

## Justification for Road of Life Programs

It is no secret that a bizarre health epidemic is encroaching upon the children of our country. These children live in a highly developed nation with advanced, sophisticated medical technology and a surplus of food, yet simultaneously suffer from obesity and malnutrition while becoming increasingly sedentary and at risk for preventable chronic disease. Affluenza- a category of diseases associated with the stereotypical excessive, sedentary, “American” lifestyle- is on the rise, currently affecting America’s adult population and attempting to consume the nation’s youth. Nationally, less than 36% of students in grades 9-12 achieve the recommended amount of physical activity (60 minutes, at least 5 days per week) (Kurpad, & Selvan, 2004, p. 23). Bringing it closer to home, the Columbus Health Department reports that less than half of Central Ohio children ages 6-17 participate in “adequate daily physical activity.” Perhaps this is a reflection of the lack of physical activity demonstrated by adults in the area: a mere 39% of Franklin County adults perform in “moderate physical activity” (Community Research Partners [CRP], 2004, p. 71). Throughout the nation, 21% of 9<sup>th</sup>-12<sup>th</sup> graders use a computer for more than 3 hours on a school day for non-school related activities; 37% watch television to the same degree. Only one-fifth of these students are eating the United States Department of Agriculture (USDA) recommended 5 daily servings of fruit and vegetables (Department of Health and Human Services [HHS], 2006, p. 24, p. 22). Physically inactive lifestyles coupled with poor diets place children at risk for being overweight. The Columbus Health Department reported that 15% of children ages 2-17 were overweight in 2002. When the increase in overweight adults in Columbus (from 48% in 1995 to 56% in 2000, comparable to national statistics) is considered, preventative health education gains a sense of immediacy. Overcoming negative national trends, youth tobacco use is decreasing in Central Ohio. Franklin County’s teen smoking rate, 14% of youth in grades 6-12, is below the national statistic of 23% (CRP, 2004, p. 71, p. 68). It is crucial that this positive trend is encouraged and fostered until the ultimate, ideal goal of no tobacco use amongst children is achieved.

Cancer and heart disease are two of the three leading causes of death in persons 25 years old and older in Ohio. Fortunately, the Ohio Department of Health reports that Franklin County is experiencing declining mortality rates for these diseases; however, the mortality rates for diabetes, chronic lower respiratory disease, and stroke are rising (as cited in CRP, 2004, p. 69). United Way also notes that Central Ohio has higher rates of death for four of the five leading causes of death (heart disease, cancer, cerebro-vascular disease, chronic lower respiratory disease, and unintentional injuries) than Ohio and the country as a whole (CRP, 2004, p. 70, p.64). The risk of heart disease, cancer, stroke, and chronic lower respiratory illnesses are influenced by lifestyle choices such as diet, physical activity, and tobacco use. Positive and negative effects of these choices appear as early as childhood. By targeting 3<sup>rd</sup>-5<sup>th</sup> grade children, we can circumnavigate these dangers.

Health promotion and primary prevention are the best measures against this epidemic. The CDC defines health promotion as “help[ing] people establish an active lifestyle and healthy eating habits early in life and to maintain these behaviors throughout their lives.” The purpose of primary prevention is to “help people who have risk factors for chronic disease...prevent...the onset of disease by establishing more active lifestyles and healthier eating habits” (Macera, et al., p. 5).

## Justification for Road of Life Programs

### Why Children?

Road of Life targets children in grades 3-5 for many reasons. Children are “active constructors” of their own health, and “active consumers.” Children also influence their parents, thus indirectly effecting change in their dietary and activity patterns. They do not need to buy groceries or run a household to influence how they eat and how they play. Choice is afforded to children in school lunches and snacks, sports, games, and other social situations. Oakley et al. believe that “young people may not translate their knowledge of the positive health factors under their control into relevant behaviors because health is not seen as the most important goal in life or because they experience their living conditions as constraining their ability to make health choices, or both” (Oakley, Bendelow, Barnes, Buchanan, Husain, 1995, p. 11).

