

Driving to be Obese: A Systematized Literature Review on the Association Between Driving Time and Distance and Weight Status in Adults

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BACKGROUND

- The prevalence of overweight and obesity continues to increase globally.¹
- Sedentary behaviour, independent of physical activity, is recognized as a risk factor for overweight and obesity and poor health.²
- Few studies however, have examined the influence of driving behaviour on weight status.
- Driving an automobile – a sedentary behaviour that is undertaken regularly by the majority North American adults – might be an opportunistic target for improving population health.

AIM

To synthesize evidence from studies that examine the relationship between automobile driving behaviour and weight status among adults.

METHOD

- **Databases searched included**
 - Pubmed; Web of Science; Transport Research International Database (TRID), and; Medline.
- **Study inclusion criteria**
 - Peer-reviewed English-language studies from all years that **quantified** the association between driving time or distance and weight status in participants aged ≥ 16 years.
- **Selection process**
 - Article titles, abstracts, and full-text were reviewed by both authors. Articles were included in the review based on author consensus.



FINDINGS

- **N=10 studies** met the inclusion criteria (figure 1).³⁻¹²
- **Study locations:** U.S. (n=5), U.K. (n=1), Spain (n=1), Columbia (n=1), Australia (n=1), and Canada (n=1).
- **Study designs:** cross-sectional (n=6), longitudinal (n=3), and ecological (n=1).
- **Weight status measurement:** self-reported BMI (n=9); objectively-assessed BMI (n=1), self-reported body weight change (n=1), and objectively-assessed waist circumference (n=1).
- **Driving time/distance measurement:** self-reported (n=8) and objectively-determined (n=2).
- **Eight of ten studies** found a significant association between either driving time or distance and weight status (figure 2).

