



## 2023 Trends & Insights





*"The future is already here. We have to make sure that we are adapting to that and keeping up with the rest of the world."*

- Michael Crawford, Howard University



## LETTER FROM ANDREA

CES has returned as a dynamic, in-person event to retake its place as the premier technology showcase in the US. After two years as a digital-only program, CES 2023 hosted nearly 115,000 attendees across four venues in Las Vegas. Our team from PHM was on site and I'm thrilled to bring you this overview of the key trends and of course, hot technology as it relates to health and health media.

Health was front and center once again at CES, proving the power of this industry. More exhibit space was devoted to health tech this year than robotics and AI! The healthcare industry was well represented on CES stages. Many of the issues and trends from last year carried through to 2023, and there were an additional number of content sessions focused on media – how it's changing, using technology and even morphing into the metaverse!

We heard from an impressive lineup of physicians, payers, pharma executives and technology innovators, all determined to solve for some of the biggest health issues of our time. The complexity around achieving health equity and democratizing access to care are at the top of that list.

Telehealth, home monitoring, hospital at home and in-home diagnostics were also front and center. While AI made its usual appearance, sensors and diagnostic devices were the real stars of 2023. Advertising, marketing and media attendees were treated to thought provoking panels about how our work relates to technology and included provocative issues around sustainability and consumer engagement.

There was a resounding and collective industry consensus to manage the flood of health data critical to our industry's future. Healthcare providers and innovators are desperate for clean, clear, useful data that will help improve patient care and outcomes. This is a problem that will only become more complicated as tech advances and the innovations on display at CES come to market.

Our team has identified several trends coming out of CES 2023 and walked the halls and found notable health tech innovations. Enjoy!

*Andrea*

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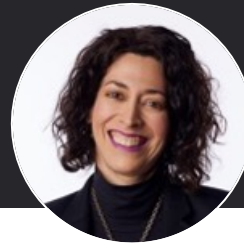
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## PUBLICIS WELCOMES CNET'S BRIAN COOLEY FOR THE NEXT BIG THING

### Summary:

CNET Editor at Large and friend of PHM Brian Cooley returned this year to deliver a special roundup of what's hot at CES, exclusively for Publicis Groupe clients and team members. Each year he offers his top picks at the show – and brings even more insights to The PHM HealthFront in April. Brian sees health technology as one with extraordinary transformative power, and 2023 has health tech taking home health monitoring to new levels and interoperability closer to reality.

The digitization of healthcare is one of the three big transformations underway in the years ahead – along with the electrification of transportation and mixed realities from AR, VR and the metaverse. The trick is in finding a trusted role for telehealth and the integration of signals from our devices.

### Key Takeaways:

- We're closer to getting a home health dashboard as an array of monitoring technology performs regular checks
- 55% of US broadband households have at least one connected health device, up 30% over 2020
- 28% of US households plan to buy a health wearable by Q1 2023
- 66% would pay for features that report blood pressure directly to their doctor
- 95% would pay for any health and medical support features

*"We're at the point where people are taking this seriously in terms of health monitoring, moving beyond the step trackers and fitness features."*



# TELEHEALTH

## Summary:

Telehealth is alive and well and much discussed at CES 2023. While use has declined since the pandemic peak, it continues to grow for a variety of reasons and will certainly play an important role in the future of health as families with children represent both the bulk of its current growth and the durable core of the telehealth movement.

