



Online ISSN: 3107 - 7676

IJMR 2026; 2(1): 56-61

2026 January - February

www.allmultiresearchjournal.com

Received: 09-11-2025

Accepted: 16-12-2025

Published: 13-01-2026

DOI: <https://doi.org/10.54660/IJMR.2026.2.1.56-61>

Impact of Prolonged Digital Screen Exposure on Visual Health in Adults

Sayani Pal Choudhury

NSHM Knowledge Campus Kolkata, West Bengal, India

Corresponding Author; **Sayani Pal Choudhury**

Abstract

The extensive use of digital devices has markedly heightened screen exposure among people, prompting concerns about its effects on visual health. Extended utilization of computers, smartphones, and other digital screens has been linked to various visual and ocular symptoms together referred to as Digital Eye Strain (DES) or Computer Vision Syndrome (CVS). This research seeks to analyze the impact of extended digital screen exposure on adult visual health by integrating existing scientific literature about underlying mechanisms, clinical symptoms, risk factors, and preventive measures.

A narrative review of ophthalmic, optometric, and occupational health research was performed to assess the correlation between digital screen usage and visual discomfort. The results demonstrate that prolonged screen exposure leads to symptoms like ocular tiredness, xerophthalmia, visual blurriness, cephalalgia, and photophobia. The symptoms generally stem from diminished blink frequency, tear film instability, accommodative and vergence strain, and inadequate visual ergonomics. Adults are especially vulnerable due to prolonged work exposure, age-related alterations in tear film quality, and the significant incidence of uncorrected refractive defects.

The review emphasizes that digital eye strain is predominantly preventable and controlled by evidence-based strategies, such as ergonomic adjustments, regular visual breaks, suitable optical correction, and preservation of ocular surface health. Nonetheless, deficiencies persist in comprehending the long-term consequences of prolonged digital screen usage, underscoring the necessity for longitudinal and impartial research methodologies. Mitigating digital eye strain is crucial for enhancing visual comfort, occupational efficiency, and general quality of life in a more digital adult demographic.

Keyword: Digital Eye Strain, Computer Vision Syndrome, Prolonged Screen Exposure, Visual Health, Adults, Dry Eye Disease, Visual Ergonomics, Occupational Health

1. Introduction

The swift progression of digital technology in recent decades has profoundly altered how adults work, learn, and participate in daily activities. Digital gadgets, including desktop computers, laptops, tablets, and smartphones, have become essential to contemporary living, especially in professional environments where extended screen-based

activities are prevalent. The proliferation of remote work, online schooling, and digital communication, exacerbated by worldwide events like the COVID-19 epidemic, has markedly augmented the time and intensity of screen exposure among adults. In addition to professional use, recreational activities such as social media interaction, video

streaming, and gaming significantly increase total daily screen time, frequently beyond recommended thresholds.

The extensive and prolonged exposure to digital screens has led to an increasing public health issue termed Digital Eye Strain (DES), also known as Computer Vision Syndrome (CVS). Digital Eye Strain refers to a spectrum of visual and ocular symptoms caused by extended usage of digital display devices. Typical symptoms encompass ocular fatigue, dryness, inflammation, hazy or variable vision, cephalalgia, and challenges in concentration. In contrast to conventional printed text, digital displays pose distinct visual obstacles, including pixelation, glare, inadequate contrast, and persistent near-vision requirements, all of which exert extra strain on the visual system. While DES is typically regarded as a functional ailment rather than a pathological one, its effects on comfort, productivity, and quality of life are significant.

Emphasizing adults is crucial because of the extent and longevity of their exposure to digital devices. Adults, particularly those in office-based, technical, or academic occupations, frequently utilize screens for prolonged durations without sufficient intervals for rest. Furthermore, age-related physiological alterations exacerbate susceptibility to visual pain. As individuals age, the durability of the tear film diminishes, increasing susceptibility to dry eye symptoms, which are aggravated by decreased blink rates during screen usage. Adults are more prone to uncorrected or undercorrected refractive defects, presbyopia, or pre-existing ocular surface problems, all of which can exacerbate the symptoms of digital eye strain. These considerations render adult populations a pivotal demographic for examining the visual health consequences of extended digital screen exposure.

