutively the patient is asked, if the light moved towards or away from the scotoma. Using the patients feedback the light mark can be placed exactly onto the retinal region corresponding to the scotoma. This method was tested on a patient with a microinfarction of a small retinal arteriole and on two patients with small preretinal parapapillary **vitreous floaters**. **Results:** Slit-lamp perimetry correctly localized preretinal **vitreous floaters** and a fresh cotton wool spot missed on an dilated fundus examination. **Conclusion:** Slit-lamp perimetry is a novel rapid diagnostic technique to localize retinal and preretinal pathologies reponsible for scotomas.

Title: **Predictive Value of Floaters in the Diagnosis of Posterior Vitreous Detachment**

Author(s): Kakehashi, A.; Inoda S.; Shimizu, Y.; Makino, S.; Shimizu H.

Journal: American Journal of Ophthalmology 125 (1): 113-115 Jan 1998

Language: English

Abstract: **Purpose:** To evaluate Weiss ring and **floaters** as indexes of posterior vitreous detachment.

Methods: Using biomicroscopy and indirect ophthalmoscopy, we examined the posterior vitreous in 200 consecutive eyes with posterior vitreous detachment.

Results: In 200 eyes with posterior vitreous detachment, biomicroscopy disclosed complete, in complete, and no Weiss ring in 102 (51%), 72 (36%), and 26 (13%) eyes, respectively. Indirect ophthalmoscopy showed the glial ring in 58 (56.9%) and 16 (22.2%) of the eyes, with a complete (102 eyes) and incomplete (72 eyes) Weiss ring, respectively. Although the incidence of **floaters** was significantly correlated with the presence of the glial ring ($P = .0014$), 60 (58.8%) and 49 (68.1%) of the eyes with a complete (102 eyes) and incomplete (72 eyes) glial ring, respectively, had no **floaters**.

Conclusion: Detecting the detached posterior vitreous cortex by biomicroscopy is essential regardless of the presence of Weiss ring or **floaters**.

Title: **Use of Nd:YAG Laser in Treatment of Vitreous Floaters**

Author(s): Toczolowski, J.; Katski, W.

Journal: Klinika Oczna, 1998, 100(3):155-7

Language: Polish

Abstract: The aim of the paper is to present results obtained after photodisruption of non-resorptive **vitreous floaters** by means of the Nd:YAG laser. **MATERIAL AND METHODS:** 10 patients were observed. The energy of a single exposition ranged from 3 mJ to 7 mJ, and the total energy needed to break the **floaters** from 56 mJ to 216 mJ. In all the patients the **floaters** got disrupted and were moving towards the periphery of the vitreous humour. **RESULTS:** Only 2 patients reported persistence of tiny clouds in the visual field. No complications were observed. It seems that the use of Nd:YAG laser can, in selected cases, be an effective method of treating **floaters** of the vitreous humour.

Title: **Managing Ocular Flashes and Floaters**

Author(s): Duguid, G.
Journal: The Practitioner, 1998 Apr, 242(1585):302-4
Language: English

Title: **Congenital Retinal MacrovesSEL**

Author(s): Spraul, C. W.; Lang, G. E.

Journal: Klinische Monatsblätter für Augenheilkunde 211 (6): 406-407 Dec 1997

Language: German

Abstract: **Patient:** A 18-year-old male was evaluated for **vitreous floaters**. Examination exhibited a large, aberrant retinal venule in the inferior temporal macula. The venule crossed the horizontal raphe. Only slight retinal pigment epithelial changes were present. Fluorescein angiography transiting revealed no early filling and no evidence of arteriovenous anastomoses. The diagnosis of a congenital retinal macrovesSEL was made.

Conclusion: This condition is a rare, usually unilateral retinal vascular anomaly which may be associated with arteriovenous anastomoses. Areas of capillary nonperfusion, foveal cysts, and associated vitreous hemorrhage have been described. The condition is, however, in most cases ophthalmoscopically stable, and the visual prognosis is excellent.

Title: **Flashes, Floaters Retinal Tears and Retinal Detachment**

Author(s): Drouilhet, J. H.

Journal: Hawaii Medical Journal, 1997 Sep, 56(9):238-9

Language: English

Title: **Optical Explanation of the gradual Disappearance of Flying Dots in Posterior Vitreous Detachment**

Author(s): Serpetopoulos, C.

