

Quintessential Harmony: Integrating Yoga, Meditation, And Ph-Based Immunity In The Pursuit Of Ultimate Consciousness And Well-Being For Future Pandemic Preparedness” : The Theory Of Survival Of The Flattest.

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Received Date : December 29, 2024

Accepted Date : December 30, 2024

Published Date : January 27, 2025

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Since ancient times ,yoga is a systematic process for accelerating growth of a man in his entirety. With this growth, man learns to live at higher states of consciousness. In **‘Yoga-Vasishtha’**¹ one of the best texts on yoga, the essence of yoga is beautifully portrayed thus, **“manah prashamanopayah yoga ityabhidhiyate”**

– yoga is called a skillful trick to calm down the mind. The basis of yoga is search for happiness externally and internally. The happiness is right within us. Yoga is a state of great steadiness at emotional level, balance of concentration, physical fitness, and detachment at mental level and homeostasis at body level. It integrates the personality by bringing body- mind-soul coordination in a well-balanced way².

It is the state of sat (truth), chit(knowledge), anand (bliss) and prakash (enlightenment). It is in silencing the mind. The rishis and munis(sages) taught yoga practices in vedas and upanishads in ancient times. In the upnishads, we read in sanskrit, ‘know the self by the self,’ **âtmanam âtmanâ pasya**³. If the efforts of yoga practitioners are confined only to securing bodily wellbeing, its benefits would be very much meager or limited as they cannot take you to the path of ultimate truth and reality. By the yoga practices taught in Vedas and Upanishads, one could reach up to the highest region of universal mind. But in the religion of saints, by practicing Surat-Shabda-Yoga and transcendental meditation⁴ exposition on truth, ultimate reality and supreme being(from vantage point of RADHASOAMI faith and system science)⁵, one can reach the highest region of universal consciousness or purely spiritual region, which in other words is attaining the state of ultimate truth and reality. Its real purpose is the spiritual upliftment from one hierarchy of consciousness to another higher level of consciousness. Anhad shabda (un struck sound) is the first manifestation or the expression of the supreme being and this is the creator of the entire creation. In all the scientific expositions on different religions, shabda is treated to be the creator of the universe. Yoga and meditation are now standard therapies of integrated system of medicine in the management of different health problems. As per who’s guidelines for palliative care⁶, they “provide relief from pain and other distressing symptoms; affirm life and regards dying as a normal process; intend neither to hasten or postpone death; integrate the psychological and

The Journal of Clinical Medicine (ISSN 2995-6315)

spiritual aspects of patient care; offer support system to help patients live as actively as possible until death; offer support system to help the family cope during the patients' illness"¹⁰. Human body is a biological, open system and maintains its vital force in the changing environment. Whenever there is difficulty in maintenance of vital force, disease develops. Disease state is cured by many medicinal systems. Esoteric healing^{4,7} (through yoga, meditation and spiritual intercession) is the system where its believers regard supreme being as omnipotent, omnipresent and omniscient. Such persons take ill health as a boon and pray through meditation that he may by his mercy grant health or if god wishes otherwise, they happily accept it so that they keep moving ahead on their spiritual path and thus help in enhancing their consciousness. Modern science in terms of cognitive psychology or neurophysiology has begun to emphasize the role of consciousness but, that is confined only to the physical world. It is only with the advent of supreme being, *Param Purush Puran Dhani Soami Ji Maharaj* (207 years ago) that in the religion of saints (**Ra Dha Sva Aa Mi Faith**), the ultimate consciousness or the super consciousness of the highest order has been revealed and can be attained by any human being through meditation⁸ as the whole existence has evolved and is dissolved in these five words only⁹.

A basic understanding of the different states and stages of the consciousness and its psychological and neural correlates, is of major importance for all scientists and clinicians. Consciousness poses the most enigmatic problems in the science of the mind. Prayer and meditation are accompanied by a host of biochemical and physical changes in the body that change metabolism, heart rate, respiration, blood pressure and brain chemistry¹¹.

Today, modern society is under stress with sense of dissatisfaction and lack of well-being. Modern era is of comfortable, convenient and sedentary life style and therefore becoming hypokinetic and lethargic⁹. Ethical lifestyle is promoting physical and spiritual activities, thus enhancing life satisfaction and well being and has been strongly highlighted. Physical fitness can be improved by regular physical activities and mental and spiritual wellbeing by various modes of transcendental meditation.

