Health Portugal

Thematic Report

July, 2026

Wearable Tech 2026

Source: GlobalData, 2026

Summary

The wearable tech industry was worth $117.4 billion in 2024 and is forecast to reach $232.2 billion by 2030, according to GlobalData. Hearables and smartwatches will be key growth drivers, supported by strong demand for health monitoring and artificial intelligence (AI) tools. Smart glasses will be the fastest-growing segment through 2030, driven by broader device availability, expanding consumer and enterprise use cases, and multimodal AI capabilities. Emerging form factors such as smart rings will gain traction, potentially displacing traditional fitness trackers, while augmented reality (AR) and virtual reality (VR) headsets will continue to face adoption constraints due to high prices, bulky designs, and a lack of compelling use cases.

The next wave of wearables promises even greater personalization, anticipating user needs, surfacing reminders, and transforming from passive into active health partners.

Leaders
Below is a list of leading vendors across all wearable tech categories.

Smartwatches - Alphabet (Google and Fitbit), Apple, Garmin, Huawei, Imagine Marketing (BoAt), Mobvoi, Samsung Electronics, Xiaomi.

Fitness trackers - Alphabet, Garmin, Samsung Electronics, Xiaomi, Zepp Health.

Hearables - Apple, Bose, Samsung Electronics, Sony, Xiaomi, Zepp Health.

Smart glasses - Amazon, EssilorLuxottica, Huawei, Lenovo, Meta, RealWear, Rokid, Samsung Electronics, Seiko Epson, Snap, Sony, ThirdEye, Vuzix, Xreal.

VR headsets - ByteDance (Pico), DPVR, HTC, Merge Labs, Meta, Sony, Xiaomi.

AR headsets
Anduril, Apple, Samsung Electronics. Smart clothing and accessories Athos, Catapult Sports, Nike, Oura, Owlet Baby Care, Ralph Lauren, Samsung Electronics, Siren Care, Under Armour.

A. Players

The wearable tech industry is experiencing intense competition, especially in the smart glasses, smartwatches, and hearables segments. Companies are vying for market share by offering competitive pricing, compelling features, and niche offerings. **Figure 1** shows a select list of leaders and challengers across the physical layer of the wearable tech value chain.

Wearable tech	Leaders		Challengers	
Smartwatches	Alphabet (Fitbit)	Imagine Marketing (BoAt)	Asus	American Exchange Group (iTouch Wearables)
	Alphabet (Google)	Mobvoi	BBK Electronics (Imoo)	Noise
	Apple	Samsung Electronics	Casio	Oppo (OnePlus)
	Garmin	Xiaomi	Coros	Sekyo
	Huawei		Fire-Boltt	The Swatch Group
			Lenovo (Motorola)	Withings
			LVMH (TAG Heuer)	Zepp Health (Amazfit)
Fitness trackers	Alphabet (Fitbit)	Xiaomi	GOQii	Imagine Marketing (BoAt)
	Garmin	Zepp Health (Amazfit)	Hilo	Suunto
	Samsung Electronics		Huawei	Wahoo Fitness
			Hume Health	Whoop
			Oppo (OnePlus)	Withings
			Polar Electro	
Hearables	Apple	Sony	Alphabet (Google)	Mobvoi
	Bose	Xiaomi	Amazon	Nothing Tech
	Samsung Electronics	Zepp Health (Amazfit)	HP (Poly)	Nuheara
			Huawei	OpenAI
			Imagine Marketing (BoAt)	Oppo (OnePlus)
			Lenovo	Panasonic
			LG Electronics	Sennheiser
			Logitech	
Smart glasses	Amazon	Samsung Electronics	3Glasses	Looktech
	EssilorLuxottica	Seiko Epson	Alibaba	Mad Gaze
	Huawei	Snap	Baidu	Mentra Labs
	Lenovo	Sony	Bose	Oppo (OnePlus)
	Meta	ThirdEye	DigiLens	Razer
	RealWear	Vuzix	Even Realities	Realmax
	Rokid		Everysight	Solos
			HTC	Symphonic Labs
			Inmo	TCL
			Iristick	Xreal
Virtual reality headsets	ByteDance (Pico)	Meta	Canbor	Shinecon
	DPVR	Sony	HP	Pimax
	HTC	Xiaomi	Huawei	Valve
	Merge Labs		Lenovo	Varjo
Augmented reality headsets	Anduril	Samsung Electronics	Aryzon	Meta
	Apple		Eyelights	Pico
			Honeywell	RealWear
			HTC (Vive)	Rivet
			Jarvish	Varjo
			Magic Leap	Vivo
Smart clothing and accessories	Athos	Ralph Lauren	Aabo	Pebble
	Catapult Sports	Samsung Electronics	AiQ Smart Clothing	Pi Ring
	Nike	Siren Care	Clim8	RingConn
	Oura	Under Armour	Graphene-X	Sensoria
	Owlet Baby Care		Hexoskin	Sky Labs
			Imagine Marketing (BoAt)	Ultrahuman
			Moticon ReGo	Velia
			Movano Health	Wearable X
			Movesense (Supa)	Zepp Health (Amazfit)