## Key Takeaways:

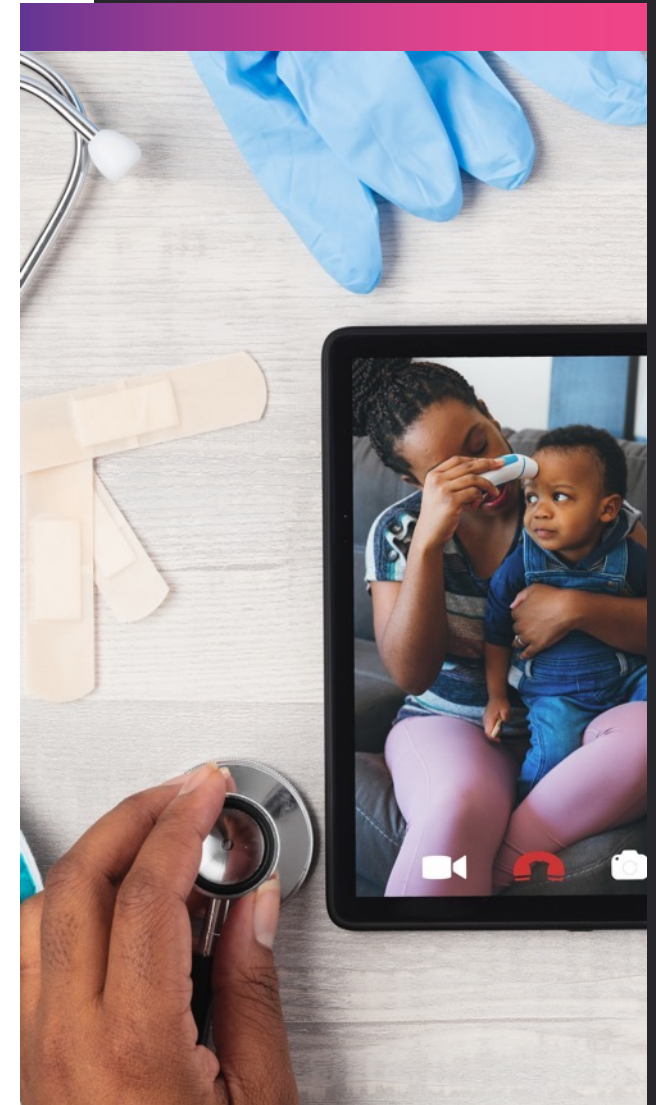
- 74% of US internet households with children at home have used telehealth services in the past 12 months versus 32% without kids at home. Seventy percent of households with children at home are likely to use telehealth services the next time they are sick\*
- Telehealth use is up 17%, according to United Healthcare's Anne Docimo, who spoke about the future of healthcare
- Government agencies are invested in growing telehealth access and making it more available to Medicare and Medicaid recipients
- Hospital systems and payers all report heavy telehealth use by patients and local or primary caregivers, lending support to growing consumer preference for the medium

## Implications for Health and Media:

Integrating health signals through more advanced at-home diagnostic tools holds promise. If we can connect health signals in our everyday life through wearables to HCPs through telehealth, we could truly advance personal health. Home monitoring functions need to become ubiquitous multitaskers. Today's crop of sensors and monitors are getting closer and if they can act as communications platforms, they also get closer to becoming media.

### Urgent Care in Your Livingroom: Samsung

*Samsung is developing a TV with Telehealth built in and doctors ready to assist in real time, offering immediate care in the living room. Larger images with the television should make for a more realistic and powerful experience.*





## THE PROMISE OF WEARABLES AND HEALTH SENSORS

### Summary:

Consumer engagement with health sensors is on the rise with no end in sight. There's strong interest in health monitoring for a variety of functions and disease states, with blood pressure being an early break out. There are devices to monitor what you'd expect – diabetes, sleep and blood pressure. There are sensors that detect stress and then relieve it with electrical pulses. There are some that can detect elevated levels of fatigue, pain and even anger. When paired with AI, these are now poised to be powerfully predictive of health conditions.

### Key Takeaways:

- 55% of US broadband households have at least one connected health device, **up 30% over 2020**
- 28% of people will buy a health wearable by 2023 Q1
- 66% would pay for features that report blood pressure to their doctor
- Sensors mounted on or near a laptop camera can provide biofeedback to doctors including temperature, blood pressure, etc.

### Implications for Health and Media:

Most interesting here is the promise of wearables in terms of using data to enable better patient-doctor-patient communication. The NHS in the UK has now approved the sharing of wearable data between HCP and Patient. This could be a game changer for the advancement of smart data usage to drive better health outcomes.

*Viso by Omron, now approved in the UK, is an app for use between patient and physician. It detects Afib, high blood pressure, diabetes and heart disease. FDA approval pending.*

# THE SILVER TSUNAMI

## Summary:

The combination of an aging population and growing shortage of healthcare workers makes it an imperative that we leverage technology to help seniors age in place. What promise do advances in digital health tech hold for patients, HCPs and hospital systems as the aging population experiences its largest increase ever?

## Key Takeaways:

- Seniors will double in the US by the year 2040 and there won't be enough specialists to care for them where they are. Much of the care will be provided by family members. How can tech support family members through things like remote monitoring
- 14 million US internet households have used an independent living solution, such as PERS, medical alert systems, or a smart home solution\*
- 54% of US internet households now have a connected health device and are looking for new technology solutions that are integrated and focus on communication, fall detection, and safety notifications especially around fire, water, and gas detections\*
- Technology will enable less intrusive remote elder care by monitoring changes in daily patterns such as lights turning on/off at set times, increased TV watching, appliance usage, etc. to notify caregivers of any potential changes. Previous attempts at this have required cameras which many find intrusive

## Implications for Health and Media:

The care team for aging individuals will become a key audience here. Health and health media needs to ensure that we are building future strategies to support this groups' learning and engagement, this includes data strategies to separate the true signals from the noise. The technologies Care Givers can leverage for reminders, and distance monitoring could be an important connection point.







