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Urban Health Literature Review
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Topic A: Built, Social, and Neighborhood Environment Effects

Topic B: Adolescents and Children

Topic C: Women's Health

Topic D: Men who Have Sex with Men (MSM)

Topic E: Injection Drug Users

Topic F: Motor Vehicle Impacts on Health

Topic A: Built, Social, and Neighborhood Environment Effects

- 1. Schootman M, Andresen EM, Wolinsky FD et al. The effect of adverse housing and neighborhood conditions on the development of diabetes mellitus among middle-aged African Americans. *Am J Epidemiol.* 2007;166:379-387.**

The authors examined the associations of observed neighborhood (block face) and housing conditions with the incidence of diabetes by using data from 644 subjects in the African-American Health Study (St. Louis area, Missouri). They also investigated five mediating pathways (health behavior, psychosocial, health status, access to medical care, and sociodemographic characteristics) if significant associations were identified. The external appearance of the block the subjects lived on and housing conditions were rated as excellent, good, fair, or poor. Subjects reported about neighborhood desirability. Self-reported diabetes was obtained at baseline and 3 years later. Of 644 subjects without self-reported diabetes, 10.3% reported having diabetes at the 3-year follow-up. Every housing condition rated as fair-poor was associated with an increased risk of diabetes, with odds ratios ranging from 2.53 (95% confidence interval: 1.47, 4.34 for physical condition inside the building) to 1.78 (95% confidence interval: 1.03, 3.07 for cleanliness inside the building) in unadjusted analyses. No association was found between any of the block face conditions or perceived neighborhood conditions and incident diabetes. The odds ratios for the five housing conditions were unaffected when adjusted for the mediating pathways. Poor housing conditions appear to be an independent contributor to the risk of incident diabetes in urban, middle-aged African Americans.

- 2. Bernstein KT, Galea S, Ahern J, Tracy M, Vlahov D. The built environment and alcohol consumption in urban neighborhoods. *Drug Alcohol Depend.* 2007; [Epub ahead of print].**

OBJECTIVES: To examine the relations between characteristics of the neighborhood built environment and recent alcohol use. **METHODS:** We recruited participants through a random digit dial telephone survey of New York City (NYC) residents. Alcohol consumption was assessed using a structured interview. All respondents were assigned to

neighborhood of residence. Data on the internal and external built environment in 59 NYC neighborhoods were collected from archival sources. Multilevel models were used to assess the adjusted relations between features of the built environment and alcohol use. RESULTS: Of the 1355 respondents, 40% reported any alcohol consumption in the past 30 days, and 3% reported more than five drinks in one sitting (heavy drinking) in the past 30 days. Few characteristics of the built environment were associated with any alcohol use in the past 30 days. However, several features of the internal and external built environment were associated with recent heavy drinking. After adjustment, persons living in neighborhoods characterized by poorer features of the built environment were up to 150% more likely to report heavy drinking in the last 30 days compared to persons living in neighborhoods characterized by a better built environment. CONCLUSIONS: Quality of the neighborhood built environment may be associated with heavy alcohol consumption in urban populations, independent of individual characteristics. The role of the residential environment as a determinant of alcohol abuse warrants further examination.

3. Miles R, Pantan LB, Jang M, Haymes EM. Residential context, walking and obesity: Two African-American neighborhoods compared. *Health Place*. 2007; [Epub ahead of print].

We compare walking and obesity rates in two African-American neighborhoods that are similar in urban form but different in level of neighborhood disadvantage. We find higher rates of utilitarian walking in the neighborhood with higher density and disadvantage and more destinations within walking distance. However levels of leisure walking and physical activity were not higher, and rates of obesity were not lower in the non-poor neighborhood with better maintenance, more sidewalks and recreational facilities. Different types of barriers to physical activity reported in the two neighborhoods and the high rates of overweight and obesity in both may explain the findings.

4. Laraia B, Messer L, Evenson K, Kaufman JS. Neighborhood Factors Associated with Physical Activity and Adequacy of Weight Gain During Pregnancy. *J Urban Health*. 2007; [Epub ahead of print].

