Empowering Pediatricians to Prevent Chronic Disease Across Generations

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Most chronic diseases are diagnosed late in life; however, the roots of chronic diseases, including many cancers, begin much earlier. As many chronic disease risk factors, including obesity, unhealthy diets, and lack of physical activity, are patterned early in life, infancy and childhood are the optimal developmental windows to establish health behaviors to reduce chronic disease later in life. Thus, the pediatrician is essential for addressing immediate health concerns in infancy and childhood and lifelong chronic disease prevention for the child.

At the child’s visit, the pediatrician also has the opportunity to disseminate chronic disease prevention messages directed to the parents. Although chronic disease susceptibility can begin much earlier in life, chronic disease risk can also be modified by many adult factors. For example, a woman’s risk of cardiovascular disease and breast cancer is influenced by her reproductive history, diet, body size, hormonal use, physical activity, smoking, and alcohol consumption before menopause. A man’s risk of cardiovascular disease and cancers is also influenced by similar factors in early adulthood through midlife. Waiting until after midlife, when most cancers and cardiovascular diseases are diagnosed, to start chronic disease prevention messages is too late. Thus, physicians, and in particular pediatricians, can play an important role in influencing health behavior. Contact with physicians increases with age but coverage is incomplete in early and middle adulthood. Consider that at least 24% of adults aged 18 to 44 do not see a physician annually in the United States, whereas 12% of adults aged 45 to 64 years and only fewer than 4% of adults older than 65 years do not see a physician annually in the United States, even greater percentages do not see a physician more regularly. Contrast these statistics with those of infants and children; 92.8% had contact with a health care professional in the past year, whereas only 2.8% of those younger than 4 years, 7% of those 5 to 11 years, and 12.8% of those 12 to 17 years did not have any contact. Thus, the pediatrician may work on the twofer, the parent-child dyad, and be a health contact for parents particularly before midlife to successfully spread chronic disease prevention messages as early as possible across generations. Here we briefly summarize the evidence for cancer and chronic
disease prevention and discuss public health gains by reinforcing prevention messages through visits by parent-child dyads to pediatricians and the impact on health outcomes across generations.

THE FIRST YEAR OF LIFE: INFANT NUTRITION AND GROWTH

Although the pediatric visit has long been an important time to reinforce the benefits of breastfeeding and infant nutrition on growth in infancy, the benefits for the mother also deserve highlighting. It is well known that breastfeeding has benefits for the offspring, but perhaps less well known are the benefits to the mother. Recent evidence indicates that longer duration of lactation reduces the risk of type 2 diabetes and insulin resistance in women; and other potential long-term health benefits of breastfeeding include lower risk of breast and ovarian cancers, rheumatoid arthritis, high blood pressure, and high cholesterol. Breastfeeding is one of the few risk factors associated with a reduced risk of estrogen receptor-negative breast cancer, a molecular subtype of breast cancer that is associated with higher mortality and more commonly seen in younger, premenopausal women. There remain stark racial disparities in breast cancer in young women in the United States, and racial disparities in breastfeeding. Among infants born in 2008, 58.9% of black mothers ever breastfed compared with 75.2% among whites; at 6 months of age 46.6% of white mothers still breastfed compared with 30.1% of black mothers. Pediatricians can have a substantial impact on reducing these disparities, particularly by encouraging new mothers to continue breastfeeding longer and/or to consider the practice for future children.

ANNUAL “WELL BABY” EXAMINATIONS

In addition to a focus on infant nutrition, pediatricians already use the annual visit for regular health messages about diet, physical activity, and injury prevention. Although these messages are often provided at a given age and developmental stage of the child and therefore at 1 visit in time, the importance of conveying messages to the parent-child dyad about long-term health benefits of physical activity to reduce most chronic diseases even with only a modest increase in walking, use of stairs rather than elevators, or more play outside could highlight how parents can role model the way by “doing” the physical activity with the child. An additional grace note to such an exchange might highlight the long-term recognized reduction in breast cancer risk through physical activity across the life course and could “sell” the prevention message for the dyad. Parents can also be informed of the long-term benefits of maintaining a healthy BMI to reduce risk of all chronic diseases as well as reduce the risk of overweight children. Further, pediatricians see many women who plan to have more children and thus they are in a unique place to inform women of the benefits of reducing the pre-pregnant BMI before conceiving, the role of physical activity in pregnancy on later age at menarche of the daughter, and the detrimental effects of pre-pregnancy overweight and obesity on risk of obesity for the future offspring. In addition to messages about the importance of diet and physical activity, pediatricians already convey cancer prevention messages through regular reminders about the use of sunscreen at annual child visits as well as the harms from smoking. Although it is often challenging to measure the full impact of pediatricians’ prevention guidance, the essential role that they play in lifelong cancer prevention cannot be denied when one considers the concrete example of their role in increasing the uptake of the human papillomavirus cancer vaccine. These cancer prevention conversations specific to sunscreen and human papillomavirus vaccine can be opportunities to share information about cancer prevention generally, including information about the importance of physical activity and maintaining a healthy BMI for both the parents and the children, as well as initiate conversations about chronic disease screening guidelines.

A WAY FORWARD

Given the long latency of many chronic diseases, as well as the importance of establishing healthy behaviors early in life, pediatricians are key to convey these prevention messages early and regularly. Many American adults do not see physicians regularly until much later in life, and usually after midlife at a point when prevention messaging may have substantially less impact. We recognize the extreme time demands posed by any clinic visit and suggest at a minimum, the pediatric office visit could be the time and place where conversation about chronic disease prevention starts with supplemental and specific material provided at the visit, including Centers for Disease Control and Prevention guidelines for chronic disease prevention and screening and information for additional resources from the National Cancer Institute and other national institutes.

The importance of linking health outcomes within families has long been recognized for the improvement of health across generations. A singular focus on birth outcomes without an emphasis on maternal health has long been criticized. Moreover, the pediatrician can place into perspective the genetic basis for chronic disease that so frequently clouds the potential for environmental modifications even...
in the presence of genetic risk. Here we extend the proposal to recognize the unique role of the pediatrician in improving the health of the parents over the long-term through chronic disease prevention, which can further improve and reinforce health messages in their own pediatric patients.

REFERENCES


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