

CONTENTS

The Closing Note for this Year	1
Why I Created the 20-20-20 Rule?	1
Research Highlight.....	2
Why Visual HFE Education Matters?	3
Recent Program of IEA Visual Ergonomics TC	4

Editorial

Sanjram Premjit Khanganba 

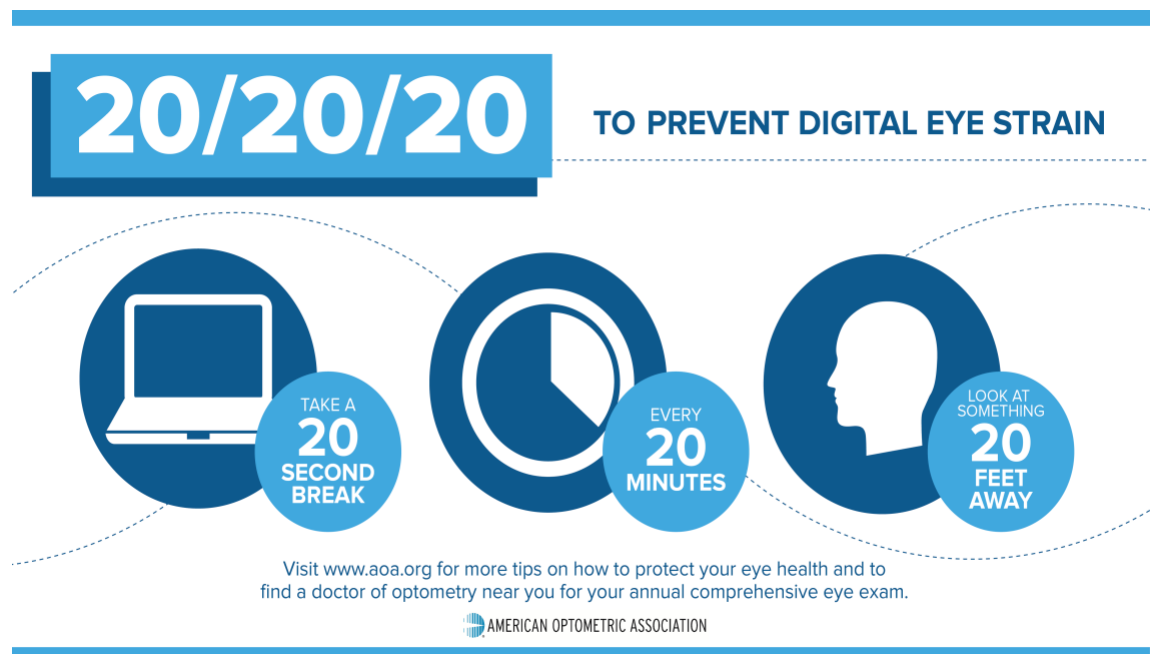
The Closing Note for this Year

As the year comes to a moment of reflection, it is fitting to revisit the themes that have shaped our conversations in visual ergonomics and human-centered design. We began the year by foregrounding an issue that sits at the heart of modern work life: the growing visual load associated with digital workstations. In an age where screens dominate our professional environments, prolonged visual tasks, poor Human Factors & Ergonomics (HFE), and suboptimal lighting continue to strain our visual system.

In this closing issue of the year, we share thoughtful insights from a distinguished voice who has shaped contemporary understanding of visual ergonomics and visual wellness. Dr. Jeffrey Anshel is a 1975 graduate from the Illinois College of Optometry. He has written numerous articles and ten books regarding nutritional influences on vision and visual ergonomics. Dr. Anshel is the principal of Corporate Vision Consulting, where he addresses the issues surrounding visual demands while viewing digital displays. He also lectures internationally on the topic of nutrition in eyecare. Dr. Anshel is a Fellow of the American Academy of Optometry and Founder and Past-President of the Ocular Wellness and Nutrition Society. He currently maintains a consulting business based in Kauai, Hawaii.