Healthy diet, physical activity, smoking, and adequate weight gain are all associated with maternal health and fetal growth during pregnancy. Neighborhood characteristics have been associated with poor maternal and child health outcomes, yet conceptualization of potential mechanisms are still needed. Unique information captured by neighborhood inventories, mostly conducted in northern US and Canadian urban areas, has been shown to reveal important aspects of the community environment that are not captured by the demographic quantities in census data. This study used data from the Pregnancy, Nutrition, and Infection (PIN) prospective cohort study to estimate the influences of individual-level and neighborhood-level characteristics on health behaviors and adequacy of weight gain during pregnancy. Women who participated in the PIN study and who resided in Raleigh, North Carolina and its surrounding suburbs were included (n = 703). Results from a neighborhood data collection inventory identified three social constructs, physical incivilities, territoriality, and social spaces, which were hypothesized to influence maternal health behaviors. The physical incivility scale was associated with decreased odds (adjusted OR = 0.74, 95%CI = 0.57, 0.98) in participating in vigorous leisure activity

before pregnancy after controlling for several individual confounders, and a crude association for decreased odds of excessive weight gain (OR = 0.79, 95%CI = 0.64, 0.98). The social spaces scale was associated with decreased odds for inadequate (adjusted OR = 0.74, 95%CI = 0.56, 0.98) and excessive (adjusted OR = 0.69, 95%CI = 0.54, 0.98) gestational weight gain. The social spaces scale was also associated with decreased odds of living greater than 3 miles from a supermarket (adjusted OR = 0.03, 95%CI = 0.00, 0.27). Territoriality was not associated with any pregnancy-related health behavior. None of the neighborhood constructs were associated with smoking or diet quality. Physical incivilities and social spaces neighborhood characteristics may be important to measure to improve our understanding of the potential mechanisms through which neighborhood environments influence health.

5. Masi CM, Hawkey LC, Harry PZ, Pickett KE. Neighborhood economic disadvantage, violent crime, group density, and pregnancy outcomes in a diverse, urban population. *Soc Sci Med.* 2007; [Epub ahead of print].

Prior research has established associations between pregnancy outcomes and specific neighborhood characteristics, including economic disadvantage, violent crime, and racial/ethnic segregation. Recently, associations have also been found between various health outcomes and group density, the degree to which an individual is a racial or ethnic majority in his or her local community. The objective of this study was to determine the extent to which census tract economic disadvantage, violent crime rate, and group density are associated with pregnancy outcomes among White, Black, and Hispanic infants in a large metropolitan setting. This cross-sectional study utilized 1990 census data, 1991 crime data, and 1991 birth certificate information for singleton live births in Chicago, Illinois. Results show substantial racial segregation in Chicago, with 35% of census tracts having more than 90% Black residents and 45% of census tracts having fewer than 10% Black residents. After stratifying by maternal race/ethnicity, we used multilevel analyses to model pregnancy outcomes as a function of individual and census tract characteristics. Among all racial/ethnic groups, violent crime rate accounted for most of the negative association between tract economic disadvantage and birth weight. Group density was also associated with birth weight but this association was stronger among Whites and Hispanics than among Blacks. Further analysis revealed that group density was more strongly associated with preterm birth while violent crime rate was more strongly associated with small for gestational age. These results suggest that group density and violent crime may impact birth weight via different mechanisms.

6. Pasch KE, Komro KA, Perry CL, Hearst MO, Farbakhsh K. Outdoor alcohol advertising near schools: what does it advertise and how is it related to intentions and use of alcohol among young adolescents? *J Stud Alcohol Drugs.* 2007;68:587-596.

OBJECTIVE: The objectives of this study were to (1) document and describe all outdoor alcohol advertisements surrounding schools and (2) examine the association between exposure to alcohol advertising in sixth grade and youth alcohol use, intentions, norms, and attitudes in eighth grade. **METHOD:** All outdoor alcohol advertisements within 1,500 feet of 63 Chicago school sites were documented and coded for content and theme.