It is especially important to teach children how to navigate health-related issues so that they are confident and competent when the need to make decisions arises (Lohaus, Klein-Hessling, Ball, & Wild, 2004, p. 379). These skills become increasingly valuable as children enter adolescence, a period when unhealthy nutrition tends to increase while “health protective patterns” (i.e. sports, proper diet) decrease. “Because health risk behaviors can be changed less easily at later developmental stages, when they have already become stable behavior habits,” write Lohaus et al. (2004), “it seems to be essential to influence health behavior early in development” (p.376). Such risk factors developed in adolescence include smoking, a high fat diet, and a sedentary lifestyle and lead towards diseases such as obesity, cancer, type II diabetes, and hypertension and other cardiovascular diseases (Kurpad & Selvan, 2004, p.512). Teaching children to be wise in making health-related decisions also helps them resist peer pressure and avoid negative health behaviors as stress-coping mechanisms. Lohaus et al. (2004) suggest beginning health promotion early, “because the relations between self-concept variable, coping competencies, symptomatology, and health-related behaviors *are already visible in late childhood*” (p. 376, p. 379). The CDC asserts that children “benefit from interventions designed to improve their eating habits and increase their activity levels,” and stresses the importance of targeting older children so that healthy behaviors are established early and “maintained throughout life (Macera, et al., p. 3, p. 5).” Moreno et al. (2004) purport that “nutrition and/or fitness deficits in school-age children and adolescents can be addressed especially by promoting regular physical activity and dietary awareness” (p. 123). In the study “Knowledge and Attitudes of Children Towards Cigarette Smoking and Its Damage,” Brook, Mendelberg, Galili, Priel, and Bujanover (1999) suggest that “even though children may not consider what happens ‘here and now’ as having long-term consequences, we should consider the teaching of anti-smoking [and pro-health] lessons as ‘passive vaccinations’ which will give results in later years” (p. 52).

### Why schools?

Schools are optimal settings for teaching healthy, preventative lifestyles to children. Compulsory schooling policies in the United States result in 97% of US children attending school (Wiecha, et al., 2004, p. 467). Gortmaker et al. (1999a) report that “school-based programs among elementary school students represent an important channel for behavioral change because of the near universal enrollment of children in school and the potential to affect behaviors of children that track into adolescence and adulthood” (p. 979). A meta-analysis of studies encouraging increased fruit and

## Justification for Road of Life Programs

vegetable intake found that “school-based health and nutritional programs...can be practical, implemented at cost and may also encourage children and adolescents to remain in school” (Knai, Pomerleau, Lock, McKee, 2006, p. 91).

The USDA states that schools and school communities have the responsibility of giving students the knowledge and skills needed to form and maintain healthy eating patterns that will last for their entire lives. In “Goals for Nutrition Education” under the “Team Nutrition” plan, the USDA recommends the integration of educational standards-based health lessons into pre-established subjects such as math, science, and language arts. These lessons should be given sequentially beginning with preschool and continuing through 12<sup>th</sup> grade and should increase students’ health knowledge and change their attitudes and eating habits (as cited in “School District,” p. 2-3). The CDC seconds these recommendations (Macera et al., p.8). Similarly, schools are great places to implement tobacco-use prevention programs. A study conducted in Oregon found that schools funded for an anti-tobacco program showed significantly greater declines in 30-day tobacco use amongst 8<sup>th</sup> graders than a non-funded school, concluding that comprehensive, school-based programs are effective and valuable supplements to state-wide anti-tobacco efforts (“Effectiveness,” 2001, p. 1).

The importance of teachers as mentors and role models in the sphere of health education must not be overlooked. Because children spend a majority of their waking hours at school, they consequentially share them with their teachers. Teachers are convenient sources of knowledge and serve as confidants for students; one study found that 33% of students were most likely to discuss cancer with their teachers, especially male students (Barnes et al., 1995, p. 5).