## THE POWER OF TECH TO REDUCE HEALTHCARE COSTS

### Summary:

Technology can play a crucial role in reducing costs within the healthcare ecosystem. From telehealth to home monitoring and robotics to assist in HCP training, tech innovations were heralded by panelists at CES for their potential to both cut expenses and close care and staffing gaps.

### Key Takeaways:

- Tech can eliminate inefficiencies in workflows, but it will require end-to-end system development and open-sourced models that can work together. Ending fragmentation is a must. This is where tech should really spend their time innovating to help drive change
- VR holds big promise in the training of HCPs. It can reduce pre-surgery anxiety for the entire surgical team and assist with pre-surgical planning overall, leading to better prepared care teams and better patient outcomes
- Tech and wearables reduce ER visits if used strategically among certain populations by allowing people to monitor their health at home, identify escalation points and key diagnostic indicators
- AR can assist doctors in better understanding conditions or help them fill in the gaps about environmental issues that may be contributing to a condition by augmenting information about a patient's location and the environmental factors associated with that location which can contribute to a patient's symptoms

### Implications for Health and Media:

At the end of the day, hospitals and doctor's offices are businesses. If services are not re-imbursed, then behavior will not change. We must prove the success of tech advances in reducing expensive ER visits and emergency care in general, to ensure that preventive, innovative solutions are reimbursed at every level. And that these emerging solutions can grow into communications channels with valuable data. These studies are underway, but there is more to be done to drive a more solid connection between tech and positive health outcomes.



# WOMEN'S HEALTH TECH ENTERS A NEW ERA

## Summary:

There's been a renewed interest and focus on Women's Health in the past year. Conversations about Women's Health are evolving and energized around advocacy following the overturn of Roe v. Wade. There's also an ongoing focus on the role women play in family health decisions.

## Key Takeaways:

- Women are 50% of the population and make 80% of healthcare decisions. Employers have come to understand that focusing on women's health is an economic decision
- There's been a clear commitment from employers to ensure their female employees feel supported. Employers are doubling down on offering Women's Health benefits – there's a shift away from “perk” approach to real benefits. They're doing this because there's a clear ROI – women see a meaningful reduction in NICU stays, ER visits and an increase in production
- Telehealth is becoming increasingly important to this population
- The medical community is increasingly involved in setting the record straight and combatting misinformation
- Sex education is evolving with start-ups and private companies are stepping in to fill the current void in high school and college education

## Implications for Health and Media:

The role of women in health is multifaceted and critical to get right. In media, we are resolute in our role of connecting women with the critical healthcare information they need. We will continue to consider how social media, femtech and other signals will assist in providing women with the data and content they need to make clear decisions for themselves and families. If fear dominates behavior, there is a chance that valuable signals could be lost.





## THE POWER OF THE PODCAST

### Summary:

Podcasts have completely disrupted the media space and are now a multibillion-dollar industry. Some 62% of US consumers listen to podcasts and the medium offers marketers a growing opportunity to reach listeners in an intimate and arguably, more engaging way.

### Key Takeaways:

- Time spent in audio exceeds the time spent in CTV and social media\*
- However, the percent of media spend in audio is far less
- Podcasting is the new journalism, a newer version of long format content
- In storytelling, interruptions are more intrusive. Advertising must align to be less disruptive and part of the programming
- Live podcasting creates a sense of community and allows that community to feel connected. Often podcasters are bringing their advertisers with them into this live experience creating trust

### Implications for Health and Media:

Be it omni-channel or multi-channel, spatial audio is exciting and an example of having companion media experiences that we can bring to life in a new immersive way. The media industry has not even scratched the surface.

## CONNECTING THE DATA

### Summary:

Disparate and disconnected data was a running theme at CES 2023. The proliferation of sensors, remote monitoring devices, mobile technology and platforms are creating a soup of information that is difficult to extrapolate and make useful.