We need to extend our focus to the wider landscape of HFE. The field is increasingly embedded in emerging technologies, systems thinking, and global priorities—from Industry 5.0 to sustainability and healthcare safety. The field is transitioning toward proactive, human-centric solutions that anticipate complexity rather than merely respond to it. Together, these reflections encapsulate a year committed to understanding, improving, and humanizing our interactions with evolving work and technological ecosystems.

Wishing everyone a wonderful and inspiring year ahead.



Talking about 20-20-20 rule

Jeffrey Anshel

Why I Created the 20-20-20 Rule?

If you are involved with ergonomics and computer use, you have likely heard of the “20-20-20 rule” for computer eyestrain. It has been recommended by almost every major state association and eyecare industry outlet, including the American Optometric Association, the American Academy of Ophthalmology, The Vision Council and many more. But have you ever wondered where it came from or what was the rationale for the practice? I

“Deconstructing the rule for Digital Eye Strain”

graduated from Illinois College of Optometry in 1975 and was under a US Navy scholarship program so was assigned to serve my 2-year active duty in San Diego. After a few years in private practice, I started working at an office located near a local university. It was here where I started seeing patients who had vision problems that didn’t fit “the mold” for their age. For instance, those in their 20’s were just starting to become myopic; others were having headaches, but only during the weekdays and at the end of the day. When I began to ask questions about their lifestyle and activities, I found that most of these people were in the computer sciences division at the university. Since I had my optometric education during the 70’s, we never studied the effects that looking at a digitally created image had on the vision of a student or office worker. This area of “display viewing” was new and there were few, if any studies on the interaction of the computer display and vision. I decided then that this was an area of eyecare that was underserved and needed to be addressed.



Dr. Jeffrey R. Anshel O.D., FAAO, FOWNS

businesses where workers were using computers on a regular basis. I would go to their corporate offices and perform on-site evaluations, giving lectures and making recommendations based on my findings. In addition, I started offering presentations to ergonomic conferences due to the fact that many of these professional never had any background on the workings of the visual system.

I wrote my first book on “Visual Ergonomics in the Workplace” in 1998. The publisher, Taylor & Francis, published many technical books, so this book was mostly written toward the eyecare and ergonomic professionals who were on the front line of computer-viewing related eyestrain. Soon after this publication, I was invited to give interviews with media outlets (radio and TV) who looked at this “new” concern for vision stress as another effect (in addition to carpal tunnel syndrome) of computer use. Given that they had time limitations for each story, they all asked for a “nutshell” approach to resolving this issue. This is when I came up with the “3-B” approach, which was to “Blink, Breathe and Break”. Around this same time, I came across a research study that noted that shorter, more frequent breaks were more beneficial than the standard “every two hours” break from computer use (this was based on carpal tunnel syndrome issues).

Fortunately, I was able to make contact with the renowned Dr. James Sheedy, then professor at the UC Berkeley school of optometry, who had a research lab where he was conducting studies in the area of computer-related eyestrain. I followed up with him to see the results of his studies and decided to form a consulting business to go directly to corporations and other

I realized that the same held true for the visual system, so to simplify the discovery, I created the “20-20-20” rule for display users. The rule states, “Every 20 minutes, take 20 seconds and look 20 feet away”. As I mentioned, this rule has now been adopted by the American Optometric Association, the American Academy of Ophthalmology, the Vision Council, and many more organizations and independent eyecare professionals.

One time I attended a conference where a speaker was discussing myopia (nearsightedness). I found it a bit disconcerting when, toward the end of the lecture, the speaker announced: “The 20-20-20 rule doesn’t work”. I was taken aback at this statement but quickly realized that the speaker was referring to myopia and not eyestrain. After the presentation, I met the speaker in the lobby and mentioned that I developed the rule to relieve eyestrain and not as a myopia control technique. I had hoped that I got the point across but recently, I’ve seen more recommendations from a variety of sources that promote the rule for myopia control.

I never did trademark the rule but am gratified to have a few organizations and colleagues acknowledge where it originated (unfortunately, however, not the AOA). One day in early 2018, I received a call from a colleague in San Diego, who was writing an article on the source of the 20-20-20 rule. He asked me if I knew where it came from. I said, “as a matter of fact, I do!” He interviewed me and in February of 2018, Dr. Chou published his article, “Deconstructing the 20-20-20 Rule for Digital Eyestrain”, in the Optometry Times newsletter.