### Nutritional and Physical Education

Proper nutrition and adequate physical activity produce healthy children. According to the USDA, these two components are “essential for students to achieve their full academic potential, fulfill mental and physical growth, and lifelong health and well-being” (as cited in “School District, p. 2). While it can be difficult to separate the effects of nutrition and exercise, the two have undeniable effects on an individual’s health when combined. Macera et al. report that as many as 580,000 deaths per year are attributable to unhealthy diets and lack of exercise, factors that also contribute heavily to disabilities resulting from diabetes, obesity, osteoporosis, and stroke.

#### Nutrition

In a sadly ironic phenomenon, the American diet is becoming increasingly processed and more exclusive of fresh produce while at the same time, volumes of evidence-based research are proving that we need more fruits and vegetables and less refined food. It is evident that many chronic and non-communicable diseases, such as certain cancers and cardiovascular diseases, may be prevented simply by eating enough fruits and vegetables on a regular basis. The Boyd-Orr Cohort, a lifetime observational study started in the 1930s, found a positive correlation between childhood fruit consumption and reduced rates of cancer in adulthood (as cited in Knai, 2006, p. 85). Americans have a long way to go to reap these benefits, considering that according to Healthy People 2010, a program managed by the HHS and the Office of Disease Prevention and Health Promotion (ODPHP), about 75% are not eating enough fruit. Additionally, 50% do not eat enough vegetables (Macera et al., p. 2). Low produce intake was associated with

## Justification for Road of Life Programs

respiratory problems in a study of 20,000 Central European children (Knai et al., 2006, p. 85). Underserved urban minority children are especially at risk for diets that do not meet the Dietary Guidelines for Americans set by the USDA and, consequentially, obesity and elevated serum lipid levels (Gortmaker et al., 1999a, p. 479).

The good news is that numerous studies have already proved that these negative trends can be reversed in children through the use of comprehensive, school-based programs. A meta-analysis of 15 studies promoting diets relatively higher in fruits and vegetables found that ten of the studies had a significantly positive effect, increasing produce intake by 0.3 to 0.99 servings per day. The researchers reported that “the evidence is strongest in favor of multi-component interventions to increase fruit and vegetable consumption in children” (Knai et al., 2006, p. 85).

### Physical Education

*“The World Health Organization has reported that a sedentary lifestyle is among the top ten leading causes of death and disability in the world, and has urged all governments, the mass media, non-government organizations, schools, hospitals, and communities to motivate the public to engage in more physical activity.”*  
Kurpad & Selvan, 2004 (as cited on p. 513)

Regular physical activity, according to the US Surgeon General, “is one the most important things people can do to maintain and improve their physical health, mental health, and overall well-being.” The USDA upholds schools to the obligation of instilling these values into children so that they will be upheld for life (as cited in “School District,” p. 2). Yet the recommendations of experts and government health agencies contradict current health trends and even the mandates of other government agencies. As schools become increasingly pressured to meet standardized testing goals, subjects viewed as “frivolous” or “unnecessary,” including physical education, are becoming optional or are being removed from curriculums in order to devote more time to mathematics and reading (Ginsburg et al., 2006, p. 5). As a result, only 32% of high school students participated in physical education classes in 2001, a 10% decrease since 1992 (Fisher et al., p. 2). Decreases in physical activity outside of school may be attributable to the rise of “passive entertainment,” such as television, computers, and video games (Ginsburg et al., 2006). Children ages 2-17 years old watch a weekly average of 22 hours of television (Boynton-Jarret et al, 2003). The CDC claims that “physical inactivity poses almost as much risk for heart disease as cigarette smoking, high blood pressure, or a high cholesterol level, but is more prevalent than any of these other risk factors” (Macera et al., p. 2). A study of Quebec youth concluded “physical fitness” and “the level of habitual physical activity” to be highly correlated with risk for coronary heart disease. The study also found a positive correlation between low levels of physical activity and an increased risk of cancer (Kurpad & Selvan, 2004, p. 514). The CDC reports the benefits of regular physical activity to include the development and maintenance of bone density and muscle mass, reduction in risk of obesity and chronic diseases, reduction of depression and anxiety, and overall promotion of psychological health (“Physical Activity,” 2006, p. 1). By teaching children to lead active lives, childhood obesity and premature cardiovascular disease may be avoided or reduced, and so may the adult manifestations of these diseases.