This research aims to analyze the effects of extended digital screen exposure on adult eye health by combining existing scientific information. The research aims to investigate the mechanics of digital eye strain, identify prevalent visual symptoms and related risk factors, and evaluate preventive and therapeutic options as supported by existing literature. This paper seeks to elucidate digital eye strain as a burgeoning occupational and lifestyle-related visual health concern by presenting a thorough review of existing research, while underscoring the significance of early intervention and evidence-based preventive strategies in adult demographics.

2. Mechanisms of Visual Impact of Prolonged Digital Screen Exposure

Extended exposure to digital screens impacts eye health due to ocular surface disturbance, accommodative strain, and visual ergonomic issues. In contrast to natural viewing settings, tasks on digital screens require continuous near-vision engagement that surpasses the visual system's adaptive capabilities, especially when exposure is extended without sufficient intervals.

2.1 Reduced Blink Rate and Tear Film Instability

A primary mechanism contributing to digital eye strain is a reduced blink rate during screen usage. Under typical circumstances, humans blink around 15–20 times per minute; however, research indicates that blink rates may diminish by as much as 60% during extended digital activities. Blinks during screen watching are not only less frequent but also often incomplete, further undermining tear film dispersal.

The diminished frequency of blinking results in heightened tear evaporation and instability of the tear film, causing

dryness and irritation of the ocular surface. Over time, this can aggravate symptoms of dry eye illness, especially in adults who may already suffer from age-related declines in tear production or quality. Environmental conditions, such as air conditioning, low humidity, and extended indoor labor, exacerbate these consequences.

2.2 Accommodative and Vergence Stress

The utilization of digital screens imposes persistent demands on the accommodative and vergence systems, which are essential for sustaining clear and singular binocular vision at proximal distances. In contrast to printed material, digital text consists of pixels with less distinct borders, rendering prolonged concentration more difficult. Frequent alterations in font size, screen brightness, and contrast exacerbate accommodative strain.

Prolonged near work may result in accommodative fatigue or spasm, presenting as blurred vision, challenges in refocusing at a distance, and ocular strain. Vergence stress, especially in those with latent binocular vision disorders, may lead to symptoms including headaches, diplopia, and visual discomfort. Adults with unaddressed presbyopia or insufficient near-vision correction are particularly vulnerable to these problems.

2.3 Screen Characteristics and Visual Demand

The visual requirements of digital screens markedly contrast with those of conventional print media. Elements like as glare, screen flicker, inadequate contrast, and subpar resolution elevate ocular strain and discomfort. Inadequate screen brightness in relation to ambient illumination may cause excessive pupil contraction or dilation, so placing additional strain on the visual system.

Poor viewing ergonomics, such as unsuitable screen height, viewing distance, or posture, might indirectly compromise visual comfort by modifying gaze angle and augmenting ocular surface exposure. Improperly elevated screens, for instance, enlarge the palpebral aperture, hence hastening tear evaporation and exacerbating dry eye symptoms.

2.4 Role of Blue Light Exposure

Digital screens emit short-wavelength visible light, known as blue light, which has been associated with ocular discomfort and disturbance of circadian rhythms. Current data does not definitively establish blue light from screens as a cause of retinal damage at standard exposure levels; however, it may contribute to visual fatigue and glare sensitivity, especially during extended use.

Evening exposure to blue light has been linked to the inhibition of melatonin release, which may impact sleep quality. Inadequate sleep may indirectly worsen symptoms of digital eye strain by compromising ocular surface health and visual acuity.

3. Common Visual and Ocular Symptoms

Extended exposure to digital screens in adults correlates with various visual and ocular symptoms that collectively define Digital Eye Strain (DES) or Computer Vision Syndrome (CVS). These symptoms are generally functional and reversible; however, their persistence can markedly diminish visual comfort, work efficiency, and overall quality of life. The intensity and amalgamation of symptoms fluctuate based on exposure time, individual vulnerability, and environmental factors.

3.1 Eye Fatigue and Asthenopia

Eye weariness, known as asthenopia, is a prevalent complaint described by individuals who participate in extended computer usage. It is marked by sensations of ocular fatigue, a sense of weight around the eyes, and challenges in maintaining visual tasks. Asthenopia primarily arises from prolonged accommodative exertion and vergence strain during near-vision tasks. Digital screens, which display text formed by pixels instead of distinctly defined characters, exacerbate the effort needed to sustain clear attention.