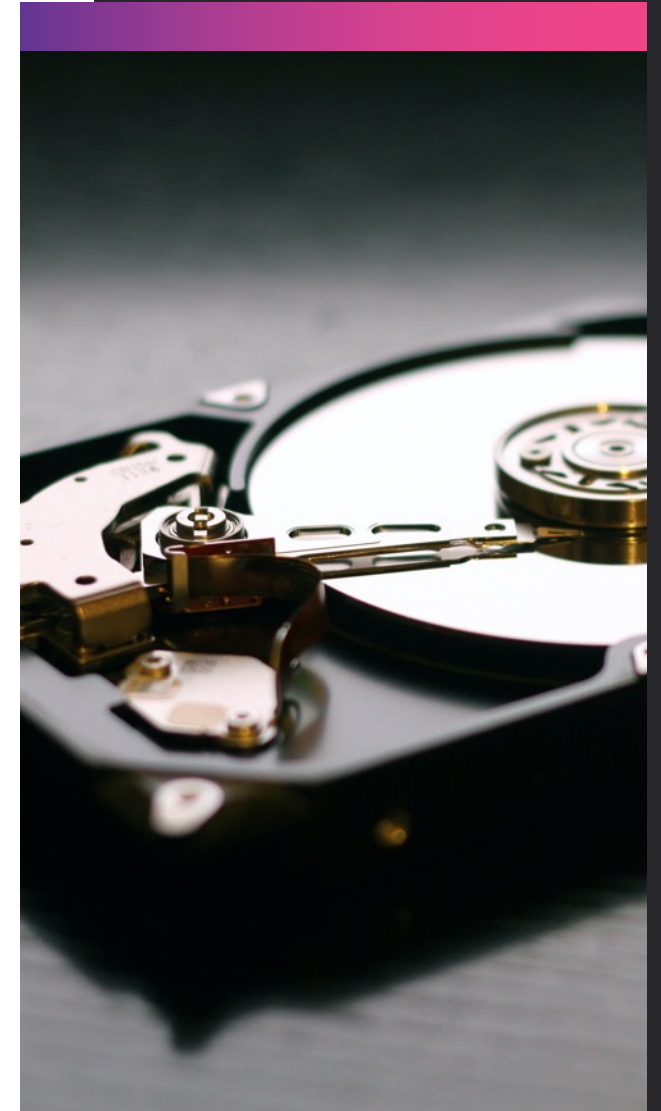
### Key Takeaways:

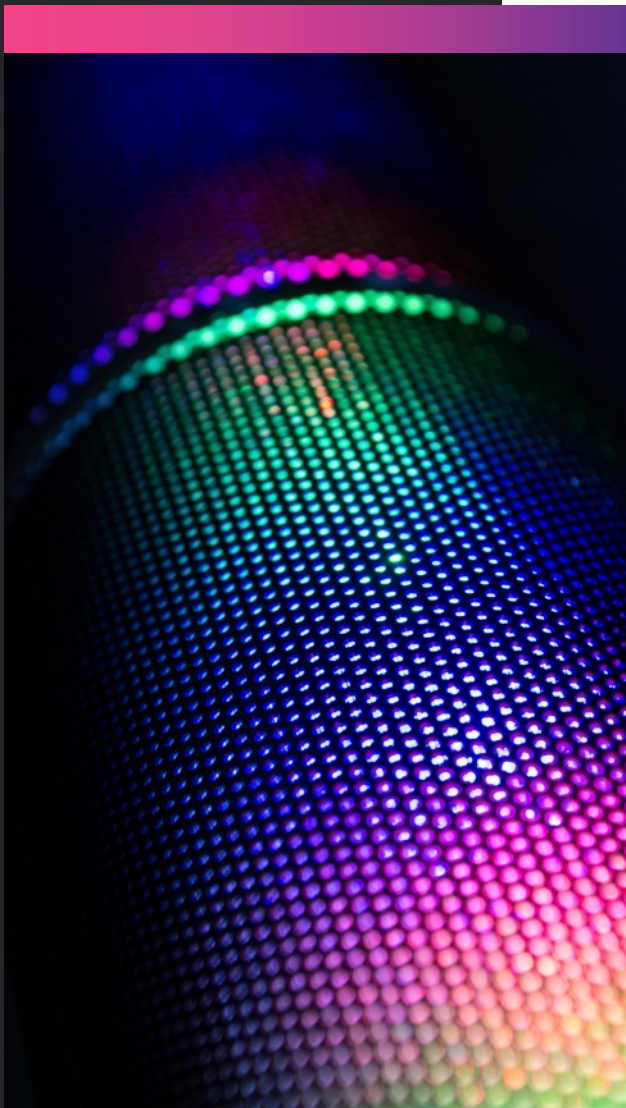
- Healthcare data is one third of the data generated globally each day, only 5% of it is usable\*
- Many aspects of the auto industry (car buying, parking garages, insurance, EV charging, etc.) are single purpose, disconnected systems that don't fit the world we live in. There are many parallels with the healthcare industry today given disconnected systems between providers, outdated options for setting appointments and the vast amounts of data collected by wearables that aren't linked to patient charts
- Data will prove the use case for new health technologies, and the need for payers to reimburse for their use

