Piernas C Popkin BM. Trends in snacking among U.S. children. Health Aff (Millwood). 2010;29(3):398-404.

APPENDIX EXHIBIT 1 (table) Mean number of snacks per day, kilocalories and grams consumed per snacking occasion by US children from the 1977-78, 1989-91, 1994-98 and 2003-06 surveys by age group ${ }^{1}$.

|  | 1977-1978 | 1989-1991 | 1994-1998 | 2003-2006 |
| :---: | :---: | :---: | :---: | :---: |
| Ages 2-6 years |  |  |  |  |
| Snacks/day | $1.34 \pm 90.04$ | $1.59 \pm 0.06^{\text {a }}$ | $2.34 \pm 0.04^{\text {ab }}$ | $2.75 \pm 0.05^{\text {abc }}$ |
| Kcal/snack <br> (\% from food) ${ }^{2}$ | $\begin{gathered} 135 \pm 2.93 \\ (47) \end{gathered}$ | $\begin{gathered} 167 \pm 4.56^{a} \\ (59) \end{gathered}$ | $\begin{gathered} 181 \pm 2.66^{\mathrm{ab}} \\ (72) \end{gathered}$ | $\begin{gathered} 173 \pm 3.62^{a} \\ (76) \end{gathered}$ |
| $\begin{aligned} & \text { Grams/snack } \\ & \quad(\% \text { from food })^{3} \end{aligned}$ | $\begin{gathered} 126 \pm 2.88 \\ (38) \end{gathered}$ | $\begin{gathered} 137 \pm 3.91 \\ (49) \end{gathered}$ | $\begin{gathered} 159 \pm 2.53 \\ (62) \end{gathered}$ | $\begin{gathered} 155 \pm 3.79{ }^{\mathrm{ab}} \\ (66) \end{gathered}$ |
| Total kcal from snacks | $310 \pm 5.3$ | $356 \pm 5.3{ }^{\text {a }}$ | $465 \pm 6.8{ }^{\text {ab }}$ | $491 \pm 8.9{ }^{\text {ab }}$ |
|  | 1977-1978 | 1989-1991 | 1994-1998 | 2003-2006 |
| Ages 7-12 years |  |  |  |  |
| Snacks/day | $1.18 \pm 0.03$ | $1.35 \pm 0.08$ | $1.99 \pm 0.04{ }^{\text {ab }}$ | $2.28 \pm 0.03^{\text {abc }}$ |
| ```Kcal/snack (% from food)}\mp@subsup{}{}{2``` | $\begin{gathered} 178 \pm 4.25 \\ (47) \end{gathered}$ | $\begin{gathered} 205 \pm 8.84^{a} \\ (56) \end{gathered}$ | $\begin{gathered} 239 \pm 5.56^{\mathrm{ab}} \\ (71) \end{gathered}$ | $\begin{gathered} 232 \pm 4.22 \mathrm{ab} \\ (75) \end{gathered}$ |
| $\begin{aligned} & \text { Grams/snack } \\ & \quad(\% \text { from food })^{3} \end{aligned}$ | $\begin{gathered} 155 \pm 3.77 \\ (38) \end{gathered}$ | $\begin{gathered} 172 \pm 9.39 \\ (47) \end{gathered}$ | $\begin{aligned} & 198 \pm 5.15^{a} \\ &(60) \end{aligned}$ | $\begin{gathered} 195 \pm 5.08^{a} \\ (65) \end{gathered}$ |
| Total kcal from snacks | $395 \pm 7.2$ | $448 \pm 13.9{ }^{\text {a }}$ | $547 \pm 13.1{ }^{\text {ab }}$ | $568 \pm 12.4{ }^{\text {ab }}$ |
|  | 1977-1978 | 1989-1991 | 1994-1998 | 2003-2006 |
| Ages 13-18 years |  |  |  |  |
| Snacks/day | $1.20 \pm 0.03$ | $1.38 \pm 0.04^{\text {a }}$ | $1.89 \pm 0.05^{\text {ab }}$ | $2.09 \pm 0.04{ }^{\text {abc }}$ |