## Justification for Road of Life Programs

### Overweight & Obesity

The number of overweight children aged 6-11 years has doubled over the past 20 years; for children ages 12-19, that number has tripled. Obesity in children is increasing faster than in adults. Children who are overweight are more likely than those who are not to become obese as adults (“Nutrition,” 2006, p. 1). Health problems accompanying obesity include hypertension, dyslipidemia, type II diabetes, coronary heart disease, stroke, gall bladder disease, osteoarthritis, sleep apnea, respiratory problems, and endometrial, colon, breast, and prostate cancers (Macera et al., p. 3). Weight gain prevention is more practical than treating obesity after it has developed because it is cheaper, easier, and more effective (Warren, Henry, Lightowler, Bradshaw, & Perwaiz, 2003). Aspects of obesity prevention and reduction include controlling caloric intake, increasing fiber, calcium, and dairy product intake, and increasing the consumption of low energy dense foods and foods with higher water contents. Evidence supports modifying obesity-related behaviors through interventions based on theory and multifaceted approaches (“What the Evidence Says,” p. 1-2). One primary school-based intervention aimed at reducing obesity risk factors found that the focus group increased their knowledge and understanding of obesity, rated higher in self-reported behavior changes, and had a significantly increased sense of self-worth (Austin & Gortmaker, 2001). Increased self-worth can increase self-confidence, in turn giving the child a sense of that he/she is capable of self-change. It has been shown that the program Planet Health reduces obesity among girls, increases obesity remission, increases fruit and vegetable intake, and reduces sedentary behavior. Wiecha, et al, found school-based interventions successful “in reducing the prevalence and incidence of childhood obesity by decreasing children’s television viewing by improving their dietary behaviors, and by increasing their physical activity” (Wiecha et al., 2004, p. 467-468).

### Cancer

Cancer is the second leading cause of death in Americans. Of the ten cancers responsible for the most deaths annually, the top five, lung, colorectal, breast, pancreatic, and prostate, respectively, are heavily influenced by diet and lifestyle choices (“Common Cancer Types,” 2007). The Nurses Health Study, in which 85% of participants lacked a genetic predisposition, found that breast cancer-causing exposures are incurred early in life, making children and adolescents ideal targets for primary prevention and intervention initiatives (Kurpad & Selvan, 2004, p. 511). A person experiences more than half of their lifetime ultra-violet radiation exposure throughout childhood and adolescence. This exposure is an important predictor in the development of skin cancer in adulthood, with persons suffering blistering sunburns in their youth bearing two times the risk of melanoma as those who do not (Glanz, Saraiya, Wechsler, 2002, p. 1). An American Cancer Society survey of 11-18 year olds found that less than one-third of U.S. youth practiced effective sun protection, clearly demonstrating the need for education (“Skin Cancer,” 2002, p. 1). In another study, children reported television as their primary source of information about cancer, especially soap operas (Oakley et al., 1995). Children need reliable education about cancer and related issues in schools, not by melodramatic television programs.

The study “Health and Cancer Prevention: Knowledge and Beliefs of Children and Young People” provides fascinating insights about how students (ages 9-10 and 15-16)

## Justification for Road of Life Programs

perceive cancer. The 9-10 year old group (100 participants) reported knowing about the following types of cancer, with the percentage of students in parenthesis: lung (76%), breast (14%), leukemia/blood (14%), skin (26%), brain and head (16%), kidney (9%), and privates/bits (5%).” More than half of the children knew or had known a cancer patient; these children showed significantly greater knowledge about cancer than those who had not. When asked to write or draw something they knew about cancer, 40% responded that it “can be caused by smoking” and 46% said “you can die from it” (Oakley et al., 1995, p. 7-8).