Among the various approaches to improve the quality of life, there has been the search for better strategies for handling stress, and improving the subjective well-being. These explorations have led us to ancient disciplines such as yoga, which combine the physical elements of a healthy lifestyle with potent prescriptions for abiding mental peace. In all the scientific expositions of different religions, like in Sant mat (shabda), in the Vedas (nad), in the Kuran (kalma) and in bible (word), the *word* or *shabda* is the creator of the universe. In

the beginning of the creation, there was only word, and the word was god and god and word are the same. Therefore, by the practicing of hearing the internal sound or word, at the seat of the spirit, one can reach the highest regions of consciousness or purely spiritual region. Hence, we all have access to an infinite power and to limitless creativity of the creation. Today, through the advances and development of science and technology in neuro-physiology, philosophy and psycho-physics¹⁰, it is possible to measure the effects of integrated approach of yoga and meditation in enhancing the extra sensory perception, working memory, mindfulness, health and level of consciousness².

By integrating the inner experience with neuroscience (Price and Barrell)¹², as a method of investigating the hypothesis of meditational practices in attaining the highest order of consciousness, for those who are the seeker of ultimate truth, ultimate reality and ultimate wisdom, is the aim of the research work which the authors are working on titled "forestalling future pandemics: lessons from PISCOV trial (pH based integrated SARS COV-2) immunity in human subjects and ***the theory of survival of the fittest***"¹³.

As per the discourse by the present Sant Satguru of the RADHASOAMI faith, REVERED PROF. PREM SARAN SATSANGI SAHAB the spiritual leader,

"The most basic elementary particles of the ubiquitous quantum spiritual force field of the supreme being RADHASOAMI Dayal are the individual spirit forces. If one views things in this perspective then all the facts fall in place. And, the creation of physical universe that science has investigated, is after all an image of the macrocosm created by the supreme being. Accordingly, it is only logical to believe that the spirit forces are the fundamental particles of the prime quantum force-field originating from the supreme being RADHASOAMI DAYAL. One speaks of duality and "principle of uncertainty" of Werner Heisenberg in quantum physics. There are similar concepts of oneness and duality in metaphysics (e.g. Vedanta or Upanishads which inspired Schrödinger). Quantum omnipresence, quantum superposition, quantum coherence and quantum entanglement are concepts of quantum physics which equally apply to metaphysics or spiritual force-fields. It would, therefore, be correct to assert that our individual spirit-forces are quantum entangled with the source, i.e. supreme being RADHASOAMI. So, if one performs the meditational practices of Surat Shabda Yoga, one may be able to tune in with the supreme source of consciousness and attain oneness with the supreme energy, intelligence, bliss and refulgence of the supreme being RADHASOAMI DAYAL. (however, one can achieve that exalted state only when RADHASOAMI DAYAL so wills). This enunciation is consistent with the laws of quantum physics."

The abstract of the research work "PISCOV TRIAL", where authors have correlated the pH based immunity for controlling

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future pandemics and ongoing Covid-19 pandemic and how the hypothesis proposed for the first time by authors that only there will be and always there had been "SURVIVAL OF THE FLATTEST" as contradiction to established Darwin's Theory of "Survival of the Fittest" is as under~

"FORESTALLING FUTURE PANDEMICS : LESSONS FROM PISCOV TRIAL (pH BASED INTEGRATED SARS CoV-2) IMMUNITY IN HUMAN SUBJECTS AND THE THEORY OF SURVIVAL OF THE FLATTEST"¹⁵.

The world witnessed the havoc done by Covid-19 and his still recuperating from its aftermath. We are living in fear of further such pandemic, either by mutated Corona virus or some other microbe with the potential of rapid spread with high morbidity and mortality. The only hope, the scientific society can act in order to avert such devastation in future is, from the lessons learned by the Covid-19 pandemic, keeping in view the challenges and opportunities provided by the nature. The Theory of "Survival of the Flattest" hereby proposed by authors, which is a contradiction from the established Theory of "Survival of the Fittest" is verified here as a complementary addendum to Ashby's "Law of Requisite Variety" with the notion that "only the variety can destroy the variety"¹⁴. We have to look back at the Permian extinction, when life almost ended on earth and death created opportunity for those humble creatures which survived, including one lineage which produced our ancestors, the first mammals.

