

# WHAT CAN APPLE VISION PRO CONTRIBUTE IN PLASTIC SURGERY?

## ¿QUÉ PUEDEN APORTAR LAS APPLE VISION PRO EN CIRUGÍA PLÁSTICA?

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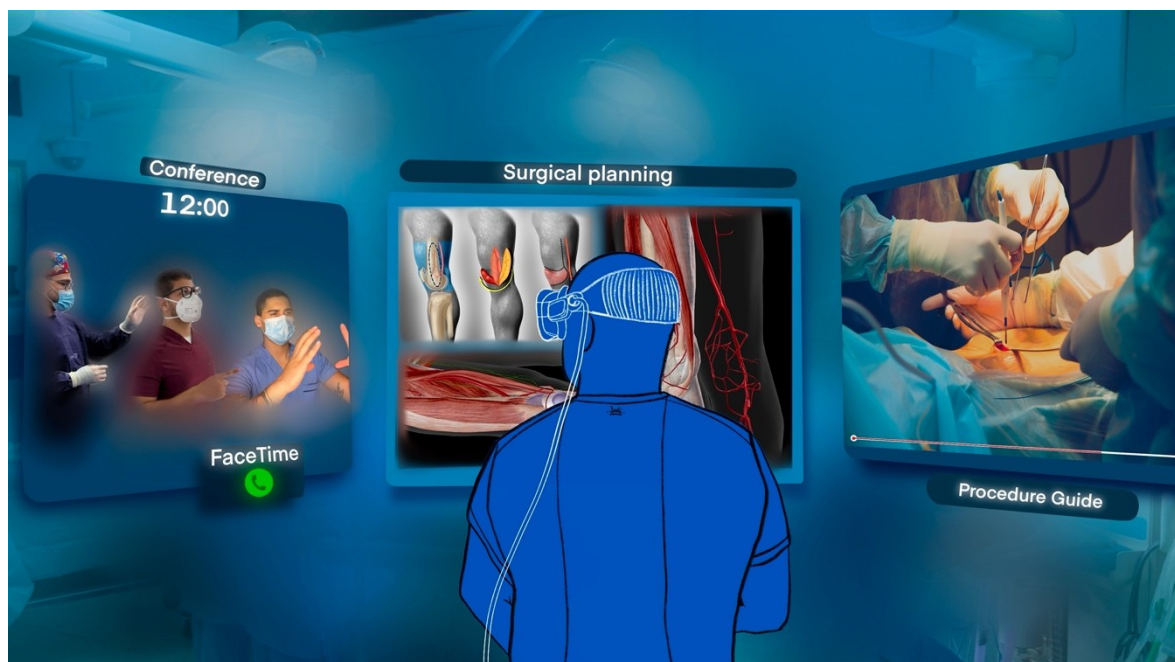
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At the Worldwide Developers Conference (WWDC), on June 5, 2023, Apple introduced a revolutionary space computer called Apple Vision Pro (AVP). They are glasses/Headphones that seamlessly link the physical and digital worlds and allow the user to maintain contact with other people while using this device. Through VisionOS, the world's first space operating system and its 23 million megapixel ultra-high definition system distributed over two screens, it allows users using AVP to interact with digital content as if it were physically present in their real space (1). Vision OS has a three-dimensional interface that allows the application to overcome the limits of screens, being able to place multiple screens at the same time, side by side in any size, giving the user infinite space with access to their applications to develop their tasks. Additionally, this system is compatible with Magic Keyboard and Magic Trackpad, allowing you to add crisp text to projected images; Likewise, it incorporates Apple's first three-dimensional camera and an audio system, which allows you to make video calls and view images and videos, creating a completely new interaction and work experience for users (1).

The use of AVP is based on the development of a mixed reality (virtual and augmented); The user interface is based on eye tracking, hand tracking, gestures, cameras and sensors, eliminating the need for keyboards, touch screens and other physical controllers, and can be used for a variety of purposes, including medical-surgical education and remote education (2). Plastic surgeons can use this immersive technology as a tool that allows them to practice surgical procedures, study anatomy very precisely, improve health care and patient monitoring, or audiovisual communication in real time with other health professionals for consultation. o define the best treatment for the patient; all of this within a controlled space where data can be acquired and procedures performed simultaneously, leading to better patient appreciation and better outcomes (figure 1) (2-3). Plastic surgery residents can use AVPs as a surgical education tool, unlimitedly replicating complex procedures or techniques that they lack or would like to perfect, in a comfortable, safe and low-risk environment (3). And it can also serve as a training method for residents in which surgeons can guide and evaluate them remotely and in real time (figure 1).



**Figure 1:** Illustrates the health professional using the Apple Vision Pro and its immersive technology, which facilitates surgical training through recreation of scenarios, acquisition of audiovisual data and video calls with other professionals. (Source: self made.)

A systematic review by Mao et al. on the use of virtual reality for surgical training, demonstrated improved surgical skills and techniques, as well as shorter surgical times with the use of virtual reality, compared to traditional academic training without the support of these technologies immersive (4).

In conclusion, AVPs are a promising tool for the future of medicine and surgery. These surgical simulations will become increasingly popular and accurate, and by being able to include other professionals (teachers) in this mixed reality interface, it would represent an evolution in the methods of evaluation and training of technical skills of residents. In addition, it could invite other medical-surgical specialties to implement this technology and explore all its scope.

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