The same study discussed above also asked the 9-10 year olds, “What can you do to try to stop yourself from getting cancer?” Seventy percent answered “don’t smoke/never start smoking. Other answers included “avoid sunburn,” “keep healthy generally,” “eat healthy/good food,” and “avoid passive smoking.” Both groups demonstrated some knowledge about cancer, its causes, and preventative measures; however, their knowledge was far from complete. This study concluded that “educating children and young people directly about cancer is feasible and important... Teachers and schools have an important part to play as providers of health information” (Oakley et al., 1995, p. 11).

It is irresponsible and unacceptable to idly wait for preventable cancers to happen to this generation of children. They need and deserve preventative education. The NCI defines prevention as “a reduction in the incidence of cancer and, therefore, cancer-related morbidity and mortality” (“Cancer Genetics Overview,” 2006). According to the NCI, “this can be accomplished by avoiding a carcinogen or altering its metabolism; pursuing lifestyle or dietary practices that modify cancer-causing factors or genetic predispositions.” Modifiable cancer risk factors include alcohol consumption (oral, esophageal, breast, and other cancers), physical inactivity (colon, breast, and other cancers), obesity (colon, breast, endometrial, and other cancers), and exposure to UV radiation (skin cancers) (“Cancer Prevention Overview, 2006, p. 1). A diet high in fiber, fruits, and vegetables, and smoking cessation (where applicable) are also important (“Cancer Genetics Overview, 2006, p. 6).

### Tobacco

3900 U.S. children ages 12-17 years old smoke their first cigarette every day (“Tobacco Use,” 2006, p. 1). 15% of middle school students use a form of tobacco, and high school smoking rates have risen from 28% in 1991 to 35% in 1999 (Albuquerque, Starr, Schooley, Pechacek, & Henson, p. 2). The CDC warns that “of all addictive behaviors, cigarette smoking is the one most likely to become established during adolescence” (“Tobacco Use,” 2006, p.1). It is critical to instill negative attitudes towards smoking in children before adolescence. In the study “Knowledge and Attitudes of Children Towards Cigarette Smoking and its Damage,” Brooke et al. (1999) found that “children absorb the attitudes of their parents towards smoking beginning in their early years and continuing during their later ones. This emphasizes the importance of beginning anti-smoking education in elementary school” (p. 51). The same study found that between ages 11-17, students develop a more positive attitude towards smoking.

Factors associated with smoking initiation include peer smoking, attitudes, and norms, stress, health concerns, risk behaviors, parental smoking status, personal income, parental attitudes, sibling smoking, attachment to family and friends, depression, and self-esteem. Advertising is also highly influential. Historical corporate documents from British

## Justification for Road of Life Programs

American Tobacco and R.J. Reynolds showed tobacco company advertisements to be “predictors of smoking initiation,” and reinforcing of the habits of current smokers (Kurpad & Selvan, 2004, p. 513). In the U.S., 83% of smokers aged 12-17 choose the three most advertised brands: Marlboro, Camel, and Newport (“Tobacco Use,” 2006, p. 2).

Tobacco use contributes to 440,000 deaths annually in the U.S. and is accompanied by \$75 billion in medical expenses (Albuquerque et al., p. 2). It is *the most preventable* cause of disease and death in the country. The effects of cigarettes on young people include respiratory and non-respiratory problems, nicotine addiction, and their potential as a “gateway drug.” Long term effects of tobacco use range from minor, treatable complications to death. Cigarettes contribute to or cause stroke, heart disease, chronic lung disease, and cancers of the lung, mouth, pharynx, esophagus, and bladder (“Tobacco Use,” 2006, p. 1). Smokeless tobacco (“chew”) use causes gum recession, increased risk of heart disease and stroke, soft tissue lesions, leukoplakia, and cancers of the mouth, pharynx, and esophagus (“Tobacco Use,” 2006, p. 1; Albuquerque et al., p. 3). Cigar smoking contributes to esophageal, laryngeal, lung, and oral cancers (“Tobacco Use,” 2006, p. 1). Smoking bidis (Indian cigarettes) leads to heart disease, and mouth, pharyngeal, esophageal, laryngeal, lung, stomach, and liver cancers (Albuquerque et al., p. 3). The NCI agrees with the evidence: the most consistent finding, over decades of research, is the strong association between tobacco use and cancers of many sites. Specific to lung cancer, NCI reports that “rates in the United States have mirrored smoking patterns, with increased in smoking being followed by dramatic increases in lung cancer death rates and, more recently, decreases in smoking followed by decreased in lung cancer death rates in men” (“Cancer Prevention Overview, 2006, p. 1). Following current smoking trends, as many as 6.4 million of today’s youth could suffer smoking-related premature deaths (“Tobacco Use,” 2006, p. 1).