Journal: Survey of Ophthalmology 42 (1): 92-94 Jul-Aug 1997

Language: English

Abstract: It is well-known that **flying dots (muscae volitantes)** in posterior vitreous detachment gradually disappear. An analogy for this phenomenon is the optical effect of planets casting conic shadows as they are lighted by the sun (in this case the pupil serves as the light Zeitschrift) and these shadows shrink as the planets near the sun. When the opacities move forward in the vitreous cavity, their shadows are not long enough to reach the retina, so the flying dots disappear. They can also disappear when their shadows fall on the optic disk or when they are mixed with the random pattern of bright and dark areas of the retinal image in ordinary conditions. Pupil dilatation makes the conoid shadow shorter; thus, the flying dots become fainter. In advanced cataract, stray light makes the retinal image less sharp, reducing the perception of dots. Replacement of the opacified lens by an intraocular lens restores the sharpness of the retinal image, because the light entering the eye becomes less diffuse, making the flying dots more obvious. The same reasoning explains similar phenomena in aphakia and large ametropias with and without corrective spectacles, as well as with opacities of any etiology in the vitreous.

Title: **Flashes and Floaters as Predictors of Vitreoretinal Pathology**

Author(s): Kirwan, J. F.; Aylward, G.W.; Downie, J.; Thompson, G.M.
Journal: Eye (London, England), 1997, 11 (Pt 3):431-2
Language: English

Title: **Vitreous cells as an indicator of retinal tears in asymptomatic or not recently symptomatic eyes.**

Author(s): Edwin E. Boldrey
Journal: American Journal of Ophthalmology, Vol. 123, No. 2, S. 263, Feb 1997
Language: English

Title: **Floaters after Cataract Surgery**

Author(s): Chignell, A.
Journal: Journal of the Royal Society of Medicine 89 (6): 332-332 Jun 1996
Language: English

Title: **Flashes and Floaters as Predictors of Vitreoretinal Pathology: Is Follow-up Necessary for Posterior Vitreous Detachment?**

Author(s): Dayan, M. R.; Jayamanne, D. G. R.; Andrews, R. M.; Griffiths, P. G.
Journal: Eye 10: 456-458 Part 4, 1996
Language: English

Abstract: **Purpose.** The aim of the study was to determine whether patients presenting with an isolated posterior vitreous detachment require follow-up to identify retinal breaks not apparent at presentation and whether some histories are more predictive of associated serious posterior segment pathology.
Methods. The notes of 295 patients presenting to eye casualty with flashes and/or floaters were reviewed.
Results. One hundred and eighty-nine patients (64%) had isolated posterior vitreous detachments, 49 (16.6%) had retinal detachments and 31 (10.5%) had flat retinal tears. Three new breaks (3.3% of all tears found, 1.9% of review appointments) were identified only at follow-up. Although a subjective reduction in vision and a history of less than 6 weeks' duration were strongly predictive of retinal breaks, the large group of patients presenting with floaters alone (124/295, 42%) still harboured a significant proportion (26.7%) of the retinal breaks.
Conclusions. A follow-up visit for patients with an isolated posterior vitreous detachment can be justified to detect the small percentage of asymptomatic retinal breaks. Although a subjective reduction of vision is the symptom most predictive of serious posterior segment pathology, it would be unsafe to identify particular subgroups of patients alone for careful examination.

Title: **Relationship between Floaters, Light-Flashes or both, and Complications of Posterior Vitreous Detachment**

Author(s): Boldrey, E. E.
Journal: American Journal of Ophthalmology 118 (5): 682-682 Nov 15 1994
Language: English

Title: **Relationship between Floaters, Light-Flashes or both, and Complications of Posterior Vitreous Detachment – Reply**

Author(s): Hikichi, T.; Trempe, C. L.
Journal: American Journal of Ophthalmology 118 (5): 682-683 Nov 15 1994
Language: English

Title: **Relationship between Floaters, Light-Flashes or both, and Complications of Posterior Vitreous Detachment**

Author(s): Lightman, D. A.; Brod, R. D.
Journal: American Journal of Ophthalmology 118 (5): 683-684 Nov 15 1994
Language: English

Title: **Relationship between Floaters, Light-Flashes or both, and Complications of Posterior Vitreous Detachment – Reply**