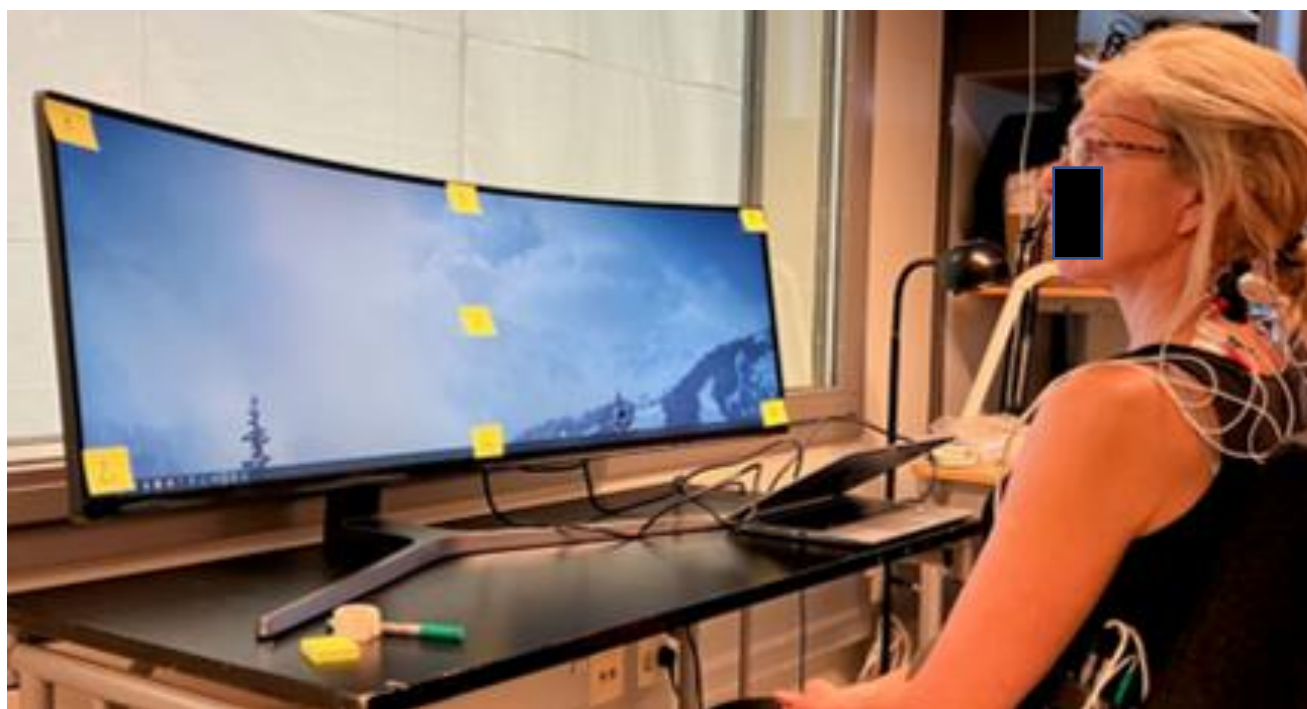
Again, the rule was not trademarked but take great pride in the fact that I have not only helped my profession, but, in turn, have helped the patients as well. It was gratifying to have attendees from my early ergonomic lectures return the following year and exclaim: “Hey, you’re that “20-20-20” guy!”

It’s funny the way things work out. And to all my colleagues who quote the rule to media outlets and patients: “You’re Welcome”!

Research Highlight

Hillevi Hemphälä 

Does Size Matter? Visual Ergonomics Recommendations for Screen Size, Viewing Distance, and Multi-Display Use



More and more people are working at bigger and bigger screens or several screens. As digital work continues to expand in both complexity and duration, the question of screen size, and its impact on visual comfort, performance, and user well-being, has become increasingly important. In our recent paper “Does Size Matter?”, we examined how viewing distance, display size, and the use of multiple screens affect visual ergonomics and overall work quality. Larger screens can support improved readability and reduce the need for repetitive zooming or window switching, but only when paired with appropriate viewing distances and ergonomic positioning.

