

# **Weight-loss diet alone or combined with resistance training induces different regional visceral fat changes in obese women.**

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## **Source**

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## **Abstract**

### **BACKGROUND:**

Quantification of abdominal fat and its regional distribution has become increasingly important in assessing the cardiovascular risk.

### **OBJECTIVE:**

To examine the effects of 16 weeks of a hypocaloric diet with a caloric restriction of 500 Kcal per day (WL) or the same dietary intervention plus resistance training (WL+RT) on regional variation of abdominal visceral (visceral adipose tissue (VAT)) and subcutaneous (subcutaneous adipose tissue (SAT)) fat loss. Second, to identify the single-image that best represents total magnetic resonance imaging measurements of total VAT and SAT volume before and after WL or WL+RT intervention.

### **DESIGN:**

A total of 34 obese (body mass index: 30-40 kg m<sup>-2</sup>) women, aged 40-60 years, were randomized to three groups: a control group (C; n = 9), a diet group (WL; n = 12) and a diet plus resistance training group (WL+RT; n = 13) with the same caloric restriction as group WL and a 16-week supervised whole-body RT of two sessions per week.

### **RESULTS:**

WL+RT programs lead to significant changes in the location of highest mean VAT area from L3-L4 to L2-L3 discal level from pre- to post- intervention, whereas after WL the greatest relative VAT losses were located at L5-S1. Similar decreases in the SAT areas at all discal levels were observed after WL and WL+RT.

### **CONCLUSION:**

Different weight loss regimes may lead to different distribution of VAT. Sites located significantly above (cranial to) L4-L5 (that is, ~ 5-6 cm above L4-L5 or at L2-L3 discal level) provided superior prediction of total abdominal VAT volume, whereas more caudal slices provide better prediction of subcutaneous fat, not only before but also after either WL or WL+RT.

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