

Skipping breakfast with late-night meals and consuming sugar-sweetened beverages are associated with trace or overt proteinuria in young and middle-aged Japanese healthcare workers

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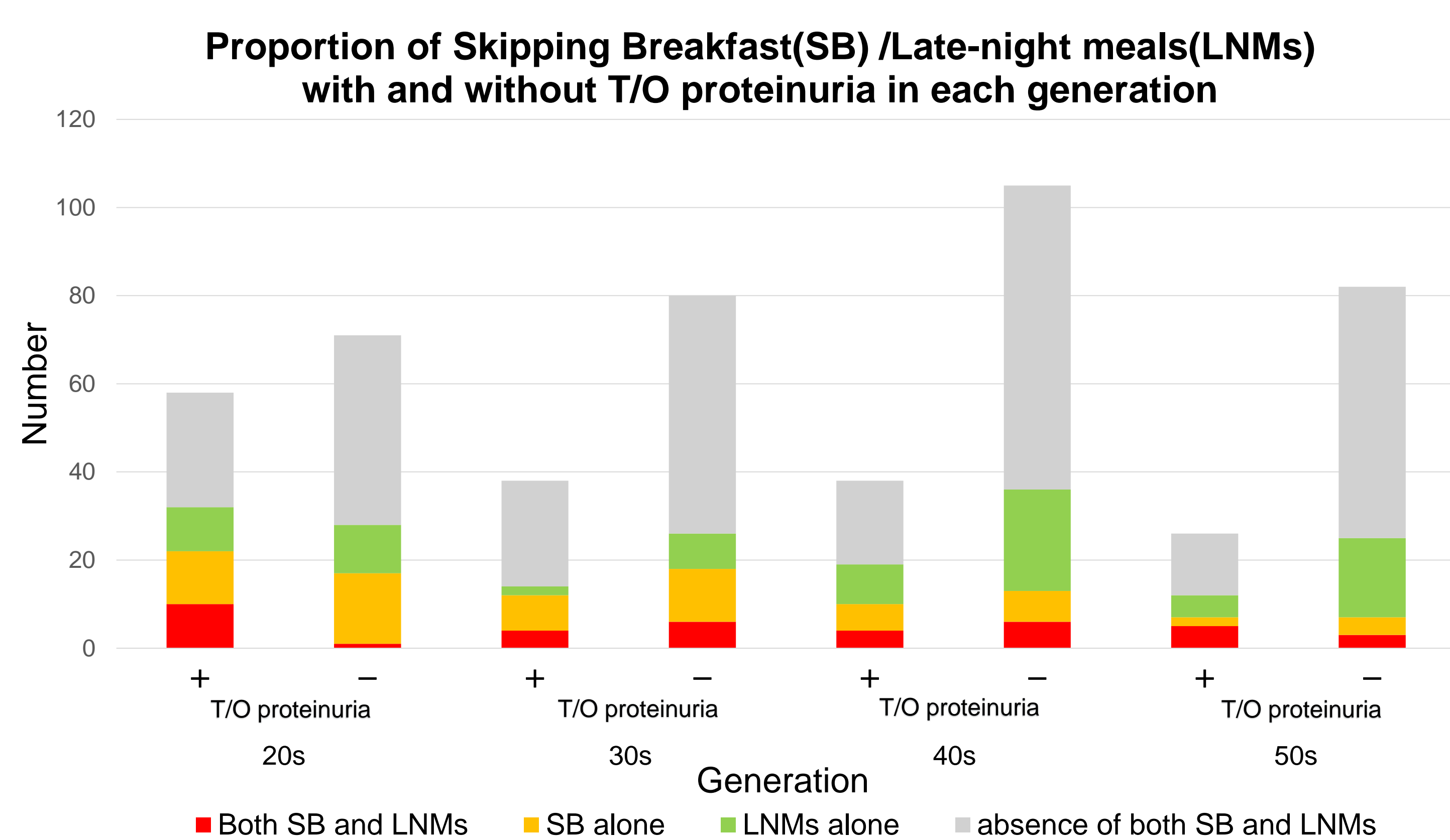
Introduction

- Not only overt proteinuria but also trace proteinuria is associated with cardiovascular disease and renal function prognosis¹.
- Various lifestyle factors, such as eating habits, physical activity, and sweetened beverage intake, have been reported to be associated with the onset of chronic kidney disease and incidence of microalbuminuria and overt proteinuria^{2,3}.
- This study aimed to report the relationship between trace/overt (T/O) proteinuria and lifestyle, including diet and work habits in young and middle-aged Japanese healthcare workers.

Methods

- A total of 498 healthcare workers at our hospital (104 men and 394 women) aged <60 years who underwent health checkups in 2022 were included in this study.
- A total of 18 items of data on lifestyle habits were obtained using a self-administered questionnaire.
- Univariate analysis was performed to extract variables relatively associated with T/O proteinuria. Multivariate logistic regression analysis was performed with T/O proteinuria as the dependent variable and sex, age, and lifestyle as the independent variables to estimate multivariate-adjusted odds ratios (ORs) and 95% confidence intervals (CIs).