When users sit too close to a large display, the head needs to turn more sideways and demands increase, potentially leading to an increased risk for pain. Based on the evidence, we recommend:

- 49 inch curved screen: Viewing distance of 80-90 cm
- 27 inch screen: 70 cm
- Two 27 inch screens:
 - Better to position them as a “V” rather than a “L”
 - One 49 inch screen is better than 2 x 27 inch

Anantha Ubaradka 

Why Visual HFE Education Matters?

Over the last decade, my experience in the field of psychology has allowed me to witness remarkable growth in both awareness and academic interest. Across the world, and particularly in India, the discipline has moved from the margins to the mainstream. Universities now offer more undergraduate and postgraduate programs than ever before, and young learners are increasingly motivated to understand human behavior. Public conversations on stress, emotional well-being, workplace adjustment, and mental health have become more open. This expanding visibility signals a welcome change in how developing societies acknowledge and value psychological knowledge.

At the same time, this rapid progress has brought new challenges. Many academic programs continue to emphasize theory, with limited opportunities to build practical and skill-based competencies. As a result, a large number of graduates enter the workforce unprepared for emerging applied careers in areas such as health services, human behavior research, workplace design, and consumer experience. A strong theoretical foundation remains important, but today's world needs psychologists who can apply knowledge to real problems, observe human behavior in complex settings, measure outcomes, and design solutions that enhance everyday functioning. The gap between academic preparation and practical demands is now evident to educators, employers, and students.

One powerful but underexplored area that can help bridge this gap is Human Factors and Ergonomics (HFE), especially the growing subfield of Visual HFE. Visual HFE examines how people use their visual system while performing everyday tasks, and how environments can support or hinder visual comfort and performance. It focuses on questions that seem simple at first: How do we read or view information? How do lighting, screen clarity, text contrast, or layout influence our attention? What role does visual fatigue play in learning and decision-making? Although these questions appear straightforward, they are deeply connected with psychological concepts such as perception, attention, cognitive workload, learning, memory, and emotional well-being.

Visual HFE, therefore, does more than explain how people see. It helps us understand how they think, decide, and perform when engaging with visual information. The world is becoming increasingly screen-centered and people spend long hours interacting with digital content, navigating interfaces, and processing visually dense materials.

Yet, the cognitive and psychological effects of these visual demands are rarely addressed in mainstream academic training.

Globally, visual HFE research is expanding, but in many developing countries, the domain remains underexplored. In India, students and professionals frequently work under

“A
Curious
Case
of
Indian
Curriculum”

visually uncomfortable conditions. Poor classroom lighting, low-quality displays in offices, crowded page layouts, and prolonged screen exposure are common realities. People report symptoms such as eye strain, headaches, blurred vision, and difficulty focusing. These may seem minor, but they affect learning, productivity, motivation, and even emotional balance. When visual discomfort accumulates over time, its influence on cognitive efficiency can be considerable.

Despite its relevance, visual HFE is rarely included in psychology curricula. When it does appear, it is usually embedded as a small component in ergonomics or occupational health courses, without structured training or hands-on skill development. Students may study theoretical models of perception, but they do not learn how to measure visual effort, assess lighting conditions, evaluate visual workload, or design environments that reduce fatigue. This leaves graduates without the applied competencies required in growing sectors. The consequences of this gap are visible in the job market. Increasingly, organizations in education technology, healthcare, learning and development, user experience research, occupational safety, transportation, and public planning require professionals who can assess human performance in visually demanding settings.

Graduates who understand visual comfort, cognitive load, and user interaction have an advantage, yet psychology students rarely receive such training. Integrating visual HFE into psychological pedagogy can change this landscape. Students can learn to analyze how people process visual information and how environmental factors affect attention and memory. They can develop practical skills to evaluate visual setups, identify sources of fatigue, suggest improvements for classrooms and workplaces, and contribute to the design of clear, user-friendly learning or information systems. With the increasing adoption of digital learning platforms and the rise of remote work, these skills have never been more relevant.

