

# WEARABLE DEVICES IN HEALTHCARE

The increased use of wearable devices continues to soar as a wide range of industries benefit from this rapidly evolving technology. Wearable devices have noticeably gained prominence in the healthcare industry. From monitoring general health and fitness to more critical applications, such as cardiac arrhythmia detection, wearable technology has helped to manage existing medical conditions, prevent illness and reduce healthcare costs.

*This bulletin outlines some of the medical applications and the benefits of wearable devices in the healthcare industry.*

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## WEARABLE TECHNOLOGY

Wearable technology is a general term for a group of smart devices that are designed to be worn throughout the day. Monitoring and diagnostic devices can measure your heart rate, pulse, blood pressure, glucose level, sleep, fetal heart rate and the nervous system; therapeutic devices manage pain, help with rehabilitation, pump insulin or provide respiratory therapy.

### Medical wearable devices

Medical wearable devices are being used to monitor patients, improve patient and staff safety and health.

Wireless patient monitoring includes:

- Bio patch
- Medical pancreas (automatic insulin administration)
- Smart sleep
- Smart glasses
- Smart hearing aids
- Smart watch
- Ankle bracelets
- Footwear

### Wearables for Safety

One of the goals of wearables is to provide for safer working conditions, which may include prediction of employee injuries, and fatal accidents due to fatigue or other factors. These devices may also help in situations, where you may feel threatened or in danger. They are sometimes disguised as jewelry so they can be used discreetly, without letting a potential attacker know what the user is doing. Most are operated by a button that sends an alert to others, sounds an alarm, or both (commonly called panic buttons in healthcare). The alerts can be pre-programmed texts or recorded voice messages. Many wearables also have built-in GPS, allowing you to share your location immediately with friends, family, nearby people or even the police. Most of the devices that allow this are hands free and portable, eliminating the need to take the device out of your pocket.

## Wearables for Health

Another goal of wearables is to change medicine from reactive (when a person is already sick and requires treatment) to preventive (when a person is healthy and pre-emptively monitors their health and wellbeing). This can significantly reduce healthcare costs while increasing the duration and quality of life. Wearables are contributing to disease prevention, detection and precautionary measures, and, provide quick accessibility to medical support while providing increased health and fitness awareness. Wearable technology provides us with the ability to monitor our fitness levels and track our location with GPS. As technology and healthcare advance, they will become more sophisticated with enhanced data security and privacy.

### Benefits of Wearables:

- User-friendly and unobtrusive
- Improved customer service
- Increase productivity
- Increased health and fitness awareness
- Self-reporting
- Faster treatment options
- Pain measurement/management
- Constant connectivity for patients, employees and doctors
- Electronic healthcare integration
- Provider/patient personalization

## SUMMARY

Wearable devices have many uses and can provide great benefits to the healthcare industry. Patient information can be gathered anytime/anywhere outside the clinical setting. Telehealth computing of wearable technology helps monitor wellbeing, provide medical care quickly and promotes treatment. Furthermore, patients/users can utilize these monitoring devices to assist in controlling diseases and taking proactive steps to mitigate possible consequences and promote improved overall health.

## REFERENCES

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