

## **ecSatter Evidence**

Compiled by Ellyn Satter 12/30/20

At the heart of a good relationship with food is the principle of Eating Competence.<sup>1</sup> Eating Competence, as defined by the Satter Eating Competence Model (ecSatter), is being positive, comfortable, and flexible with eating as well as matter-of-fact and reliable about getting enough to eat of enjoyable and nourishing food. Even though ecSatter says nothing at all about what or how much to eat or what to weigh, people who are Eating Competent (EC) have better diets, lower BMIs, superior metabolic profiles, and more-positive quality of life indicators. Eating competence is measured by the validated ecSI 2.0 TM.<sup>2,3</sup>

### **EC show superior diets**

Instead of going by what and how much to eat, people who are Eating Competent depend on their own natural food preference, growth, and diversity-seeking processes to ensure dietary variety.

- EC parents of fourth graders show superior dietary quality, flexible definition of mealtime regularity.<sup>4</sup>
- EC Finnish adults at risk of diabetes eat more fruits and vegetables.<sup>5</sup>
- EC SNAP eligible adults have greater food security.<sup>6</sup>
- EC predominantly Hispanic parents of fourth graders have more fruits, vegetables in home.<sup>7</sup>
- EC Finnish adolescents more frequently eat family meals, fruits, vegetables.<sup>5</sup>
- EC university students have highest perceived dietary quality.<sup>8</sup>
- EC have higher fiber, vitamin A, E, C, most B-vitamins, magnesium, iron, zinc, potassium, higher Healthy Eating Index, are more likely to follow the Prudent dietary pattern.<sup>9</sup>
- EC have better food resource management skills, offer and serve more fruits and vegetables.<sup>2</sup>
- EC do better with food budgeting and planning, offer and serve more fruits and vegetables and are in action maintenance stage of change.<sup>10</sup>

### **EC show superior wellness, medical nutrition therapy measures**

People who are eating competent show superior wellness and metabolic indicators, even though they don't follow prescriptive diets.

- EC less likely have metabolic syndrome, unidentified type 2 diabetes, higher HDL. Lower EC have higher insulin resistance.<sup>11</sup>
- EC have greater fewer oral health issues.<sup>6</sup>
- EC have lower HDL-cholesterol, fasting blood glucose, total cholesterol and LDL cholesterol to HDL ratios, diabetes, family HX early-onset heart disease.<sup>12</sup>
- EC show higher HDL-cholesterol, lower Chol/HDL, lower triglycerides, and lower [stress-tested] systolic and diastolic blood pressure.<sup>13</sup>

### **EC show lower BMI**

ecSatter is weight-neutral. It defines desirable weight as stable BMI at any level, and does not encourage in any way striving for weight loss. Correlation and intervention studies show that people who are Eating Competent have the same or lower BMIs.

- EC parents of fourth graders who show a flexible definition of regular family meals have lower BMI.<sup>4</sup>
- EC Finnish adults at risk for diabetes are less likely to be obese.<sup>11</sup>
- EC Hispanic parents of fourth graders had lower incidence of overweight, obesity.

- EC Finnish adolescents more often perceived their weight as appropriate and less often had tried to lose weight.<sup>5</sup>
- EC university students have lowest incidence of overweight/obesity.<sup>14, 15</sup>
- EC university students psychologically secure, have lowest BMI.<sup>8</sup>
- EC low-income female adults have lower BMI.<sup>2</sup>
- EC elderly Spanish have lower BMI.<sup>12</sup>
- EC subjects in validation trial have lower BMI.<sup>10</sup>

### **EC show superior quality of life indicators**

ecSatter correlates with higher indicators of social and emotional well-being including eating attitudes, size acceptance and physical self-esteem and show more positive sleep and activity patterns.

- EC Finnish adults at risk of diabetes have higher physical activity and better sleep quality, are less likely to smoke.<sup>11</sup>
- EC Finnish adolescents more often perceive their body size as appropriate, have less often tried to lose weight, have higher self-esteem and a stronger sense of coherence.<sup>5</sup>
- EC university students show more physical activity, higher sleep duration<sup>14</sup> and quality of sleep.<sup>15</sup>
- EC introductory nutrition students are less likely to report past or current eating disorders<sup>16</sup>
- EC low income adult females showed lowest interpersonal distrust, impulsivity, ineffectiveness, maturity fears and social insecurity as well as lowest body dissatisfaction, drive for thinness, restrained eating, disinhibited eating and (intolerable) hunger.<sup>2, 10</sup>
- EC university students had lowest desired weight loss, lowest emotional eating, lowest psychological/emotional distress, highest perceived dietary quality.<sup>8</sup>
- EC university students have higher weight satisfaction, lower desire to lose weight.<sup>17</sup>

### **EC show better parenting with food**

- EC show highest fdSI (precursor to sDOR.2-6yTM), are likely divide feeding responsibilities, view child's eating positively.<sup>18</sup>
- EC mothers of 2-5 year-olds showed low restriction, appropriately divided feeding responsibilities.<sup>19</sup>

