

Strength training may lower diabetes risk in obesity



New findings reported in the *Journal of Endocrinology* suggest that strength training may be a fast and effective way to reduce the risk of fatty liver disease and diabetes in obese people.

The findings are from a study that examined the effects of strength-based exercise on liver fat accumulation, blood glucose regulation and markers of inflammation in obese mice. After performing strength training over a short time-period, the obese mice had less fatty livers, reduced levels of inflammatory markers and their blood glucose regulation was improved, even without overall loss of body weight.

These improvements in metabolism occurred over a short time, even though the overall amount of body fat was unchanged, suggesting that strength training can have positive effects on health and directly affect liver function and metabolism, according to Dr. Leandro Pereira de Moura, from the School of Applied Sciences at the University of Campinas in Brazil, who led the study. The results indicate that strength training "may be a more effective, non-drug and low-cost strategy for improving health in obesity," he points out.

While these findings show a clear benefit in obese mice, it would be difficult to mimic strength training in animals, the doctor said, adding that more research is required in both animals and people to really understand how liver metabolism is affected by strength training.

These health benefits of strength-based exercise, Dr Pereira de Moura notes, will be even more effective if accompanied by reduction of body fat. "However, based on these findings obese individuals could be directed to increase their activity through strength training but they should always first consult their primary care physician," he says.

Obesity, which is now a global health epidemic, needs more effective intervention strategies to avoid debilitating complications including fatty liver disease and diabetes. Although increased physical activity is a widely accepted method of improving health and aiding weight loss, the relative benefits of different types, durations and intensities of physical activities are still under much debate. A wealth of research has focussed on the benefits of energy-burning aerobic exercise, with the potential benefits of muscle-building strength and resistance training often neglected.

Dr. Pereira de Moura and his colleagues now plan to investigate the mechanisms underlying these findings, to identify how they may be maximised and to help devise real guidance for obese individuals. They are also conducting studies that examine the impact of different exercise protocols, such as aerobic exercise or aerobic exercise combined with strength training, on fatty liver accumulation. With a better understanding as to how strength training improves liver function, researchers may be able to identify new targets for drug intervention that may prevent or reduce the risk of fatty liver disease and type 2 diabetes in obesity.

Source: [Society of Endocrinology](#)

Image Credit: Dr. Pereira de Moura

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