

**Methods** 10 databases were searched for quantitative and qualitative English language articles reporting at least one of the behaviours and their impact on priori primary and secondary outcomes (figure 1) in adolescents (11-18 years) with type 1 diabetes. There were no restrictions on article publication dates or study design. Articles were subjected to title and abstract screening, full text screening, data extraction and quality assessment.

**Results** In total 9922 articles were identified from the initial search with 92 articles included for data extraction after title, abstract and full text screening, (figure 2). Data analysis is ongoing, where possible a meta-analysis (quantitative), meta-aggregation (qualitative) and mixed-methods synthesis (quantitative and qualitative narrative summary) will be conducted.

**Discussion** This extensive investigation on the full spectrum of 24-hour movement behaviours will identify the different, and perhaps complimentary, physiological and psychosocial impacts of each behaviour.

**REFERENCES**

1. Cameron FJ, Garvey K, Hood KK, Acerini CL, Codner E. ISPAD Clinical Practice Consensus Guidelines 2018: Diabetes in adolescence. *Pediatr Diabetes* 2018;**19** Suppl 27:250-61.
2. Rollo S, Antsygina O, Tremblay MS. The whole day matters: Understanding 24-hour movement guideline adherence and relationships with health indicators across the lifespan. *J Sport Health Sci* 2020.

**23 AHI DOES NOT ADEQUATELY REFLECT OSA SEVERITY**

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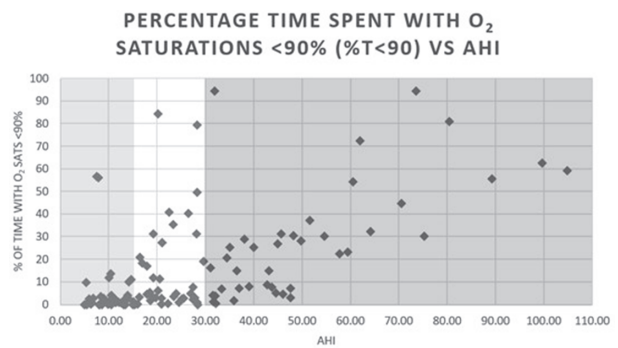
**Introduction** Obstructive sleep apnoea (OSA) results in significant cardiovascular consequences. Level of hypoxia and degree of sympathetic activation are postulated to play a role.

The Apnoea Hypopnoea Index (AHI) is used as a tool to assess severity of OSA. However, it does not measure depth or duration of hypoxia and may underestimate the risk of complications. The aim of this study was to evaluate the relationship between AHI and the burden of hypoxia.

**Method** This was a retrospective study, using data from nocturnal sleep studies. Equal numbers of each OSA severity, defined by AHI, were selected consecutively from 122 adult patients who underwent sleep studies between Dec 2020 and May 2021. Demographic data, AHI and percentage time spent with oxygen saturations <90% (%T<90%) were recorded. Excel was used for analysis and Spearman's rank used to calculate the correlation coefficient (rho, r).

**Result** AHI was compared to %T<90% (figure 1) showing a moderate positive correlation (r0.6). Subgroup analysis demonstrated a moderate correlation in the severe group (r0.67), whereas only a very weak correlation in the moderate and mild groups (r0.19 and 0.16 respectively). There was no significant difference in the %T<90% in the moderate group compared to those with an AHI 30-60 (mean(SD) 14.86 (20.15) and 17.96(17.91) P=0.067) despite these patients having different categories of OSA severity.

**Conclusion** This study suggests that AHI inadequately reflects degree of hypoxic burden, and therefore is an incomplete measure of OSA disease severity. The results demonstrate patients with moderate OSA have a burden of hypoxia similar to many of those with severe disease. In these patients, AHI may inadequately reflect the risk of future complications



**Abstract 23 Figure 1** Percentage time spent with O<sub>2</sub> saturations <90% (%T<90) vs AHI

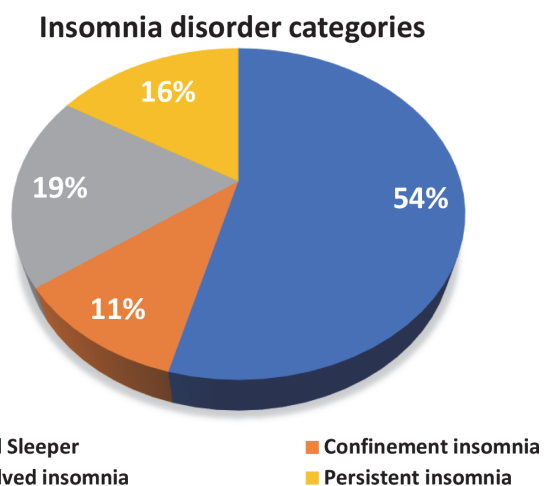
resulting from hypoxia. Further research is needed to develop an alternate measure of severity to accurately reflect this risk, a composite of AHI and hypoxic burden would be a first step.

**24 INSOMNIA PREVALENCE IN CONFINED ELITE ATHLETES**

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The demands of training, competition stress, and impact of frequent (inter)national travel are assumed to contribute to the shorter night-time sleep durations and poor overall sleep quality reported for elite athletes (1–3). However, systematically exploring this assumption is challenging, since a robust evaluation of sleep quality and practices in the presence and absence of sports participation would interrupt elite sports careers. The COVID-19 pandemic resulted in a cessation of international sport, and the home confinement of athletes. Using baseline data from an ongoing (pre-pandemic) study of athlete sleep, we compared the insomnia levels, sleep quantity and practices of elite athletes when exposed to, and deprived of



**Abstract 24 Figure 1** Insomnia disorder categories: good sleeper (did not score for insomnia disorder); resolved insomnia (scored for insomnia disorder in pre-confinement); confinement insomnia (scored for insomnia disorder in confinement); and persistent insomnia (scored for insomnia disorder in pre and during confinement)