Author(s): Hikichi, T.; Trempe, C. L.
Journal: American Journal of Ophthalmology 118 (5): 684-684 Nov 15 1994
Language: English

Title: **Natural-History of Posterior Vitreous Detachment with Early Management as the Premier Line of Defense against Retinal-Detachment**

Author(s): Byer, N. E.
Journal: Ophthalmology 101 (9): 1503-1513 Sep 1994
Language: English

Abstract: **Purpose:** This study was designed to elucidate various aspects of the natural history of posterior vitreous detachment (PVD), in particular the relation between symptomatology and prognosis as it relates to management of patients with the earliest symptoms of PVD.

Methods: A prospective study of 350 consecutive patients with PVD was performed, excluding all patients referred from an ophthalmologist, those with symptoms of more than 3 months in duration, and those with a history of ocular trauma, except for cataract surgery. Aphakia was present in 21 eyes, and 50 patients were bilaterally involved.

Results: Of 163 patients who had one to two **floaters** as their presenting symptom, with or without tight flashes, a retinal tear developed in 12 (7.3%). Of 31 phakic eyes with secondary retinal tears on initial examination, 9 (29%) had one to two **floaters** and light flashes as the only symptoms. Of eight phakic eyes that initially, or eventually, had a retinal detachment, three (37%) had an interval of 2 1/2 to 3 weeks before visual field loss, during which they noticed only one to three visual **floaters** plus light flashes as their only symptoms. This early stage in which symptoms are detectable is crucial in terms of providing an opportunity for early treatment that might prevent retinal detachments.

Conclusions: The prompt and conscientious vitreoretinal examination of each patient older than 45 years of age who experiences **vitreous floaters**, even though limited to one or two, should be undertaken without delay. This practice, combined with expeditious treatment of any secondary retinal tears, provides the most effective known means of preventing rhegmatogenous retinal detachment, and currently it appears to be neglected. A national public educational effort should be pursued to publicize the importance of these symptoms.

Title: **Relationship between Floaters, Light-Flashes or both, and Complications of Posterior Vitreous Detachment**

Author(s): Hikichi, T.; Trempe, C. L.

Journal: American Journal of Ophthalmology 117 (5): 593-598 May 15 1994

Language: English

Abstract: We examined biomicroscopically the vitreous and retinal conditions of 902 consecutive symptomatic eyes (785 patients) to ascertain the relationship between **floaters**, light flashes, or both, and complications of posterior vitreous detachment. Of 785 patients, 785 symptomatic eyes were divided as follows: group 1, 342 eyes with **floaters** alone; group 2, 240 eyes with **floaters** and light flashes; and group 3, 203 eyes with light flashes alone. We also studied 636 asymptomatic fellow eyes. The prevalence of posterior vitreous detachment was significantly higher in groups 1 (138 of 342, 40%), 2 (214 of 240, 89%), and 3 (137 of 203, 67%) than in the asymptomatic eyes (127 of 636, 20%), in group 2 than in groups 1 and 3, and in group 3 than in group 1 ($P = .01$). The prevalence of retinal breaks in eyes with posterior vitreous detachment was 5% (seven of 138), 13% (27 of 214), 12% (16 of 137), and 4% (five of 127) in groups 1, 2, 3, and the asymptomatic eyes, respectively; the prevalence was significantly higher in groups 2 and 3 than in asymptomatic eyes ($P = .02$ and $P = .04$) and group 1 ($P = .04$ and $P = .05$). The prevalence of vitreous hemorrhage in eyes with retinal breaks was 71% (five of seven); 70% (19 of 27), and 6% (one of 16) in groups 1, 2, and 3, respectively. Of 117 patients with bilateral symptoms, 105 (90%) had the same symptoms and 104 (89%) had the same vitreoretinal relationship, bilaterally. Our **results** show that the presence of both **floaters** and light flashes carries the highest risk of development: of posterior vitreous detachment and retinal breaks among the three symptoms, and that vitreous hemorrhage is a good indicator of retinal breaks in eyes with **floaters**.

Title: **Laser treatment removes 'floaters' of eye patients**

Author(s): Janice Yu

Journal: The Free China Journal, v10; n61; p4, 8. Oktober 1993

Language: English

Title: **Treatment of Vitreous Floaters with Neodymium-YAG Laser**

Author(s): Tsai, W. F.; Chen, Y. C.; Su, C. Y.

