Mild Traumatic Brain Injury Diagnostic Microneedle Patch

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Technology description

An innovative transdermal patch that diagnoses mild traumatic brain injury (MTBI).
This technology accurately tests the cellular damage response which provides information on the severity of the injury.

Background

Mild traumatic brain injury (MTBI), often called a concussion, is a common type of traumatic brain injury that is characterized by a blow to the head which results in short-term neurological disturbances. These disturbances typically resolve on their own; however, in some cases, serious complications can arise. According to statistics presented by the Centers for Disease Control and Prevention, the incidence rate for MTBIs has increased substantially over the past decade. MTBI is predominantly caused by falls, traffic accidents, sports related accidents, and physical assaults. Current MTBI diagnostic methods include psychological assessments which often rely on subjective, self-reported symptoms. Studies reviewing these types of assessments indicate that between 56% and 89% of patients who sustained an MTBI are incorrectly diagnosed. Therefore, there is a clear need to develop an objective diagnostic test which is more sensitive, specific, cost effective, and can be administered easily.

Technology Description

Researchers at the University of New Mexico have developed an innovative transdermal patch that diagnoses mild traumatic brain injury (MTBI). This technology accurately tests the cellular damage response which provides information on the severity of the injury.

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Application area

Objective diagnostic test for MTBI
Easy-to-use patch that can accurately diagnose concussions
Cost-effective
Non-invasive
Able to detect more than one biological molecule

Institution

The University of New Mexico

Inventors

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