



## Are the AHA Life's Essential 8 factors useful for migraine prevention? Insights from a 4-year follow-up with 4,293 participants in the ELSA-Brasil study

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### Background

Migraine disorders are polygenic, neurovascular disorders thought to be influenced by lifestyle and environmental factors. It is unknown whether well-established lifestyle and health factors related to cardiovascular health would be associated with lower migraine occurrence.

### Objective

We aimed to evaluate the risk of migraine and its chronification associated with the 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 (wave 1: 2008-2010) and diagnosis of migraine without aura (MWO), migraine with aura (MWA) at inter-wave 2013-2014 among subset of participants from the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). The LE8 factors scores were computed following the AHA's scoring system. Migraine diagnoses were based on ICHD-3. Modified Poisson regression models estimated the risk ratios (RR) with 95% confidence interval for migraine diagnoses, according to the adherence levels to the LE8 factors categorized as low (reference), moderate, and high (recommended by AHA).

### Results

Among 4,293 adults (mean age: 51.3, ±8.9 years, 54.6 % female), 19.4 % and 10.5 % were diagnosed as MWO and MWA, respectively, after a mean (SD) follow-up of 4.0 (0.38) years. In the models adjusted for sex, age, race, household income, education, marital status, and migraine preventive medication, high adherence to LE8 factors was associated with lower risk of both migraine types. The associations with MWO presented an inverted J-shaped curve, with an increase in the RR for moderate adherence (RR: 1.06 [0.84, 1.35]), followed by a decrease with high adherence to LE8 factors (RR: 0.80 [0.58, 1.10], quadratic p-trend = 0.015). For MWA, there was a linear decrease in the risk as adherence increased to the recommended level (RR: 0.55 [0.377, 0.82], linear p-trend = 0.003).

### Conclusion

In the ELSA-Brasil study, high adherence to AHA LE8 factors was associated with lower risk of both migraine types.