Journal: British Journal of Ophthalmology 77 (8): 485-488 Aug 1993

Language: English

Abstract: Fifteen cases of **vitreous floaters** with serious psychological reactions have been collected. By using a direct ophthalmoscope, causal vitreous opacities were detected. The opacities were photodisrupted with neodymium YAG laser, using energy levels of 5 to 7.1 mJ and total energy 71 to 742.0 mJ. Symptoms completely disappeared immediately after treatment in all 15 cases. There were no intraoperative or postoperative complications noted during a follow up period of at least 1 year. To our knowledge, the use of neodymium YAG laser to treat **vitreous floaters** has not been previously described. Our initial experience indicates that the treatment is simple, safe, and effective.

Title: **Patients with Asteroid Hyalosis and Visible Floaters**

Author(s): Noda, S.; Hayasaka, S.; Setogawa, T.

Journal: Japanese Journal of Ophthalmology 37 (4): 452-455 1993
Language: English
Abstract: Four patients with asteroid hyalosis who complained of seeing multiple spherical **floaters** were examined. Except for multiple brilliant particles in the gelatinous vitreous, no abnormalities were found by ophthalmoscopic examination. Asteroid bodies usually cause no visual symptoms in most patients. Therefore it is unusual that our patients with asteroid hyalosis perceived **floaters**. We concluded that it was because there had been no vitreous detachment so that the asteroid particles were located close enough to the retina to be perceived as **floaters**.

Title: **Retinal Detachment**
Author(s): Messmer, D. E.
Journal: Schweizerische Rundschau für Medizin Praxis = Revue suisse de médecine Praxis, 1992 May 5;81(19):622-5
Language: German
Abstract: Retinal detachment can be successfully treated today in over 90% of patients. For a good functional prognosis early diagnosis and appropriate initial treatment remain crucial. Symptoms of incipient retinal detachment are those of acute posterior detachment of the vitreous body with "**mouches volantes**" and/or photopsia. At risk and thus to be examined urgently if such symptoms occur are patients with previous history of detachment, severe myopia, aphakia or pseudophakia. Prophylactic treatment of degenerative retinal lesions that can be interpreted as precursors of detachment is highly controversial and only indicated in patients with particular risk factors. Research in surgical treatment of retinal detachment focuses on improvement of functional result by improved instruments and standardized operative techniques.

Title: **When are Simple Flashes and Floaters Ocular Emergencies**
Author(s): Diamond, J. P.
Journal: Eye 6: 102-104 Part 1, 1992
Language: English
Abstract: One hundred and seventy patients presented to the Bristol Eye Hospital casualty department with flashes and/or **floaters** during a six month prospective study. A sight-threatening condition was found in 41 patients (24.1%), the most important of which was a retinal break (16.5%).
Although there were no specific symptoms which could be correlated to an increased incidence of retinal breaks, those patients who complained of isolated unioocular **floaters** had an insignificant incidence of breakage, when compared to asymptomatic fellow eyes.
Thus while the majority of patients with flashes and **floaters** do merit an urgent ophthalmological opinion, those who complain of a single, isolated **floater** can safely be reviewed as routine outpatients.

Title: **Ophthalmologic Emergencies Represented by Phosphenes and Muscae Volitantes**
Author(s): Popescu, M.P.; Alexandra, D.; Poepescu, M.
Journal: Revista de chirurgie, oncologie, radiologie, o. r. l., oftalmologie, stomatologie. Oftalmologie. 1987 Oct-Dec;31(4):257-60.
Language: Romanian

Title: Phosphenes and Floaters as Emergencies in Ophthalmology
Author(s): Berthe-Bonnet, S.; Comhaire-Poutchinian, Y.
Journal: Bulletin de la Societé Belge d'Ophtalmologie, 1986; 217:123-30
Language: French

Title: The Vitreous and Vitreous Floaters – Understanding a Common Visual Complaint
Author(s): Laibovitz, R. A.
Journal: P ostgraduate Medicine 75 (5): 64-& 1984
Language: English

Title: Risk of Retinal Tears in Patients with Vitreous Floaters
Author(s): Boldrey, E. E.
Journal: American Jorunal of Ophthalmology 96 (6): 783-787 1983
Language: English

