analyzed by isotope dilution high resolution gas chromatography and mass spectrometry after clean up on silica and carbon columns. Non-dioxin-like POPs were analyzed by gas chromatography with electron capture detector. All measurements were performed at 0 and 12 weeks. For statistical analysis we used repeated measures ANOVA and a multivariate regression model. Correlations were calculated using Pearson's correlations.
Results: We did not observe any difference between the groups in serum levels of most POPs in response to both hypocaloric diets. In the groups combined, changes in serum concentrations of the POPs were correlated to changes in HbA1c ($r=+0.34$; $p<0.01$), fasting plasma glucose ($r=+0.41$; $p<0.01$) and β-cell function measured as insulin secretion at a reference glucose level ($r=-0.37$; $p<0.01$), independent of changes in body weight and volume of visceral fat.
Conclusions: Our findings support the relationship between POPs and diabetes, especially β-cell function.
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Oral Abstract 3 – Tree nuts improve glycemic control in all-comers: A systematic review and meta-analysis of randomized controlled trials (Effie Viguiliouk, Canada)

Effie Viguiliouk[1, 2], Cyril WC Kendall[1, 2], Sonia Blanco Mejia[1, 2], Vanessa Ha[2, 4], Stephanie Nishi[1, 2], Arash Mirrahimi[2, 3], Adrian I. Cozma[2, 5], Viranda H. Jayalath[2], Livia S. Augustin[1, 2], Laura Chiavaroli[1, 2], Lawrence A. Leiter[1, 2], Russell J. de Souza[2, 4], David JA Jenkins[1, 2], John L. Sievenpiper[1, 2]*
[1]Nutritional Sciences, University of Toronto, Toronto, ON, Canada
[2]Toronto 3D Knowledge Synthesis and Clinical Trials Unit, St. Michael's Hospital, Toronto, ON, Canada
[3]School of Medicine, Queen's University, Kingston, ON, Canada
[4]Clinical Epidemiology & Biostatistics, McMaster University, Hamilton, ON, Canada
[5]Undergraduate Medical Education, University of Toronto, Toronto, ON, Canada
E-mail: effie.viguiliouk@mail.utoronto.ca

Objective: Tree nut consumption is associated with reduced diabetes risk, however, results from randomized controlled trials (RCTs) on glycemic control have been inconsistent. To assess the effect of tree nuts on glycemic control we conducted a systematic review and meta-analysis of RCTs.
Methods: We searched MEDLINE, EMBASE, CINAHL, and Cochrane databases through 8 August 2014 for relevant RCTs ≥3-weeks reporting HbA1c, fasting glucose, fasting insulin, and/or HOMA-IR. Three independent reviewers extracted relevant data. Data were pooled using generic inverse variance random effects models and expressed as mean differences (MD) with 95% confidence intervals (CI). Heterogeneity was assessed (Cochran's Q) and quantified (I^2).
Results: 32 trials (n=1688) met the eligibility criteria. Diets emphasizing tree nuts significantly lowered fasting glucose (MD=-0.11 mmol/L, 95% CI:-0.18, -0.03 mmol/L; P=0.004), fasting insulin (MD=-4.80 pmol/L, 95% CI:-8.15, -1.45 pmol/L; P=0.005) and HOMA-IR (MD=-0.45, 95% CI:-0.81, -0.09; P=0.01) compared with isocaloric control diets. No significant treatment effects were observed for HbA1c, however the direction of effect favoured tree nuts.
Limitations: Majority of trials were of poor quality (MQS<8) and short duration (follow-up<12 weeks).
Conclusion: Pooled analyses show that inclusion of tree nuts into the diet improves glycemic control. Owing to the uncertainties in our analyses there is a need for longer, higher quality trials.
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