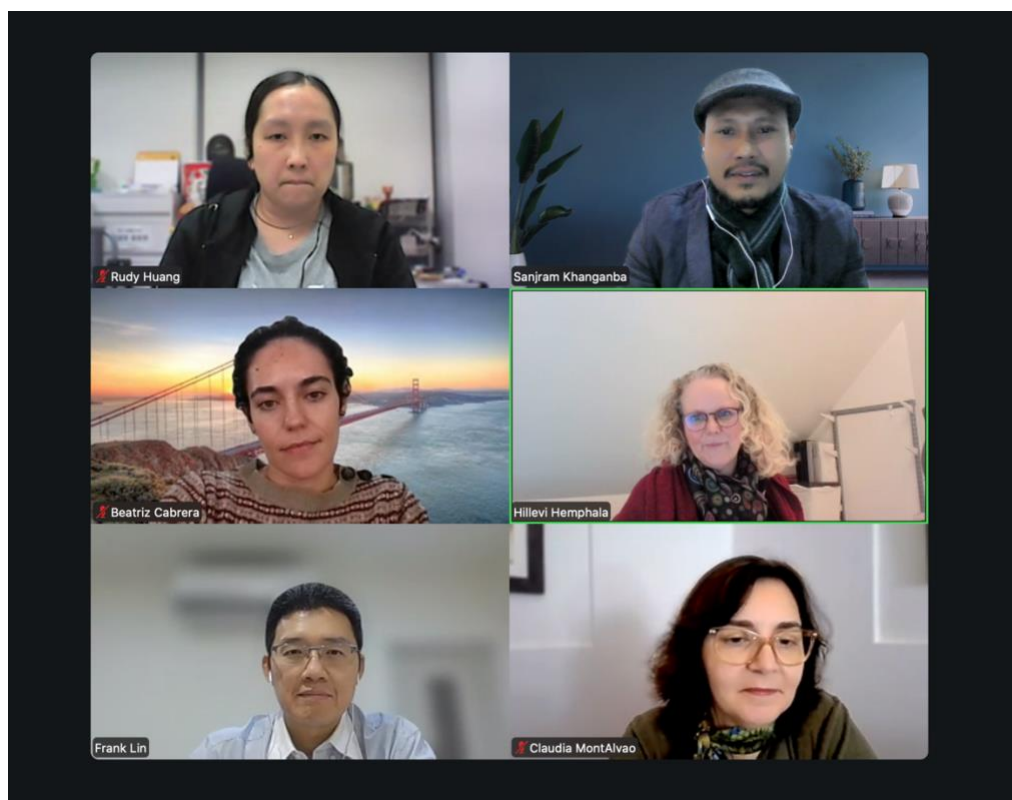
Visual HFE also strengthens interdisciplinary collaboration. A psychologist trained in this area can work alongside designers, architects, engineers, educators, and public health professionals. They can contribute to accessible educational materials, ergonomically sound workspaces, more intuitive user interfaces, and public information systems that promote clarity and attention. Such opportunities are expanding steadily as organizations recognize the link between visual comfort, cognitive performance, and well-being.

Most importantly, visual HFE encourages psychology students to see how theory translates into everyday solutions. It helps countries like India build their own research base by studying local classrooms, offices, and public spaces. Evidence can then inform national guidelines for visual learning environments, workplace setups, and awareness programs that protect cognitive health.

Visual HFE is not only about preventing tired eyes. It is about supporting clear thinking, sustained attention, effective learning, and healthy cognitive functioning. As education systems and workplaces modernize, the visual system will remain central to how people learn and perform. By giving visual HFE a better place in psychology curricula, universities can prepare students to become applied professionals who help shape environments that enhance human functioning in everyday life.



Recent Program



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FFPE 2025-2026 Impact Grants
The Foundation for Professional Ergonomics (FFPE) is pleased to announce the availability of the FFPE Impact Grants that aims to support small projects in the quest to develop professional ergonomics around the world. The funding preference will be given, but not limited to, applicants from developing countries (as defined by the United Nations) or proposals that help develop or grow professional ergonomics in

ERGONOMIC

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Fighting Fatigue: Understanding Fatigue Risks in Healthcare and the Maritime Industry
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BY ALEXSANDRA GAMPER | OCTOBER 21, 2025 | HEADLINES

Aleksandra Gamper

Previous
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Next
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The International Ergonomics Association is a global federation of human factors/ergonomics societies, registered as a nonprofit organization in Geneva, Switzerland.