Title: Vitreous Floaters
Author(s): Murakami, K.; Jalkh, A. E.; Avila, M. P.; Trempe, C. L.; Schepens, C. L.
Journal: Ophthalmology 90 (11): 1271-1276 1983
Language: English

Title: Vitreous Floaters in a Radiologist
Author(s): Hauch, T. L.
Journal: Jama-Journal of the American Medical Association 250 (7): 962-962 1983
Language: English

Title: Vitreous Floaters in a Radiologist
Author(s): Belmont, O.
Journal: Jama-Journal of the American Medical Association 250 (7): 962-963 1983
Language: English

Title: Floaters – Visual Artifacts that Result from Blood-Cells in Front of the Retina
Author(s): Walker, J.
Journal: Scientific American 246 (4): 150-& 1982
Language: English

Title: Optical Study on Muscae Volitantes
Author(s): Yaoeda H.
Journal: Nippon Ganka Gakkai Zasshi. 1981;85(4):300-5.
Language: Japanese

Title: **Therapy for Vitreous Floaters**
Author(s): Tolentino, F. I.
Journal: Jama-Journal of the American Medical Association 237 (24): 2645-2646 1977
Language: English

Title : **Symptomatic Floaters as a Clue to Vitreoretinal Disease**
Author(s) : Morse, P. H.
Zeitschrift : Annals of Ophthalmology, 1975 Jun;7(6):865-8.
Sprache : English
Inhalt : One hundred consecutive patients with symptomatic floaters without previous ocular trauma or surgery are analyzed as to the underlying cause. The most common findings were posterior vitreous detachment with and without vitreous hemorrhage, vitreous syneresis with collagen fibril clumping, diabetic retinopathy with vitreous hemorrhage, retinal tears without retinal separation, and retinal separation. Significant vitreoretinal disease occurred in 36% of the patients.

Title: **Mouches-Volantes (Muscae-Volitantes)**
Author(s): Heimann, K.
Journal: Germane Medizinische Wochenschrift 99 (45): 2318-2318 1974
Language: German

Title: **Minor Scalp Surgery and Vitreous Floaters – no Relationship**
Author(s): Sever, R. J.
Journal: Journal of the American Medical Association 222 (5): 589-& 1972
Language: English

Title: **Minor Scalp Surgery and Vitreous Floaters – no Relationship**
Author(s): Orentrei, N.
Journal: Journal of the American Medical Association 222 (5): 589-& 1972
Language: English

Title: **Muscae Volitantes**
Author(s): Horns, R. C.
Journal: Minnesota Medicine 1972 Apr; 55(4):344
Language: English

Title: **Vitreous Floaters and Flashing Lights. Vitreous Collapse and Sequelae**
Author(s): Robertson, D. M.
Journal: Minnesota Medicine, 1972 Apr;55(4):314-7
Language: English

Title: **Vitreous Opacities or Floaters**
Author(s): Sever, R. J.
Journal: Journal of the American Medical Association 207 (8): 1524-& 1969
Language: English

Title: Weitere Studien über die entoptischen Erscheinungen (I). Eine dermatologische Betrachtung

Author(s): Matsumoto, S

Journal: Bulletin of the Osaka Medical School. Supplement XIII, 1968

Language: German

Title: Muscae Volitantes

Author(s): Friedman, E.

Journal: Jama-Journal of the American Medical Association 188 (13): 1165-& 1964

Language: English

Title: Floaters in Eye – They are Spots that most People Occasionally see before their Eyes – Authors propose that Floaters are usually Diffraction Patterns cast on Retina by Red Blood Cells

Author(s): White, H. E.; Levatin, P.

Journal: Scientific American 206 (6): 119-& 1962

Language: English

Title: Nature of Aqueous Floaters due to Sympathomimetic Mydriatics

Author(s): Mitsui, Y.; Takagi, Y.

Journal: Archives of Ophthalmology 65 (5): 626-& 1961

Language: English

Title: Vitreous Floaters

Author(s): Breakey, A. S.

Journal: Jama-Journal of the American Medical Association 175 (1): 73-& 1961

Language: English

Title: Muscae volantes (mouches volantes)

Author(s): Ten Doesschate

Journal: Ned Tijdschr Geneeskd. 1960 Nov 19; 104:2229-31

Language: Dutch

Title: Aqueous Floaters in the Differential Diagnosis of Papillitis and Papilledema

Author(s): Chamlin, M.

