OBJECTIVE: This analysis aimed to study predictors of different treatment outcomes and associations between subjective symptoms, psychometric variables and mercury levels in patients who subjectively attributed their health problems to dental amalgam. MATERIAL AND METHODS: A secondary and retrospective analysis of data of a recently published randomized clinical trial was performed. Seventy-eight patients [44% female, mean (SD) age 35 (6) years, randomly assigned to either amalgam removal or a health promotion program] were included into statistical analysis. Prior to intervention and 12 months later, questionnaires for assessing symptoms, psychological distress and health status were presented, and mercury levels in blood and urine were determined. RESULTS: The patients' personality profile at study onset was characterized by slightly reduced extraversion and slightly elevated emotional instability. Overall, subjective symptoms decreased slightly and there were no statistically significant differences in the decrease of symptoms after intervention between both groups. Decrease of mercury levels after intervention was closely associated with removal of amalgam fillings (r(mult) = 0.64 in regression analysis). Statistically significant correlations could be found between mercury levels and
subjective symptoms with respect to baseline (r = 0.29-0.39) and to changes after intervention (r = 0.24-0.42), but not for psychological distress (r = 0.05-0.25) and health related quality of life (r = -0.03-0.18). Prediction of symptom improvement after intervention was poor (r(mult) = 0.44).

CONCLUSIONS: Results contribute some new aspects to the inconsistent findings in the literature with respect to associations between symptoms and subtoxic mercury levels. More emphasis should be placed on exploring individual vulnerability for amalgam sensitivity.