Adults with unaddressed refractive abnormalities, presbyopia, or binocular vision disorders are most prone to asthenopic symptoms. Chronic eye fatigue can diminish focus, elevate error rates in tasks, and adversely impact productivity in professional environments.

3.2 Dry Eye Symptoms

Symptoms associated with dry eye are among the most common signs of digital eye strain. These encompass ocular dryness, burning, sense of a foreign substance, erythema, and excessive lacrimation (reflex tears). A diminished blink rate and incomplete blinking while using screens break the tear film, resulting in heightened tear evaporation and irritation of the ocular surface.

Adults are more susceptible because to age-related alterations in tear film composition and glandular function. Environmental conditions, including low humidity, air conditioning, and extended inside labor, further aggravate tear film instability. Chronic dry eye symptoms can lead to discomfort, fluctuating vision, and heightened vulnerability to ocular surface disease.

3.3 Blurred and Fluctuating Vision

Blurred vision, whether for near or distant objects, is a frequently observed visual issue among those with extended screen exposure. This symptom is typically temporary and arises from accommodative tiredness or spasm, which hinders the eye's capacity to sustain or swiftly modify focus. Adults sometimes encounter challenges in refocusing from screen-related tasks to distant things, a characteristic commonly observed at the conclusion of the workday.

Variable vision may be linked to tear film instability, as an irregular tear layer can impair the optical quality of the eye. Blurred vision may, in certain instances, signify insufficiently repaired refractive problems, underscoring the necessity of regular eye examinations for frequent digital device users.

3.4 Headaches and Periocular Pain

Headaches are a prevalent extraocular symptom linked to digital eye strain, typically localized to the frontal or temporal areas. These headaches may arise from extended accommodative exertion, binocular vision strain, or inadequate visual ergonomics, including incorrect screen height and viewing distance.

Periocular discomfort and a feeling of pressure surrounding the eyes may occur during headaches, especially in those with latent binocular vision impairments. Headaches can markedly impair work performance and may lead individuals to decrease screen time or pursue medical assistance.

3.5 Light Sensitivity and Visual Discomfort

Heightened sensitivity to light, known as photophobia, has been observed in people suffering from digital eye strain. Screen glare, elevated brightness levels, and prolonged exposure to short-wavelength (blue) light may induce visual

discomfort and hinder the ability to endure protracted screen usage. While blue light has not been definitively associated with irreversible retinal damage at standard exposure levels, it may exacerbate subjective visual tiredness and discomfort, especially during extended or nocturnal usage.

4. Risk Factors for Digital Eye Strain In Adults

The onset and intensity of digital eye strain in adults are affected by a multifaceted interplay of behavioral, visual, ergonomic, and environmental factors. Comprehending these risk variables is crucial for recognizing at-risk people and executing effective preventative measures.

4.1 Duration and Intensity of Screen Use

The length of daily digital screen exposure is a significant predictor of digital eye strain. Adults who utilize screens continuously for over four to six hours daily exhibit a markedly greater incidence and intensity of visual complaints. Extended continuous gazing heightens accommodation demand, diminishes blink frequency, and aggravates tear film instability.

In professional environments, activities demanding prolonged concentration, such as data entry, graphic design, programming, or online instruction, are notably linked to heightened risk. The lack of frequent breaks exacerbates visual fatigue and eye discomfort, underscoring the necessity of job scheduling and workload management.

4.2 Poor Visual Ergonomics

Inadequate workplace ergonomics significantly contribute to the onset of digital eye strain. Factors including improper screen height, insufficient viewing distance, inadequate illumination, and screen glare can markedly elevate visual stress. Improperly positioned screens can elevate ocular surface exposure, hastening tear evaporation, while screens situated too near or too distant may induce strain on accommodative and vergence systems.

Insufficient ambient lighting or extreme brightness disparity between the screen and the surrounding environment compels the visual system to perpetually adjust, resulting in eye strain and headaches. A significant number of individuals lack ergonomic training or knowledge, resulting in suboptimal workplace setups, which constitute a prevalent and alterable risk factor.

4.3 Uncorrected or Inadequately Corrected Refractive Errors

Adults with untreated or inadequately corrected refractive defects, such as myopia, hyperopia, astigmatism, and presbyopia, face a heightened risk of digital eye strain. Even little refractive defects can result in considerable symptoms during extended near-vision activities. Presbyopia, usually commencing in mid-adulthood, frequently leads to heightened accommodative strain in the absence of suitable near vision correction.

