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Researchers in Japan develop strategy to strengthen skeletal muscles

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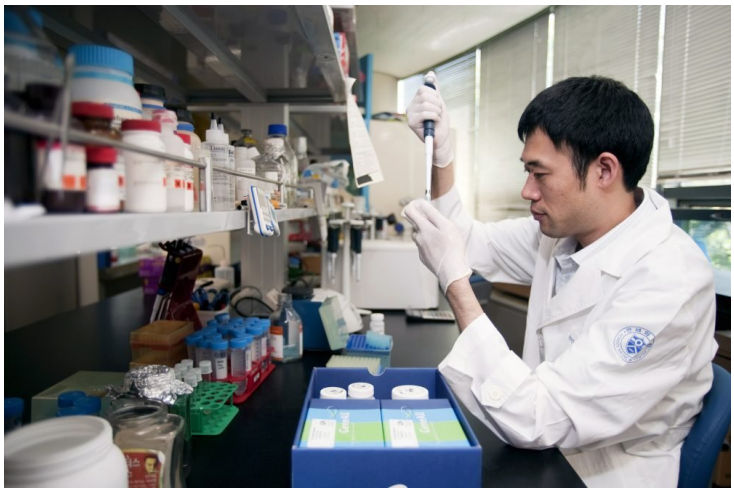

Hokkaido University researchers have developed a strategy to fabricate materials that become stronger in response to mechanical stress mimicking skeletal muscle growth. Their findings could pave the way for long-lasting materials that can adapt and strengthen based on surrounding conditions.

The strategy was inspired by the process that makes human skeletal muscles become stronger. As a result of strength training at the gym, for example, muscle fibres break down, encouraging the formation of new, stronger fibres. For this to happen, the muscles must be supplied with amino acids, the building blocks of proteins, which join together and form muscle fibres.

The research team developed a strategy employing 'double-network hydrogels' that emulates the building process of skeletal muscles.

According to the researchers, their work could help with the development of self-growing gel materials for applications as flexible exosuits for patients with skeletal injuries; these suits would potentially become stronger and more functional the more they are used.