The novel corona or other such viruses needs acidic environment inside host cells of humans to gain entry and replicate further. If the host blood pH can be changed to more alkaline range from normal 7.35 -7.45 range, then they are protected from infection by such infections, through inhibition of receptor mediated endocytosis of virus inside host cells as the cellular endoplasmic vesicles require an acidic environment to transport virus inside the host cell. This important blood chemistry and its consequent sub cellular processes provide a model whose clinical effects have been shown to provide both post-exposure and pre-exposure prophylaxis from Covid-19 in data set of 110 high risk and 3000 general population respectively. The interventions used to raise intracellular pH needs to be adopted to give efficacy as an ideal vaccine. Further, if applying these simple, mostly nutraceuticals, natural interventions with one exception of Clathrin Inhibitor group, to 2/3rd of mass population, than a herd immunity pattern gets evolved. The authors of this proposed hypothesis conducted a randomized double blind actively controlled phase 2/3 merged trial (trial PDF attached), (Indian Council of Medical Research, Clinical Trials Registry of India- Ref No-CTRI/2020/05/025490 and UTN No-U1111-1252-7438) as PISCOV trial (pH based Integrated SARS Cov-2 Immunity in human subjects) and the trial design is attached in the end of this paper. The final data of PISCOV trial is available, which are significant and is also an inexpensive

intervention protocol which granted almost 100% immunity from SARS CoV-2¹⁶ or other such potential infections. The integrated approach in intervention arm used in the trial consisted of combination prophylaxis by Neem Bark Extract (NBE) concoction in dosage of 10 ml bd, Arsenicum album 30C - 4 times daily, Clathrin Inhibitor drug Chloroquine in dosage of 150 mg bd and Dexamethasone orally in dosage of 0.5 mg tds for the duration of 10 days to symptomatic as well as asymptomatic high risk contacts of proven Covid-19 positive patients. As compared to study group where data of 30 subjects after 6 weeks of recruitment is available and none of them tested positive to Covid-19 by RT-PCR as well as IgG antibody on sero-surveillance, out of 28 subjects of control group, who were analysed for same duration, and received standard care and treatment as per ICMR protocol for high-risk contacts, 7 subjects tested positive, with 4 on RT-PCR and 3 had presence of IgG Antibodies. The current paper focuses on further forestalling of such virus borne pandemics as the same principles which apply to Covid-19 will also be applicable for other such viruses or microbes, which have the potential of mass destruction to mankind.

In philosophical terms, the theory of "Survival of the flattest" as hypothesized, means that those human beings who are humble will survive and not those who are clever and powerful. In order to fulfil its purposes, the system must be capable of a greater variety of response and humbleness than the variety manifested by the environment. As per laws in the general systems theory, only the variety can destroy the variety. Ashby's Law¹⁴ {V(c)>v(s)} of Requisite Variety. Now in order to support our hypothesis of "Survival of the flattest" we list the names of humble creatures, living beings which survived mass major extinctions;

1. The humble Tardigrades survived last five major extinctions. Fossils date their existence on earth to more than 500 million years ago.
 2. Lystrosaurus (Book by Annale Newitz- Scatter, Adopt and remember: How humans will survive a mass extinction). Talked about the underground burrowers and those who walked most survived the permian extinction.¹⁵
 3. Birds- Avian Dinosaurs: birds are the only dinosaurs to survive the mass extinction event 65 million years ago.
 4. Frogs and Salamander
 5. Lizards
 6. Snakes
 7. Turtles, Alligators and Crocodiles
 8. The Flowering plants (angiosperms species) survived the mass Cretaceous-Palaeogene extinction caused by asteroid hit 66 million years ago. So what made them survive, despite being immobile and relying on the sun for energy?. Its the flower power that makes them nature's true survivors.¹⁷
- On the contrary the following civilizations, which were

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considered to be the best of their times in technology, education, civic sense, bravery and academics perished despite being the fittest:-

1. Harappa and Mohanjodaro
2. The Ancient Greece
3. The Roman Empire
4. The Great Nalanda University

The same holds true if the individualism is replaced with nations as a whole and their further demarcation as underdeveloped, developing and developed countries. If the enemy is the same, it is invisible and immune to the available medical technology than why fight as individual nations with different policies. We witnessed an exponential curve of the novel Corona Virus infections in the developed nations and medical doctors, scientists, politicians were working day and night to flatten the curve. There was an indispensable need of an effective vaccine against covid-19 for which many candidate potential trials were underway in many nations simultaneously. But now, in the Post-Covid era, we are witnessing an alarming rise in young cardiac deaths and an exponential increase in diabetes in young¹⁶ (Clinical profile, etiology, outcome and new-onset diabetes: A SARI case series).

