

A8

Technology and heart health: A new frontier in fitness training

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Background

Cardiovascular health is crucial for physical fitness and performance. This study explores wearable devices and at-home tools for monitoring cardiovascular metrics, focusing on their role in fitness training and long-term health management.

Materials and methods

Wearable devices like smartwatches (e.g., Apple Watch, Fitbit) and at-home tools such as blood pressure monitors and pulse oximeters were examined for fitness settings. Wearables track heart rate, activity, and calories burned, enabling real-time training adjustments. At-home tools provide non-digital alternatives for tracking vital metrics. Proper calibration and use are essential for accurate data. Research shows wearables effectively track cardiovascular responses in everyday settings, helping to tailor fitness programs. Exercise interventions have proven effective in reducing blood pressure and improving cardiovascular health.

Results

Wearable devices were ranked the top trend in the ACSM 2022 Worldwide Survey of Fitness Trends. They offer continuous tracking of cardiovascular metrics, enabling progress monitoring and health issue detection. Wearable sensors predict cardio-respiratory fitness and provide personalized health recommendations. Blood pressure monitors and pulse oximeters are cost-effective alternatives for clients with chronic conditions or limited access to wearables.

Conclusions

Integrating cardiovascular monitoring tools into fitness programs empowers clients and trainers with valuable insights, enhances exercise prescriptions, supports heart health, and detects potential health concerns early. These technologies bridge fitness and medical care, fostering a holistic health and performance optimization approach.