Table S1. Additional methods information.

| Variables                                      | Definition                                                                                                                                                                                                 |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carotid-to-Femoral Pulse Wave Velocity (cf-PWV) | cf-PWV was measured with a validated automatic device (Compliance; Artech Medicale, Paris, France)\(^1\) with the subjects in the supine position in a room with controlled temperature (20°C–24°C) and in accordance with the ELSA-Brazil protocols.\(^2\) Initially, BP was administered in the right arm, using an oscillometric device (HEM Omron 705CP), with the participant in the supine position. Pulse waveform was captured using a sensor that was placed in the carotid and femoral arteries, allowing one to view the pulse waves on a computer screen. The direct distance from the sternal furcula to the right femoral site where the pulse was recorded was measured with a standardized inelastic tape without correction for abdomen curvature. The software identified the pulse waves with good recording quality. cf-PWV was calculated by dividing the distance from the sterna furcula to the femoral site by the time delay between the carotid and the femoral pulse waves, which was expressed in m/s. The individual value was automatically recorded as the average of the measurements that were obtained in 10 consecutive cardiac cycles recorded under regular cardiac rhythm. For quality control, all cf-PWV tests were recorded in the 6 sites and sent to a centralized Reading Center responsible for validating exams of all ELSA-Brasil participants.\(^2\) |

| Age                                            | Age at baseline was analyzed as a continuous variable, and subsequently stratified into 5-year age ranges (≥ 50 < 55 year age; ≥ 55 < 60 year age; ≥ 60 < 65 year age; ≥ 65 < 70 year age; ≥ 70 year age) to facilitate the viewing of results in graphic analyses. |

| Schooling                                      | Schooling in complete years of formal education was measured by the question, "What is your educational level?" The answers were classified into four categories: ≥ 14 years of study, 11-13 years of study, 8-10 years of study, and < 8 years of study. |

| Smoking                                        | Participants who smoked >100 cigarettes during their lifetime and who were still smoking were classified as ever smokers. Those who gave a positive response to the question, “Do you now smoke cigarettes?” were classified as current smokers, otherwise as ex-smoker. Everyone who responded negatively to these two questions were classified as never smokers.\(^4\) |
**Physical activity**

Leisure-time physical activity was assessed using the International Physical Activity Questionnaire (IPAQ). Exercise intensity was defined as low, moderate, and high. Participants were included in the ‘high’ intensity activity group if they performed seven days of any combination of walking, or moderate- or vigorous-intensity activities achieving ≥3000 Metabolic Equivalent of Task (MET)-min/week. Participants were classified in the ‘moderate’ activity group if they met any one of the following criteria: ≥3 days of vigorous activity of at least 20 min/day, or ≥3 days of moderate-intensity activity or walking of at least 30 min/day, or >5 days of any combination of walking, or moderate- or vigorous-intensity activities, achieving ≥600 MET-min/week, or >3 days of vigorous activity achieving ≥1500 MET-min/week. All participants who did not meet the inclusion criteria for the ‘high’ or ‘moderate’ intensity activity groups were included in the ‘low’ intensity activity group.

**Alcohol consumption (g/day)**

To evaluate the consumption of alcoholic beverages (beer, wine, spirits—rum, whiskey, ‘cachaca’, and vodka), we used the Alcohol Use Questionnaire (AUQ), which was structured with closed questions based on the questionnaire of the National Center for Health Statistics. Also frequency and amount of consumption were determined (daily, weekly, monthly). Alcohol volume was classified according to the report of each participant in milliliters/day for each drink. After In addition, dose classification was performed following the following normalization: one glass of red wine or white wine (120 ml), one serving of bottled or canned beer (350 ml) or one bottle of 620 ml of beer were considered two doses. For distillates it was considered a 50 ml dose of “cachaca”, vodka, brandy, among others. To calculate the amount of ethanol in grams, the average alcoholic percentage of the most common beverage brands on the market was used: beer = 6%; wine = 12%; spirits = 39%. First, the amount reported weekly by the equivalent measurement in mL was determined. Next, the amount of pure alcohol intake in mL/day was calculated according to the alcoholic concentration of each beverage. These were subsequently added to the amount of alcohol consumed and kinds of beverage, and then multiplied by the density of ethanol (0.8) in order to obtain the total amount of pure ethanol in g/day.

**Blood Pressure (BP)**

The BP was measured immediately after having measured the CF-PWV, after a 5-minute rest in a temperature-controlled environment (20 °C - 24 °C), with the subject in the supine position, and using a
validated oscillometric device (Omron HEM 705 CP) on their right arm. Only one BP measurement was performed before measuring the CF-PWV.