Furthermore, persons utilizing single-vision lenses for extended computer tasks may encounter discomfort if the lenses are not tailored for intermediate viewing distances. Neglecting routine eye examinations exacerbates vulnerability to symptoms associated with digital eye strain.

4.4 Pre-existing Ocular Surface Conditions

Pre-existing ocular surface conditions, especially dry eye illness, markedly heighten susceptibility to digital eye strain. Adults with impaired tear film stability have more pronounced symptoms during screen usage due to

diminished blinking and heightened tear evaporation. Individuals who wear contact lenses are particularly vulnerable, as these lenses can aggravate tear film instability and ocular surface desiccation.

Age-associated alterations in meibomian gland functionality and tear secretion exacerbate these hazards, rendering middle-aged and older persons especially susceptible.

4.5 Environmental and Occupational Factors

Environmental factors including low humidity, air-conditioned workplaces, subpar air quality, and extended indoor labor lead to ocular surface dryness and discomfort. Occupational circumstances, such as elevated visual task demands, time constraints, and restricted break chances, exacerbate the risk of digital eye strain.

Moreover, the heightened utilization of many digital devices daily, sometimes termed “multi-screen behavior,” leads to an aggregate visual burden, potentially exacerbating symptoms despite brief individual exposure durations.

5. Prevention and Management Strategies

Due to the widespread occurrence of digital eye strain in adults and its effects on visual comfort and productivity, a comprehensive strategy for prevention and control is crucial. Effective solutions emphasize behavioral adjustment, ergonomic enhancement, ocular surface safeguarding, and consistent eye care.

5.1 Behavioral Interventions and Visual Hygiene

A commonly endorsed behavioral strategy for mitigating digital eye strain is the 20-20-20 rule, which advises consumers to take a 20-second respite every 20 minutes to focus on an object at least 20 feet distant. This method alleviates accommodative strain and permits ocular muscles to relax, hence reducing visual fatigue.

Conscious blinking constitutes a significant behavioral intervention. The utilization of digital screens is correlated with a marked decrease in spontaneous blink frequency, resulting in tear film instability and symptoms of dry eye. Promoting regular and thorough blinking during screen activities can aid in preserving ocular surface moisture. Moreover, restricting prolonged screen exposure and integrating regular intervals of rest into daily activities are vital elements of visual hygiene.

5.2 Ergonomic Optimization of Workstations

The appropriate ergonomic design of digital workstations is essential for reducing visual strain. Screens have to be situated roughly 50–70 cm from the eyes and somewhat beneath eye level to minimize ocular surface exposure and alleviate neck strain. Adjustable chairs, suitable desk height, and stable seating posture enhance overall comfort and mitigate musculoskeletal complaints frequently associated with digital eye strain.

Lighting settings must be tuned to minimize glare and reflections on panels. Employing anti-glare filters along with suitable screen brightness and contrast adjustments helps mitigate visual discomfort. Ergonomic training and occupational interventions have demonstrably reduced the incidence and intensity of computer vision-related complaints in adult populations.

5.3 Optical Correction and Visual Aids

Routine comprehensive eye examinations are crucial for those who utilize digital screens extensively. Precise repair of refractive defects, including presbyopia, is essential for

alleviating accommodative stress. Specialized computer glasses or occupational lenses tailored for intermediate viewing distances may offer considerable symptomatic alleviation for persons who engage in prolonged screen time. Blue-light-filtering lenses have become increasingly popular; yet, existing evidence indicates that their efficacy in alleviating digital eye strain is minimal. Although these lenses may enhance subjective comfort for certain individuals, they should be regarded as supplementary rather than main preventive strategies.

5.4 Management of Ocular Surface Health

Preserving ocular surface integrity is essential for managing digital eye strain. Utilizing preservative-free artificial tears helps mitigate feelings of dryness, irritation, and burning linked to extended screen exposure. These lubricants enhance tear film stability and diminish friction between the eyelids and the ocular surface.

Alterations to the environment, like elevated ambient humidity and less direct airflow from air-conditioning units, can enhance tear film integrity. Individuals with preexisting dry eye illness or meibomian gland dysfunction may require tailored interventions to avert symptom worsening during screen usage.

