

Abstract Submission No.: A-0778

**Association between weekend catch-up sleep and chronic kidney disease:
Analysis from the NHANES 2017-2020**

Seung Hyun Han¹, Ara Ko¹, Jeonghwan Lee², Dong Ki Kim¹, Yon Su Kim¹, Yoon Kyu Oh², Chun Soo Lim², Jung Pyo Lee²

¹Department of Internal Medicine-Nephrology, Seoul National University Hospital, Korea, Republic of

²Department of Internal Medicine-Nephrology, Seoul National University Boramae Medical Center, Korea, Republic of

Objectives : Limited information is available on the relationship between weekend catch-up sleep (WCS) and chronic kidney disease (CKD). This study aims to investigate the association between WCS and CKD in adults.

Methods : This study included 4,961 participants aged 40 years or older from the National Health and Nutrition Examination Survey (NHANES) conducted between 2017 and 2020. WCS was defined as sleeping more than one hour longer on weekends compared to weekdays. The association between WCS and both CKD and albuminuria was evaluated using adjusted multivariable logistic regression analysis.

Results : Participants with WCS had a significantly lower prevalence of CKD compared to those without WCS in both crude and adjusted models (adjusted odds ratio [OR] 0.67; 95% confidence intervals [CI] 0.49-0.93). Catching up on sleep for 1-2 hours was significantly associated with a decreased risk of CKD (fully adjusted OR 0.58; 95% CI 0.40-0.94, p-value = 0.033). Furthermore, 1-2 hours of WCS was associated with a lower prevalence of albuminuria among individuals sleeping less than 6 hours on weekdays (OR 0.12; 95% CI 0.05-0.28, p-value = 0.001).

Conclusions : Weekend catch-up sleep is associated with a reduced risk of CKD, showing significantly lower prevalence rates with 1 to 2 hours of catching up on sleep. WCS is also linked to a reduced risk of albuminuria among individuals sleeping less than 6 hours on weekdays. These findings indicate the potential benefits of WCS in preventing kidney disease. Further longitudinal studies are needed to confirm these results.

T1.png

Table. Adjusted multivariable logistic regression analysis between the duration of weekend catch-up sleep and CKD.

Weekend catch-up sleep duration (h)	OR (95% CI)	
	Model 1	Model 2
Total		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.61 (0.42-0.87) 0.009	0.59 (0.38-0.91) 0.026
WCS >2	0.88 (0.54-1.44) 0.604	0.79 (0.42-1.49) 0.401
Weekday sleep duration < 6		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.21 (0.09-0.47) <0.001	0.34 (0.10-1.16) 0.077
WCS >2	0.59 (0.28-1.26) 0.161	0.86 (0.24-3.11) 0.783
6 ≤ Weekday sleep duration < 9		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.72 (0.47-1.09) 0.117	0.71 (0.43-1.15) 0.138
WCS >2	0.98 (0.55-1.74) 0.929	0.84 (0.39-1.81) 0.613
Weekday sleep duration ≥ 9		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.58 (0.23-1.45) 0.229	0.46 (0.13-1.60) 0.184
WCS >2	0.77 (0.26-2.26) 0.621	0.41 (0.06-2.68) 0.299

Data are presented as odds ratio (95% confidence interval) and p-value. Model 1: adjusted for age and sex, Model 2: adjusted for age, sex, race, job, alcohol, smoking, physical activity, partner, BMI, HTN, DM, average sleep duration. Abbreviations: WCS, weekend catch-up sleep; OR, Odds ratio; CI, confidence interval

T1.png

Table. Adjusted multivariable logistic regression analysis between the duration of weekend catch-up sleep and albuminuria.

Weekend catch-up sleep duration (h)	OR (95% CI)	
	Model 1	Model 2
Total		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.69 (0.44-1.07) 0.091	0.64 (0.37-1.11) 0.094
WCS >2	0.94 (0.65-1.34) 0.713	0.76 (0.46-1.26) 0.238
Weekday sleep duration < 6		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.09 (0.04-0.21) <0.001	0.13 (0.06-0.30) <0.001
WCS >2	0.64 (0.27-1.50) 0.284	0.92 (0.36-2.34) 0.846
6 ≤ Weekday sleep duration < 9		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.82 (0.52-1.30) 0.384	0.78 (0.45-1.33) 0.299
WCS >2	1.06 (0.63-1.78) 0.825	0.86 (0.44-1.69) 0.623
Weekday sleep duration ≥ 9		
No WCS	Ref	Ref
1 < WCS ≤ 2	0.70 (0.26-1.89) 0.464	0.60 (0.20-1.78) 0.300
WCS >2	0.74 (0.19-2.80) 0.640	0.34 (0.04-2.90) 0.274

Data are presented as odds ratio (95% confidence interval) and p-value. Model 1: adjusted for age and sex, Model 2: adjusted for age, sex, race, job, alcohol, smoking, physical activity, partner, BMI, HTN, DM, average sleep duration. Abbreviations: WCS, weekend catch-up sleep; OR, Odds ratio; CI, confidence interval