| Mean Arterial Pressure (MAP) | The mean arterial pressure (MAP) was defined by means of systolic and diastolic blood pressure, which was also measured at the time of cf-PWV measurement using the formula: MAP = diastolic blood pressure + (systolic blood pressure - diastolic blood pressure) / 3. |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mean heart rate             | The mean heart rate was measured at a different time than the cf-PWV, after a five-minute rest, with the participant sitting in a quiet environment with controlled temperature (20ºC-24ºC), using a validated oscillometric device (Omron HEM 705CPINT). Three recordings were performed, and the mean of the second and third measurements was used. |
| Anthropometric variables    | The anthropometric variables (weight, height) were measured with participants in fasting, by trained assistants, according to standard protocols. An electronic balance was used, with a capacity of 200 kg and a precision of 50g. The height was measured on a wall stadiometer with a 1-mm precision, with the individual in the supine position, barefoot, leaning the head, buttocks, and heels on the wall and staring horizontally. The stature was verified in the inspiratory period of the respiratory cycle. |
| Total cholesterol/HDL cholesterol ratio | The Level of Total cholesterol and HDL-c were measured using standardized automated enzymatic colorimetric methods (Enzymatic colorimetric assay - ADVIA Chemistry) on blood samples collected after 12 hours of fasting. The total cholesterol / HDL ratio was calculated according to a pre-established equation. |
| Cardiovascular disease      | The presence of cardiovascular disease was defined by subjects’ self-reports of the following conditions: acute myocardial infarction, unstable angina, congestive heart failure, stroke, and myocardial revascularization. |
| Diabetes                    | All individuals who reported a medical diagnosis of diabetes or the use of diabetes medication or fasting glycemia ≥ 126 mg / dL; or glucose tolerance test ≥ 200mg / dL; or a glycated hemoglobin ≥ 6.5% were considered diabetic. Fasting glycemia and after a 2-hour loading of 75g of glucose were determined by the enzymatic method (hexokinase), using the ADVIA 1200 apparatus. The glycated hemoglobin (HbA1c) was evaluated by means of high pressure liquid chromatography (Bio - RadLaboratories, Hercules, California). |
| Use of antihypertensive and lipid-lowering medications | Information on the use of medications was obtained based on subjects’ self-reports, prescriptions, and medicine boxes. Additionally, the following question was asked: “Have any of the medications you took in |
the last 2 weeks been for hypertension (elevated BP)?” The drugs in ELSA-Brazil were classified according to the criteria of the Anatomical Therapeutic Chemical (ATC).2,5
**Table S2. Association of carotid femoral pulse wave velocity (cf-PWV) at baseline and performance in the cognitive function test in the time interval between visits, estimated by linear mixed-effect regression. ELSA-Brasil. (N=6.927).**

| Cognitive Function Tests | Memory Tests (number of correct words) | Verbal Fluency Tests (number of correct words) | Trail B test† (seconds) |
|--------------------------|----------------------------------------|-----------------------------------------------|------------------------|
|                          | N=6.520                                | N=6.674                                       | N=6.493                |
| Intercept                | β (95%CI)                              | β (95%CI)                                    | β (95%CI)              |
| cf-PWV m/s               | -0.06 (-0.14; 0.01)                    | -0.06 (-0.17; 0.03)                          | -0.00 (-0.00; 0.01)    |
| Time (years)             | 1.14 (0.83; 1.45)***                   | 0.19 (-0.23; 0.63)                           | -0.06 (-0.10; -0.02)***|
| PWV*time                 | -0.02 (-0.04; -0.00)**                 | -0.02 (-0.04; -0.00)*                        | -0.00 (-0.00; 0.00)    |

*Indicates (β); p-value *≤ 0.05; **≤ 0.01; ***≤ 0.001
† (β) Regression coefficients are log transformed;
Final model adjusted by: follow-up time, sex, age, schooling level, smoking, alcohol consumption, diabetes, CVD, total cholesterol/HDL cholesterol ratio, anti-hypertensive use, lipid-lowering drugs, mean heart rate, interaction age x time, interaction PWV x time, and MAP.

**Table S3. Association of age at baseline and performance in the cognitive function test in the time interval between visits, estimated by linear mixed-effect regression. ELSA-Brasil. (N=6.927).**

| Cognitive Function Tests | Memory Tests (number of correct words) | Verbal Fluency Tests (number of correct words) | Trail B test† (seconds) |
|--------------------------|----------------------------------------|-----------------------------------------------|------------------------|
|                          | N=6.520                                | N=6.674                                       | N=6.493                |
| Intercept                | β (IC95%)                              | β (IC95%)                                    | β (IC95%)              |
| Age (years)              | -0.14 (-0.16; -0.11)***                | -0.11 (-0.14; -0.07)***                      | 0.01 (0.00; 0.01)***   |
| Time (years)             | 1.14 (0.83; 1.45)***                   | 0.19 (-0.23; 0.63)                           | -0.06 (-0.10; -0.02)***|
| Age*time                 | -0.01 (-0.01; -0.00)**                 | -0.00 (-0.01; -0.00)*                        | 0.00 (0.00; 0.00)***   |

*Indicates (β); p-value *≤ 0.05; **≤ 0.01; ***≤ 0.001
† (β) Regression coefficients are log transformed;
Final model adjusted by: follow-up time, sex, schooling level, smoking, alcohol consumption, diabetes, CVD, total cholesterol/HDL cholesterol ratio, anti-hypertensive use, lipid-lowering drugs, mean heart rate, cf-PWV, interaction PWV x time, interaction age x time, and MAP.
Supplemental References:

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