Figure 1 - The players in the wearable tech theme.
Source:GlobalData, 2026.

B. Technology Briefing

Wearable tech devices are classified into seven categories: smartwatches, smart glasses, fitness trackers, AR headsets, VR headsets, hearables, and smart clothing and accessories (**Figure 2**).

▪ **Smartwatches** are computerized wristwatches with smartphone-like features such as touchscreen interface, cellular connectivity, internet access, health and fitness monitoring, and interoperability with other connected devices.

▪ **Fitness trackers** are electronic devices, usually worn around the wrist, which monitor and record physical activity, heart rate, number of calories burned, sleep, and other metrics. Unlike smartwatches, fitness trackers do not have smartphone-like capabilities.

▪ **Hearables** are ear-worn connected devices that allow users to listen to 3echn 3echnolo, make and receive phone calls, monitor their 3echno and activity, and access information services such as traffic updates.

▪ **Smart glasses** are computerized eyewear with internet connections that convey task-specific information and services in the user's field of view (FOV) 3echnol their ears.

▪ **VR headsets** completely cover the eyes for na immersive experience. The device uses sensors to simulate a user's physical presence in a 3D environment.

▪ **AR headsets** are head-mounted display (HMD) devices that allow users to see the real world overlaid with a layer of digital 3echnolo. The digital 3echnolo layer can include sensor-based data, location-based data, sound, 3echn, graphics, or other datasets.

▪ **Smart clothing and accessories** include garments, footwear, and accessories with integrated sensors that transmit biometrics and other datasets. Smart clothing products are essentially electronic devices designed to communicate with connected devices (like smartphones) and the wearer's body. Accessories include smart rings, smart necklaces, smart earrings, and smart bracelets, which incorporate sensors that track sleep, heart rate, and temperature; provide notifications and alerts; and support contactless payments.

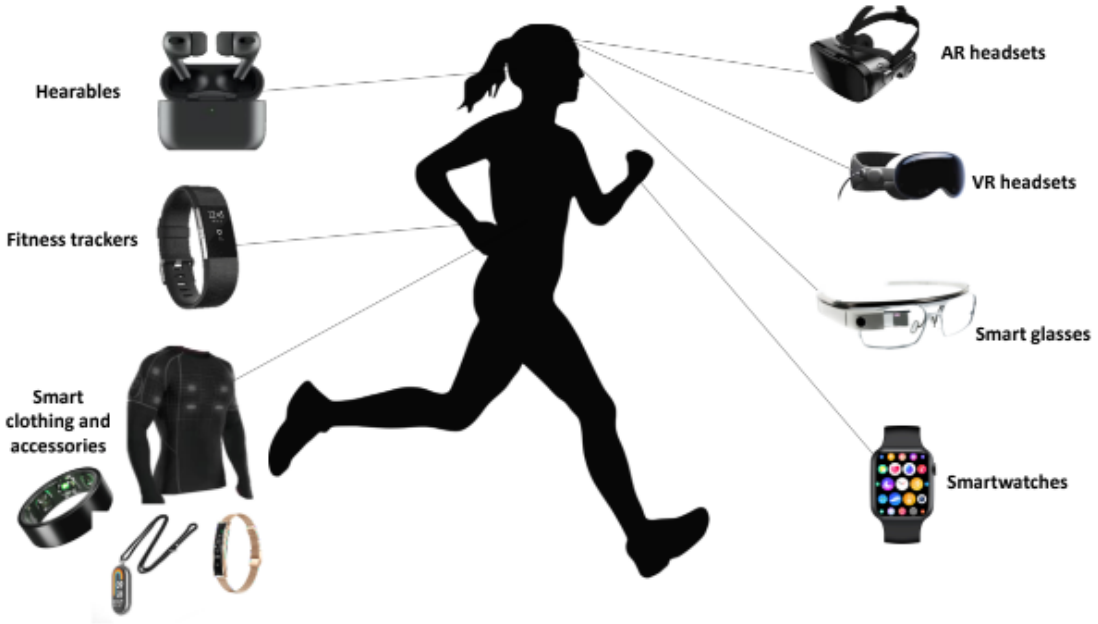

Figure 2 -The seven categories of wearable tech devices.
Source:GlobalData, 2026.

