
PRESS RELEASE

Injection of appetite gene may offer a more effective alternative to dieting

Increasing the amount of appetite hormone, leptin, in the brain causes long-term weight loss without the bone weakening which is a common side effect of weight loss by dieting, according to a study published today in the [*Journal of Endocrinology*](#).

Leptin, known as the appetite-suppressing hormone, is produced by fat cells in the body and sends a signal to the brain that tells us when to stop eating. Obese people often become desensitised to their leptin hormone signals and over eat as a result.

Conventional weight loss methods such as dieting lead to weight loss that is often difficult to maintain and can lead to weakening of bones and osteoporosis equivalent to significant aging. Because osteoporosis is a major public health issue associated with decreased quality of life and increased mortality, there is a strong incentive to develop weight loss strategies that preserve bone strength.

Researchers at the Oregon State University and the University of Florida in the USA have found that injecting the gene that codes for leptin into the brains of adult female rats causes them to lose weight and maintain lower body weight. The researchers also looked at the structure of bones from rats that lost weight as a result of leptin gene-therapy and compared them to bones of normal rats that gained weight; they found that the gene-therapy rats did not lose bone mass.

Dr Urszula Iwaniec who conducted the study said, “Unfortunately, dieting, exercise and weight loss drugs have limited long-term success in controlling weight and can result in detrimental side effects such as weakening of the bones. In this study we show that leptin gene-therapy causes effective long-term weight loss while maintaining bone mass”

“Although the results are promising, additional research will be required to determine whether leptin gene therapy is practical for use in humans.”

Obesity is a major public health issue across the world. In the UK it is predicted that in 2015 obesity will cost the NHS £27 billion and in the US the annual cost of obesity exceeds \$147 billion. These expenses are projected to increase over the years with 1/3 of the US adult population now being affected by obesity.

“Novel approaches like leptin gene-therapy for treating obesity are needed to address this public health crisis”, said Dr Iwaniec.

Notes for editors:

1. The study "[Hypothalamic leptin gene therapy reduces body weight without accelerating age-related bone loss](#)" will be published in the *Journal of Endocrinology* on Wednesday 21 October 2015.

2. For press enquiries, please contact the Society for Endocrinology press office:

Dr Fiona Docherty

Communications Executive

Tel: +44 (0)1454 642 252

Email: fiona.docherty@endocrinology.org**Omar Jamshed**

Communications Executive

Tel: +44 (0)1454 642 206

Email: omar.jamshed@endocrinology.org

3. *The Journal of Endocrinology* is published by [Bioscientifica](#), an innovative and agile publisher. Bioscientifica collaborates with learned societies worldwide to develop new and existing quality products that meet the ever-changing needs of the biomedical community. Our publishing portfolio includes journals and online resources, including *Journal of Endocrinology*, *Endocrine Related Cancer*, *Endocrine Connections*, *Bone Abstracts* and *Endocrinology, Diabetes and Metabolism Case Reports*. Bioscientifica is a wholly-owned commercial subsidiary of the Society for Endocrinology.

4. The Society for Endocrinology is a UK-based membership organisation representing a global community of scientists, clinicians and nurses who work with hormones. Together we aim to improve public health by advancing endocrine education and research, and engaging wider audiences with the science of hormones www.endocrinology.org