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What is AHA Life´s Essential 8 factors' role in preventing migraine chronification? Insights from a 4-year follow-up with 4,193 participants in the ELSA-Brasil study

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Background
Migraine chronification is believed to depend on lifestyle and other health factors. However, there is a scarcity of studies evaluating whether well-established lifestyle and health factors can reduce the risk of migraine chronification.

Objective
We aimed to evaluate the risk of migraine chronification considering the recommended adherence to Life´s Essential 8 (LE8) behavior (diet, physical activity, sleep, and nicotine exposure) and health (body mass index, blood lipids, blood glucose, and blood pressure) factors scores proposed by the American Heart Association (AHA) in a middle-aged population.

Methods
This is a prospective analysis based on the exposure to LE8 factors at the baseline (2008-2010) and migraine chronification at the inter-wave (2012-2014) among participants with migraine diagnosis at baseline from the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). The LE8 factors scores were computed following the AHA´s scoring system. Migraine chronification was defined as the change in migraine attack frequency from < 15 days/month to ≥15 days/month from baseline to follow-up period. Modified Poisson regression models estimated the risk ratio (RR) with a 95% confidence interval for migraine chronification, according to the adherence levels to the LE8 factors categorized as low (reference), moderate, and high (recommended).

Results
Participants with migraine attack frequency ≥ 15 days/month at baseline were excluded (n = 100). Among 4,193 participants included (mean age: 51.3, ±8.9 years, 54.1% female), 241 (5.7%) presented with migraine chronification at follow-up. The mean (SD) follow-up period was 4.0 (0.38) years. Prevalence of recommended adherence to LE8 factors was 12.6% and 6.2% among controls and migraine chronification groups, respectively. In the model adjusted for sex, age, race, household income, education, marital status, and migraine preventive medication, achieving the recommended adherence to LE8 global factors was associated with lower migraine chronification risk (RR: 0.376 [0.203, 0.69], p=0.002). Achieving the recommended adherence to LE8 behavior domain (RR: 0.47 [0.272, 0.82], p=0.008) was associated with lower migraine chronification risk but not LE8 health domain (RR: 0.84 [0.51, 1.39], p=0.518).

Conclusion
In the ELSA-Brasil study, the high adherence to AHA LE8 factors, mostly behavior factors, was associated with a lower risk of migraine chronification.