

Early Life

What we know

Childhood is a time where substantial growth occurs. Experiences from childhood shape who we are as adults. Many factors influence adult health in early life including prenatal care, the environment, nutrition, and trauma.

Social Class and Education

The social status into which a person is born, often follows them throughout life. Growing up in a low social class can have negative effects on adult health. Adults from underprivileged childhoods spend a greater amount of their lives in poor health compared to people in higher social classes⁸. Children in poverty also live fewer total years^{1,8,10}. The only factor known to reduce the effects of disadvantaged childhood is education. Adults who grow up in lower social classes and receive a higher level of education live longer than people who receive less education⁸. Not everyone who grows up disadvantaged achieves educational success. A person born into a family with a higher social class is more likely to have access to a good education. This often leads to work and financial success later in life.

Childhood Nutrition

Proper nutrition during pregnancy enhances development of healthy babies. Nutrition in-utero influences adult health. Expecting mothers with diets low in protein increase babies' blood pressure. High blood pressure before birth continues to influence adult blood pressure⁴. Both poor iron and folic acid intake during pregnancy are linked to preterm births and low birth weight. Nutrient shortages also put infants at a higher risk for birth defects, obesity, diabetes, and cardiac disease^{2,4}. Newborn exposure to chemicals, such as those used in manufacturing plastic, may lead to an increased chance of breast and prostate cancer later in life³. Nutrition received before birth affects health throughout life.

Poor nutrition in childhood also has negative effects on adult health. Children who eat large amounts of calories and protein but low amounts of vitamins often have slow growth and are underweight². Children who suffer from nutrient shortages are more likely to perform poorly in school. These children may also have impaired mental and social skills. Both physical and mental growth relies on interaction with the environment, timing, degree of nutrient deficiency, and the possibility of recovery⁹. Few interventions have been tested to reduce the negative effects of poor nutrition. More research is needed to see if interventions have a direct impact on brain development. (See, "Food").

Trauma

Trauma can come in many forms. For children, this can include abuse and neglect as well as preventable accidents. Experiencing trauma as a child affects adult health. Early childhood trauma not only creates health problems in childhood, but also prepares adults to respond negatively to hardship^{5,6,7}. Children who experience abuse are more likely to experience other stressful life events. These children also tend to achieve less in school and have chronic sleep problems. The effects of trauma follow a person throughout life (see, "Stress").

Local Implications for Harrisonburg/Rockingham

Interventions in early life need to focus on access and quality of education, and provision of good nutrition, health education, preventive care, and support of strong parent-child relationships. Healthy People 2020 identifies early and middle childhood as an important focus, and links evidence-based resources and interventions to assist communities to address areas of concern for these age groups.¹¹

There are concerns related to early life locally. In the SRMH Community Stakeholder Survey Results (2015), childhood obesity is identified as the third most important health concern, and there is a higher percentage of late prenatal care births locally than in Virginia overall.¹² Additionally, 21% of Virginia children receive public assistance, up from 15% in 2005.¹³ Children, especially, suffer from hunger in the Blue Ridge Area, where 29% of food bank clients are children under the age of 18.¹⁴ Almost twice as many people in Harrisonburg City live in poverty (32.5%) compared to the United States as a whole (14.8%).¹⁵ Poverty was identified as a challenge in the HCC survey, as well as a lack of affordable housing for children who live in poverty.¹⁶

The Harrisonburg City schools have unique issues. In Harrisonburg City, 71.3% of kids are eligible for free or reduced lunch, compared to 42% of children in Virginia overall.¹⁷ This area is a refugee resettlement area, and many people, including children, come to the area having experienced trauma in early life. English language learner students represent 37% of all students locally – almost 2,000 of the City school district's 6,000 students. Of these, eight percent are Arab and/or Kurdish.¹⁸

In addition to the Harrisonburg City and Rockingham County schools, examples of local organizations that actively promote wellness in early life are the Office on Children and Youth, H/R Health Department, local clinics and social services, Migrant Education, Healthy Families of the Blue Ridge, Church World Service Refugee Resettlement services, and numerous day care facilities. HCC survey participants noted that local schools are a strength, and many local agencies provide activities for children, (e.g., Second Home, City of Harrisonburg Parks and Recreation, and Big Brothers/ Big Sisters). Local universities such as Eastern Mennonite University provide summer sports camp opportunities for children, important for combatting childhood obesity.