### Educational Interventions

Educational interventions are constantly being developed, revised, implemented, and studied. “Planet Health,” “Eat Well and Keep Moving,” “Be Smart,” and “Eat Fit” are successful examples of integrated, school-based health interventions. Planet Health targeted 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> graders; its goals included increasing physical activity, decreasing television watching, improving diet by increasing produce intake, and moderating fat intake (Wiecha et al., 2004, p. 468). When used by 6<sup>th</sup> and 7<sup>th</sup> grade students over two years, it reduced the prevalence of obesity in girls, increased obesity remission, decreased television viewing, and increased fruit and vegetable intake (Gortmaker et al., 1999b, p. 1). Eat Well and Keep Moving was tested by fourth grade students in public schools in Baltimore. The students’ produce intake increased by 0.72 servings per day, and television decreased by one half-hour per day. This program was deemed so successful based on the preliminary results that the superintendent introduced it into fifty more schools. At a two-year follow up, the students were still consuming 0.73 servings more of produce per day than they had before the intervention (Gortmaker et al., 1999a, p. 982). Be Smart focused on 5-7 year old children and divided its curriculum into four groups to test the efficacy of each section: Eat Smart (nutrition), Play Smart (physical activity), Eat Smart-Play Smart (nutrition and physical activity), and Be Smart (control group focused on food processing and traditions, and the human body). All of the groups showed an

## Justification for Road of Life Programs

increase in physical activity during their morning break, modest increases in fruit and vegetable consumption, and increased health knowledge. The Play Smart and Eat Smart-Play Smart groups also increased their recess physical activity. As a whole, the Be Smart program demonstrated the potential of schools as settings for diet and physical activity influence (Warren et al., 2003, p. 289-90, 292, 294-5). Eat Fit was a goal-oriented intervention focused on 11-15 year olds. It was based on self-efficacy, self-regulation, and outcome expectations, and employed workbooks, web-based assignments, and classroom curriculums to relay its messages. Seventy-four percent of the students made lasting improvements in their physical activity behaviors and 79% improved their dietary behaviors (Horowitz, Shilts, & Townsend, 2004, p. 43-4). Also, intervention studies from Massachusetts and California demonstrated that comprehensive tobacco control programs (including anti-tobacco education) can significantly reduce rates of tobacco use. In California, these programs had a trickle-down effect, also reducing rates of death from cardiovascular disease and lung cancer (Albuquerque et al., p. 6).

### Road of Life

*“Actively engaging children and adolescents in the learning process increased the likelihood for a positive effect. Youth are more likely to consider and adopt new or improved behaviors when they learn about them through fun, participatory activities rather than through lectures.”-Karen Glanz et al., 2002 (p. 14)*