Discover the Latest Breakthroughs in Visual Ergonomics with the Experts Shaping the Field

This year's webinar was conducted Friday, 14th November 2025. Participants from various parts of the world attended the sessions. It was an enriching experience for the organizing team members and the participants. We intend to organize more such webinars.

The webinar had six focused sessions:

How can we create a healthy visual environment? With a focus on computer work and screen recommendations and non-visual flicker from LED (Hillevi Hemphälä, Ph.D., Department of Design Sciences Division of Ergonomics and Aerosol Technologies, Lund University, Sweden).

Visual fatigue and accommodative microfluctuation performance under visual load (Rudy Ying-Yin Huang, Ph.D., Human Factors Engineering Lab Department of Mechanical Engineering National Taiwan University, Taiwan).

Image quality assessment of displays (Frank Po-Hung Lin, Ph.D., Department of Industrial Engineering & Management National Kaohsiung University of Science and Technology, Taiwan).

Gaze behavior and happy-face advantage (Sanjram Premjit Khanganba, Ph.D., Chair, Focused Research Group in Human Factors Human Factors & Applied Cognition Lab Indian Institute of Technology Indore, India).

Screen recommendations - the 20-20-20 rule and rest breaks (Beatriz Redondo Cabrera, Ph.D., Clinical and Laboratory Applications of Research in Optometry (CLARO) Research Group, Department of Optics, Faculty of Sciences, University of Granada, Spain).

Visual ergonomics and information design: its role in plain language documents (Claudia Mont'Alvão, Ph.D., Department of Arts & Design, Graduate Program in Design Pontifical Catholic University of Rio de Janeiro, Brazil).



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Release of
the Next
Issue:
January
2026

What is Visual Ergonomics?

Visual ergonomics is the multidisciplinary science concerned with understanding human visual processes and the interactions between humans and other elements of a system. Visual ergonomics applies theories, knowledge and methods to the design and assessment of systems, optimizing human well-being and overall system performance. Relevant topics include, among others: the visual environment, such as lighting; visually demanding work and other tasks; visual function and performance; visual comfort and safety; optical corrections and other assistive tools. A description of the how the definition was developed is included in a Letter to the Editor published in *Applied Ergonomics*: "A definition of visual ergonomics", available online 8 April 2014. An easy-to-read article explaining the practical implications of visual ergonomics was developed by this Technical Committee and published in *WORK* (2014): 47: 419-420. <https://doi.org/10.3233/wor-141820>

Dear Members, Do you have any news?

Call for entries closes on the 15th day of the preceding month of the scheduled publication of the newsletter.
If you have any news or announcements for the newsletter, please send the details to us.

Items of interest include but not restricted to: Reports about conferences Reports about seminars Reports about meetings Reports about webinars

If you have attended activities related to visual ergonomics, the newsletter is the right place to highlight your work. Announcements about up-coming conferences related to visual ergonomics, call for papers for journals on the topic of visual ergonomics, details about awards you (or someone else) may have received, articles you have recently published related to visual ergonomics, interesting jobs openings etc. are welcome. If you have photos, accompanying your texts inputs, it is highly appreciated.

The executive board reserves the final decision related to the inclusion of information in the newsletter.

Hillevi Hemphälä, Ph.D., Chair (Lund University, Sweden)
Rudy Ying-Yin Huang, Ph.D., Co-Chair (National Taiwan University, Taiwan)
Frank Po-Hung Lin, Ph.D., Member (National Kaohsiung University of Science and Technology, Taiwan)
Sanjram Premjit Khanganba, Ph.D., Member (Indian Institute of Technology Indore, India)
Beatriz Redondo, Ph.D., Member (University of Granada, Spain)
Claudia Mont'Alvão, Ph.D., Member (Pontifical Catholic University of Rio de Janeiro, Brazil)