future eye

10 VISION TRENDS THAT WILL TRANSFORM HEALTHCARE



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The Eye Unlocked

As the leader in health-focused vision care, VSP Vision[™] is constantly monitoring the pulse of healthcare transformation.

The eye is a window into full-body health and new technology-driven shifts are even further underscoring the role that vision care plays in a person's ability to be and stay healthy.

At SXSW 2024, the VSP Global Innovation Center, along with its partners, spotlight 10 vision trends that will transform healthcare, introducing several startups emblematic of the forces shaping the industry's future.

For a full recording of the conversation and more on the latest in vision innovation, visit https://www.vspvision.com/innovation/

10 Vision Trends Transforming Healthcare



1. The Eye is the Window into Full-Body Health



2. Smart Eyewear Accelerates the Quantified Self



3. The Eye is a Tool for More than 20/20 Vision



4. Audiology and Vision Care Team Up



5. Aesthetics Bring the 'Health Spa' to Optical



6. New Screening Modalities Improve Access to Care



7. Accessibility Tech is a Bridge to Wider Adoption



8. The Bionic Eye Makes Science Fiction a Reality



9. Can Eye Care be an Early Adopter of Generative AI?



10. There's a Space Race to Solve the Myopia Epidemic



Trend 1:

The Eye is the Window into Full-Body Health

Overview: The eye has always been a window into overall health and wellness. An eye exam provides doctors a way to look at a nerve, artery, or vein without an invasive procedure, giving providers valuable insights into more than just a patient's eye health. Recent advancements in the field of artificial intelligence have expanded what can be detected during a patient's eye exam, including signs of cardiovascular and kidney disease, diabetes, neurological issues, and other disease states. Al startups elevating the eye's role in disease detection include <u>RetiSpec</u>, which uses advanced Al to identify early signs of Alzheimer's, and <u>Toku Eyes</u>, which has developed software to assess heart risk through a retinal scan.

Key Datapoint: According to research from market intelligence platform CB Insights, AI-enabled screening technologies, companies using artificial intelligence for the automated detection of various eye conditions and diseases, have <u>reised</u> over \$1.8 billion in equity funding since 2020.





Trend 2:

Smart Eyewear Accelerates the Quantified Self

Overview: The prevalence of wearable tech ushered in the concept of the Quantified Self, or the self-tracking, measurement, and activation of personal health and behavioral information. Within smart eyewear, new sensors, especially those that are Al-enabled, now takes quantified self a bit further with even more timely and meaningful personal data.

Startup Spotlight: San Francisco-based <u>Cive</u> makes smart glasses that serve as a personal virtual coach, providing real-time feedback and insights on a user's training. The startup also makes smart goggles which use embedded sensors to track and measure a swimmer's workouts





Trend 3:

The Eye is a Tool for More than 20/20 Vision

Overview: The eye's intimate connection with the brain - and the brain's connection to the rest of the sensorimotor system - means the human eye is capable of a lot more than just vision. For example, AI-powered eye tracking is being integrated into B2B solutions to boost an individual's productivity and occupational performance. One startup, 4tiitoo, develops human-machine interaction software that allows a user to control their computer programs with their eyes.

Key Datapoint: "Eye-as-a-tool" is an active area of scientific research and tech development. Between 2011-2020, 2,140 patents were filed regarding "eye-as-a-tool" technologies, compared to just 244 in the previous decade. For this datapoint and more, view the VSP Global Innovation Center's Future of Personal Performance report.





Trend 4: Audiology and Vision Care Team Up

Overview: As the two most important sensory systems in the body, an individual's eyes and ears are inextricably linked. And while optometry and audiology are intertwined throughout most of the world - in fact, 80% of hearing aids in Japan and 48% in the U.K. are <u>sold</u> within an optical outlet - they've remained mostly independent of one another in the U.S. However, to increase access to hearing aids, the FDA <u>recently established</u> a new category of over-the-counter (OTC) hearing aids, potentially opening the door for partnerships between auditory and vision care.

Startup Spotlight: <u>Amplify Hearing</u> is a startup providing the technology, network, and infrastructure necessary to enable independent optometrists to integrate audiology services into their practices.



Trend 5:

Aesthetics Bring the 'Health Spa' to Optical

Overview: Once seen as a niche category, aesthetics-focused vision care practices are gaining traction as more patients are <u>hyper-focused</u> on the appearance of their eyes. Whether offering Intense Pulse Light (IPL) therapy to reduce skin pigmentation or applying radiofrequency to reduce wrinkles around the eyelids, the introduction of cosmetic services in eye care practices underscores the desire for more aesthetic-based services from patients.

Innovation Spotlight: In 2020, the FDA <u>approved</u> **Upneeq**, a prescription eye drop from RVL Pharmaceuticals that optometrists can apply to patients looking to improve the cosmetic appearance of droopy eyelids.





Trend 6:

New Screening Modalities Improve Access to Care

Overview: From vision screening stations to handheld autorefractors, next generation devices are scaling access to eye care, particularly within healthcare deserts. **EveChen**, one such technology, is a fully automated eye health kiosk delivering four self-serve tests, including scans for diabetic retinopathy and visual acuity. And as healthcare goes virtual, at-home, and hybrid, these new modalities can enable vision care to seamlessly integrate into the industry's emerging, shifting models of primary care.