Results

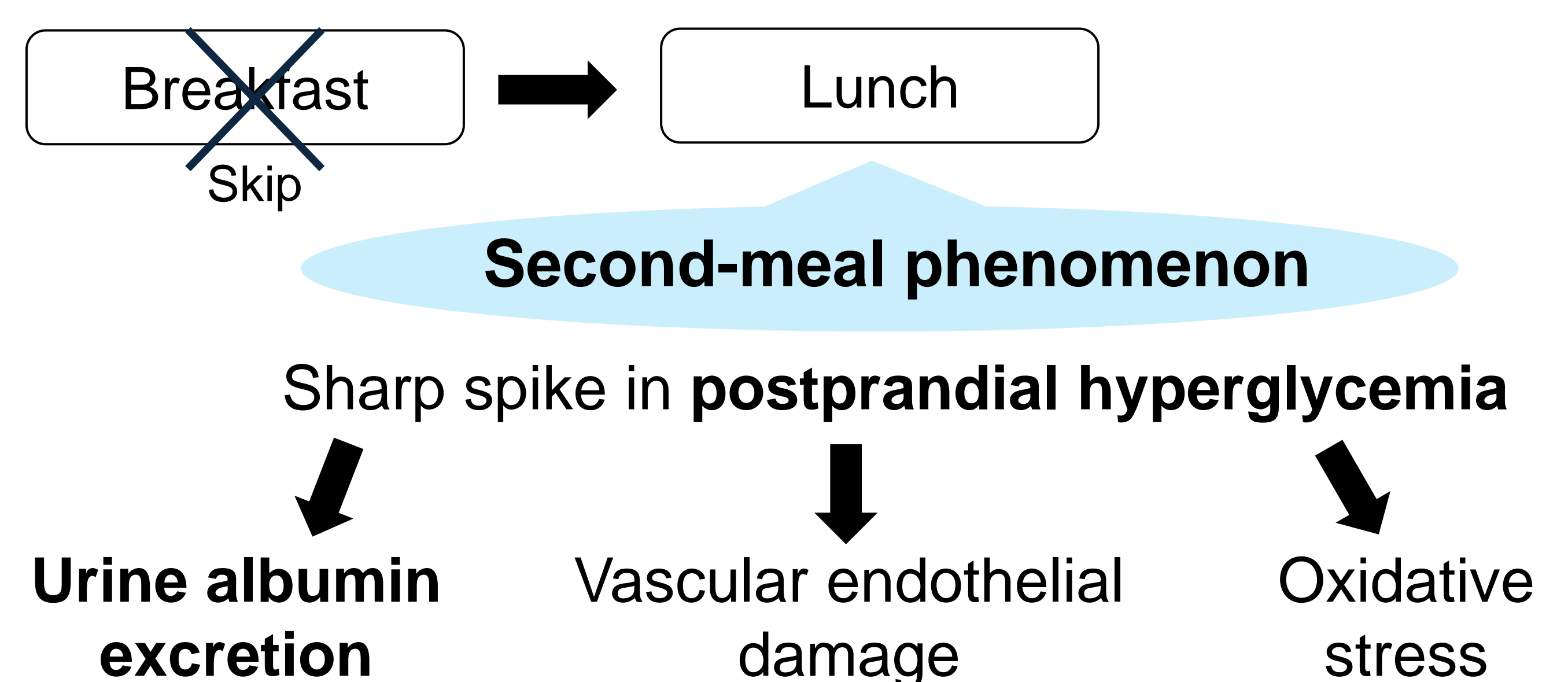


- Younger participants had a higher proportion of T/O proteinuria, and those in their 20s had a statistically significantly higher proportion than those in their 50s (OR 2.80, 95% CI 1.51–5.20).
- T/O proteinuria was prevalent in those who Skipping Breakfast(SB) with Late-Night Meals(LNMs) (OR 4.1, 95% CI 1.94-8.47).
- A statistically significant correlation was observed between age and SB and LNMs (correlation coefficient 0.13, $P = 0.005$) using the Cramer's coefficient of association.
- Frequent consumption of sugar-sweetened beverages tended to be associated with proteinuria in multivariate logistic regression analysis. (OR 1.52, 95% CI 0.94–2.47).

Discussion

This study suggests that young healthcare workers, who should have a low prevalence of proteinuria, may have increased prevalences of T/O proteinuria due to their dietary habits.

The relationship between Skipping Breakfast and Proteinuria



- The second-meal phenomenon after skipping breakfast induces postprandial hyperglycemia and decreases insulin response at the next meal⁴.
- A sharp spike in postprandial hyperglycemia may be responsible for the induction of urine albumin excretion, vascular endothelial damage, and oxidative stress⁵.

The relationship between Consumption of sugar-sweetened beverages and Proteinuria

- A previous cohort study showed that consumption of one or more sugar-sweetened beverages per day was associated with a higher risk of developing chronic kidney disease⁶.

We need to investigate why eating habits such as skipping breakfast are more common among younger generations.

Conclusion

Skipping breakfast with late-night meals and consuming sugar-sweetened beverages are associated with T/O proteinuria. Encouraging healthcare workers, especially young generation, to improve their dietary habits is important to reduce the risk of proteinuria.

References

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