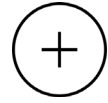


REDEFINING AND DESIGNING PERFORMANCE EYEWEAR

RISKS AND EFFECTS OF
UV LIGHT
ON RUNNERS

 METHOD
SEVEN



PWR
LAB



PWR Lab stitches together real-time, location-specific weather data and personal running data to quantify the factors impacting runners every day, including personal levels of UV radiation exposure. With a team of scientists, athletes, and engineers, Method Seven is working to design, test, and build a pair of trail running glasses personalized for full eye protection and comfort, built to the standard of professional athletes.

THE MISSION

Temperature, humidity, elevation, sun azimuth, and infrared exposure; These are just a couple of factors that define the atmospheric experience of runners. The atmospheric experience can be thought of as our interactions with the space around us -- the space that we cannot always see but the space that we can feel. In this space lives an invisible danger: light. Light is essential for sight but can be harmful to the eye and cause damage over time.

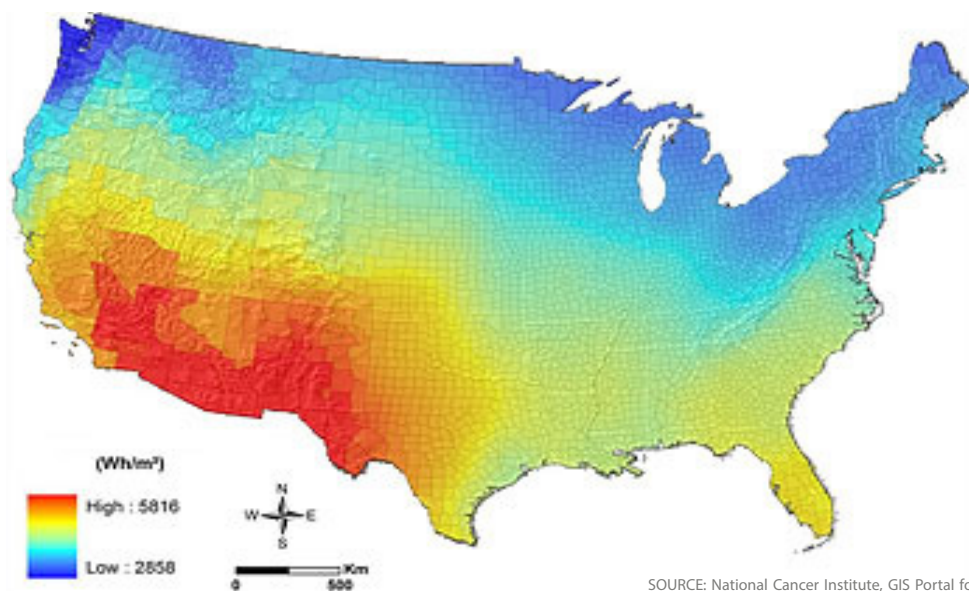
Method Seven's mission to understand the space between your eyes and your environment begins with studying and measuring the consequences of light, and PWR Lab's data driven insights surrounding the sport of running facilitates Method Seven's mission. Using atmospheric data and PWR Lab's runner specific data, the levels of exposure to harmful sources of light can be measured and applied to drive innovation and build a product to the everyday needs of trail runners.

UV light, or ultraviolet light, is a type of radiation emitted from the sun that is invisible to the naked eye. It is the light that makes black-light posters glow and is responsible for summer sunburns. However, too much exposure to UV radiation is damaging to living tissues and can have serious consequences, especially for your eyes. Two types of UV light in particular, UV-A and UV-B, reach the ground-level, and overexposure can lead to blurred vision, sensitivity to light, excessive tearing, and blindness. Individual exposure to these types of light is dependent on many factors, including time outside, geography, elevation, cloud cover, and ozone concentration. A person's UV dose, or energy absorbed over time, is cumulative and builds overtime, meaning risk increases as exposure increases.

PWR Lab has the means and expertise to interpret, measure, and analyze these factors affecting runners. PWR Lab collects running data by tracking runners' individual metrics over the duration of their run, including latitude, longitude, elevation, time, mileage, UV exposure and many more. Using data and research from PWR Lab, Method Seven has set out to design a pair of sunglasses for athletes who train under the sun to ensure their protection and longevity.

COUNTY LEVEL UV EXPOSURE DATA FOR U.S.

UV Exposure measured in Watt-hours per square meter through June 2020



SOURCE: National Cancer Institute, GIS Portal for Cancer Research

WHAT IS UV?

Every time you step outside, you are exposed to a range of radiation energy from the sun, and certain types in particular pose a risk.

Ultraviolet light refers to a part of the electromagnetic spectrum between visible light and X-rays.

UV rays have a wavelength between 10 and 400 nanometers, which is a shorter wavelength than visible light thus making UV light invisible to the human eye. UV rays can pass through clouds and reflect off of surfaces, making exposure unavoidable.

TYPES OF UV

UV light is categorized into three different subtypes.

