

# CARDIOVASCULAR AND METABOLIC CHANGES RELATED TO SLEEP AND AGEING

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## Background

- Sleep disorders and troubles increase with age.
- 50% of adults older than 65 have some chronic sleep related complaints.
- The prevalence of comorbidities increases with age.

## Material & Methods

- Patients from the SSMC (N=2995)
- PSG and PG recordings
- Sleep history (STOP, ESS, PSQI)
- Medical history
- Analysis by age

## Results

- Severity of OSA increased with age ( $r=0.17$ ,  $p<0.001$ ).
- The prevalence of all comorbidities increased with age in OSA patients, both in men and women.
- The prevalence of hypertension and DM2 was similar in men and women with OSA (45.13 vs. 47.99%, and 14.88 vs. 12.84%,  $p>0.05$ )
- The prevalence of depression (10.74 vs. 15.05%) and GERB (26.96 vs. 33.98%) were higher in women with OSA ( $p<0.05$ ).

Table 2. Prevalence of hypertension and DM2 in OSA patients according to age

Age (years)	Total N (%) N=2559	AHI Mean (SD)	OSA patients with hypertension N (%) N=1177	OSA patients with DM2 N (%) N=375
<21	18 (0.70)	5.52 (±9.26)	1 (5.56)	0 (0)
21-30	123 (4.81)	12.57 (±20.50)	3 (2.44)	4 (3.25)
31-40	291 (11.37)	19.72 (±23.85)	40 (13.75)	13 (4.47)
41-50	477 (18.64)	24.42 (±23.24)	150 (31.45)	36 (7.55)
51-60	743 (29.03)	27.77 (±22.65)	395 (53.16)	118 (15.88)
61-70	658 (25.71)	28.61 (±21.18)	415 (63.07)	149 (22.64)
≥70	249 (9.73)	27.12 (±19.26)	173 (69.48)	55 (22.09)
total	2559 (100)	20.82 (±8.80)	0.46 (45.99)	0.15 (14.65)

OSA – obstructive sleep apnea, AHI – apnea hypopnea index, DM2 – diabetes mellitus type 2

Table 1. Demographic characteristics of OSA patients

	Total N=2559	Men N=1788	Women N=771
Age (years)	56 (18-85)	55 (18-85)	57 (20-85)
Height (m)	1.77 ± 0.10	1.82 ± 0.07	1.67 ± 0.06
Weight (kg)	94.46 ± 20.88	99.82 ± 19.02	82.04 ± 19.68
BMI (kg/m <sup>2</sup> )	29.9 ± 5.8	30.02 ± 5.35	29.3 ± 6.83
Neck circumference (cm)	41.69 ± 4.88	43.52 ± 4.06	37.45 ± 3.87

## Conclusion

- OSA is associated with ageing.
- The prevalence of hypertension and DM2 increases with age in OSA patients.
- The prevalence of GERB and depression increases with age in OSA patients.
- Untreated sleep apnea puts a person at risk for cardiovascular disease and metabolic disturbances, which increases significantly during ageing.