5.5 Occupational and Educational Interventions

Organizational policies that advocate for regular breaks, ergonomic evaluations, and employee training effectively mitigate digital eye strain. Training programs that enhance awareness of appropriate screen usage, workstation configuration, and early symptom identification can enable individuals to engage in preventive practices.

Employers and educational institutions are essential in executing screen-time control policies and promoting visually healthy work environments. These therapies not only augment ocular comfort but also elevate productivity and overall well-being.

6. Long-Term Implications and Future Research Directions

6.1 Long-Term Implications of Prolonged Digital Screen Exposure

Although digital eye strain is typically seen as a temporary and reversible illness, increasing research indicates that chronic and extended exposure to digital screens may have lasting effects on adult visual health. Ongoing accommodative strain and vergence requirements linked to prolonged near tasks may lead to chronic visual discomfort and diminished visual efficacy, especially in those with unaddressed refractive errors or binocular vision disorders.

Extended screen exposure has been associated with the worsening and possible advancement of dry eye disease, particularly in middle-aged and older individuals. The age-related decrease in tear production, coupled with a diminished blink rate during screen usage, may expedite tear film instability and ocular surface inflammation over time. This persistent ocular surface strain might adversely impact quality of life and visual acuity.

Furthermore, recent studies have highlighted concerns regarding the potential link between prolonged near work and myopia progression in adults, although the evidence is less definitive than that observed in juvenile groups. The cumulative effect of digital screen usage on sleep quality, mediated by modified visual habits and circadian rhythm disturbance, may indirectly affect ocular comfort and general visual health.

6.2 Impact on Quality of Life and Occupational Productivity

Chronic digital eye strain can substantially impact quality of life, working productivity, and occupational well-being. Persistent symptoms like ocular fatigue, cephalalgia, and visual impairment can diminish focus, elevate error rates, and exacerbate occupational stress. In occupations necessitating prolonged screen interaction, these impacts may result in diminished productivity, elevated absenteeism, and increased healthcare consumption.

From a public health standpoint, the escalating dependence on digital technology indicates that unaddressed or inadequately managed visual discomfort may impose an increasing strain on healthcare systems, especially within aging workforces.

6.3 Gaps in Current Knowledge

Notwithstanding comprehensive investigations into digital eye strain, numerous deficiencies persist. Numerous current researches depend on self-reported symptoms and cross-sectional methodologies, constraining causal inference and longitudinal evaluation. There is little longitudinal data investigating whether extended digital eye strain results in lasting visual changes or structural ocular modifications in adults.

Moreover, discrepancies in diagnostic criteria and symptom evaluation instruments hinder the comparability of findings between research. The efficacy of novel therapies, including blue-light filtering technology, screen-based software applications, and wearable devices, is insufficiently substantiated by robust clinical evidence.

6.4 Future Research Directions

Future research should prioritize longitudinal and interventional studies to better understand the chronic effects of prolonged digital screen exposure on adult visual health. Standardized diagnostic frameworks for digital eye strain are needed to improve study comparability and clinical recognition.

Further investigation is warranted into the interaction between digital eye strain and age-related ocular conditions, such as presbyopia and dry eye disease. Research should also explore personalized prevention strategies based on individual risk profiles, occupational demands, and visual characteristics.

Advances in digital technology present opportunities for innovative research, including the use of objective metrics such as blink rate monitoring, tear film analysis, and eye-tracking data. These approaches may enhance understanding of underlying mechanisms and support the development of evidence-based guidelines for safe and sustainable digital device use.

7. Conclusion

Extended exposure to digital screens has become an inescapable element of contemporary adult existence, propelled by a growing dependence on digital technologies for professional, educational, and recreational purposes. This paper's findings indicate that prolonged screen usage is significantly linked to digital eye strain, a multifaceted syndrome marked by visual fatigue, dry eye symptoms, impaired vision, headaches, and general visual discomfort. These symptoms result from a confluence of diminished blink frequency, accommodative and vergence strain, inadequate visual ergonomics, and environmental factors.

Adults constitute a notably susceptible demographic due to prolonged work exposure, age-associated alterations in tear film stability, and the significant incidence of unaddressed or insufficiently addressed refractive defects. Although digital eye strain is typically reversible, its chronic nature can adversely impact quality of life, workplace productivity, and visual efficiency if not treated.