- UV-A (320-400 nm) is the UV light with the longest wavelength, and is more commonly known as "black light." UV-A rays are closer to visible light rays and can pass through the eye's cornea and reach the lens. Overexposure can cause damage to the central vision and has been linked to cataracts and macular degeneration.
- UV-B rays (290-320nm) have shorter wavelengths and higher energy levels relative to UV-A rays. UV-B is partially absorbed by the ozone layer, but about 5 percent reach the ground and can cause damage to the cornea and the lens on the front of the eye.
- UV-C rays (100-290nm) have the highest energy out of the three types of UV rays and are extremely harmful. However, almost all UV-C rays are absorbed by Earth's atmosphere and do not reach the surface.

THE PROCESS



Pictured above is Avery Collins, a professional ultra runner from Silverton, Colorado

“People are exposed to harmful doses of UV and unknowingly affected until it causes injury. While exposure to these rays is inevitable, the dangers themselves are not.”

With a goal to develop a product fine-tuned for trail runners, Method Seven recruited the help of Avery Collins, a professional runner from Silverton, Colorado. Collins has been trail running for about 9 years, and also spends his free time under the beating sun, whether it be snowboarding or hiking. Collins has long been aware of the need to protect his skin from UV. Recently, though, he has become increasingly concerned about the impact of UV on his eyes as well.

Like most people, Avery Collins knew the basics of UV protection; wear sunscreen and don't stare directly at the sun. As an athlete outside year round, Collins lives with sunglasses on and he always assumed that they were protecting him from any and all dangers to his eyes. It wasn't until his partnership with Method Seven that he began to understand his usual trail glasses were not protecting his eyes from harmful UV rays. His frequent training and exposure to the sun were putting him at risk for serious eye damage.

Collins' journey with Method Seven started with an important realization: people are exposed to harmful doses of UV and unknowingly affected until it causes injury. While exposure to these rays is inevitable, the dangers themselves are not. In order to preemptively address his own problem and the potential problem of millions of other runners, Collins joined the Method Seven and PWR Lab team to design, test, and develop a long term solution using data and experience.

With the help of PWR Lab's running metrics and weather data, Method Seven is measuring the atmospheric experience of runners to understand the risks and effects of UV light. PWR Lab stitches together real-time, location-specific weather data and personal running data to quantify the factors impacting runners every day, including personal levels of UV radiation exposure. With a team of scientists, athletes, and engineers, Method Seven is working to design, test, and build a pair of trail running glasses personalized for full eye protection and comfort, built to the standard of professional athletes.



APPLYING THE DATA

In order to understand the UV dangers that runners are exposed to, PWR Lab measures weather data and running data.

- Geographic location
- Elevation
- Cloud coverage
- UV intensity
- Ozone concentration
- Historical weather patterns
- Time of day
- Duration of run

PWR Lab uses data from GPS wearable devices and machine learning to measure data from these categories. The analysis and layering of this data drives research and innovation. Studied alongside UV exposure, PWR Lab's running data is the key to quantifying personal UV exposure and understanding the risks that runners face when exposed to these harmful rays.

THE FUTURE

The PWR Lab and Method Seven partnership is an ongoing collaboration in research and design. The mission to redefine the way we see light is a continued learning process and Method Seven wants to involve the running community. Partners like Avery Collins are involved to test lenses and frames across a variety of terrain and conditions to ensure peak performance and protection on the trail. In order to develop the best pair of trail running glasses, Method Seven and PWR Lab want your help too.

We are conducting a research study alongside a virtual race event that is using digital tools to collect data. Runners who participate in the study will get to see their personal UV exposure from the race and contribute to the research and design process. This event and research study is an opportunity to start a conversation about UV protection that will lead to a more knowledgeable and well protected community of athletes. Using experiential data, Method Seven is committed to designing exceptional products that are safe and help outdoor athletes and users have the best experience.



CONTACT US

PWR Lab is connecting brands to athletes through data science and wearable technology. With our technology, brands are able to better understand the challenges their consumers face and solve them using real-time data and analysis. PWR Lab is the tool facilitating communication between brands and athletes, paving the way for more comprehensive research geared towards solving real-world problems. Interested in partnering with PWR Lab? Contact us to see how PWR Lab can bring your ideas to life.

Email: support@pwrlab.com
Phone: 505-226-0125

www.pwrlab.com • support@pwrlab.com



M7 TRAIL SERIES

Run The Spectrum

September 2021 - November 2021



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The M7 Trail Series is a free running challenge from Method Seven designed to raise money for various charities, and recruit trail runners to help design the perfect product for the world's most advanced lens. All runners can enter for free, and those who connect GPS devices will have the option to share data and feedback with Method Seven. to help drive product development. Your participation will directly contribute to research and product development.

REGISTER

INTERESTED IN LEARNING MORE?

The Method Seven and PWR Lab partnership is ongoing and we are continually learning more about UV light. Data from the race will be studied and analyzed to further the development of Method Seven's Ultra Trail HD. You can sign up to get notified when the Method Seven Ultra Trail HD glasses are released.

GET NOTIFIED

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