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Effects of a large breakfast versus large dinner on 24-h blood glucose profiles during a day of prolonged sedentary behaviour



Evelyn B. Parr^{1,*}, David W. Dunstan^{1,2}, Sam K. Pinto¹, Jill J. Leckey¹, John A. Hawley^{1,3}

¹ Mary MacKillop Institute for Health Research, Australian Catholic University, Melbourne, Victoria, Australia

² Baker IDI Heart and Diabetes Institute, Melbourne, Victoria, Australia

³ Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, Merseyside, United Kingdom

Evidence indicates that postprandial glucose concentrations may be manipulated by reducing energy consumption at dinner and increasing energy intake at breakfast. It is possible that the effects may be largest for dysglycaemic individuals, particularly those who are inactive on a daily basis. We aim to test the hypothesis that an increased energy intake at breakfast can improve blood glucose metabolism during periods of prolonged sitting in overweight/obese men and women with prediabetes.

To date, nine adults (age: 58 ± 5 y, BMI: 33 ± 4 kg/m²) with prediabetes (IFG and/or IGT) have completed two 10 h laboratory visits in a randomised order consisting of sitting uninterrupted for breakfast, lunch and dinner meals of either 20%/30%/50% energy intake (dinner condition) or 50%/30%/20% energy intake (breakfast condition), respectively, with the same meal composition (50% carbohydrate, 20% protein, 30% fat). Continuous glucose monitors (CGM) measured interstitial [glucose] from 0800 on a trial day to 0800 the morning after.

The total 24 h area under the curve (AUC) [glucose] was not different between conditions ($P=0.49$) nor was the mean amplitude of glucose excursions (MAGE; $P=0.22$). The incremental AUC (iAUC) between breakfast and lunch was higher in the breakfast condition ($P=0.01$) but between lunch and dinner was greater for the dinner condition ($P=0.001$). No difference in iAUC between conditions from dinner to 0800 the following day ($P=0.08$) was observed.

Our preliminary findings indicate that while the total 24 h AUC and the MAGE do not support a

difference in blood glucose regulation in response to a large breakfast, a more consistent blood glucose concentration profile was observed across a day in the breakfast condition. These findings suggest that a larger breakfast balanced by a smaller dinner may hold some benefit for the acute regulation of blood glucose during prolonged sedentary behaviour in dysglycaemic individuals.

<https://doi.org/10.1016/j.orcp.2016.10.043>

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Invited talk: The Mexico experience with SSB and junk food taxes: Impact after 1 and 2 years of the taxes



Arantxa Colchero¹, Juan Rivera¹, Shu Wen Ng², Carolina Batis^{2,1}, Lindsey Taillie¹, Barry M. Popkin^{1,*}

¹ Center for Nutrition, National Institute of Public Health, Cuernavaca, Mexico

² University of North Carolina Gillings School of Global Public Health, Chapel Hill, NC, United States

From 1 January 2014, Mexico implemented an excise tax of 1 peso per liter on sugar sweetened beverages and an 8% tax on nonessential food products (junk food tax). In both cases, longitudinal models that examined how pretax trends in SSB and food purchases of a representative sample of Mexican urban consumers were studied. A panel of households who kept all receipts and all containers along with registering the location of the purchases were surveyed biweekly to create the longitudinal data used for these analyses. Outcomes were volumes of beverages and grams of foods. The results for both studies on impact of the tax overall and on different socioeconomic (SES) groups were comparable. Consumption declined significantly of the taxed items with the largest impacts in low and middle SES consumers. Purchases of taxed beverages decreased by an average of 6% in 2014 compared with expected purchases without the tax. Furthermore, these reductions became large over time, reaching a 12% decline by December 2014. All three socioeconomic groups reduced purchases of taxed beverages, but the reduction was greatest among households of low socioeconomic status, averaging a 9% decline during 2014 and reaching a 17% decrease by December 2014 compared with pretax trends. For taxed foods, there was a 5.1% decline change beyond what would have been expected