### Implications for Health and Media:

Health can learn a lot from disruptors in the auto industry, as there may be applications as healthcare catches up. If the auto industry can solve for data fragmentation and disconnected systems, there is be hope for similar long-term advances in healthcare.

*"I think data is the most important currency in the 21st century"*  
– Michael Crawford, Howard University





## HOT TOPICS IN DIGITAL HEALTHCARE

### Summary:

Some topics at CES were tackled in single sessions or by products on the show floor. Others were present in nearly every aspect of the show. Nary a panel concluded without a mention or discussion on the following hot button issues:

### Health Equity:

Solving for health equity continues to be a work in progress, but one thing is clear – technology has a critical role in doing just that. Underserved populations, particularly those in rural areas who can be several hours from the nearest hospital or care facility, are in dire need of solutions such as telehealth, home monitoring and hospital at home services.

### Broadband:

One note that is of constant conversation is the importance of broadband access in the US to help us achieve our healthcare goals. The lack of broadband access for many vulnerable populations is the biggest impediment to access to digital health solutions, including telehealth and remote monitoring.

### Move Over Femtech:

In years past, CES showed a lot of Fem Tech, but this year there's a notable focus on men's tech, with solutions for ED and sperm monitoring for fertility. Notably absent were solutions for mature women who are still waiting for technology to help ease the symptoms of menopause.

### Auto's Role in Health:

Automotive advancements are always popular at CES, and this year was no exception. Sensors are finding their way into vehicles and auto makers are exploring how they can detect health conditions while driving. Imagine a car that can sense a driver in distress, then activate a driver assistance feature that pulls over and parks, to avoid an accident.

### Wellness care and The Power of Google to Predict:

The US health system is based on treating sick people. But we know that most people turn to Google when they start feeling ill. Search behavior can reveal early onset of illnesses, including cancer. How can this type of data be used to get in front of diagnosis? If care is pulled upstream, we have a chance to catch illness much earlier.



## HOT TOPICS IN HEALTH AND MEDIA

### Storytelling and Technique:

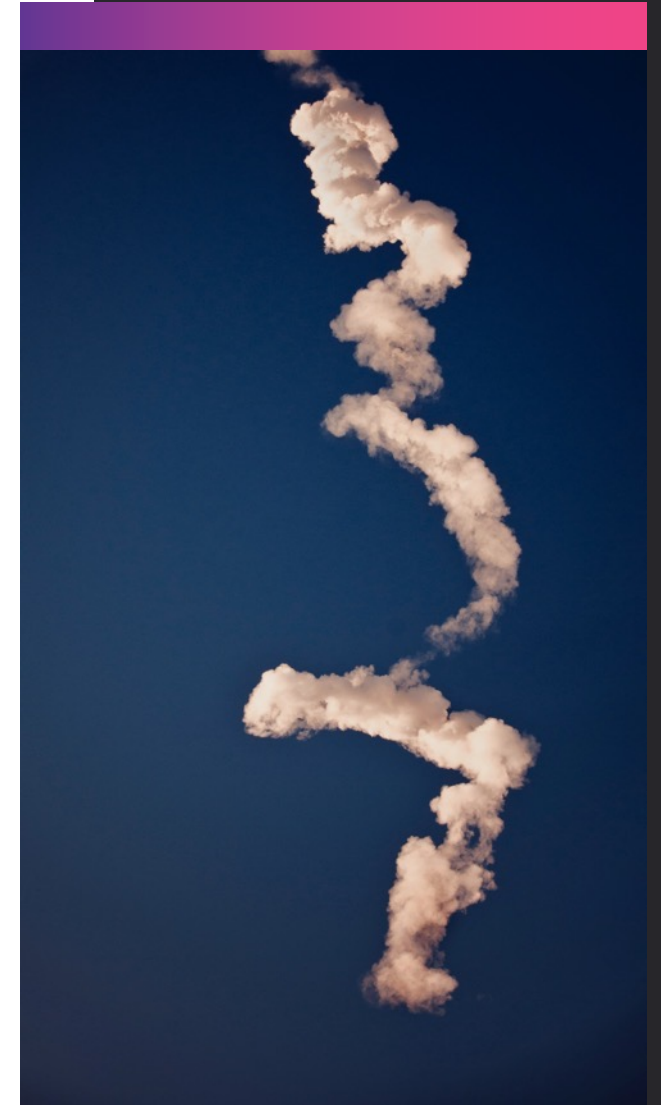
At its core, storytelling is a way to forge an authentic connection. Content providers are experimenting with new technology and new platforms will open up new possibilities and new audiences. We are looking at the rise of decentralized story telling—the same story on two platforms will be a very different experience for each audience. For brands, this offers both tremendous opportunity and challenges.