Longitudinal mixed-effects regression analysis was used to determine the association between number of alcohol advertisements around a school in sixth grade and student alcohol behaviors, intentions, norms, and attitudes at the end of eighth grade, 2 years later. Participants included 2,586 sixth-grade students in the 2002-2003 school year. The sample was 37% black, 33% Hispanic, and 15% white. Gender was evenly distributed, and the average age was 12.2 at the end of sixth grade. RESULTS: A total of 931 alcohol advertisements were found within 1,500 feet of the 63 school sites. Exposure to alcohol advertising around schools at the end of sixth grade was found to predict alcohol intentions at the end of eighth grade. This finding held true even for those students who were nonusers of alcohol in sixth grade. CONCLUSIONS: Exposure to outdoor alcohol advertising around schools is associated with subsequent youth intentions to use alcohol. The association between exposure to alcohol advertising and youth alcohol-use intentions was found even among sixth-grade nonusers of alcohol, suggesting that even those who have not used alcohol are still influenced by alcohol advertising. These findings suggest that restrictions in alcohol advertising near schools may be warranted.

7. Xue Y, Zimmerman MA, Caldwell CH. Neighborhood Residence and Cigarette Smoking Among Urban Youths: The Protective Role of Prosocial Activities. *Am J Public Health.* 2007; [Epub ahead of print].

Objectives. We examined the association between neighborhood characteristics and cigarette use among adolescents and explored the protective effects of participation in prosocial activities, in an attempt to better understand strengths in adolescents' lives and help identify protective factors for the prevention of adolescent smoking. Methods. We interviewed ninth graders who had grade point averages of 3.0 or lower and who were not developmentally disabled. Participants' addresses were geocoded so that interview data could be linked to 1990 US census data on neighborhood characteristics. Results. Neighborhood disadvantage and the percentage of Black residents in a neighborhood had different effects on cigarette smoking among Black and White adolescents. Living in a neighborhood with a high percentage of Black residents had favorable effects for Blacks but not for Whites. For both groups, a low percentage of Black residents was a risk factor for cigarette use, and risk effects were higher in the more disadvantaged neighborhoods. Involvement in prosocial activities moderated neighborhood risks. Conclusions. Neighborhood effects on adolescent cigarette use were contingent upon both contextual and individual characteristics. Participation in prosocial activities had a protective effect among adolescents in high-risk neighborhoods. Engaging adolescents in such activities may help offset the adverse effects of living in a disadvantaged neighborhood.

8. Pampalon R, Hamel D, De KM, Disant MJ. Perception of place and health: differences between neighbourhoods in the Quebec City region. *Soc Sci Med.* 2007;65:95-111.

This paper addresses two questions: (1) Can people's perceptions of problems and social cohesion in the neighbourhood be considered as contextual variables; and (2) are these perceptions related to people's health? Data come from a general health survey carried out in 2004 among 1634 individuals living in three localities of the region of Quebec City, namely a downtown, a suburban and a rural area, which were further subdivided into 34

smaller spatial units, hereafter called neighbourhoods. The survey included questions on individuals' perception of problems (social and environmental) and social cohesion (attraction to neighbourhood, neighbouring and psychological sense of community) in the neighbourhood, as well as questions on self-rated health, long-term disability and self-mastery. A first set of logistic multilevel models was performed to ascertain the existence of neighbourhood variations in the perception of problems and social cohesion, after accounting for individual attributes. A second set of multilevel models was carried out to examine the association between perceived problems and social cohesion in the neighbourhood and people's health. Results show that, after accounting for individual attributes, the perception of problems and social cohesion varies significantly by neighbourhood and/or localities and can be considered as contextual variables. Furthermore, these perceptions of place appear to be significant predictors of people's health.

Topic B: Adolescents and Children

9. Van de PE, O'donnell O, Van DE. Are urban children really healthier? Evidence from 47 developing countries. *Soc Sci Med.* 2007; [Epub ahead of print].

