



How Diet and Nutrition Affect Mental Health

Many of us already know that when we make healthy food choices we tend to feel better, and when we eat heavy, sugary foods we can feel tired or sluggish. Therefore, it should come as no surprise that there is considerable evidence to suggest that nutrition can have an impact on mental health as well as physical health. This is especially true for young people. For example, Oddy et al.¹ found that poorer mental health outcomes in adolescents aged 13-15 were associated with a Western dietary pattern (a diet high in red and processed meats, take-out, and sugary and refined foods). Better mental health outcomes were found in those who had a higher intake of fresh fruit and leafy green vegetables.

Overconsumption of sugar alone can negatively impact young people's mental health. In a sample of 5,498 youth aged 15-16 in Oslo, Norway, researchers found a strong association between sugary soft drink consumption and mental health problems.² In a related study, researchers found a positive association between consumption of sugary soft drinks and sweet foods and risks for suicidal behaviors among adolescents aged 12-19 in Jiangsu Province, China.³

Certain foods and dietary supplements, such as fish, fruits and vegetables, and over-the-counter vitamins and supplements can have a positive impact on young people's mental health. For example, Omega-3 fatty acids, which are found in fish and fish oil, are beneficial to neural functioning.⁴ In a randomized, double-blind, placebo-controlled study of adolescents, researchers found that fish oil may prevent progression of psychosis in high-risk youth aged

13-25. Participants who took capsules containing concentrated marine fish oil once per day for 12 weeks had significantly reduced the transition rate to full psychosis. In addition, researchers found significant symptomatic and functional improvements during the 12 month follow-up period. These findings are especially promising because fish oil tends to have minimal side effects and it is accessible and affordable. The authors of this study suggest that fish oil may offer a safe and effective prevention strategy in young people who are at a high risk of developing psychosis.⁵

Vitamin D is another supplement that can positively affect mental wellbeing. Multiple studies have linked vitamin D deficiency to cognitive impairment, depression, bipolar disorder, and schizophrenia. Therefore, many mental health professionals and physicians recommend regular vitamin D intake.⁴

Following an extensive review of the literature on the benefits of nutrition and diet on mental health, Walsh⁴ determined that one's diet should: contain a wide array of multicolored fruits and vegetables (i.e., "rainbow diet": see table on next page); contain some fish, with preference given to cold deep-seawater fish, such as salmon; and reduce excess calories. Implementation of these diet changes could result in improved mental well-being. However, before making any dietary changes, speaking with a doctor is recommended.

YOUTH DIETARY PRACTICES

Nutrition is especially important during adolescence due to rapid growth and development. The onset of many psychiatric illnesses which coincide with adolescence¹ may

be diminished by recommended dietary habits. Additionally, behavior patterns (such as eating habits) acquired during this time are likely to influence long-term behaviors.⁶ However, getting young people to eat healthier is not always easy.

In a study of 141 adolescents in 7th and 10th grade from two schools in St. Paul, Minnesota, researchers found that the factors that most influence teens' eating habits were: hunger or cravings; appeal or taste; time available to them; their parents' eating habits and schedules; and convenience. Time considerations appeared to strongly influence participants' food choices. The young people said that they would prefer to sleep longer in the morning rather than prepare and/or eat breakfast. In addition, they reported not wanting to wait in a long lunch line at school; fast-food was appealing because it was served quickly. When preparing their own food, young people wanted to make food that was quick and easy. Some young people reported that they ate a lot of take-out because their parents did not have time to cook or prepare meals at home.

Some additional barriers to eating well as reported by participants were: healthy food, such as fruit and vegetables, available at school were bruised or "nasty"; healthier food choices were less convenient because some fruits and vegetables require extra preparation time (e.g. peeling, cooking); healthful foods were typically not served at fast-food restaurants; finally, participants viewed fast-food as less expensive than healthier foods. When asked what would make eating more nutritiously easier for adolescents the participants suggested: making healthy foods look and taste better by serving vegetables with dips, preparing vegetables in a stir-fry or hiding vegetables in stews,

offering healthier options at fast-food restaurants and vending machines, and making healthy food available at home. Lastly, participants said that eating healthy should be "cool" and suggested better advertising and packaging designs for healthy foods.⁷

Gender and ethnicity appears to affect the food choices young people make. In a study of 780 adolescents, aged 14-19 from 4 public high schools in San Bernardino, California, researchers found that males reported significantly greater caloric intake in comparison to females. In contrast, females reported greater intentions to eat healthfully, held more positive attitudes towards healthy food choices, and felt more social pressure to eat healthy foods in comparison to males. Researchers found that Black participants, both male and female, reported significantly greater caloric intake and a higher proportion of calories from fat than their White and Hispanic counterparts.⁸

MODIFYING YOUTH DIETARY HABITS

Dietary modifications that increase nutrition can be introduced quickly with minimal to no health risks and could offer significant improvements in physical health, self-esteem, and quality of life.⁹ Although getting young people to eat healthfully can sometimes be challenging, putting in the effort to help young people eat better can improve their physical and mental well-being.

