Objective: The aim of this systematic review was to examine randomized clinical trials (RCT) regarding long-term effects of weight loss (WL) on biological markers in people with type 2 diabetes mellitus (T2DM). Methods: We searched for articles published in English and Spanish recorded in the databases of Pubmed and Cochrane, and the journal collections platforms of Ebsco and Scielo between January 1, 2000 and January 1, 2010. Inclusion criteria included RCT with follow-up 12 months. Results: A total of 842 articles were identified, 95 of them contained information on the effect of WL on biological markers. Twenty studies fulfilled the inclusion criteria. WL percentage ranged from 0.8 to 20%. A reduction of A1C was observed in nine studies, blood glucose in seven, of total cholesterol and LDL in four, systolic and diastolic blood pressure in three, and the use of hypoglycemic drugs in four; an increase of HDL was observed in seven studies. Remission of T2DM was reported in only one study, which included surgical treatment. The quality of the studies ranged from very low to high; however, the study with the longest follow-up that did not involve surgical treatment, was 52 months. Conclusion: The evidence of the beneficial effect of WL on biological markers on long-term studies in people with T2DM is inconclusive. These results warrant longer and better designed studies.

Keywords
Weight loss, Diabetes, Systematic review, Metabolic control.