OBESITY

ComBATting obesity

Brown adipose tissue (BAT) has an important role in non-shivering thermogenesis (that is, the production of heat during cold exposure without shivering) during early childhood but was thought to be non-functional in adulthood. Guy Vijgen, Wouter van Marken Lichtenbelt and colleagues now reveal that BAT can be recruited in adults with morbid obesity.

The investigators conducted an observational prospective cohort study of 10 adult patients with morbid obesity who underwent bariatric surgery using laparoscopic adjustable gastric banding. Patients were studied both before and 1 year after surgery. BAT activity was determined following acute cold stimulation using ^{18}F -fluorodeoxyglucose-PET-CT.

The number of patients with active BAT increased from two before surgery to five at 1 year after surgery. Moreover, following weight loss, individuals with

active BAT had significantly greater levels of non-shivering thermogenesis than those with inactive BAT.

“Our findings are the first to demonstrate that BAT activity can increase and that BAT can be recruited following weight loss,” explains Vijgen. “Indeed, increased BAT activity could promote daily energy expenditure and thus promote weight loss in obese individuals,” he adds, “making BAT a potential therapeutic target in weight management during the treatment of obesity.” The researchers now plan to further investigate the physiology of BAT in adults with obesity as well as other conditions in which low BAT activity is present, such as type 2 diabetes mellitus.

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Original article Vijgen, G. H. *et al.* Increase in brown adipose tissue activity after weight loss in morbidly obese subjects. *J. Clin. Endocrin. Metab.* doi:10.1210/jc.2012-1289