The critical 3echnologie of a wearable device include input, output, platform 3echnologies, and power sources **(Figure 3)**.

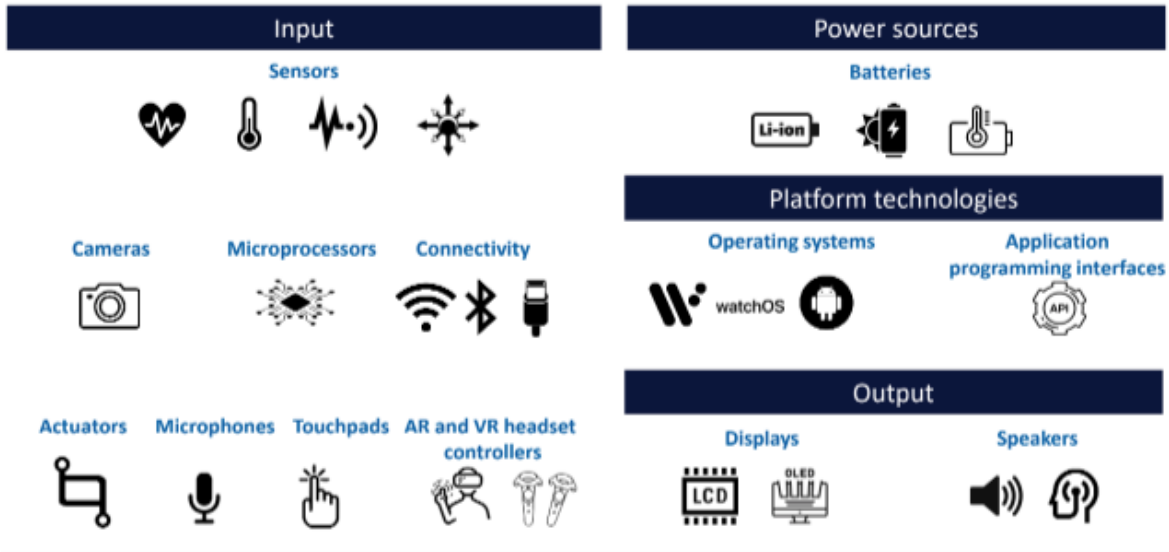

Figure 3 - Critical components of wearable tech devices.
Source:GlobalData, 2026.

Input

This category encompasses the components that gather data from the device wearer. The input elements in wearables are segmented into two sub-categories: internal data input components, which are responsible for gathering data about the wearer's body, and external data input components, which cater to the wearer's environment.

Internal data input components

In generating motion-related data on the wearer, devices primarily rely on a combination of sensors such as accelerometers, gyroscopes, and magnetometers. Using multiple sensors to collect motion-related data is primarily intended to augment the device's accuracy. As all these sensors have unique limitations, the data collected from multiple sensors is correlated to produce more accurate results. Wearable devices also include digital sensors for collecting biometric data (heart rate, temperature, blood pressure, galvanic skin response, electrocardiogram (ECG) readings, and brain activity) from the wearer. These sensors are placed in direct contact with the wearer's body. Numerous original equipment manufacturers (OEMs) operate in this area. They are constantly looking to minimize the size and cost of their offerings without compromising on the power factor.

External data input components

In the external data input sub-category, smartphone-like high-quality camera technologies and microprocessors are increasingly in demand. They primarily study the wearer's behavior and environment and provide actionable insights. For instance, in the logistics sector, AR smart glasses scan barcodes and QR codes on boxes to identify the items and support real-time actions based on the analysis performed by software embedded in the built-in microprocessors. External data inputs also feature wireless technology standards, such as Bluetooth, Wi-Fi, and Zigbee, which provide internet connectivity to wearable devices. Thanks to these connectivity systems, wearables are contributing elements to the Internet of Things (IoT) ecosystem.