### Making Sustainable Media:

There's a role for media to play in sustainability by focusing on media's carbon impact. This includes all channels including digital. We need to consider our industry's size and the carbon footprint if programmatic bidding and targeting.

### The Future of Measurement Attention Metrics:

How should the media industry measure attention? A conversation has been unfolding specifically around how to use tech to better understand and measure engagement through attention, rather than viewership. How will different types of media and content inform attention metrics so that we can better target people with information they are truly seeking? Some immediate considerations come in the form of pages and placements that are getting attention, or zeroing in on creative that is driving attention and from whom specifically. This area of focus is especially relevant in healthcare and we agree that there is more to be done.





## CES 2023: FUTURE CHALLENGES

CES may be the biggest forum to talk about tech, but it's also a forum for the industry to come together and talk about the challenges we face, and there was no shortage of those at this year's show.

### Key Takeways:

- The lack of broadband access for many vulnerable populations is the biggest impediment in accessing digital health solutions, including telehealth and remote monitoring. There is some plan for this in the recently passed infrastructure bill, but can we close that last mile and definitively increase broadband access and digital literacy?
- **Advancing Media Measurement:** How should the media industry truly measure attention, rather than just eyeballs? And how does the industry use tech to achieve this. An industry conversation has been unfolding specifically around how to use tech to better understand and measure engagement through attention. Can we agree on how to best define and measure attention? How will different types of media and content inform attention metrics so that we can better target people with information they are truly seeking? This is especially relevant in healthcare.
- **Addressing sustainability in media:** A discussion around media's role in reducing its carbon footprint was part of a lively discussion at CES 2023. As an industry, how do we come together to tackle sustainability and waste in our industry, due to the amount of energy used by machines in data collection, how we bid on programmatic, etc?

## CES 2023 HOT TECH

### Summary:

There are devices to monitor the expected, such as diabetes, sleep and blood pressure. There are sensors that detect stress and then relieve it with electrical pulses. There are even some that can detect elevated levels of fatigue, pain and even anger. When paired with AI, these are now poised to be powerfully predictive of health conditions.



### Hot Tech: Let Health Rain: Withings U-Scan:

This hands-free home urine lab does double duty by analyzing output and identifying key biomarkers for hormonal changes that indicate ovulation and monitors metabolic intake to optimize nutrition and hydration. Just pop the cartridge in the disk, place the disc in a toilet at home and view results and recommendations on an app. U-Scan has a Q3 release and is pending FDA approval in the US.



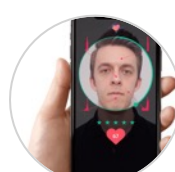
### Vivoo:

This wellness platform uses real-time body data to deliver personalized advice, supplement recommendations and research based on the results of an at-home urinalysis. There's an attachment for the toilet (or you can pee directly on the provided strip), and the information is analyzed and accessed via an app.