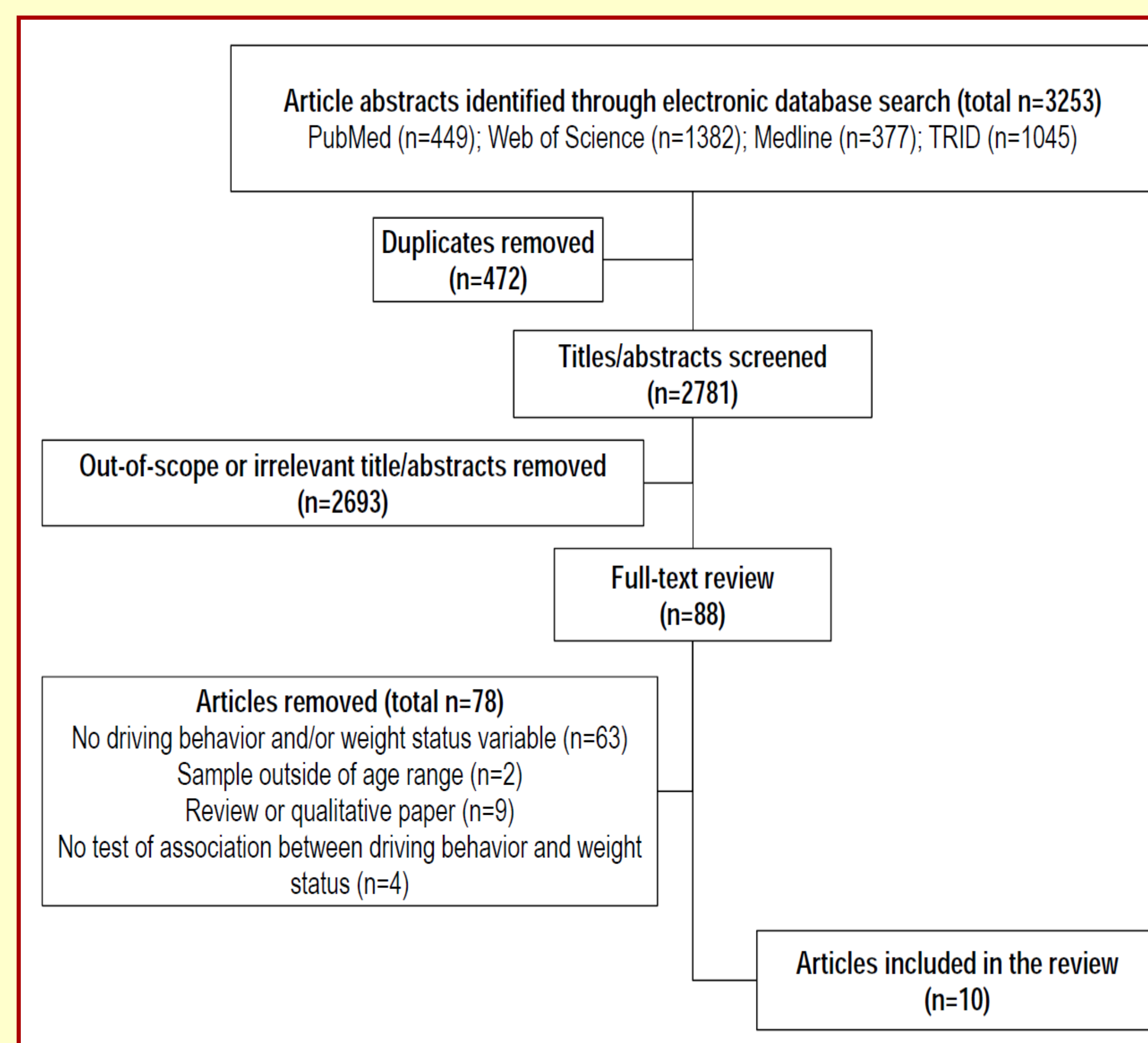


Figure 1: Article search and selection process

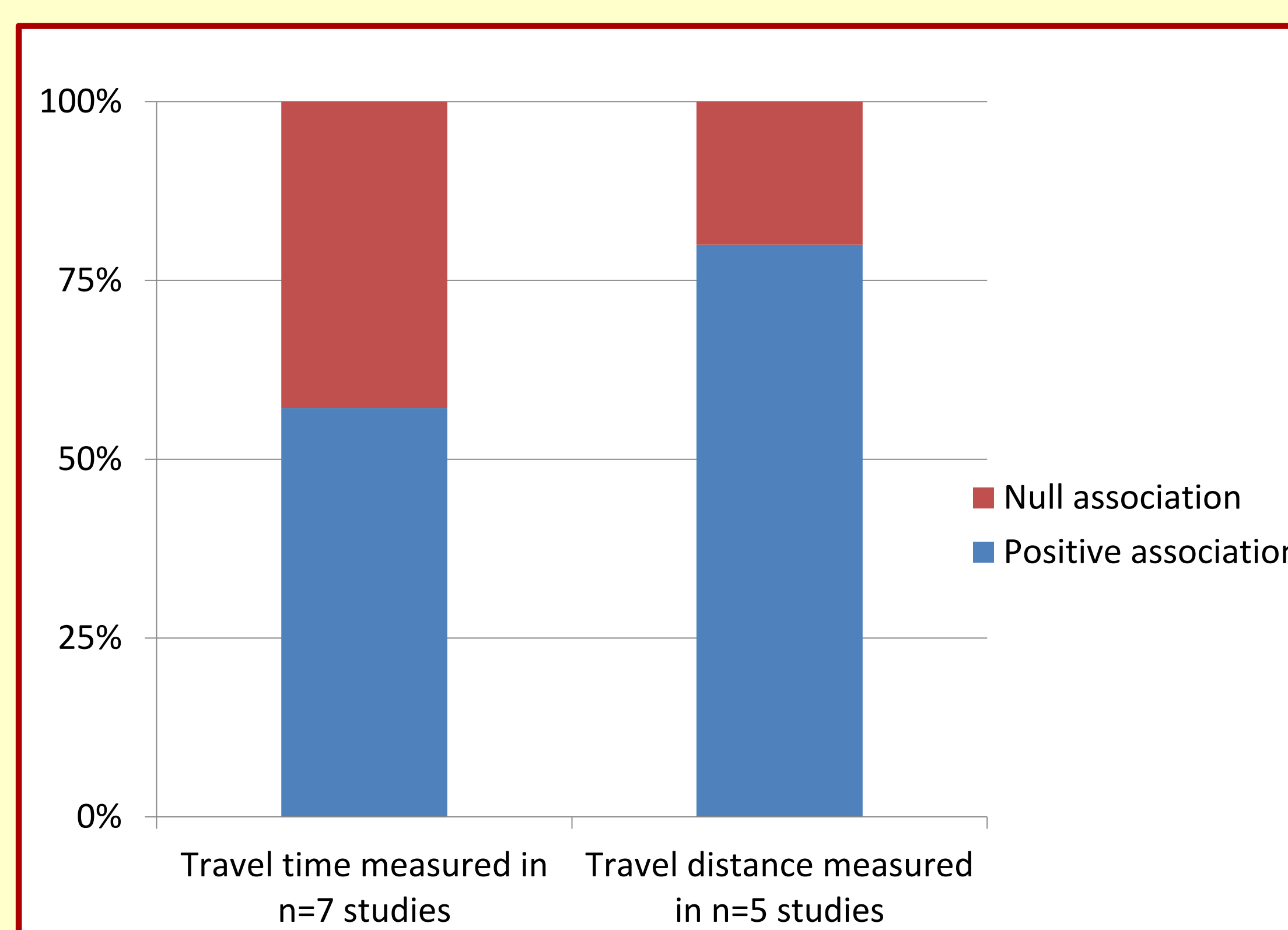


Figure 2: Proportion of studies reporting positive, negative, and null associations between driving and weight status

CONCLUSIONS

- Increases in distance and time travelled by motor vehicle was consistently associated with adverse weight status in adults.
- Most evidence was based on cross-sectional study designs – caution should be taken in drawing causal inferences.
- Few studies reported reliability or validity testing for their driving behaviour measurement tools.
- Longitudinal studies adjusting for physical activity and diet-related variables are needed to better understand the causal pathways between driving behaviour and weight status.

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