Output

The data gathered by wearable sensors is transmitted to external devices such as network access points and smartphones for analysis. The aforementioned wireless connections—Bluetooth, Wi-Fi, and others—serve as the data transmission facilitators between wearables and smartphones. In contrast, military wearables use radio frequency (RF) features to transmit data to base stations. In addition to data transmission, output components also comprise displays and speakers. Similarly, vibrating components (which deliver a mild sensation as haptic feedback for touch interfaces) are becoming integral to wearable devices, especially smart clothing.

Displays

Wearable devices feature various types of display panels, such as e-ink displays, passive matrix liquid crystal displays (LCDs), and high-resolution organic light-emitting diodes (OLEDs), such as in the Apple Watch Series 11. As battery life remains a key area of concern, wearable OEMs opt for the type of display that will most enhance their products' utility while providing users with a clear view. Samsung Electronics and Garmin are leading in MicroLED technology for smartwatches, providing improved color reproduction, better contrast ratios, and increased energy efficiency compared to OLED displays. Garmin's Fenix 8 Pro, announced in September 2025, will feature a MicroLED display with up to 4,500 units of brightness, making it the brightest smartwatch from Garmin to date. It is significantly brighter than most other premium smartwatches, such as the Apple Watch Ultra 3 and the Samsung Galaxy Watch Ultra (2025), which have a peak brightness of about 3,000 nits. As manufacturing costs fall due to advances in manufacturing techniques and production scales up, MicroLED technology is expected to be in mid-range and budget wearable devices in the coming years. Regarding data display, most wearable devices reflect a limited set of metrics, such as momentary heart rate and daily step count, typically relying on an accompanying mobile app to demonstrate the complete (weekly, monthly, etc.) range of available metrics. Smartphones maintain an edge over wearables in this respect, as they can provide a graphical view of the current heart rate and walking average on their comparatively larger displays.

Speakers

Speakers are increasingly used in wearable devices, driven by the growing demand for audio capabilities and cellular connectivity. While some devices allow unidirectional audio output (e.g., smart clothes), others also feature bidirectional voice communication, which supports integration with conversational platforms. The emphasis on wearable speakers is also due to the increasing popularity of hearables, the development of audio-supported smart glasses, and the limited scope for improvement in smartwatch displays.

Platform technologies

Wearable platform technologies include operating systems (OSs) and application programming interfaces (APIs).

OSs

OSs are fundamental to modern wearables and are responsible for establishing communication between wearable devices and the apps that run on paired smartphones and tablets. Smartphone apps differ from their counterparts on wearable devices in terms of functionality, user interaction, and device specificity. As a result, tech companies optimize their respective OSs to calibrate the wearable apps on smartphones and establish seamless interoperability. Apple offers an optimized version of its iOS platform, watchOS, in Apple Watches, while Google uses the Android-derived Wear OS for smartwatches. Apple has maintained control of the market thanks to the closed nature of its OS, while Google strengthened its OS in 2021 by merging with Samsung's Tizen OS, offering better battery life and a greater selection of apps. Apple has designed the visionOS platform for its Vision Pro AR headset with features built to integrate digital media with real-world and physical inputs such as eye movements, hand gestures, and voice controls.

APIs

While the race to develop proprietary OSs intensifies, wearables are also becoming enterprise data generation tools. With technological maturity and cross-pollination of data, new business opportunities are emerging, which will result in the transformation of wearables from products into services. This, in turn, will bring APIs to the fore and open new avenues for app developers. Google allows app development through two of its APIs. Google Fit REST API allows access and storage of data from the Google Fitness Store using an external application, while the Wear OS API enables the development of apps and games for Google devices using Java. Apple's Health Records API creates an ecosystem of tools that use health records to manage medications, nutrition plans, diagnosed diseases, and more. Google's Fitbit offers an API for developers looking to connect and develop apps and services from the data collected by the brand's wearables (fitness trackers and smartwatches).

Power sources

One of the key constraints for wearables is power. Lithium-ion batteries power most wearables, but several companies are researching alternative power sources. The goal is to build a reliable and consistent power source that supports efficient connectivity with other devices. Although solar-powered batteries, body heat-powered devices, zinc-carbon batteries, and lithium-ion polymer batteries are gaining ground in the market, connectivity support remains a constant concern. Meanwhile, solid-state lithium batteries have the potential to overcome limitations of traditional lithium-ion batteries, such as short lifespan, safety concerns over flammable liquid electrolytes, and size and weight issues. Solid-state lithium batteries use a solid electrolyte, increasing energy density and eliminating the risk of leaks and explosions. With an extended lifespan, they endure more charge-discharge cycles before experiencing performance degradation, leading to less frequent replacements. Samsung Electronics is reportedly developing solid-state batteries for the Galaxy Ring 2, which should offer greater energy density, longer life, and a reduced fire risk.