In modern times, particularly with reference to the post-Newtonian era timeline, the philosophy has been undermined by true believers of science who strongly advocate "**Survival of the Fittest**" in evolutionary terms of natural selection of the species and sub species, but as we shall see and verify the deviation from this existing principle in the paper titled "**Survival of the Flattest**" to prove our theory, particularly when survival of the human race is at stake. However, the author will deal with the subject in consideration i.e. global pandemic of novel Corona virus and its prevention by a unique and naturally inherent community immunization methodology based on socio-economic-cultural-dietary factors(S-E-C-D) prevailing in the community under study i.e. India and verified post facto scientifically while comparing with other nations and applying the ancient Greek principle of "*Omne trium perfectum*" or **The Rule of Three**¹⁸.

Figure 1.

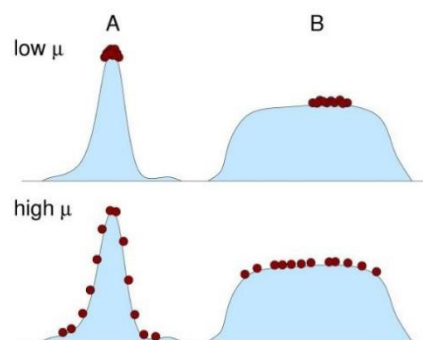


Figure 1: Schematic drawing of the survival-of-the-flattest effect. At low mutation rate μ , all individuals accumulate close to the top of the local fitness peak, and hence the individuals on peak A out compete the individuals on peak B. At high mutation rate, most individuals on the steep peak A are located at low fitness values, while the individuals on the flat peak B remain close to the local optimum. As a consequence, the mean fitness of the individuals on peak B exceeds that of the individuals on peak A, and thus the former out competes the latter.

Source publication:19 Claus O Wilke, BMC Evolutionary Biology 2005, 5:44

Figure 2.

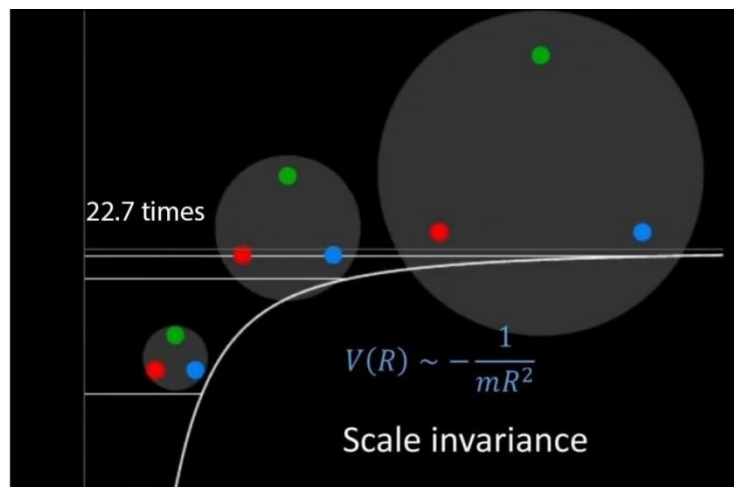


Figure 2: Equation: The nesting doll feature, a discrete scale variance, arising out of symmetry in the equation describing the forces between the three particles, when spaced at certain distance apart, then the same particles spaced 22.7 times farther apart were also a solution (Pi).

The “Omne trium perfectum” or The Rule of Three or Golden ratio has to be applied which in simple terms implies that anything which comes in a set of threes is complete or perfect.²⁰(Vitaly Effimov, Quanta Magazine,1970) Effimov, a Soviet nuclear physicist proposed this theory in which trios of particles form a state of matter similar to Borromean rings, an ancient symbol of three interconnected circles in which no two are directly linked.²¹(Evelyn Lamb)

Body: A healthy diet, exercise and relaxation²³.