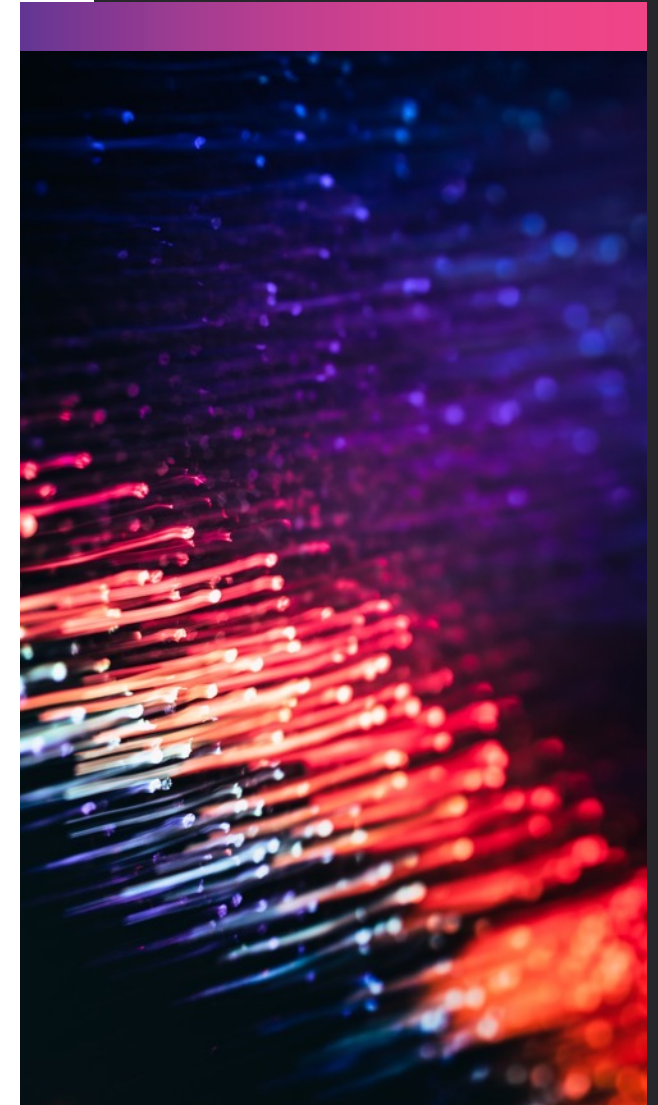
### Beauty and Health Start Inside: Neutrogena Stax:

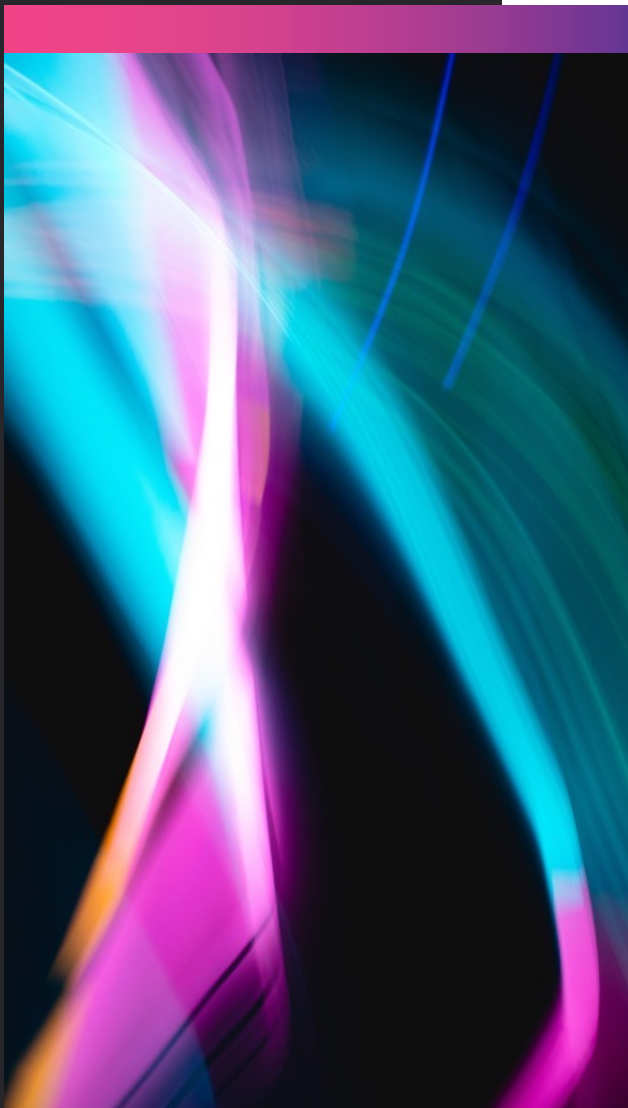
Beauty brands show up strong at CES and in 2023, Neutrogena showed off SkinStacks, a partnership between Neutrogena and nutritional supplement maker Nourished. Built on Neutrogena's 2020 CES release of the Skin360 App, users receive a month's supply of daily gummie vitamins based on a variety of user inputs. Each "stack" delivers a supplement to solve for needs like fine lines, dull skin or acne. This mashup of a household name in beauty + health + tech delivers a product that had the show abuzz.



### Selfie for Good Health: The Nuralogix Anura

This software uses a phone camera and app to scan a face and mine it for various signals including hemoglobin and blood pressure. It will also work as a feature in a telehealth visit.