On average, child health outcomes are better in urban than in rural areas of developing countries. Understanding the nature and the causes of this rural-urban disparity is essential in contemplating the health consequences of the rapid urbanization taking place throughout the developing world and in targeting resources appropriately to raise population health. Using micro-data on child health taken from the most recent Demographic and Health Surveys for 47 developing countries, the purpose of this paper is threefold. First, we document the magnitude of rural-urban disparities in child nutritional status and under-5 mortality across all 47 developing countries. Second, we adjust these disparities for differences in population characteristics across urban and rural settings. Third, we examine rural-urban differences in the degree of socioeconomic inequality in these health outcomes. The results demonstrate that there are considerable rural-urban differences in mean child health outcomes in the entire developing world. The rural-urban gap in stunting does not entirely mirror the gap in under-5 mortality. The most striking difference between the two is in the Latin American and Caribbean region, where the gap in growth stunting is more than 1.5 times higher than that in mortality. On average, the rural-urban risk ratios of stunting and under-5 mortality fall by, respectively, 53% and 59% after controlling for household wealth. Controlling thereafter for socio-demographic factors reduces the risk ratios by another 22% and 25%. We confirm earlier findings of higher socioeconomic inequality in stunting in urban areas and demonstrate that this also holds for under-5 mortality. In a considerable number of countries, the urban poor actually have higher rates of stunting and mortality than their rural counterparts. The findings imply that there is a need for programs that target the urban poor, and that this is becoming more necessary as the size of the urban population grows.

10. Reynolds AJ, Temple JA, Ou SR et al. Effects of a school-based, early childhood intervention on adult health and well-being: a 19-year follow-up of low-income families. *Arch Pediatr Adolesc Med.* 2007;161:730-739.

OBJECTIVE: To determine the effects of an established preventive intervention on the health and well-being of an urban cohort in young adulthood. **DESIGN:** Follow-up of a nonrandomized alternative-intervention matched-group cohort at age 24 years. **SETTING:** Chicago, Illinois. **PARTICIPANTS:** A total of 1539 low-income participants who enrolled in the Child-Parent Center program in 20 sites or in an alternative kindergarten intervention. **INTERVENTIONS:** The Child-Parent Center program provides school-based educational enrichment and comprehensive family services from preschool to third grade. **MAIN OUTCOME MEASURES:** Educational attainment, adult arrest and incarceration, health status and behavior, and economic well-being. **RESULTS:** Relative to the comparison group and adjusted for many covariates, Child-Parent Center preschool participants had higher rates of school completion (63.7% vs 71.4%, respectively; $P = .01$) and attendance in 4-year colleges as well as more years of education. They were more likely to have health insurance coverage (61.5% vs 70.2%, respectively; $P = .005$). Preschool graduates relative to the comparison group also had lower rates of felony arrests (16.5% vs 21.1%, respectively; $P = .02$), convictions, incarceration (20.6% vs 25.6%, respectively; $P = .03$), depressive symptoms (12.8% vs 17.4%, respectively; $P = .06$), and out-of-home placement. Participation in both preschool and school-age intervention relative to the comparison group was associated with higher rates of full-time employment (42.7% vs 36.4%, respectively; $P = .04$), higher levels of educational attainment, lower rates of arrests for violent offenses, and lower rates of disability. **CONCLUSIONS:** Participation in a school-based intervention beginning in preschool was associated with a wide range of positive outcomes. Findings provide evidence that established early education programs can have enduring effects on general well-being into adulthood.

11. Gee L, Smith TL, Solomon M, Quinn MT, Lipton RB. The clinical, psychosocial, and socioeconomic concerns of urban youth living with diabetes. *Public Health Nurs.* 2007;24:318-328.

OBJECTIVE: Young people with chronic diseases face the challenge of moving from the pediatric to the adult health care environment, in addition to the normal hurdles of young adulthood. To most effectively help them through this process, we must first understand their perspective. **DESIGN:** Qualitative study of the social and emotional impact of having diabetes. **SAMPLE:** Young adults ($n=23$), aged 19-26, who had been living with diabetes for a median of 12 years (range 4-19) were contacted; all but one were from underserved ethnic minorities. **MEASUREMENTS:** Semistructured telephone interviews were conducted, transcribed, and coded. **RESULTS:** Having diabetes profoundly affected the life choices and expectations of these young people; their feelings and attitudes evolved over time. Financial and insurance concerns were key, because managing diabetes care on one's own as an adult was a major challenge. Most young people reported that family, friends, and coworkers were sources of support, but that disclosure of their diabetes was problematic. **CONCLUSIONS:** Offering emotional and practical support to young adults coping with diabetes is key to ensuring adequate medical management as they move into the adult system and assume full responsibility for their health.

