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An Alternative Non-Surgical Cataract Treatment Method in Medicine and Ophthalmology; "Medi-Ultrasound Eye-Tronic Method"

Emin Taner ELMAS[1], Yavuz ORUÇ[2]

[1]Assistant Professor Dr., Vocational School of Higher Education for Technical Sciences, Division of Motor Vehicles and Transportation Technologies, Department of Automotive Technology, Iğdır University, Turkey & Graduate School of Natural and Applied Sciences - Major Science Department of Bioengineering and Bio-Sciences, Iğdır University, Turkey. **ORCID ID:** https://orcid.org/0000-0002-7290-2308

[2]Assoc. Prof. Dr., Specialist Doctor, MD, (Doçent, Uzman Tıp Doktoru), Ophthalmology Specialist, Ağrı İbrahim Çeçen Üniversitesi Göz Hastalıkları Anabilim Dalı,, Ağrı, Türkiye. **ORCID ID:** https://orcid.org/0000-0002-3321-3665

Abstract

This article is a study which introduces an alternative medical treatment method to cataract surgery. This is a non-surgical cataract treatment method in medicine and ophthalmology, so it will be called as ***"Medi-Ultrasound Eye-Tronic Method" or "Applied Medi-Ultrasound Eye-Tronic Method"***

This ***"Medi-Ultrasound Eye-Tronic Method"*** *is not a treatment that has been applied so far, it was invented, first thought and designed by the author of this article, Emin Taner ELMAS, and can be put into practice with step-by-step development stages.*

As it is known, cataracts occur when proteins in the lens of your eye clump together and make it difficult for light to pass through clearly, it may be possible to consider to treat the cataract by breaking and dissolving the collected proteins in the lens of the eye.

As I have explained in my article entitled "Medical Treatment Method of Alzheimer's Disease & Parkinson's Disease by the Help of the Natural Musical Sound of Nây-ı Şerîf, Instrument of Ney (Ney: Turkish Reed Flute, Nay)"; the frequency rates of the sound of Ney instrument can be increased to very high values with the use of special amplifier equipment, and elimination of the impermeable layer in the blood brain barrier can be provided.

The sound of the Ney instrument will be a natural primary source and then the frequency of this primary voice will be increased to a high rate, causing a huge sound energy production, so the energy transfer process with a thermodynamical interaction stated by "ELMAS's Theory of Thermodynamics" [1] may partially or totally eliminate the impermeable layer in the blood brain barrier of Alzheimer's patients. ELMAS's Theory of Thermodynamics" introduces a scientific approach for 5th Law of Thermodynamics which is a theoretical application example for medical thermodynamics and is revealed by Emin Taner ELMAS who is the author of this article.

Very similar to the method introduced in my article entitled "Medical Treatment Method of Alzheimer's Disease & Parkinson's Disease by the Help of the Natural Musical Sound of Nây-ı Şerîf, Instrument of Ney (Ney: Turkish Reed Flute, Nay)" it may also be possible to consider to treat the cataract by breaking and dissolving the collected proteins in the lens of the eye. After breaking the collected proteins in the lens of the eye, a special solution or drug can be used additionally in order to dissolve broken cataract.

I have also shown the similar positive medical conclusions in my article entitled "The Effects of Medicine and Music Therapy Practices on Human Health".

As a conclusion; the frequency rates of the sound of Ney instrument can be increased to very high values with use of special amplifier equipment, and elimination of the impermeable layer collected in the lens of the eye, can be provided. The sound of the Ney instrument will be a natural primary source and then the frequency of this primary voice will be increased to a high rate, causing a huge sound energy production, so the energy transfer process with a thermodynamical interaction stated by "ELMAS's Theory of Thermodynamics"[1] may partially or totally eliminate the collected proteins in the lens of the eye.

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This medical treatment method can also be accepted as a kind of music therapy and shall definitely increase the life quality of cataract patients. Preventing or slowing down the formation of cataracts over time by applying music therapy can also be considered as a preventive treatment method. [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58].

Keywords: *"Medi-Ultrasound Eye-Tronic Method"; "Applied Medi-Ultrasound Eye-Tronic Method"; Eye; Cataracts; Cataracts Surgery; Medicine; Ophthalmology; Bioengineering; Health Science; Alzheimer's Disease; Parkinson's Disease; Nây-ı Şerîf; Instrument of Ney; Turkish Reed Flute; Nay; "Saz-Bağlama" instrument; Energy; Thermodynamics; Energy Transfer; ELMAS's Theory of Thermodynamics; Gama Waves; Frequency; Music Therapy; Medical Music; Neuro-Engineering; Neuro-Science, Medical Thermodynamics; Medical Technique; Medical Engineering.*

INTRODUCTION

As a general information; cataracts occur when proteins in the lens of your eye clump together and make it difficult for light to pass through clearly. When the clumps are small, you may not notice the changes very much because they are subtle. Objects may lose sharpness, vision may blur slightly, and distant objects may start to appear blurrier, while near vision temporarily improves in a phenomenon called myopic shift. [18], [19], [20].