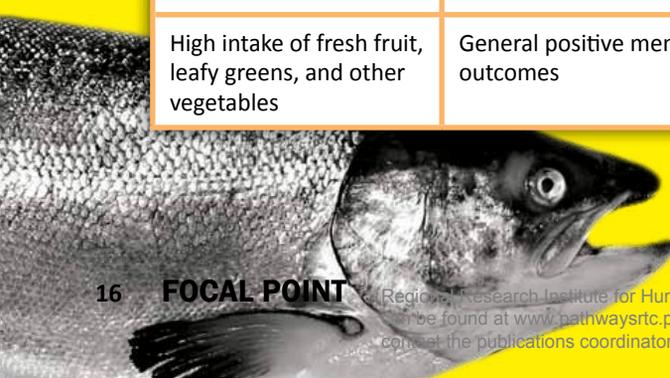
Parents and caregivers can help young people make healthy food choices by keeping fruits and vegetables stocked at home while limiting access to high-fat and sugary foods. Parents and caregivers could also try to get young people involved in grocery shopping and meal prepara-

Rainbow Diet and Omega-3 Food Sources



Food or Supplement	Improvements in Mental Health Conditions	Good Sources
Fish and Fish Oil; Omega-3 Fatty Acids	Psychosis	Fish oil supplements containing omega-3 fatty acids or cold deep seawater fish such as salmon; flax seeds; and walnuts.
Vitamin D	Cognitive Impairment, depression, bipolar disorder, schizophrenia	Vitamin D dietary supplements; limited amounts of unprotected exposure to natural sunlight (avoid burning); fatty fish such as salmon, tuna, and mackerel; and vitamin D fortified foods such as orange juice, milk, and yogurt.
High intake of fresh fruit, leafy greens, and other vegetables	General positive mental health outcomes	Apple slices, oranges, berries, bananas, kale chips, collard greens, spinach, tomatoes, carrots, etc.

**Consult your doctor before making any diet changes or introducing vitamins and supplements into your diet*





Getting young people to eat healthier is not always easy.

tion to help build cooking skills and increase engagement in their health. Encouraging adolescents to make small changes like swapping out soda pop for sparkling water or choosing carrot sticks over potato chips for an afternoon snack might eventually lead young people to make more healthy choices after they experience some success with feeling better physically and/or mentally. Although parents and caregivers are the primary influences over adolescent food choice, the eating habits of siblings and friends are also influential, so it's important to consider their involvement when encouraging a young person to adopt healthful eating practices.⁸

To help young people develop a deeper relationship with their food, parents and caregivers could take their youth to farmer's markets where young people can meet the people growing their food. Perhaps, parents could encourage youth to plant a backyard, patio, or countertop garden, or encourage them to participate in a community garden (and if there isn't one in your area, consider starting one!). By investing time in planting, watering, and nurturing the produce in their own backyard or community garden young people might develop a deeper connection to their food which might lead to a greater interest in cooking or making healthful changes.

Changing one's diet to include healthier food choices can be challenging, especially for young people. It can take months or even years. Encouraging, celebrating and modeling these behaviors as well as teaching adolescents how to make quick, tasty, healthy foods could be quite beneficial especially as they transition into adulthood. Obviously, the suggestions mentioned above require extra time, effort and planning, and many parents, caregivers, and adolescents have busy lives. However, putting in the effort to encourage adolescents to make smart food choices can help them build healthy habits that could have a positive impact on their physical and mental health.

REFERENCES

1. Oddy, W. H., Robinson, M., Ambrosini, G. L., O'Sullivan, T. A., de Klerk, N. H., Beilin, L. J., . . . Stanley, F. J. (2009). The association between dietary patterns and mental health in early adolescence. *Preventive Medicine, 49*, 39-44.

2. Lien, L., Lien, N., Heyerdahl, S., Thoresen, M., & Bjertness, E. (2006). Consumption of soft drinks and hyperactivity, mental distress, and conduct problems among adolescents in Oslo, Norway. *American Journal of Public Health, 96*, 1815-1820.
3. Pan, X., Zhang, C., & Shi, Z. (2011). Soft drink and sweet food consumption and suicidal behaviours among Chinese adolescents. *Acta Paediatrica, 100*, 215-222.
4. Walsh, R. (2011). Lifestyle and mental health. *American Psychologist, 66*, 579-592.
5. Amminger, P. G., Schafer, M. R., Papageorgiou, K., Klier, C. M., Cotton, S. M., Harrigan, S. M., . . . Berger, G. E. (2010). Long-chain ω -3 fatty acids for indicated prevention of psychotic disorders. *Archives of General Psychiatry, 67*(2), 146-154.
6. Kelder, S. H., Perry, C. L., Klepp, K. I., & Lytle, L. L. (1994). Longitudinal tracking of adolescent smoking, physical activity, and food choice behavior. *American Journal of Public Health, 84*, 1121-1126.
7. Neumark-Sztainer, D., Story, M., Perry, C., & Casey, M. A. (1999). Factors influencing food choices of adolescents: Findings from focus-group discussions with adolescents. *Journal of the American Dietetic Association, 99*, 929-937.
8. Backman, D. R., Haddad, E. H., Lee, J. W., Johnson, P. K., & Hodgkin, G. E. (2002). Psychosocial predictors of healthful dietary heavier in adolescents. *Journal of Nutritional Education and Behavior, 34*, 184-193.
9. Deslandes, A., Moraes, H., Ferreira, C., Veigal, H., Silveira, H. Mouta, R., . . . Laks, J. (2009). Exercise and mental health: Many reasons to move. *Neuropsychobiology, 59*, 191-198.

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