Road of Life is a 501(c)3 For-Impact organization with a mission to eradicate preventable cancer and diseases of excess by educating children about the tobacco use, fitness, and nutrition decisions they can make to lead a healthier life. According to the USDA, “well-planned and well-implemented wellness programs have been shown to positively influence children’s health” (as cited in “School District,” p. 2). Many roadblocks to health education exist, but Road of Life Version 3.0 is prepared to handle them. One roadblock is that health education is being consumed by subjects evaluated by standardized tests, such as math, science, and writing (Wiecha et al., 2004, p. 467). Road of Life Version 3.0 aligns with the National Health Education Standards for 3<sup>rd</sup>-5<sup>th</sup> grades, the Ohio Academic Content Standards Benchmarks for 3<sup>rd</sup>-4<sup>th</sup> grades, and the Ohio State Academic Content Standards Indicators for the fourth grade. The program is ready-to-use and designed for integration into pre-existing classes. Cost is another common roadblock. Health education programs can cost upwards of thousands of dollars, making them inaccessible to cash-strapped schools. Version 3.0 can be downloaded for free, made available by donations, from Road of Life’s website, or purchased as a bound book at a comparatively low price.

Road of Life Version 3.0 incorporates health planning and health goals set forth by the Centers for Disease Control and Prevention (CDC). The CDC outlines six planning states in “Guidance for Comprehensive Cancer Control Planning” through the Division of Cancer Prevention and Control. They are enhancing infrastructure, mobilizing support, using data and research, building partnerships, assessing and addressing the local cancer burden, and conducting evaluations (“Guidance,” 2002, p. 3). Road of Life enhances infrastructure through the employment of AmeriCorps Vistas, using national and state educational standards, and improving classroom education. The need for Road of Life’s

## Justification for Road of Life Programs

curricula and the local cancer burden were documented using extensive medical, social, and educational research. Support is mobilized and partnerships built by forming alliances with other organizations working with children, through grants, and by working with local educators and schools. Road of Life works with an ever-growing team of community partners, including AmeriCorps, City Year, United Way, and Columbus Public Schools to increase the program's availability and outreach capacity. Student evaluations are conducted at the end of the school year to measure and record efficacy. Version 3.0 targets 11 of the 28 focus areas identified by the government in Healthy People 2010: cancer; chronic kidney disease; diabetes; educational and community-based programs; health and communication; heart disease and stroke; maternal, infant, and child health; nutrition and overweight; physical activity and fitness; respiratory diseases; and tobacco use. Road of Life Version 3.0 is dedicated to empowering and propelling children towards better health.

References

- Albuquerque, M., Starr, G., Schooley, M., Pechacek, T., and Henson, R. Advancing Tobacco Control Through Evidence-Based Programs. *Chronic Disease Prevention and Control*.
- Austin, S. B., Gortmaker, S. L., (2001). Dieting and Smoking Initiation in Early Adolescent Girls and Boys: A Prospective Study. *American Journal of Public Health*, volume 91(issue 3), 446-50.
- Barnes, J., Bendelow, G., Buchanan, M., Husain, O. A. N., (1995). Health and cancer prevention: knowledge and beliefs of children and young people. *British Medical Journal*, volume 310, 1029-1033.
- Boynton-Jarret, R., Thomas, T. N., Peterson, K. E., Wiecha, J., Sobol, A. M., Gortmaker, S. L., (2003). Impact of Television Viewing Patterns on Fruit and Vegetable Consumption Among Adolescents. *Pediatrics*, volume 112, 1321-1326.
- Brook, U., Bujanover, Y., Galili, A., Mendelberg, A., Priel, I. (1999). Knowledge and Attitudes of Children Towards Cigarette Smoking and Its Damage. *Patient Education and Counseling*, volume 37, 49-53.
- Cancer Genetics Overview: Health Professional Version (2006). *National Cancer Institute*.
- Cancer Prevention Overview: Health Professional Version (2006). *National Cancer Institute*.
- Effectiveness of School-Based Programs as a Component of a Statewide Tobacco Control Initiative—Oregon (1999-2000). *Tobacco Information and Prevention Source, National Center for Chronic Disease Prevention and Health Promotion*.
- Fisher, C., Hunt, P., Kann, L., Kolbe, L., Patterson, B., & Weschsler, H. Building a healthier future through school health programs. The Centers for Disease Control and Prevention.
- Ginsburg, K. R. (2006). The Importance of play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. *American Academy of Pediatrics*, 1-32.
- Glanz, K., Saraiya, M., Wechsler, H., (2002). Guidelines for School Programs to Prevent Skin Cancer. *MMWR: Recommendations and Reports*, volume 51, 1-16.
- Gortmaker, S. L., Cheung, L. W. Y., Peterson, K. E., Chomitz, G., Cradle, J. H., Dart, H., Fox, M. K., Bullock, R. B., Sobol, A. M., Colditz, G., Field, A. E., Laird, N., (1999). Impact of a School-Based Interdisciplinary Intervention on Diet and Physical Activity among Urban Primary School Children. *Archives of Pediatric Adolescent Medicine*, volume 153, 975-83.
- Gortmaker, S. L., Peterson, K., Wiecha, J., Sobol, A. M., Dixit, S., Fox, M. K., Laird, N., (1999). Reducing Obesity via a School-Based Interdisciplinary Intervention among Youth: Planet Health. *Archives of Pediatric Adolescent Medicine*, volume 153 (issue 4), 409-18.
- Guidance for Comprehensive Cancer Control Planning, Volume 1: Guidelines (March 25, 2002). Division of Cancer Prevention and Control Centers for Disease Control and Prevention.

