Introduction Hyperhomocysteinemia has been associated with ischaemic heart disease and stroke. Dietary intake of folate and other vitamins is a major determinant of blood homocysteine concentration. The objective of this study is to analyse the plasma homocysteine concentrations in young adults who have been followed since birth. In addition, homocysteine concentrations are presented in accordance to the main dietary patterns previously identified in this cohort.

Methods The 1982 Pelotas birth cohort included 5914 children who were born in three maternity units in a city of Southern Brazil (Pelotas). In 2004–2005, members of this cohort were interviewed and blood was collected in 5827 subjects. Food frequency questionnaire was applied in the interview and three main dietary patterns were defined by principal component analysis: common Brazilian (CB), processed food (PF) and vegetable/fruit (VF). Serum levels of homocysteine were determined using immunosassay analyser.

Results The mean of homocysteine was 8.45 ± 3.27 μmol/l, and it was higher in men (9.50 ± 3.71 μmol/l) than in women (7.99 ± 2.32 μmol/l). Higher means of homocysteine were observed among subjects from the third tertile of intake for CB and PF dietary patterns. However, an inverse association was observed between the tertiles of VF dietary pattern. The means of homocysteine were 8.73 ± 3.36, 8.44 ± 3.38, and 8.19 ± 3.09 μmol/l, respectively in the tertiles of VF dietary pattern (p< 0.001).

Conclusion These findings suggest that homocysteine concentrations were lower among subjects who adhered to the healthy dietary pattern.