### **References**

1. Satter E. Eating Competence: definition and evidence for the Satter Eating Competence Model. *J Nutr Educ Behav*. 2007;39:S142-S153. Computer.
2. Krall JS, Lohse B. Validation of a measure of the Satter eating competence model with low-income females. *Int J Behav Nutr Phys Act*. Apr 07 2011;8:26-36. doi:10.1186/1479-5868-8-26
3. Lohse B. The Satter Eating Competence Inventory for Low-income persons is a valid measure of eating competence for persons of higher socioeconomic position. *Appetite*. Apr 2015;87:223-8. doi:10.1016/j.appet.2014.12.228
4. Lohse B, Faulring K, Mitchell DC, Cunningham-Sabo L. A definition of "regular meals" driven by dietary quality supports a pragmatic schedule. *Nutrients*. Sep 1 2020;12(9)doi:10.3390/nu12092667
5. Tilles-Tirkkonen T, Nuutinen O, Suominen S, Liukkonen J, Poutanen K, Karhunen L. Preliminary Finnish measures of eating competence suggest association with health-promoting eating patterns and related psychobehavioral factors in 10–17 year old adolescents. *Nutrients*. 2015;7:3828-3846.

6. Lohse B, Masters L. Eating competence and oral health in Supplemental Nutrition Assistance Program eligible populations. *J Dent Hyg.* Dec 2019;93(6):42-50.
7. Lohse B, Pflugh Prescott M, Cunningham-Sabo L. Eating competent parents of 4th grade youth from a predominantly non-Hispanic white sample demonstrate more healthful eating behaviors than non-eating competent parents. *Nutrients.* Jun 30 2019;11(7)doi:10.3390/nu11071501
8. Greene GW, Schembre SM, White AA, et al. Identifying clusters of college students at elevated health risk based on eating and exercise behaviors and psychosocial determinants of body weight. *J Am Diet Assoc.* Mar 2011;111:394-400. doi:10.1016/j.jada.2010.11.011
9. Lohse B, Bailey RL, Krall JS, Wall DE, Mitchell DC. Diet quality is related to eating competence in cross-sectional sample of low-income females surveyed in Pennsylvania. *Appetite.* 2012;58:645-650. doi:10.1016/j.appet.2011.11.022
10. Lohse B, Satter E, Horacek T, Gebreselassie T, Oakland MJ. Measuring eating competence: psychometric properties and validity of the ecSatter Inventory. *J Nutr Educ Behav.* Sep-Oct 2007;39:S154-66. doi:10.1016/j.jneb.2007.04.371
11. Tilles-Tirkkonen T, Aittola K, Männikkö R, et al. Eating Competence Is associated with lower prevalence of obesity and better insulin sensitivity in Finnish adults with increased risk for type 2 diabetes: The StopDia Study. *Nutrients.* Dec 30 2019;12(1)doi:10.3390/nu12010104
12. Lohse B, Psota T, Estruch R, et al. Eating competence of elderly Spanish adults is associated with a healthy diet and a favorable cardiovascular disease risk profile. *J Nutr.* 2010;140:1322-1327. doi:10.3945/jn.109.120188
13. Psota TL, Lohse B, West SG. Associations between eating competence and cardiovascular disease biomarkers. *J Nutr Educ Behav.* Sep-Oct 2007;39(5 Suppl):S171-178. doi:10.1016/j.jneb.2007.05.004
14. Quick V, Shoff S, Lohse B, White A, Horacek T, Greene G. Relationships of eating competence, sleep behaviors and quality, and overweight status among college students. *Eat Behav.* Dec 2015;19:15-19. doi:10.1016/j.eatbeh.2015.06.012
15. Quick V, Byrd-Bredbenner C, White A, Lohse B. Eat, sleep, work, play: Associations of weight status and health-related behaviors among young adult college students. *Am J Health Promot.* 2013:e64-e72.
16. Brown LB, Larsen KJ, Nyland NK, Eggett DL. Eating competence of college students in an introductory nutrition course. *J Nutr Educ Behav.* May-Jun 2013;45(3):269-73. doi:10.1016/j.jneb.2012.10.010
17. Clifford D, Linda A, Keeler LA, Gray K, Steingrube A, Neyman Morris M. Weight attitudes predict eating competence among college students. *Family and Consumer Sciences Research Journal.* 2010;39:184-193.
18. Lohse B, Satter E, Arnold K. Development of a tool to assess adherence to a model of the division of responsibility in feeding young children: using response mapping to capacitate validation measures. *Child Obes.* Apr 2014;10(2):153-68. doi:10.1089/chi.2013.0085
19. Tylka TL, Eneli IU, Kroon Van Diest AM, Lumeng JC. Which adaptive maternal eating behaviors predict child feeding practices? An examination with mothers of 2- to 5-year-old children. *Eat Behav.* Jan 2013;14:57-63.