| Kcal/snack <br> (\% from food) ${ }^{2}$ | $\begin{gathered} 23 \pm 5.74 \\ (43) \end{gathered}$ | $\begin{gathered} 263 \pm 9.04^{a} \\ (49) \end{gathered}$ | $\begin{gathered} 306 \pm 8.65^{\mathrm{ab}} \\ (61) \end{gathered}$ | $\begin{gathered} 271 \pm 4.29{ }^{\mathrm{ac}} \\ (65) \end{gathered}$ |
| $\begin{aligned} & \text { Grams/snack } \\ & \quad(\% \text { from food })^{3} \end{aligned}$ | $\begin{gathered} 209 \pm 5.03 \\ (32) \end{gathered}$ | $\begin{gathered} 248 \pm 6.15^{a} \\ (38) \end{gathered}$ | $\begin{gathered} 322 \pm 11.89 \\ (50) \end{gathered}$ | $\begin{gathered} 285 \pm 6.38 \mathrm{abc} \\ (56) \end{gathered}$ |
| Total kcal from snacks | $515 \pm 9.5$ | $609 \pm 27.6^{\text {a }}$ | $734 \pm 29.2{ }^{\text {ab }}$ | $674 \pm 14.8^{\text {a }}$ |
|  | 1977-1978 | 1989-1991 | 1994-1998 | 2003-2006 |
| Ages 2-18 years |  |  |  |  |
| Snacks/day | $1.23 \pm 0.03$ | $1.44 \pm 0.04{ }^{\text {a }}$ | $2.07 \pm 0.03{ }^{\text {ab }}$ | $2.34 \pm 0.02^{\text {abc }}$ |
| ```Kcal/snack (% from food)}\mp@subsup{}{}{2``` | $\begin{gathered} 185 \pm 3.71 \\ (45) \end{gathered}$ | $\begin{gathered} 210 \pm 3.92^{a} \\ (55) \end{gathered}$ | $\begin{gathered} 241 \pm 4.43 \mathrm{ab} \\ (68) \end{gathered}$ | $\begin{gathered} 231 \pm 2.58 \mathrm{ab} \\ (72) \end{gathered}$ |
| $\begin{aligned} & \text { Grams/snack } \\ & (\% \text { from food })^{3} \end{aligned}$ | $\begin{gathered} 169 \pm 3.36 \\ (35) \end{gathered}$ | $\begin{gathered} 183 \pm 4.00^{a} \\ (45) \end{gathered}$ | $\begin{gathered} 224 \pm 4.90^{\mathrm{ab}} \\ (57) \end{gathered}$ | $\begin{gathered} 219 \pm 4.06^{\mathrm{ab}} \\ (62) \end{gathered}$ |
| Total kcal from snacks | $418 \pm 6.0$ | $463 \pm 14.2^{\text {a }}$ | $576 \pm 12.0{ }^{\text {ab }}$ | $586 \pm 8.0{ }^{\text {ab }}$ |

SOURCE: Content based on authors' assessments.
Notes: ${ }^{1}$ All estimates are mean $\pm$ S.E. Data were obtained from those individuals who reported any snack over a 2 day period (d1, d2 or both).
${ }^{2}$ \% Energy from food was calculated dividing the energy from foods by the total energy (food plus beverages) *100.

3 \% Grams from food was calculated dividing the grams from foods by the total grams (food plus beverages) *100.
${ }^{\text {a Significantly different from 1977-78. P<0.01 (Student's t test). }}$
${ }^{\mathrm{b}}$ Significantly different from 1989-91. P<0.01 (Student's t test).
${ }^{c}$ Significantly different from 1994-96. P<0.01 (Student's t test).