Mind: Therapy, psychiatry and study

Spirit: Prayer, meditation and service to others

The Theory of threes can be further elaborated in regards to Quantum Theory as well as Law of Return and the Psychology theory of Thesis, Antithesis and Synthesis, which are beyond the scope of discussion in the present paper, as the author wants to avoid the bias of Philosophy for the sake of science protagonists.

Therefore it will suffice to mention that the author is trying to demonstrate with his above mention of “Omne trium perfectum” or The Rule of Three or Golden ratio of TRINITY, in the current perspective, solely due to the rapid and significant responses observed with the synergistic effect of 3 factors when applied together on the study subjects. In the 2 conducted trials of global pandemic of Covid-19, which was in its accelerating phase with no respite of any relief from suffering, was visible in the near future.

CONCLUSION

The integration of three profound interventions namely Yoga, Meditation and pH based immunity leads to Quintessential Harmony upto Ad infinitum. This has been proved beyond doubt in the landmark and the scientific double blind randomized control study PISCOV trial done by the authors.

The interventions offers a holistic approach to health and consciousness. By incorporating the highest form of yoga, encompassing Tan (Body), Mann (Mind), and Dhun (Sound), {As we often say— “**RA DHA SVA AA MI**” it’s about Body, Mind, and Dhun (Sound), not Dhan (Wealth)} alongside transcendental meditation (Surat Shabda Yoga), we align the physical and metaphysical realms. Additionally, interventions targeting an alkaline shift in body pH, as highlighted in the PISCOV paper, underscore the critical interplay between pH-based immunity and factors like unique host miRNA, spike protein mutations, and chemoprophylactic agents such as clathrin inhibitors and chloroquine. The role of dietary practices, neem extracts, theophylline derivatives, and BCG vaccination further emphasizes a multifaceted strategy for strengthening immunity. Agricultural work, sun exposure, and the doctrine of humbleness, guided by the ‘Survival of the Flattest,’ highlight the interconnectedness of natural and spiritual dimensions. Ultimately, these practices bring individuals closer to the Supreme Being, fostering ultimate consciousness and a profound sense of survival amidst the chaos of modern life. Thus preparing and forestalling such pandemics in future for the service of Humankind. Hence, the hypothesis of “Survival of the Flattest” proposed by the authors gets Q.E.D (Quod Erat Demonstrandum).

Contribution List

Apart from authors, the students and staff of the hospitals associated with the Institutes of authors helped in research work.

Acknowledgement

The authors acknowledge the inspiration of the work done under the main guidance and mentorship of Professor Prem Saran Satsangi Sahab, the Chief Advisor of Advisory Committee on Education(ACE), of Dayalbagh Educational

The Journal of Clinical Medicine (ISSN 2995-6315)

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Funding Statement

The funding of the research "PISCOV" trial and subsequent review article under consideration has been borne by authors and the owner of the Siddharth Hospital , 1/115 /1 &2 , Gulab Rai Marg , Delhi Gate, Agra -282002.

Declaration of the Conflict of Interest

The authors declares that there is no conflict of Interest.

Grant Number

(Indian Council of Medical Research, Clinical Trials Registry of India- Ref No-CTRI/2020/05/025490 and UTN No-U1111-1252-7438) as PISCOV trial(pH based Integrated SARS Cov-2 Immunity in human subjects).

Ethical Committee

Name of the Ethics Committee	Status	Date of approval
Siddhartha Hospital Institutional Review Board	Approved	30/05/2020

