Trends & Technology

Trends

Transplanted hair follicles could help repair scar tissue

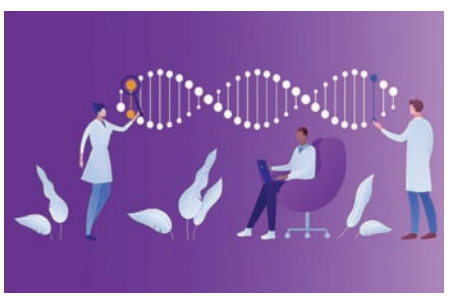
In a study funded by the Medical Research Council and Engineering and Physical Sciences Research Council, skin scars began to behave more like uninjured skin when treated with hair follicle transplants. The scarred skin harbored new cells and blood vessels, remodeled collagen to restore healthy patterns, and expressed genes found in healthy, unscarred skin. Scar tissue in the skin lacks hair, sweat glands, blood vessels, and nerves. Scarring, which occurs in over 100 million people per year, can impair movement as well as potentially causing discomfort and emotional distress. With the knowledge that hair transplants had previously been shown to aid wound healing, the researchers hypothesized that transplanting growing hair follicles into scar tissue might induce scars to remodel themselves. They transplanted hair follicles into the mature, normotrophic scars on the scalps of three participants in 2017. The researchers found that the follicles inspired profound architectural and genetic shifts in the scars toward a profile of healthy, uninjured skin. After transplantation, the follicles continued to produce hair and induced restoration across skin layers.

Source: **asamonitor.pub/3jWJFPn**

NIH researchers uncover new links to genetic conditions with genotype-first approach

National Institutes of Health (NIH) researchers completed an assessment of 13 studies that took a genotype-first approach to patient care, as opposed to the phenotype-first approach to clinical research, which starts with clinical findings. A genotype-first approach to patient care involves selecting patients with specific genomic variants and then studying their traits and symptoms. The researchers found that this approach helped discover new relationships between genomic variants and specific clinical traits. The approach also helped researchers find novel symptoms related to a disorder that clinicians previously missed because the patient did not have the typical symptoms, as well as determine the function of specific genomic variants, which has the potential to help clinicians understand newly described disorders. Based on the results of the study, researchers recommend institutions aiming to establish genotype-first centers create strategic plans, especially for deciding what genomic findings will be returned, which may involve genetic counseling services. They also recommend actively communicating with study participants to build informed and trusting long-term relationships.

Source: **asamonitor.pub/3WKcZHj**



FDA grants accelerated approval to Leqembi for the treatment of Alzheimer's

The U.S. Food and Drug Administration (FDA) has given Fast Track, Priority Review, and Breakthrough Therapy designations to Leqembi for the treatment of Alzheimer's disease. Leqembi is the second of a new category of medications approved for Alzheimer's disease that target the fundamental pathophysiology of the disease. Researchers evaluated Leqembi's efficacy in a double-blind, placebo-controlled, parallel-group, dose-finding study of 856 patients with Alzheimer's disease. Patients receiving the treatment had significant dose- and time-dependent reduction of amyloid beta plaque, with patients receiving the approved dose of lecanemab, 10 milligram/kilogram every two weeks, having a statistically significant reduction in brain amyloid plaque from baseline to week 79 compared to the placebo arm, which had no reduction of amyloid beta plaque. These results support the accelerated approval of Leqembi, which is based on the observed reduction of amyloid beta plaque, a marker of Alzheimer's disease. Alzheimer's disease is an irreversible, progressive brain disorder affecting more than 6.5 million Americans.

Source: **asamonitor.pub/3Zh9F8h**

WHO warns of early death in many persons with disabilities due to health inequities

A new report by the World Health Organization shows evidence of persons with disabilities being at a higher risk of premature death – even up to 20 years earlier – and illness compared to persons without disabilities, due to systemic and persistent health inequities. Persons with disabilities have an increased risk of developing chronic conditions, with up to double the risk of asthma, depression, diabetes, obesity, oral diseases, and stroke. Many of the differences in health outcomes can be explained by avoidable and unjust factors. Inequities in health care take the form of negative attitudes of health care providers, health information in formats that cannot be understood, and difficulties accessing a health center due to the physical environment, lack of transport, or financial barriers. One in six people have significant disabilities, or 1.3 billion people worldwide, underscoring the importance of inclusion, accessibility, and nondiscrimination in the health sector for all people. Ensuring health equity for persons with disabilities is critical toward achieving universal health coverage, can contribute to healthier global populations, and is a central component in efforts to protect populations in health emergencies. The report provides important economic analysis of adopting a disability-inclusive approach. It shows investing in a disability-inclusive health sector is cost-effective, as WHO calculates that governments could expect a return of about $10 for every $1 invested on disability-inclusive noncommunicable disease prevention and care. In addition, family planning and vaccination are cost-effective when implemented in a disability-inclusive manner.

Source: **asamonitor.pub/3CuqxhW**

COVID-19 vaccine for children after MIS-C appears safe, according to NIH-supported study

An NIH-funded study of children and adolescents who received a COVID-19 vaccination following multisystem inflammatory syndrome (MIS-C) found that there were no reports of serious complications including myocarditis or MIS-C reoccurrence, demonstrating that it is safe to get a vaccine after having MIS-C. MIS-C affects one in 3,000 to 4,000 children and adolescents who had COVID-19. It occurs a few weeks after COVID infection and can lead to organ failure. Symptoms can range from stomach pain, fever, and rash to myocarditis. The cross-sectional study included 22 medical centers and enrolled 385 patients aged 5 years or older with prior MIS-C who were eligible for COVID-19 vaccination. Of this group, 48.1% received at least one vaccine dose. Of those who received a COVID vaccination following MIS-C, mild adverse reactions – mostly arm soreness and fatigue – occurred in 49% of them, similar to the general population. There were no reports of serious complications, including myocarditis or recurrence of MIS-C.

Source: **asamonitor.pub/3QnoKB8**

Technology

AI-calculated biomarker could predict how lung cancer patients respond to immunotherapy

A newly discovered biomarker that can be calculated by an artificial intelligence (AI) algorithm from a routine CT scan could make the search for the right cancer treatment much more efficient. Researchers trained an algorithm to comb through scans of non-small cell lung cancer (NSCLC) tumors, looking for specific indicators of how well an individual might respond to immunotherapy treatments. Immunotherapy is often the first treatment option for NSCLC – the most common form of lung cancer – even though it works in less than half of patients and can be a significant financial burden. The new biomarker has been dubbed quantitative vessel tortuosity, or QVT, as it assesses the arrangement of the blood vessels surrounding a tumor. The researchers used AI tools to examine these vessels in more than 500 NSCLC patients both before and after they'd been treated with immune checkpoint inhibitor therapies. Their findings determined that tumor-associated vasculature is more twisted in patients who don't respond well to immunotherapy, as the more twisted the vessels, the harder it is for anti-tumor cells to reach the tumor. With those findings, the researchers were able to train a machine learning algorithm to analyze the blood vessels around a tumor using only a CT scan and calculate the likelihood that a patient will respond to immunotherapy. ■

Source: **asamonitor.pub/3IuTBtu**