

# Physical activity as a potential non-pharmacological strategy to support healthier aging in adults with Down syndrome

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## INTRODUCTION



Adults with Down syndrome (DS) are at elevated risk for Alzheimer's disease and frequently present sleep-related respiratory abnormalities and low levels of physical activity.



As life expectancy increases, identifying modifiable factors that may support healthier aging becomes increasingly important.



Physical activity is a promising non-pharmacological strategy, while sleep characteristics may provide additional insight into overall health vulnerability in this population.

**Objective: To characterize physical activity levels in adults with Down syndrome and to describe complementary sleep-related respiratory findings associated with overall health vulnerability.**

## METHODS



### Physical Activity Cohort

n = 32

- WHO physical activity recommendations
- Weekly physical activity (min/week)
- Balance status assessment



### Sleep Cohort

n = 55

- Overnight polysomnography
- Apnea-Hypopnea Index (AHI)
- Microarousal Index
- Minimum SpO<sub>2</sub>



- Cross-sectional observational study

## RESULTS

### Physical Activity According to Balance Status

#### No Balance Difficulty

80.6 min/week

#### Balance Difficulty

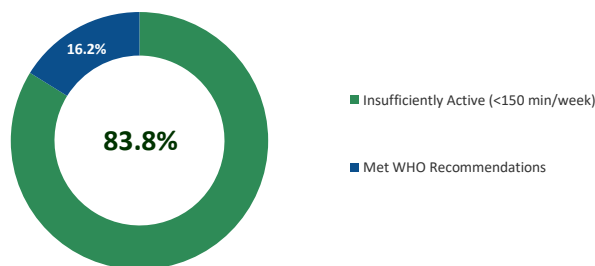
39.1 min/week

p = 0.0417



Adults with balance difficulties accumulated **nearly half** the weekly physical activity of those without balance impairment.

### Physical Activity Profile



**Only 16.2% of participants met the WHO recommendations for physical activity.**

## Participant Profile

|              |                        |
|--------------|------------------------|
| Participants | n = 32                 |
| Mean Age     | 39 years               |
| Mean BMI     | 27.1 kg/m <sup>2</sup> |

BMI in the overweight range

## Complementary Respiratory Sleep Profile

|                          |             |
|--------------------------|-------------|
| Apnea-Hypopnea Index     | 19 events/h |
| Microarousal Index       | 12 events/h |
| Minimum SpO <sub>2</sub> | 83%         |

Respiratory sleep abnormalities were common in this cohort and may contribute to overall health vulnerability in adults with Down syndrome.

## CONCLUSIONS

Adults with Down syndrome who reported balance difficulties accumulated substantially lower levels of physical activity. Complementary polysomnographic findings revealed frequent respiratory sleep abnormalities, reinforcing the broader health vulnerability observed in this population. Together, these findings suggest that physical activity may represent a potentially accessible non-pharmacological strategy to support healthier aging.



## TAKE-HOME MESSAGE

Physical activity may represent one of the most accessible and scalable non-pharmacological strategies to support healthier aging in adults with Down syndrome, a population with elevated vulnerability to Alzheimer's disease and sleep-related health challenges.

## REFERENCES

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