## CES 2023 HOT TECH



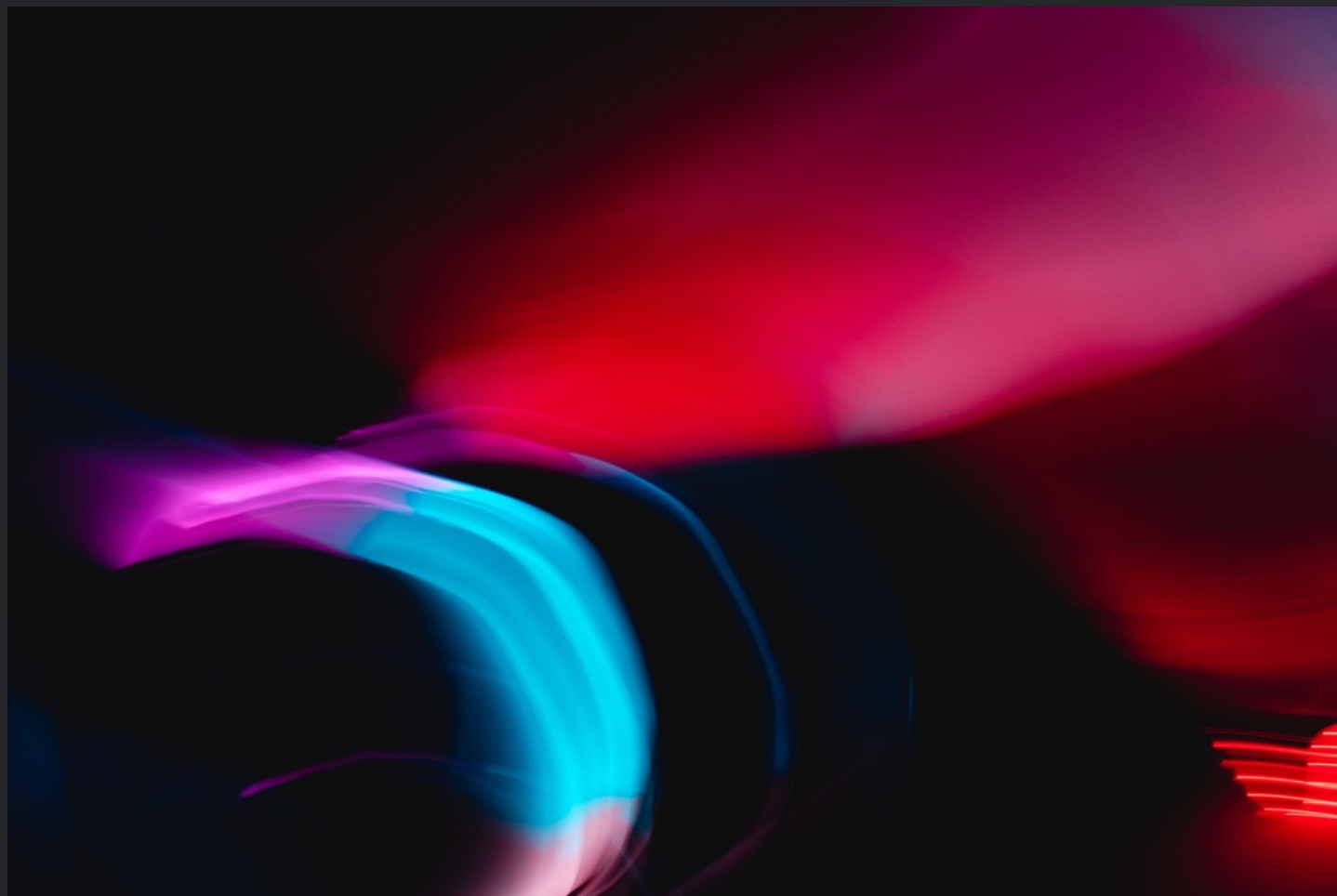
### **BP in your pocket: Valenecell BP Sensor**

Blood pressure monitoring is emerging as an early health issue important to consumers and this calibration-free cuffless monitoring solution is smaller, more portable, and easier to use with frequency. And at \$99, it's priced to become a household item.

### **Tech Collaboration at Last**

We're starting to see some real collaboration occurring, with technology companies forming consortiums to break down siloes. Matter is bringing together Amazon, Apple, Google and Samsung to create an open-source smart home standard that will make our devices work together. It's a promising enterprise that hints at what could come to health.





To learn more about our 2022 CES  
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