Table S1. Measures of quality and Hosmer-Lemeshow tests for logistic regression models of associations between categories of carbohydrate intake variables and insulin resistance (HOMA-IR > 3.16) in adolescents from Chiapas, Mexico.

| Factor variables        | Insulin resistance (HOMA-IR > 3.16) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
|-------------------------|-------------------------------------|-------------|-------------|-------------|-------------|
|                         | Total Carbohydrates^a               | Model 1     | Model 2^c   | Model 3^d   | Model 4^e   |
| Males                   | Sensitivity                         | 47.37%      | 47.37%      | 36.84%      | 42.11%      |
|                         | Specificity                         | 68.48%      | 77.17%      | 81.52%      | 79.35%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.296       | 0.296       | 0.153       |
| Females                 | Sensitivity                         | 62.96%      | 88.89%      | 85.19%      | 81.48%      |
|                         | Specificity                         | 65.82%      | 56.96%      | 56.96%      | 68.35%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.051       | 0.090       | 0.376       |
| Dietary Fiber^a         | Sensitivity                         | 54.35%      | 71.74%      | 71.74%      | 67.39%      |
|                         | Specificity                         | 71.93%      | 63.16%      | 64.91%      | 66.77%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.402       | 0.502       | 0.112       |
| Total Sugars^a          | Sensitivity                         | 78.26%      | 67.39%      | 60.87%      | 69.57%      |
|                         | Specificity                         | 36.26%      | 61.40%      | 63.16%      | 63.74%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.295       | 0.262       | 0.168       |
| Dietary GI              | Sensitivity                         | 43.48%      | 60.87%      | 71.74%      | 67.39%      |
|                         | Specificity                         | 69.59%      | 56.14%      | 53.80%      | 63.16%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.274       | 0.294       | 0.113       |
| Dietary GL^a            | Sensitivity                         | 41.30%      | 63.04%      | 71.74%      | 69.57%      |
|                         | Specificity                         | 68.42%      | 56.73%      | 54.39%      | 60.82%      |
|                         | Hosmer–Lemeshow test p-value        | NA*         | 0.238       | 0.183       | 0.102       |

^a Energy-adjusted using the residuals method. ^b Interaction term p < 0.05. ^c Adjusted for age (years). ^d Adjusted for age (years) and BF% (normal/high). ^e Adjusted for age (years), BF% (normal/high), energy-adjusted dietary fiber intake (g/day) and energy-adjusted MUFA intake (g/day). ^f Adjusted for sex (males/females) and age (years). ^g Adjusted for sex (males/females), age (years) and BF% (normal/high). ^h Adjusted for sex (males/females), age (years), BF% (normal/high), energy-adjusted MUFA intake (g/day) and total energy intake (kcal/day). ^i Adjusted for sex (males/females), age (years), BF% (normal/high) and energy-adjusted MUFA intake (g/day). ^j Adjusted for sex (males/females), age (years), geographic area (rural/urban) and BF% (normal/high). ^k Adjusted for sex (males/females), age (years), geographic area (rural/urban), BF% (normal/high), energy-adjusted MUFA intake (g/day) and total energy intake (kcal/day). ^l Adjusted for sex (males/females), age (years), geographic area (rural/urban), BF% (normal/high) and energy-adjusted MUFA intake (g/day). HOMA-IR, homeostasis model assessment of insulin resistance; T, tertiles; BF%, body fat percentage; MUFA, monounsaturated fatty acids; GI, glycemic index; GL, glycemic load.
Table S2. Measures of quality and Hosmer–Lemeshow tests for logistic regression models of associations between insulin resistance (HOMA-IR >2.97) and categories of carbohydrate intake variables in adolescents from Chiapas, Mexico.

| Factor variables | Insulin resistance (HOMA-IR > 2.97) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
|------------------|-------------------------------------|-------------|-------------|-------------|-------------|
| Total Carbohydrates<sup>a</sup> | Model 1 | Model 2<sup>b</sup> | Model 3<sup>c</sup> | Model 4<sup>d</sup> |
| Sensitivity      | 74.00% | 60.00% | 64.00% | 68.00% |
| Specificity      | 35.33% | 55.09% | 58.08% | 62.28% |
| Hosmer–Lemeshow test p-value | NA* | 0.215 | 0.223 | 0.109 |
| Dietary Fiber<sup>a</sup> | Model 1 | Model 2<sup>b</sup> | Model 3<sup>c</sup> | Model 4<sup>d</sup> |
| Sensitivity      | 84.00% | 70.00% | 74.00% | 72.00% |
| Specificity      | 38.32% | 59.28% | 58.08% | 60.48% |
| Hosmer–Lemeshow test p-value | NA* | 0.121 | 0.168 | 0.197 |
| Total Sugars<sup>a</sup> | Model 1 | Model 2<sup>b</sup> | Model 3<sup>c</sup> | Model 4<sup>d</sup> |
| Sensitivity      | 80.00% | 62.00% | 66.00% | 74.00% |
| Specificity      | 37.13% | 61.08% | 61.08% | 60.48% |
| Hosmer–Lemeshow test p-value | NA* | 0.350 | 0.320 | 0.329 |
| Dietary GI       | Model 1 | Model 2<sup>b</sup> | Model 3<sup>c</sup> | Model 4<sup>d</sup> |
| Sensitivity      | 78.00% | 60.00% | 64.00% | 66.00% |
| Specificity      | 37.13% | 55.69% | 59.28% | 60.48% |
| Hosmer–Lemeshow test p-value | NA* | 0.291 | 0.336 | 0.200 |
| Dietary GL<sup>a</sup> | Model 1 | Model 2<sup>b</sup> | Model 3<sup>c</sup> | Model 4<sup>d</sup> |
| Sensitivity      | 72.00% | 64.00% | 60.00% | 68.00% |
| Specificity      | 34.73% | 59.88% | 62.87% | 65.87% |
| Hosmer–Lemeshow test p-value | NA* | 0.269 | 0.306 | 0.166 |

