



# Physical inactivity and headache disorders: cross-sectional analysis in the Brazilian longitudinal study of adult health (ELSA-Brasil)

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### Background

Physical inactivity has been linked to headache disorders, but data regarding the current recommended leisure-time (LTPA) and commuting physical activity (CPA) levels is unknown.

### Objective

To test the associations between headache disorders (definite and probable migraine tension type headache-TTH) and physical inactivity in these domains (LTPA and CPA) in the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil).

### Methods

In a cross-sectional analysis, logistic regression models computed the odds ratio (OR) for the relationship between headache disorders and physical activity (LTPA and CPA) in the following levels: “active” (Reference), “insufficiently active”, and “inactive”. The full models were controlled for the effects of sociodemographic data, cardiovascular risk profile, and use of headache medication (migraine prophylaxis).

### Results

Of 15,0105 participants, 14,847 (45.6 % of men and 54.4 % women) responded the baseline interviews regarding physical activity levels and headache disorders. Overall, most significant physical inactivity was observed in LTPA domain for definite migraine [OR: 1.32 (1.10-1.57)] and probable migraine [OR: 1.33 (1.17-1.50)]. Similar findings were replicated by sex. Physical inactivity (LTPA) was positively associated with definite migraine in women [OR: 1.29 (1.04-1.59)], probable migraine in both men [OR: 1.40 (1.15-1.69)] and women [OR: 1.29 (1.04-1.59)]. Physical inactivity in CPA domain was associated to increased OR for probable TTH in men [OR: 1.33 (1.01-1.75)], while CPA was inversely associated to definite migraine [OR: 0.79 (0.64-0.98)] and probable migraine [OR: 0.80 (0.67-0.96)] in women. Considering all headaches, unmet vigorous physical activity levels were associated to increased OR for definite migraine [OR: 1.36 (1.13-1.65)] and probable migraine [OR: 1.37 (1.20-1.57)]. Finally, we found higher odds for daily headaches among LTPA-inactive [OR: 1.73 (1.20-2.49)] and CPA-insufficiently active [OR: 1.36 (1.04-1.79)] participants.

### Conclusion

Physical inactivity is associated with headache disorders in the ELSA-Brasil study, with distinct associations regarding headache subtype, sex, physical activity domain and intensity, and headache frequency.