



2023 WEARABLE DEVICE TRENDS

New digital advancements have accelerated the timeline for innovation in the wearable device industry – an industry with a [market value](#) of roughly \$116 billion in 2021 and expected to grow to nearly \$380 billion by 2028.

The demand for data-driven wearables in the healthcare and wellness industry has increased as society continues to rapidly adopt a more virtual environment. This is reflective of the overall industry shift toward wearable devices that aren't just used for fitness monitoring, but those that also continuously track physiological measurements for disease monitoring, treatment, and research. As consumers continue to prioritize their own [health and well-being](#), their increased interest in a more holistic device has driven a change in wearable products and opened market opportunities in the wellness space.

While there are barriers to entering this industry due to increased regulations and supply chain challenges, there are still a variety of access points if done correctly.

In this report, we explore five trends that will impact the wearable device industry in 2023:



FROM FITNESS DEVICE TO HOLISTIC DEVICE



INCREASED ACCESSIBILITY TO TIME-SENSITIVE HEALTH DATA



BROADENING THE SPECTRUM BETWEEN DIAGNOSIS AND WELLNESS



PSYCHOLOGICAL RESEARCH AND USE



BIG TECH ACQUIRING LIFE SCIENCE COMPANIES



FROM FITNESS DEVICE TO HOLISTIC DEVICE

Previously, the wearable market was tailored to individuals who highly prioritized health and fitness, and companies such as Fitbit [dominated this market](#). The COVID-19 pandemic shifted consumer interest toward a more [health-centric focus](#), however, and consumer demand now surrounds devices that can track holistic health measurements.

According to one study, approximately [30% of U.S. adults use wearable healthcare devices](#); of those users, nearly half wear a device daily. These healthcare wearables consist of bands, clothes, or patches. The most cutting-edge wearable type would be [e-textiles](#), or smart clothes. These devices utilize interwoven electric sensors in clothing with varying capabilities, such as [diagnostic, therapeutic, and preventative measures](#), and can provide an optimized point-of-care platform to patients. One example of a company aligning with this shift is [Dorsavi](#), a wearable device company that previously specialized in fitness tracking metrics, such as biomechanical movements. Now, Dorsavi has created smart clothes that assess a movement's risk of injury, actively aid in recovery, and can sense when an athlete is healed – [these clothes are currently in the clinical trial phase](#). While still fitness-related, these innovative products reflect the holistic treatment aspect that wearables are shifting toward.

In the coming years, we expect to see companies continuing to roll out innovative technologies to best meet the increased consumer demand for holistic monitoring devices.

Approximately 30% of U.S. adults use wearable healthcare devices; of those users, nearly half wear a device daily.

[SOURCE](#)



INCREASED ACCESSIBILITY TO TIME-SENSITIVE HEALTH DATA

Wearable devices continue to enable greater accessibility, in both the clinical space and the at-home wellness arena, when it comes to collecting time-sensitive health data.

Clinical trials are a great example of the success of decentralizing processes that were previously thought to only be effective in person, and we saw a [28% increase](#) in the number of trials with a decentralized or virtual component in 2022. One reason for success in [decentralized clinical trials](#) is due to the improved monitoring capabilities of healthcare wearables, made possible by the [introduction of 5G](#). 5G allows for decreased data transfer time as well as increased connection capabilities, so patients can be farther from their physician without compromising the effectiveness of the device – previously [a challenge in this space](#).

This new increase in accessibility has also created a marketplace in the rising geriatric population that suffers from chronic lifestyle diseases, such as [heart disease, metabolic syndrome, diabetes, and others](#), which [kill 7 out of 10 Americans annually](#). Critical conditions that can arise from these diseases include stroke, heart attack, aspiration issues, pulmonary embolism, and heart failure. Wearables offer a low-cost and highly effective way to collect valuable holistic data on these individuals for the purpose of detecting early signs of a complication and tracking patterns associated with one.

Companies such as [Lumafit and Oxitone](#) have created pulse oximetry wearables that can identify oxygen desaturation of the blood, which is a key indicator of a stroke, heart failure, and pulmonary embolism. Oxygen saturation is a very time-sensitive matter, so if an individual gets a notification that theirs is rapidly dropping, those few minutes could potentially be lifesaving.

There was a 28% increase in the number of trials with a decentralized or virtual component in 2022.

SOURCE



BROADENING THE SPECTRUM BETWEEN DIAGNOSIS AND WELLNESS

The wearable market is evolving rapidly, but the procedure for FDA approval can become lengthy for any new data-driven wearables. The [legal and regulatory](#) requirements have created market barriers due to its slow adaptation to current product characteristics. The FDA will only approve a wearable to be a healthcare device if it can accurately measure physiological metrics to diagnose a patient, and this is also where the biggest challenge lies.