Journal: Archives of Ophthalmology 61 (1): 37-44 1959

Language: English

Title: Clinical Significance of Muscae Volitantes

Author(s): Raynaud, G.

Journal: Revue du Corps de Sante Militaire, 1958 Dec; 14(4):523-6

Language: French

Title: **A Surgical Procedure for the Relief of Vitreous Opacities (Floaters)**
Author(s): Blumenthal, C. J.
Journal: South African medical journal = Suid-Afrikaanse tydskrif vir geneeskunde, 1958
Mar 15; 32(11):296-8.
Language: n/a

Title: **Use of Iodo-Niacin – for Retinal or Vitreous Hemorrhages and Vitreous Floaters**
Author(s): Abrahamson, I. A.
Journal: American Journal of Ophthalmology 42 (5): 771-772 1956
Language: English

Title: **Mouches Volantes**
Author(s): Müller, J. K.
Journal: Germane Medizinische Wochenschrift 79 (3): 123-123 1954
Language: German

Title: **Muscae Volitantes**
Author(s): n/a
Journal: British Medical Journal 1 (4801): 115-115 1953
Language: English

Title: **On the Structure of the Vitreous and the Muscae Volitantes**
Author(s): Best, F.
Journal: Klinische Monatsblätter für Augenheilkunde, 1951;119(2):153-61.
Language: German

Medicine history

Monographs and anthologies

Title: Purkinje's Vision. The Dawning of Neuroscience
Author(s): Wade, Nicolas J. / Brozek, Joseph
Publisher: New Jersey: Lawrence Erlbaum Associates, Inc., 2001
Language: English

Title: The Medical Legacy of Moses Maimonides
Author(s): Rosner, Fred
Publisher: Hoboken: KTAV Publishing House Inc., 1998
Language: English

Title: 1042-1136: Discours sur l'oeil
Author(s): Gurgani, Ismail Ibn Hasan
Publisher: Téhéran: Institut Français de Recherche en Iran, 1998
Language: French

Title: Brewster and Wheatstone on Vision
Author(s): Wade, Nicholas J. (Ed.)
Publisher: London/NY: Academic Press Inc., 1983
Language: English

Title: Galen on Sense Perception
Author(s): Siegel, R. E.
Publisher: Karger: Basel-Bew York, 1970
Language: English

Title: Die Augenheilkunde des Ibn Sina
Author(s): Hirschberg, J.; Lippert, J.
Publisher: Veit u. Co: Leipzig, 1902
Language: German

Articles

Title: Muscae volitantes – von frühen Beobachtungen zu Purkinjes Erklärung
Author(s): Plange, H.
Journal: Gesnerus 47, 1990, S. 31-44
Language: German

Sources (until 1950)

Monographs and anthologies

Title: Commentatio de examine physiologico organi visus et systematis cutanei
Author(s): Purkinje, J. E.
Publisher: Dr. W. Junk: S'Gravenhage, 1937
Language: Latin

Title: Lupenspiegeluntersuchungen auf Glaskörpertrübungen bei verschiedenen Lichtquellen mit besonderer Berücksichtigung der physiologischen, senilen Glaskörpertrübungen
Author(s): Frei, Eugen
Publisher: Zürich, 1925
Language: German

Title: Untersuchungen über das Vorkommen seniler Glaskörpertrübungen an 200 Augen gesunder Personen
Author(s): Z'Brun, Theophil
Publisher: Berlin: Springer, 1921
Language: German

Title: The Cure of Imperfect Sight by Treatment without Glasses
Author(s): Bates, W. H.
Publisher: New York, 1920
Language: English

Title: Handbuch der Physiologischen Optik, Bd. 1
Author(s): Helmholtz, H. v.
Publisher: Hamburg/Leipzig: Verlag von Leopold Voss, 1909
Language: German

Title: 200 Expériences de Physiologie Amusante
Author(s): Peres, A.
Publisher: Paris: Gedalge, 1890
Language: French

Title: Die Anomalien der Refraction und Accommodation des Auges
Author(s): Donders, F. C.
Publisher: Wien: Wilhelm Braumüller, 1866
Language: German

Title: Oevres complètes
Author(s): Hippokrates / Littré, E. (Ed.)

