**Supporting information – Figure 1**: Results from the shape analysis of SPHARM-PMD comparing left and right hippocampi among subjects with Mild Cognitive Impairment ≤ vs. > a cutpoint found in spline regression analysis of inorganic hexavalent selenium in cerebrospinal fluid. The color and the arrows represent the magnitude and direction, respectively, of the vector difference between the mean hippocampal shapes of the two patient groups, according to the scale on the right. Red color identifies the areas where the differences are more pronounced and the vector lengths are proportional to these differences. The vectors point to the shape of the hippocampus with concentrations of inorganic hexavalent selenium lower than the cutpoint, i.e. 0.2 (ng/mL). For example, a large arrow pointing up and to the left in the right hippocampus indicates that, compared with someone with CSF Se below 0.2 ng/mL, someone with higher Se would have the equivalent point in the hippocampus represented by the start of the arrow shifted up and to the left as indicated by the point of the arrow, leading to a smaller overall volume.