Light rays pass through the cornea to the lens, which focuses images on the retina—a layer of light-sensitive tissue at the back of the eye. Light rays first pass through the vitreous humor, a clear, gel-like substance that fills most of the eye. The retina captures images, which are then sent to the brain via the optic nerve. [18], [19], [20].

Usually, cataracts develop gradually in both eyes. However, some people lose more vision in one eye than the other. As the cataract thickens, your vision becomes blurrier. You may have difficulty seeing when driving at night or reading small print and other details. [18], [19], [20].

Over time, however, cataracts can cause colors to fade, making driving at night difficult and making everyday tasks like reading or recognizing faces increasingly difficult. A yellowish haze can color everything you see and contribute to loss of detailed vision. At first, updating your eyeglass prescription may give you clear enough vision. Eventually, however, the blur will worsen and impair your vision to the point where you will need cataract surgery to drive or do most other activities of daily living. [18], [19], [20].

Cataracts are a very common eye condition, especially as we age. Cataracts are more than just a condition that causes blurry vision and makes it difficult to distinguish colors. Untreated cataracts can limit vision to the point of blindness. [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58].

METHOD, FINDINGS AND DISCUSSION

The only definitive treatment for cataracts is surgery. In spite of the fact that the surgery procedure has an outstanding track record of safety and success, it is an operation and of course, it has many important risk factors. In addition, surgery is a tiring process for the patient. After cataract, a new artificial lens is placed in the patient's eye, which can create a constant artificial object sensation in the eye. Due to these drawbacks, cataracts can be treated without surgery. [18], [19], [20].

As it is known, cataracts occur when proteins in the lens of your eye clump together and make it difficult for light to pass through clearly, it may be possible to consider to treat the cataract by breaking and dissolving the collected proteins in the lens of the eye. [18], [19], [20].

As I have explained in my article entitled "Medical Treatment Method of Alzheimer's Disease & Parkinson's Disease by the Help of the Natural Musical Sound of Nây-ı Şerîf, Instrument of Ney (Ney: Turkish Reed Flute, Nay)"; the frequency rates of the sound of Ney instrument can be increased to very high values with the use of special amplifier equipment, and elimination of the impermeable layer in the blood brain barrier can be provided.

The sound of the Ney instrument and/or Saz-Bağlama instrument will be a natural primary source and then the frequency of this primary voice will be increased to a high rate, causing a huge sound energy production, so the energy transfer process with a thermodynamical interaction stated by "ELMAS's Theory of Thermodynamics" [1] may partially or totally eliminate the impermeable layer in the blood brain barrier of Alzheimer's patients. ELMAS's Theory of Thermodynamics" introduces a scientific approach for 5th Law of Thermodynamics which is a theoretical application example for medical thermodynamics and is revealed by Emin Taner ELMAS who is the author of this article. The frequency rate increase operation will be realized by means of an ultrasound machine and related equipment. The formula of $V= \lambda \times f$ is applicable for the ultrasound machine; where "V" is the velocity of the sound wave (m/s), "λ" is the wave length (m) and "f" is the frequency rate (Hz or 1/s). Since the speed of sound will be constant in a certain environment, as the frequency increases, the wavelength of the sound becomes shorter. As the wavelength gets shorter, the energy amount will increase. $f = 1/T$, where "f" is the frequency rate (Hz or 1/s) , "T" is the time (s). $E= h \times f$ known as Planck Formula, where "E" is the energy (joule - j), "h" is the Planck Constant (6,626 06957 ×10-34 j.s), "f" is the frequency rate (Hz or 1/s).

E= h x V/λ , where, E" is the energy (joule - j), "h" is the Planck Constant (6,626 06957 ×10-34 j.s), "V" is the velocity of the sound wave (m/s), "λ" is the wave length (m). The sound has 3 dimensions, the first dimension is "frequency" (Hz), the second dimension is "sound intensity" which is the average energy passing through unit area per unit time (watt/ cm2), the third dimension is the "time" (s). The weakest "sound intensity rate" (Sr) that the human ear can hear is 10-16 watt/ cm2 and this value is accepted as 0 (zero) on the decibel (dB) scale. The formula is given by dB= 10 x log ((So)/Sr) , where "Sr"= 10-16 watt/cm2 , "So" is the "sound intensity rate" or "energy rate" (watt/cm2). If the "energy rate" or "sound intensity" in terms of (j/cm2) and the time period this energy is applied in terms of (s) are known; the decibel (dB) rate can be calculated accordingly [1-27].