References

- ¹Barnes, Wilson, Everson-Rose, Hayward, Evans, & Mendes de Leon. (2012). Effects of early-life adversity on cognitive decline in older african americans and whites. *Neurology*, 79(24), 2321-2327. doi:10.1212/WNL.0b013e318278b607
- ²Cook, J. T., & Frank, D. A. (2008). Food security, poverty, and human development in the united states. *Annals of the New York Academy of Sciences*, 1136(1), 193-209. doi:10.1196/annals.1425.001
- ³Dolinoy, Huang, & Jirtle. (2007). Maternal nutrient supplementation counteracts bisphenol A-induced DNA hypomethylation in early development. *Proceedings of the National Academy of Sciences*, 104(32), 13056-13061. Retrieved from <http://www.pnas.org/cgi/doi/10.1073/pnas.0703739104>

- ⁴Godfrey, K. M. B., D.J.P. (2000). Fetal nutrition and adult disease. *American Journal of Clinical Nutrition*, 71(5), 1352s. Retrieved from <http://ajcn.nutrition.org/content/71/5/1344s.long>
- ⁵Greenfield, E., Lee, C., Friedman, E., & Springer, K. (2011). Childhood abuse as a risk factor for sleep problems in adulthood: Evidence from a U.S. national study. *Annals of Behavioral Medicine*, 42(2), 245-256. doi:10.1007/s12160-011-9285-x
- ⁶Horwitz, A. V., Widom, C. S., McLaughlin, J., & White, H. R. (2001). The impact of childhood abuse and neglect on later mental health: A prospective study. *Journal of Health & Social Behavior*, 42(2), 184-201.
- ⁷Levine, M. E., Cole, S. W., Weir, D. R., & Crimmins, E. M. (2015). Childhood and later life stressors and increased inflammatory gene expression at older ages. *Social Science & Medicine*, 130, 16-22. doi:10.1016/j.socscimed.2015.01.030
- ⁸Montez, J., & Hayward, M. (2014). Cumulative childhood adversity, educational attainment, and active life expectancy among U.S. adults. *Demography*, 51(2), 413-435. doi:10.1007/s13524-013-0261-x
- ⁹Prado, E. L., & Dewey, K. G. (2014). Nutrition and brain development in early life. *Nutrition Reviews*, 72(4), 267-284.
- ¹⁰Pudrovska, T., & Anikputa, B. (2014). Early-life socioeconomic status and mortality in later life: An integration of four life-course mechanisms. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 69(3), 451-460.
- ¹¹Healthy People 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/early-and-middle-childhood/ebrs>
- ¹²Community Health Solutions. (2015). A community health needs assessment prepared for Sentara Rockingham Memorial Hospital. Retrieved from <http://www.sentara.com/Assets/Pdf/About-Us/Community-Health-Needs-Assessments/SRMH-2015-Community-Health-Needs-Assessment.pdf>
- ¹³Children who Receive Public Assistance. Retrieved May 16, 2016 from <http://datacenter.kidscount.org/data/tables/8857-children-who-receive-public-assistance?loc=1&loct=1#detailed/2/48/false/869,36,133,35,16/any/17739,17740>.
- ¹⁴Blue Ridge Area Food Bank. Retrieved May 16, 2016 from <https://www.brafb.org/learn/hunger-in-our-area/>.
- ¹⁵U.S. Census Bureau. Retrieved May 16, 2016 from <http://www.census.gov/quickfacts/table/PST045215/00,5135624>.
- ¹⁶Harrisonburg Healthy Community Council Survey (2015).
- ¹⁷Students Approved for Free or Reduced Price School Lunch. Retrieved May 16, 2016 from <http://datacenter.kidscount.org/data/tables/3239-students-approved-for-free-or-reduced-price-school-lunch?loc=48#detailed/5/6870/true/1380,1232,1123,1031,923/any/12923,6682>.

¹⁸ Pascopella, A. The District, February 2016. Virginia school district opens doors to refugee students. Retrieved from: <http://www.districtadministration.com/article/virginia-school-district-opens-doors-refugee-students>.