C. Market Size and growth forecasts

GlobalData forecasts that the wearable tech market will grow from $117.4 billion in 2024 to $232.2 billion in 2030 at a compound annual growth rate (CAGR) of 12% (**Figure 4**).

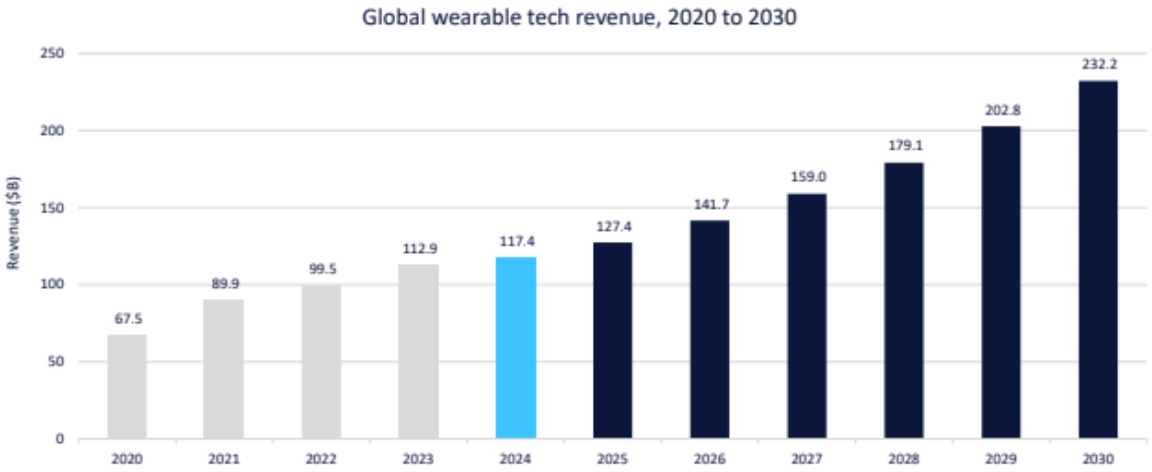

Figure 4 - The wearable tech market - 2020 - 2030.
Source:GlobalData, 2026.

Hearables will dominate through 2030, despite smart glasses' growth - Hearables make up the largest segment of the wearable tech market, accounting for over 50% of total revenue in 2024. GlobalData predicts that health and fitness monitoring within hearables will be a key selling proposition over the next few years. The healthcare landscape has changed drastically as the sector transitioned to a post-pandemic world. Hearables revenue will grow at a CAGR of 10.5% between 2024 and 2030, and it will maintain its position as the market's largest segment, with a 46% share in 2030.

Smartwatches, the second-largest segment, will record revenue of $65.5 billion in 2030, up from $45.0 billion in 2024 at a CAGR of 6.5%. Users continue to transition from fitness trackers and basic watches to smartwatches. Smartwatch growth will be primarily driven by AI integration to deliver more personalized fitness coaching and predictive health insights, as well as by the emergence of budget-friendly smartwatches. Meanwhile, the transition to smartwatches and the rise of alternative devices, such as smart rings, will weaken demand for fitness trackers. Revenue will fall to $3.2 billion in 2030 from $3.8 billion in 2024.

The smart glasses market will record the highest CAGR among all wearable tech sectors. From $2.3 billion in 2024, the market will grow to $23.4 billion in 2030 at a CAGR of 47.6%. This growth will be driven by AI integration, improved design, advances in processor miniaturization, and the rise of compelling use cases in both consumer and enterprise markets. Advances in AI are enabling smart glasses to integrate visual, audio, and other sensor data to deliver context-aware, interactive assistance. These systems can recognize objects, translate languages, process video, images, and audio, and provide contextual answers to user queries—capabilities that expand the practical use cases for smart glasses beyond what was previously possible.

The AR headsets market will be worth $6.0 billion by 2030, up from $887 million in 2024 at a CAGR of 37.5%. New devices continue to be introduced in the market, and new use cases are emerging. Although these devices will initially appeal to select users, improved features, functionality, and new use cases will broaden their appeal. Vendors that can build an ecosystem incorporating both hardware and software around their products will likely succeed in this segment.

