

Singapore develops new therapeutic approach to treat metabolic disorders

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Therapeutic approach inhibits obesity development

Scientists at Nanyang Technological University, Singapore (NTU Singapore) have developed a new therapeutic approach to obesity and related metabolic disorders that in laboratory experiments demonstrated a significant reduction in body fat, body weight, and improvement in the blood markers that accompany these disorders.

Developed by a team from NTU Singapore's School of Chemical and Biomedical Engineering (SCBE), their method begins with an injection of a specially developed hydrogel using an insulin needle, into a fat deposit directly under the skin.

A near infrared light is then shone on the site of the injection for five minutes a few times daily, over a few days, activating the hydrogel's fat-burning ability. Through laboratory experiments reported in ACS Nano in December 2021, the NTU scientists showed that mice on a high fat diet that went through this treatment were lighter in body mass after two weeks, as compared to obese mice in the group that did not receive the treatment.

The NTU scientists have filed a patent for their innovation through NTUitive, the University's innovation and enterprise company.

The NTU team is now looking to collaborate with clinical partners to conduct clinical trials on human subjects to further test their therapeutic approach to tackle obesity. They are also studying how this treatment method could be applied for cosmetic uses such as body shaping.