<sup>a</sup> Energy-adjusted using the residuals method. <sup>b</sup> Adjusted for sex (males/females) and age (years). <sup>c</sup> Adjusted for sex (males/females), age (years) and BF% (normal/high). <sup>d</sup> Adjusted for sex (males/females), age (years), BF% (normal/high) and energy-adjusted dietary fiber intake (g/day). <sup>e</sup> Adjusted for sex (males/females), age (years), BF% (normal/high) and energy-adjusted SFAs intake (g/day). <sup>f</sup> Adjusted for sex (males/females), age (years), BF% (normal/high) and energy-adjusted MUFAs intake (g/day). <sup>g</sup> Adjusted for sex (males/females), age (years), waist circumference (normal/high). <sup>h</sup> Adjusted for sex (males/females), age (years), waist circumference (normal/high) and energy-adjusted dietary fiber intake (g/day). BF%, body fat percentage; SFAs, saturated fatty acids.
Table S3. Measures of quality and Hosmer–Lemeshow tests for logistic regression models of associations between categories of carbohydrate intake variables and elevated fasting insulin concentration (≥14.38 μU/mL) in adolescents from Chiapas, Mexico.

| Factor variables | Elevated fasting insulin concentration (≥14.38 μU/mL) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
|------------------|------------------------------------------------------|-------------|-------------|-------------|-------------|
|                  |                                                      | Model 1     | Model 2b    | Model 3c    | Model 4d    |
| Total Carbohydrates* |                                                      |             |             |             |             |
| Sensitivity      |                                                      | 78.72%      | 65.96%      | 65.96%      | 70.21%      |
| Specificity      |                                                      | 36.47%      | 55.88%      | 63.53%      | 62.35%      |
| Hosmer–Lemeshow test p-value | NA*                                                  | 0.117       | 0.194       | 0.179       |             |
| Dietary Fiber* |                                                      | Model 1     | Model 2b    | Model 3c    | Model 4d    |
| Sensitivity      |                                                      | 55.32%      | 70.21%      | 68.09%      | 72.34%      |
| Specificity      |                                                      | 72.35%      | 63.53%      | 66.47%      | 65.88%      |
| Hosmer–Lemeshow test p-value | NA*                                                  | 0.031       | 0.070       | 0.076       |             |
| Total Sugars* |                                                      | Model 1     | Model 2b    | Model 3c    | Model 4d    |
| Sensitivity      |                                                      | 80.85%      | 68.09%      | 70.21%      | 70.21%      |
| Specificity      |                                                      | 37.06%      | 63.53%      | 62.94%      | 65.29%      |
| Hosmer–Lemeshow test p-value | NA*                                                  | 0.249       | 0.218       | 0.374       |             |
| Dietary GI |                                                      | Model 1     | Model 2b    | Model 3c    | Model 4d    |
| Sensitivity      |                                                      | 44.68%      | 65.96%      | 65.96%      | 70.21%      |
| Specificity      |                                                      | 70.00%      | 58.24%      | 64.12%      | 65.29%      |
| Hosmer–Lemeshow test p-value | NA*                                                  | 0.158       | 0.311       | 0.190       |             |
| Dietary GL* |                                                      | Model 1     | Model 2b    | Model 3c    | Model 4d    |
| Sensitivity      |                                                      | 40.43%      | 65.96%      | 68.09%      | 72.34%      |
| Specificity      |                                                      | 68.24%      | 58.24%      | 65.88%      | 65.29%      |
| Hosmer–Lemeshow test p-value | NA*                                                  | 0.159       | 0.397       | 0.168       |             |

* Energy-adjusted using the residuals method. b Adjusted for sex (males/females) and age (years). c Adjusted for sex (males/females), age (years) and BMI (normal/overweight or obesity). d Adjusted for sex (males/females), age (years), BMI (normal/overweight or obesity) and energy-adjusted MUFA intake (g/day). e Adjusted for sex (males/females), age (years), BMI (normal/overweight or obesity), energy-adjusted MUFA intake (g/day) and total energy intake (kcal/day). f Adjusted for sex (males/females), age (years), Mother’s language (Spanish/Indigenous) and BMI (normal/overweight or obesity). g Adjusted for sex (males/females), age (years), mother’s language (Spanish/Indigenous), BMI (normal/overweight or obesity) and energy-adjusted dietary fiber intake (g/day). h Adjusted for sex (males/females), age (years), Mother’s language (Spanish/Indigenous), energy-adjusted dietary fiber intake (g/day) and total energy intake (kcal/day). BMI, body mass index.