Key Datapoint: Nearly one-third of the U.S. population (121 million) <u>lives in a healthcare desert</u>, an area with insufficient access to primary care providers, eye care providers, pharmacies, hospitals, community health centers, or more. See the VSP Global Innovation Center's Future of Healthcare Desert Solutions for more







Trend 7:

Accessibility Tech is a Bridge to Wider Adoption

Overview: Technologists are harnessing augmented and mixed reality to help individuals with low vision better navigate their surroundings. And many assistive technologies, like text-to-speech and closed captioning, are often on-ramps to wider market adoption. Smart eyewear designed for those with vision and hearing loss today could lead to applications that enable a larger subset to improve individual productivity.

Innovation Spotlight: The VSP Global® Innovation Center recently published the <u>Emerging Technology for Accessibility</u> guide, a resource for innovators navigating the trends advancing assistive technologies. The guide is intended to spark conversation, encourage the use of inclusive design principles, and advance understanding of accessibility, low vision, and the emerging assistive device category.





Trend 8:

The Bionic Eye Makes Science Fiction a Reality

Overview: While the idea of integrating electronics into the human body for medical treatment has been around for decades - think of the pacemaker or cochlear implant - applications to and for the eye have remained nascent. However, research has <u>accelerated</u> in recent years that is making the "Bionic Eye," an electronic prosthesis that is surgically inserted into the eye, a potential reality.

Innovation Spotlight: Launched by a co-founder of <u>Neuralink</u>, Elon Musk's brain chip startup, the <u>Science Eve</u> is a visual prosthesis and brain-computer platform that aims to restore sight in individuals suffering from blindness caused by agerelated macular degeneration (AMD).





Trend 9:

Can Eye Care be an Early Adopter of Generative AI?

Overview: Generative AI is <u>poised</u> to unleash the next wave of productivity, potentially adding trillions of dollars in value to the global economy. While the technology is beginning to demonstrate how it can reimagine healthcare in new and exciting ways, from easing administrative burdens to accelerating clinical trials, mass applications are yet to be seen. As there are already several instances of Gen AI in eye care, including being able to scale readings of retinal scans, vision could play the role of early adopter, helping establish a bridge to industry-wide deployment.

Innovation Spotlight: The VSP Global® Innovation Center recently published a Futurist Report on <u>The Future of Generative</u> <u>Al in Healthcare</u>, spotlighting the currents and startups behind the technology's possibilities and potential and exploring five rising trends shaping the future of Gen Al in the industry.



Trend 10:

There's a Space Race to Solve the Myopia Epidemic

Overview: According to the <u>American Academy of Ophthalmology</u>, the myopia (nearsightedness) epidemic has become virtually impossible to ignore, with experts <u>predicting</u> that nearly 50% of the world's population will become myopic by 2050. As uncorrected myopia is the <u>leading cause</u> of blindness worldwide, there is an increased demand for innovations and technologies that can help prevent or manage the onset of myopia. Digital therapeutics, or evidence-based behavioral treatments that can be offered online, have emerged as a potential solution, often using video game-like interfaces to control the progression of myopia in children and adolescents.

Startup Spotlight: <u>GoCheck Kids</u> is the first iPhone app registered with the FDA to screen young children for correctable vision impairment and detect risk factors for myopia. Another startup, <u>MyopiaX</u>, is currently developing a series of easy-to-use virtual reality games that are designed to slow the advancement of myopia.





Bringing Vision Innovation to **SXSW**

The VSP® Vision's Global Innovation Center is proud to be welcomed back to the world's largest innovation conference



In our inaugural year, the VSP Global Innovation Center led two official SXSW panel – "Using an Innovation Mindset to Create Belonging" and another on "The Future of Vision Training" which was accompanied by an interactive performance vision experience. Watch the 2022 recap <u>here</u>.



We returned to SXSW, moderating a panel in the Health Track on "Scaling Access to Care in Healthcare Deserts" as well as lending our voice to the Female Quotient Equality Lounge. In the expo hall attendees could take a personalized eye health quiz and demo devices. VSP also sponsored a networking hike. Watch the 2023 recap <u>here</u>.



2024

Back for a third year, the Global Innovation Center participated in a panel on 10 key vision trends transforming healthcare and hosted a fireside chat and happy hour for the healthcare innovation community at Capital Factory, Texas' largest startup incubator.

Our Call to Innovators

At VSP Vision[™], we are constantly reimagining the way eye care and eyewear are delivered to the world.

To fulfill this promise, the VSP Global Innovation Center is actively seeking new startups and technologies to collaborate with on forwardlooking innovations, especially around access to eye care.

Interested in connecting? Let's talk.

GET IN TOUCH WITH US AT: globalinnovationcenter@vsp.com

About VSP Global Innovation Center

At VSP Vision, our purpose is to empower human potential through sight. As the first and only national not-for-profit vision benefits company, VSP has been the leader in health-focused vision care, providing affordable access to eye care and eyewear for more than 85 million members through a network of more than 41,000 providers.

The VSP Global Innovation Center (GIC) is VSP's lens into the future.

Through emerging technologies, new business exploration, and strategic connections within the innovation ecosystem, the GIC is a hub for reimagining the way eye care and eyewear are delivered to the world.

To learn more, please visit www.vspglobal.com/innovation

