

Body composition through adult life: Constant fat-free mass and increasing body fat

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1. Introduction

Scandinavian reference data on body composition is not available and the validity of extrapolations from other populations is unknown. DXA- (dual energy x-ray absorptiometry) derived body composition data on adults from four Swedish population based studies were pooled. The studies were conducted between 1990 and 2006.

2. Methods

525 men and 722 women, 20 to 75 years of age and BMI ranging between 16.4 to 41.7 kg/m². Cross-sectional data on measured anthropometry and DXA-determined body composition were analysed.

3. Results

Table. BMI (mean±sd) and prevalence of overweight and obesity by gender and age groups.

Age group	BMI, kg/m ²	≤29.9 kg/m ² , %	≥30 kg/m ² , %
Men			
20-29, yrs.	23.4±2.6	29.7	1.4
30-39, yrs.	24.7±2.8	41.9	3.2
40-49, yrs.	25.6±2.9	50.7	7.1
50-61, yrs.	26.0±3.2	48.2	11.9
75, yrs.	26.5±3.0	56.0	14.0
Average	25.4±3.1	45.9	7.8
Women			
20-29, yrs.	22.7±2.8	13.4	2.4
30-39, yrs.	23.6±3.2	21.5	4.2
40-49, yrs.	24.2±3.7	29.6	7.2
50-61, yrs.	25.4±3.6	36.4	11.6
75, yrs.	27.0±5.0	33.3	27.1
Average	24.4±3.7	28.2	8.6

BMI increased across all age groups.
Men: +3.1 kg/m², women: +4.3 kg/m², p<0.0001, both genders.

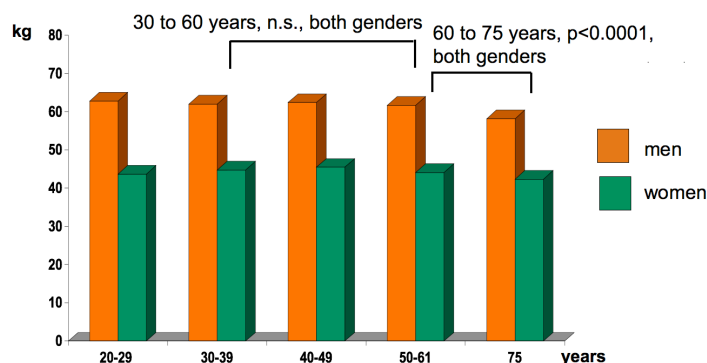
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7. Conclusions

- ✓ Fat-free mass was found to be constant between 30 to 60 years of age and decreased up to 75 years in Swedish men and women.
- ✓ The increase in BMI across age groups was due to increased fat mass.
- ✓ The reduction in skeletal muscle mass with age is important in relation to sarcopenia.
- ✓ This data may be used as reference for body composition in Scandinavian populations.

4. Results

Figure. Fat-free mass by gender and age groups.



5. Results Height-adjusted skeletal muscle mass remained unchanged from 20 to 60 years of age but decreased thereafter to the age of 75 years in men (p<0.0001) but not in women (p=0.22).

6. Results

Table. Percent body fat (%BF) by gender and age group. Mean±sd.

Age group	%BF, men	%BF, women
20-29, yrs.	18.9±7.2	29.7±7.0
30-39, yrs.	22.7±6.0	31.6±6.8
40-49, yrs.	23.9±6.1	32.7±7.7
50-61, yrs.	25.2±6.0	36.0±7.2
75, yrs.	28.8±6.3	38.8±8.1
Average	23.9±6.7	33.4±7.7

Percent body fat increased across all age groups.
Men, +9.8%, women, 9.1%, p<0.0001, both genders.