This medical treatment method can also be accepted as a kind of music therapy and shall definetely increase the life quality of the patients.

Very similar to the method introduced in my article entitled "Medical Treatment Method of Alzheimer's Disease & Parkinson's Disease by the Help of the Natural Musical Sound of Nây-ı Şerîf, Instrument of Ney (Ney: Turkish Reed Flute, Nay)" it may also be possible to consider to treat the cataract by breaking and dissolving the collected proteins in the lens of the eye. After breaking the collected proteins in the lens of the eye, a special solution or drug can be used additionally in order to dissolve broken cataract.

I have also shown the similar positive medical conclusions in my article entitled "The Effects of Medicine and Music Therapy Practices on Human Health".

This medical treatment method can also be accepted as a kind of music therapy and shall definetely increase the life quality of cataract patients.

Especially the sound of the "Ney" instrument has completely natural tones and is a sound very close to the human voice. The "Saz-Bağlama" instrument, when evaluated together with the "Ney" instrument, has a structure that can provide positive benefits on human health in terms of the sound tones it creates and the frequencies created by these tones. (Definition of sound tone: If the sounds have the same frequency values but the sound sources are different, the perception of the sounds as different is called "tone". In fact, it is also possible to say the color difference between the sounds for "tone".) These instruments mentioned; the "Saz-Bağlama" instrument and the main branches of music performed with the "Ney" instrument, which are Turkish Folk Music (THM), Turkish Art Music (TSM), Classical Turkish Music (KTM) and Turkish Sufi Music (TTM), also have a structural sound tone feature suitable for musicotherapy.

Applications on Human Health", the interaction of the music in question with human health and therefore with the treatment processes is evaluated together with the Turkish Music Maqams and presented as both a preventive and an auxiliary-supportive treatment method. It is aimed that this study will serve as a guide for doctors and other healthcare professionals and provide support to increase the quality of life of patients.

When the Musicotherapy mentioned in this article is evaluated scientifically on the basis of Neuroengineering and Neuroscience; it is based on the principle that the vibration frequencies created by musical tones spread in the form of energy waves and strengthen the signal transmission in the neurons to the extent that it can also be described as the firing of neurons, and hormone activities occur more effectively, thus positively affecting the organs, including the brain. This interaction that occurs with the event in question is also compatible with ELMAS's Theory of Thermodynamics ("ELMAS's Theory of Thermodynamics": A Scientific Approach for 5th Law of Thermodynamics -A Theoretical Application Example for Medical Thermodynamics), which is a scientific approach to the 5th Law of Thermodynamics, [1] and it leads to the conclusion that energy and mass are vectorial quantities, and therefore energy and mass transfers will also occur vectorially.

As a conclusion; by applying the **"Medi-Ultrasound Eye Tronic Method",** the frequency rates of the sound of Ney instrument and/or Saz-Bağlama instrument can be increased to very high values with use of special amplifier equipment, and elimination of the impermeable layer collected in the lens of the eye, can be provided. The sound of the Ney instrument will be a natural primary source and then the frequency of this primary voice will be increased to a high rate, causing a huge sound energy production, so the energy transfer process with a thermodynamical interaction stated by "ELMAS's Theory of Thermodynamics" [1] may partially or totally eliminate the collected proteins in the lens of the eye. [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58].

CONCLUSION

We can say that the mechanism of Alzheimer's and the mechanism of cataract formation in the eye are the same or very similar.

Therefore, I conclude that the sound energy developed for neurological diseases such as Alzheimer's and Parkinson's can also be used to eliminate the protein layer in the same way for the treatment of cataracts in the eye.

Preventing or slowing down the formation of cataracts over time by applying music therapy can also be considered as a preventive treatment method.

After the formation of cataracts, by increasing the frequencies of the sound, sound energy is sent in the form of ultrasonic waves and the impermeable protein layer that causes cataracts is broken and eliminated, and then the broken and distributed protein layer can be dissolved with various drug drops. Therefore, cataracts can be treated without the need for any surgical operation.

It is possible to say that the **"Applied Medi-Ultrasound Eye-Tronic Method"** invented by the author of this article, Emin Taner ELMAS, and explained in this study can be considered as an alternative non-surgical cataract treatment method in medicine and ophthalmology.

[1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58].