This research emphasizes that digital eye strain is predominantly preventable and treatable by evidence-based measures, including ergonomic optimization, behavioral adjustments such as regular visual breaks, suitable optical correction, and preservation of ocular surface health. Implementing these steps at both individual and organizational levels is crucial for alleviating visual pain and fostering long-term visual health.

Notwithstanding increased awareness, substantial gaps persist in comprehending the long-term consequences of extended digital screen exposure. Subsequent research must concentrate on longitudinal results, standardized diagnostic criteria, and objective evaluation methodologies to enhance clinical guidelines and public health policies. With the proliferation of digital device usage, it is essential to prioritize visual health through preventative measures and ongoing research to protect the ocular well-being of adults in a more digital environment.

8. References

1. Rosenfield M. Computer vision syndrome: A review of ocular causes and potential treatments. *Ophthalmic and Physiological Optics*. 2011;31(5):502–515.
2. Rosenfield M, Gurevich R. Digital eye strain: Prevalence, measurement and amelioration. *BMJ Open Ophthalmology*. 2017;1(1):e000146.
3. Coles-Brennan C, Sulley A, Young G. Management of digital eye strain. *Clinical and Experimental Optometry*. 2019;102(1):18–29.
4. Portello JK, Rosenfield M, Bababekova Y, Estrada JM, Leon A. Computer-related visual symptoms in office workers. *Optometry and Vision Science*. 2012;89(5):676–681.
5. Sheedy JE, Shaw-McMinn PG, Hayes JR. Symptoms in computer users: The role of eyelid aperture size. *American Journal of Ophthalmology*. 2003;136(2):229–235.
6. Mohan A, Sen P, Shah C, Jain E, Jain S. Prevalence and risk factors of digital eye strain among adults. *Indian Journal of Ophthalmology*. 2021;69(4):951–957.
7. Kelvin DO, Ikpade MU. The physical toll of digital overload: A review of impacts on ocular health. *Journal of Institutional Research*. 2025.
8. American Optometric Association. Computer vision syndrome. St. Louis: American Optometric Association; 2023 [cited 2026 Feb 4]. Available from: <https://www.aoa.org/healthy-eyes/eye-and-vision-conditions/computer-vision-syndrome>
9. Blehm C, Vishnu S, Khattak A, Mitra S, Yee RW. Computer vision syndrome: A review. *Survey of Ophthalmology*. 2005;50(3):253–262.
10. Anshel JR. Visual ergonomics in the workplace. *AAOHN Journal*. 2007;55(10):414–420.
11. Sheppard AL, Wolffsohn JS. Digital eye strain: Prevalence, measurement and amelioration. *BMJ Open Ophthalmology*. 2018;3(1):e000146.
12. Tsubota K, Nakamori K. Dry eyes and video display terminals. *New England Journal of Medicine*. 1993;328(8):584.

13. Hayes JR, Sheedy JE, Stelmack JA, Heaney CA. Computer use, symptoms, and quality of life. *Optometry and Vision Science*. 2007;84(8):738–744.
14. Uchino M, Yokoi N, Uchino Y, Dogru M, Kawashima M, Komuro A, *et al*. Prevalence of dry eye disease and its risk factors in visual display terminal users. *American Journal of Ophthalmology*. 2013;156(4):759–766.
15. Chawla A, Lim TC, Shikhare SN, Munk PL, Peh WCG. Computer vision syndrome: Darkness under the shadow of light. *Canadian Association of Radiologists Journal*. 2019;70(1):5–9.
16. Logaraj M, Madhupriya V, Hegde S. Computer vision syndrome and associated factors among medical students. *International Journal of Ophthalmology*. 2014;7(2):291–295.
17. Gowrisankaran S, Sheedy JE. Computer vision syndrome: A review. *Work*. 2015;52(2):303–314.
18. Ichhpujani P, Singh RB, Foulsham W, Thakur S, Lamba M. Visual implications of digital device usage in adults. *Journal of Current Ophthalmology*. 2019;31(2):139–145.

How to Cite This Article

Choudhury SP. Impact of Prolonged Digital Screen Exposure on Visual Health in Adults. *International Journal of Multi Research*. 2026; 2(1): 56-61.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.