The VR headset market will generate revenue of $23.5 billion by 2030, up from $5.7 billion in 2024 at a CAGR of 26.6%. Differentiating products by price, features, and ease of use will be key to growth in this market. In the long run, VR headsets will become valuable training tools and popular leisure activity options. As hardware costs decline, VR headsets will become more accessible to a broader audience. The smart clothing and accessories market will grow to $3.7 billion in 2030 from $925 million in 2024 at a CAGR of 26.1%. The growth will primarily be driven by smart rings due to consumer interest in this form factor, which is sleeker and less obtrusive than smartwatches and fitness bands (**Figure 5**).

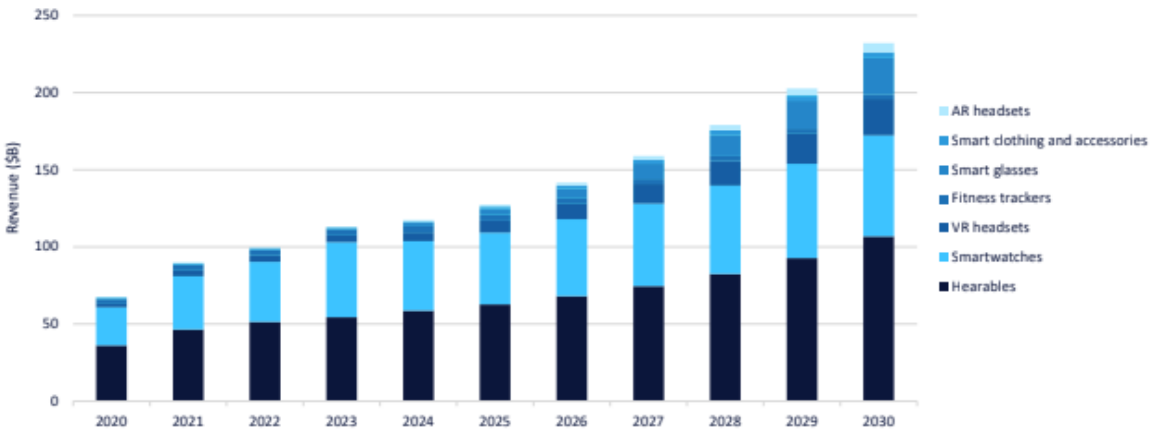

Figure 5 - Wearable tech revenue by type, 2020 to 2030.
Source:GlobalData, 2026.

D. Use Cases

Healthcare is a key market for wearables, which are currently used for remote consultations, surgical assistance, disease management, telehealth, and patient monitoring. Discreet form factors, such as smart rings and pendants, are being introduced to provide 24/7 monitoring of metrics like sleep, heart rate variability, and body temperature, often with greater accuracy due to their constant contact with the body.

The Oura Ring (**Í**), for instance, is used by healthcare providers and researchers to monitor patients remotely, track chronic diseases, and analyze biometrics like heart rate variability (HRV) and sleep stages. In October 2025, Oura Health partnered with Cigna Healthcare to integrate continuous biometric data collected from the Oura Ring 4 into Cigna's preventive care and chronic disease management programs. In June 2025, Maven Clinic, a US virtual women's health provider, partnered with Oura to integrate its ring's data into women's and family healthcare to offer virtual care. Maven members can use sleep, HRV, temperature, and stress data to gain insights that can support personalized care across pregnancy, postpartum, and menopause.

Smart glasses are being used in telesurgery and for visually impaired users. IVisionTech's iSee smart glasses, for instance are designed for visually impaired users and provide real- time navigation, object recognition, and contextual information. Meanwhile, the US non-governmental organization (NGO) Ohana One is a pioneer in telesurgery, using smart glasses for surgical training and supervision.

VR headsets are being used in the healthcare sector to provide immersive life-support training and educate patients about how different intraocular lenses (IOLs) (monofocal, multifocal, and premium lenses) will impact their vision before cataract surgery. US start-up VirtuaLens launched a VR platform in September 2025 that allows cataract patients to try different IOL options in realistic 3D scenarios. This system helps patients understand how various lenses may impact their vision in real-life situations, such as night driving and reading, before surgery.

Wearables in healthcare

Smart ring to monitor patients remotely

Source: Oura

Smart glasses help visually impaired users detect objects

Source: iVision Tech

Patients virtually try different lenses via VR headsets

Source: GCC Business News

Figure 6 - Wearables in Healthcare.

Are you interested in learning more about Wearable Tech?
Reach out to us: healthbusiness@healthportugal.com