BIOGRAPHY OF THE AUTHOR

***Asst. Prof. Dr. Emin Taner ELMAS[1]**

Asst.Prof. Dr. Emin Taner ELMAS is a Mechanical Engineer having degrees of B.Sc., M.Sc., Ph.D., and was born in Sivas in 1974. He completed his doctorate at Ege University, Graduate School of Natural and Applied Sciences, Mechanical Engineering Department, Thermodynamics Science Branch, and his master's degree at Dokuz Eylül University, Mechanical Engineering Department, Energy Science Branch. He also completed his undergraduate education at Hacettepe University, ZEF, Mechanical Engineering Department and graduated from the faculty with honors in 1995 and became a mechanical engineer. He was awarded a non-refundable scholarship by the Turkish Chamber of Mechanical Engineers in his 4th year because he was the most succesful student during his first 3 classes study at the faculty. He graduated from İzmir Atatürk High School in 1991.

Asst. Prof. Dr. ELMAS has completed his military service as a NATO Officer in Bosnia and Herzegovina. He was a "Reserved Officer" as a "2nd Lieutenant" as an "English-Turkish Interpreter". He was also a "Guard Commander" and served in Sarajevo, Camp Butmir within the SFOR task force of NATO. He has been awarded with 2 (two) NATO Medals and Turkish Armed Forces Service Certificate of Pride (Bosnia & Herzegovina).

In addition to his academic duties at universities, he has worked as an engineer and manager in various industrial institutions, organizations and companies; He has served as Construction Site Manager, Project Manager, Management Representative, Quality Manager, Production Manager, Energy Manager, CSO-CTO, CBDO, Factory Manager, Deputy General Manager and General Manager.

Asst. Prof. Dr. Elmas is Department Head and is an Assistant Professor of Automotive Technology at the Department of Motor Vehicles and Transportation Technologies at Vocational School of Higher Education for Technical Sciences at IGDIR UNIVERSITY, Turkey. He is also an Assistant Professor of Bioengineering & BioSciences at the same university. He has nearly 30 years of total experience in academia and in industry.

He has served as a scientific referee and panelist for ASME, TUBITAK and many scientific institutions, organizations and universities, including NASA.

"Mechanical Engineering, Energy Transfer, Thermodynamics, Fluid Mechanics, Heat Transfer, Higher Mathematics, Evaporation, Heat Pipes, Space Sciences, Automotive, Bioengineering, Medical Engineering Applications, Neuroengineering, Medical Technique" are his academic and scientific fields of study; "Heating-Ventilation Air Conditioning Applications, Pressure Vessels, Heat Exchangers, Energy Efficiency, Steam Boilers, Power Plants, Cogeneration, Water Purification, Water Treatment, Industrial Equipment and Machinery, Welding Manufacturing, Sheet Metal Forming, Machining" are his industrial experience fields.

Asst. Prof. Dr. Emin Taner ELMAS is also a musician, saz (baglama) virtuoso player and ney (Nay, Turkish Reed Flute) performer. He has a YouTube Music Channel (Emin Taner ELMAS) which includes some of his sound recordings of him playing the saz-baglama and blowing the ney. He composed the poem written by the great poet Âşık Veysel ŞATIROĞLU under the name of "Raşit Bey" in memory of his father Judge (Hâkim) Raşit ELMAS as "Raşit Bey Türküsü", wrote it down, notated and published it as an academic article and broadcasted this song on his own music channel. He wrote the poems entitled "Canım Babam" and "Geldim Babam" which he wrote also in memory of his father and published in an academic literature journal, and composed instrumental musics for these poems. He also composed an instrumental song called "Annem Annem Türküsü" and gave it to his mother, Lawyer Tuna ELMAS, as a gift on Mother's Day, 11.05.2025. He continues his artistic studies by writing various poetry, lyrics and also realizing musical composition and repertoire works.

Assoc. Prof. Dr. Yavuz Oruç[2]

Assoc. Prof. Dr. Yavuz Oruç is a board-certified ophthalmologist currently serving at the Faculty of Medicine, Ağrı İbrahim Çeçen University, and practicing at Ağrı Training and Research Hospital, Turkey.

His clinical and academic focus lies in advanced cataract surgery, with a particular specialization in the use of trifocal intraocular lenses (IOLs)—commonly referred to as "smart lenses." These lenses provide patients with optimal vision at near, intermediate, and far distances without the need for glasses.

In 2024, Dr. Oruç was named "Physician of the Year" by the Turkish Ministry of Health, recognizing his outstanding contributions to healthcare services in the Eastern Anatolia region.

In May 2025, he performed Ağrı's first trifocal IOL cataract surgery, successfully restoring full-range vision to an elderly patient. This pioneering procedure earned him formal recognition and a commendation from the university leadership.

Dr. Oruç continues to lead innovative surgical practices in ophthalmology, aiming to enhance visual outcomes and quality of life for patients through cutting-edge technologies and evidence-based care.

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