## Justification for Road of Life Programs

- Horowitz, M., Shilts, M. K., Townsend, M. S. (2004). EatFit: A Goal-Oriented Intervention that Challenges Adolescents to Improve Their Eating and Fitness Choices. *Journal of Nutrition Educational Behavior*, volume 36, 43-44.
- Knai, C., Pomerleau, J., Lock, K., McKee, M., (2006). Getting Children to Eat More Fruit and Vegetables: A Systematic Review. *Preventative Medicine*, volume 42, 85-95.
- Kurpad, A. V., Selvan, M. S., (2004). Primary prevention: Why focus on children and young adolescents? *Indian Journal of Medical Research*, volume 120, 511-518.
- Macera, C. A. Promoting Healthy Eating and Physical Activity for a Healthier Nation. *National Center for Chronic Disease Prevention and Health Promotion Centers for Disease Control and Prevention*.
- Moreno, N. P., Denk, J. P, Roberts, J. K., Tharp, B. Z., Bost, M., Thomson, W. A., (2004). An Approach to Improving Science Knowledge about Energy Balance and Nutrition among Elementary- and Middle-School Students. *Cell Biology Education*, volume 3, 122-30.
- Nutrition and the Health of Young People. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (May 2006).
- Physical Activity and the Health of Young People. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (May 2006).
- School District Model Wellness Policy Language. *Illinois Nutrition Education & Training Program*, <[www.kidseatwell.org](http://www.kidseatwell.org)>.
- Skin cancer: Preventing America's most common cancer. Fact sheet. 2002.
- Ten leading causes of death in the U.S. (2003). Information Please Database. <[www.infoplease.com](http://www.infoplease.com)>
- Tobacco Use and the Health of Young People. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (May 2006).
- Warren, J.M., Henry, C.J.K., Lightowler, H.J., Bradshaw, S.M., and Perwaiz, S. (2003). Evaluation of a Pilot School Programme Aimed at the Prevention of Obesity in Children. *Health Promotion International*, volume 18(4), 287-96.
- What Matters. *United Way of Central Ohio Community Assessment 2004*. Community Research Partners. April 2004.
- What the Evidence Says About Nutrition Interventions to Prevent or Reduce Obesity. *Strategy for Reducing Obesity and Other Chronic Diseases: Nutrition and Physical Activity Program to Prevent Obesity*.
- Wiecha, J. L., El Ayadi, A. M., Fuemmeler, B. F., Carter, J. E., Handler, S., Johnson, S., Strunk, N., Korzec-Ramirez, D., Gortmaker, S. L., (2004). Diffusion of an Integrated Health Education Program in an Urban School System: Planet Health. *Journal of Pediatric Psychology*, volume 29(issue 6), 467-74.
- Youth Risk Behavior Surveillance- United States. (2005). Department of Health and Human Services, the Centers for Disease Control and Prevention.