However, devices in the general wellness space may be held to less strict standards if they aren't FDA-approved, including privacy and security of the data collected, which may not be controlled under [HIPPA standards](#). This is where there's an unmet need within the overall wearable market: devices are still viewed as diagnostic devices rather than wellness devices.

Consumers yearn for a device that enables them to take initiative and gain insight into their personal daily health metrics. This more proactive approach to their own health and well-being creates a sense of clarity and security as to what is going on with their body in their day-to-day life. While a physician will not solely use this data to diagnose a patient, irregular metrics gathered from these apps and devices can give patients hard evidence and validity to the symptoms they might experience.

By having this data readily available for the physician, the practitioner now has a baseline and improved direction on what further testing may be necessary to then diagnose the patient. This added justification gives the patient the power to play an active role in their own health and can

help to streamline their healthcare provider's efforts to better correlate symptoms with physiological measures.

By pivoting into the wellness space, wearable companies could meet consumer demand while also decreasing time, money, and resources expended.



PSYCHOLOGICAL RESEARCH AND USE

Healthcare wearables are also being utilized in the psychological field of medicine. One challenge within mental health care is there's currently no quantitative method to accurately diagnose or track a [patient's progress](#). The most common method for currently tracking this data is through surveys or questionnaires that are impacted by self-reporting bias, which is qualitative in nature.

Wearables utilized within this space track various physiological measurements that correlate to psychological symptoms, such as [activity patterns](#), [circadian rhythm](#), [heart rate variations](#), and [EEG](#). The quantification of symptoms allows scientists to study these areas, and physicians can also track patient progress. The clinical trial testing for these devices is promising, as a review article in the National Library of Medicine stated numerous studies have been able to predict depressed individuals [between 86.7-96% of the time](#); anxiety detection was also high at 87%.

The global software as a medical device (SaMD) market was estimated at \$1.1 billion in 2022 and is expected to reach \$5.4 billion by 2032.

SOURCE

While wearables have aided in diagnosing and tracking, another type of device is making an impact in the treatment of psychological diseases – a software categorized as SaMD (software as a medical device). The company Tover created [Tovertafel](#), which is a game that “projects interactive images to train social-emotional skills in disabled children, promote connection and challenge disabled adults, or combat apathy and stimulate brain activity in seniors with dementia.” This software that has been clinically proven to improve the quality of life of individuals living with dementia or an intellectual disability.



BIG TECH ACQUIRING LIFE SCIENCE COMPANIES

The increase in technological advancements in the wearable market has created an environment where big tech companies and life science companies are starting to work together to research and develop new products. One of the largest acquisitions was when [Google bought Fitbit in 2021](#). The goal of this acquisition was for Google to collaborate with

Fitbit's already large market presence to create a line of affordable wearables. Another [large acquisition was between Walmart and CareZone in 2020](#), a strategic move by Walmart to expand its presence in digital health.

While the industry is expected to expand, there are two potential risks for companies to be aware of. The first potential risk is in production, as manufacturing and supply chain have grown into a serious area of concern not only in life science industries, but also in CPG companies as well. Supply shock hit companies big during the pandemic, so while companies can't predict the cause or timeline of future ones, it would be wise to have a plan in place to avoid or mitigate a large loss on yearly revenue.

Increased regulations, trade policies, and taxation on big acquisitions also pose adversity, but this is a more manageable obstacle to overcome. The wearable industry, particularly medical devices, is known for tight restrictions, so the regulation increases should not blindsides a seasoned med device company, since they have seen and navigated through similar situations in the past. The macroeconomic and political tensions could create hesitation in investors to go "all in" on these types of projects, so it would be important to first vet any incoming regulations or supply chain issues for the specific sub-industry before moving forward.

CONCLUSION

As seen, the wearable industry is entering a new era with opportunities not only with the average citizen, but also in various subgroups of the healthcare field. For a company trying to enter this space, it would be beneficial to first look at FDA regulations to see if they should enter the diagnostic space or wellness space. Also, it's necessary to evaluate if there's a partnership available that would mitigate the lengthy approval process. The areas that show the greatest promise are chronic disease monitoring, clinical trials, athletic injuries and recovery, and psychological research and treatment. This is an excellent and exciting moment to enter this industry, as most devices are still in the R&D phases, and there's still time to compete before products get established in market during the coming years.

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