Publisher: Baillière: Paris, 1839-61
Language: French /Greek

Title: **Opera Omnia. Greek und Latin (20 Bde.)**
Author(s): Galen
Publisher: Cnobloch: Leipzig, 1821-33
Language: Latin / Greek

Title: **Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht**
Author(s): Purkinje, Johann
Publisher: Fr. Vetterl Edlen von Eildenbrunn, Prag 1819
Language: German

Title: **Lehre der Augenkrankheiten (2 Bde.)**
Author(s): Beer, G. J.
Publisher: Camesina; Heubner & Volke: Wien 1813/17
Language: German

Title: **Elementa physiologiae corporis humani, Bd. 5**
Author(s): Haller, A. von
Publisher: Lausanne, 1763
Language: Latin

Title: **Adversaria anatomica omnia**
Author(s): Morgagni, G. B.
Publisher: Lugduni, 1723
Language: Latin

Title: **Cursus seu mundus mathematicus (Bd. I-III)**
Author(s): Dechales, C. F. M.
Publisher: Lugduni, 1674
Language: Latin

Title: **Ophthalmodouleia, das ist Augendienst**
Author(s): Bartisch, G.
Publisher: Stöckel: Dresden, 1583
Language: n/a

Articles

Title: **Some neurological Aspects of the Hunger-winter in Holland**
Author(s): Meyjes, F. E.

Journal: Folia-Psychiatrica,-Neurologica,-et-Neurochirurgica-Neerlandica. 1948; No. 3/4: 8
Language: English
Abstract: The 7-month famine which affected in the winter of 1944-1945 nearly 5 million Dutch, already underfed, represented a mass experiment on the effects of starvation. It did not give rise to major neuropathies, in contrast to the experiences made in civil and military prison camps in the Dutch Indies and elsewhere in the Far East. In Holland the neurologists saw only minor symptoms, such as paresthesias and tendency toward cramps. There was some diminution of tendon reflexes but the phenomenon was not general. On examination, the senses were normal but there were complaints of blurred vision, **mouches volantes** weakness of accommodation, and decreased auditory acuity. Diminution of libido and disorders of menstruation were widespread. Almost everybody was easily tired. Many people complained of polyuria and nycturia.

Title: **Muscae Volitantes or Floating Specks**
Author(s): Agarwal, R. S.
Journal: Indian-Medical-Record. 1947; 67: 85-89
Language: English
Abstract: **Muscae volitantes** are supposed to be due to the presence of many floating opacities in the vitreous humor. They are not due to errors of refraction nor are they due to disturbances in the circulatory system; they cannot be seen with the ophthalmoscope or retinoscope. The author believes these floating specks are wholly functional and not organic in origin. He attributes them to eyestrain and mental strain and not to opacities in vitreous humor. He finds frequently in his practice that the strain causing floating specks can be easily relieved with the aid of central fixation exercises as devised by Dr. W. H. Bates of America.

Title: **Vision - Peripheral, foveal, etc.**
Author(s): Ferree, C. E.
Journal: Psychological-Bulletin, Mar 1911; Vol 8 (3): 89-93
Language: English
Abstract: Reviews 4 studies on different kinds of vision (1910). The topics included localization of diasclerotic light, secondary visual phenomenon resulting from a stimulation of the macular region, sensitivity of the eye to variations of wavelength in the yellow region of the spectrum, and appearance of **mouches volantes** and its relation to neurasthenia. The investigations on the sensitivity of the eye to variations of wave-length have been marked with some controversy regarding the sensitivity of the apparatus used.

Title: **Mouches Volantes physiologiques et phénomènes entoptiques**
Author(s): Scrinii
Journal: Report Société de Psychologie, Journal de Psychologie normal et pathologique, 1910, 7, 66-80
Language: French

Title: **Etwas über die Mouches volantes**
Author(s): Meister, A. L. F.
Journal: Göttingisches Magazin der Wissenschaften und Literatur, 2, 1780, S. 127-132

Language: German

Title: **New Experiments on the Ocular Spectra of Light and Colours**

Author(s): Robert Waring Darwin

Journal: Philosophical Transactions of the Royal Society of London, Vol. 76 (1786), 313-348

Language: English