REFERENCES

1. The Concise Yoga Vāsistha. Translated By Venkatesananda, S. Albany: State University Of New York Press. 1984. Pp. 51, 77, 87, 121, 147, 180, 188, 306, 315, 354, 410. ISBN 0-87395-955-8.
2. Agarwal S. "Meditational Spiritual Intercession and Recovery from Disease In Palliative Care: A Literature Review." *Ann Palliat Med.* 2018 Jan;7(1):E012345. Doi: 10.21037/Apm.2017.12.01.
3. Sacred Books of The East, Vol. 1 - Max Müller -1879- The Upanishads Page 14 .
4. Agarwal S, Et Al. "Esoteric Healing Touch- A Preliminary Report: A Controlled Trial Investigating Different Treatment Approaches In Seriously Hospitalized Patients." *J Clin Med Res.* Doi: 10.1234/Jcmr.
5. Revered Prof. Prem Saran Satsangi, "Exposition on Truth, Ultimate Reality and Supreme Being(From Vantage Point Of Radhasoami Faith And System Science)"-2010. Book Published by Radhasoami Satsang Sabha Dayalbagh Agra-282005. Page 90-91.
6. World Health Organization. Palliative Care. [Internet]. 2022 Available From: <https://www.who.int/news-room/fact-sheets/detail/palliative-care>.
7. Barbara Csala, Ferenc Köteles, Et Al. "The Relationship Between Yoga and Spirituality: A Systematic Review of Empirical Research." *Front Psychol.* 2021 Aug;12:695939. Doi: 10.3389/Fpsyg.2021.695939.
8. Misra, B. S. (1909). *Discourses On Radhasoami Faith.* Banaras:, Radhasoami. Satsang.
9. Agarwal S, Agarwal S, Dayal S. A Pilot Study To Assess The Effect Of Adrenalinum 3x On Short Term And Long-Term Complications Of Lifestyle Disorders Like Hypertension, Cancer, Diabetes, Anti-Social Behaviors. *Acta Scientific Medical Sciences.* 2023 Oct 12;7(11):20-25.
10. Agarwal S, Et Al. Assessing the Effect of Disease Progression on Spirituality", Published In *International Journal Psychology Research* ,December 2012,Volume 2 No.12,Pg 729-736.
11. Arora, J K Et Al. Impact of Physical Exercise and Transcendental Meditation on Physiological Parameters : An Ann Modelling , Paper Published In *International Journal Of Scientific And Engineering Research*, Volume 6, Issue 2 , February-2015. Pg 512-515.
12. Donald D. Price, James J. Barrell, "Inner Experience and Neuroscience: Merging Both Perspectives", Published 2012, Doi: <https://doi.org/10.7551/mitpress/8145.001.0001>
13. Siddharth Agarwal, Sapna Agarwal, S Dayal, Deepti Yadav PISCOV Trial (Ph Based Integrated Sars Cov-2) Immunity In Human Subjects August2023 Dayalbagh Educational Institute. E.https://www.researchgate.net/publication/373043775_Piscov_Trial_Ph_Based_Integrated_Sars_Cov-2_Immunity_In_Human_Subjects
14. Ashby.W.R(1956). *An intoroduction to cybermetics.* Chapman and Hall London. URL- <http://pcp.vub.ac.be/ASHBOOK.html>.
15. Hillel L. Hoffman. The permian extinction- when life nearly came to an end.*National Geographic Magazine, Nature* 367 (1994).
16. Agarwal S, Agarwal S, Verma RK, Dayal S. Clinical profile, etiology, outcome and new-onset diabetes: A SARI case series. *J Clin Intensive Care Med.* 2022; 7005-015.
17. Jamie B thompson et.al. No phylogenetic evidence for angiosperm mass extinction at the Cretaceous-

The Journal of Clinical Medicine (ISSN 2995-6315)

- Palaeogene boundary. The royal society publishing biology letters 13 Sep. 2023.
18. 'What is the mysterious Rule of Three', copywriters of Distinction.Rule-of- three.co.uk.Retrieved2015-06-01.
 19. Claus O Wilke, BMC Evolutionary Biology (2005), 5:44
 20. Evelyn Lamb,Roots of Unity,Scientific American,(2016),30(12).
 21. Schnitker et al, (2013) "Hegel's Thesis-Antithesis-Synthesis model,Encyclopedia of Sciences and Religions.Berlin:Springer.p978.
 22. American College of Chest Physicians. The CHEST Foundation. Human Metapneumovirus (HMPV) (<https://foundation.chestnet.org/lung-health-a-z/human-metapneumovirus-hmpv>). Updated 11/2/2020. Accessed 6/20/2023
 23. Agarwal S, Agarwal S, Dayal S (2024) Effect of Opium 1M Single Dose on Ptosis and Diplopia Due to Road Traffic Accident: A Case Report. Curr Res Cmpl Alt Med 8: 261. DOI: 10.29011/2577-2201.100261