Osteocalcin - More than a bone marker
The Odense Androgen Study
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Background

Adipocytes affect bone (leptin, neuronal pathways)
Karsenty et al, Cell Metab. 2006
Thus (by principle of feed back loops)
Bone must affect adipocytes
Lee et al, Cell. 2007 & Kindblom et al, JBMR. 2009

Objectives

To examine the relationship between osteocalcin and regional fat depots

Methods

The Odense Androgen Study: population-based, cross-sectional study. 779 men aged 20-29 years
Nielsen et al, JCEM. 2007

Whole body DXA
N=799

DXA fat parameters - adjusted

Abdominal MRI
N=403

MRI fat parameters - adjusted

Thigh MRI
N=402

Results

Osteocalcin vs. BMI, waist, and fat mass

Osteocalcin vs. bs-ALP and 1CTP

All bone markers vs. waist

Conclusions

Associations: central fat vs. peripheral fat

DXA:

Associations: deep vs. sc. adipose tissue

MRI:

References

1. Karsenty et al, Cell Metab. 2006
2. Lee et al, Cell. 2007