12. Carpenter LR, Lott J, Lawson BM et al. Mass distribution of free, intranasally administered influenza vaccine in a public school system. *Pediatrics.* 2007;120:e172-e178.

OBJECTIVE: School-based influenza vaccination programs are a potentially important method of protecting the community against influenza. We evaluated the feasibility and success of a large, school-based influenza vaccination campaign. **METHODS:** On-site administration of intranasally administered, live attenuated influenza vaccine was offered to all students and staff members in a large, metropolitan public school system in October to December 2005. We evaluated vaccine coverage levels, resources expended, and physician and parent attitudes and knowledge. **RESULTS:** Of 53,420 public school students, 24,198 were vaccinated with live attenuated influenza vaccine. Of 5841 school staff members, 3626 were vaccinated with live attenuated influenza vaccine or inactivated influenza vaccine. The proportions of students vaccinated were 56% among elementary schools, 45% among middle schools, and 30% among high schools. Schools with larger proportions of black or low-income families had lower vaccine coverage levels. The health department and school system expended 6900 person-hours during the campaign, and various health department clinics were closed for a total of 84 half-days. Community physicians were supportive of the campaign and frequently advised participation for eligible patients. Some physicians had misunderstandings about live attenuated influenza vaccine contraindications. Concern about adverse effects, having asthma, negative physician advice, and nonparticipation in any vaccination program were common reasons for students not participating. **CONCLUSIONS:** This influenza vaccination campaign in a large public school system achieved relatively high vaccine coverage levels but required a substantial resource commitment from the local health department. This evaluation has critical implications for the ongoing debate regarding immunization policies for school-aged children and preparedness plans for pandemic influenza.

13. Doherty IA, Minnis A, Auerswald CL, Adimora AA, Padian NS. Concurrent partnerships among adolescents in a Latino community: the Mission District of San Francisco, California. *Sex Transm Dis.* 2007;34:437-443.

OBJECTIVES: Latino adolescents in the United States are disproportionately affected by sexually transmitted infections, yet knowledge of their sexual networks, particularly concurrent sex partners, is limited. **GOAL:** The goal of this study was to describe the prevalence, patterns, and correlates of sexual concurrency among adolescents in an urban neighborhood. **STUDY DESIGN:** The authors conducted cross-sectional analyses of 368 sexually active youth recruited from public venues within a predominantly Latino neighborhood in San Francisco, California. **RESULTS:** During the prior 6 months, 20% of sexually experienced youth had concurrent partnerships, but this was more likely among males (27%) as females (12%) (odds ratio = 2.6; 95% confidence interval = 1.5-4.5). Sexually transmitted infection prevalence was too low to examine its association with concurrency. Factors that increased the likelihood of concurrency among males included: immigrant generation and being below grade level; and among females: older age and use of illegal substances. **CONCLUSIONS:** Ample opportunities to transmit sexually transmitted infections through concurrency were present, yet very few adolescents were infected, perhaps owing to adequate condom use within a neighborhood with low sexually transmitted infection prevalence.

14. Leonard NR, Gwadz MV, Cleland CM, Vekaria PC, Ferns B. Maternal substance use and HIV status: Adolescent risk and resilience. *J Adolesc.* 2007; [Epub ahead of print].

We examined the risk and protective factors and mental health problems of 105 low SES, urban adolescents whose mothers were coping with alcohol abuse and other drug problems. Approximately half of the mothers were also HIV-infected. As hypothesized, there were few differences between adolescents of HIV-infected and HIV-uninfected mothers in background characteristics, mental health issues and current substance use risk behaviors. In addition to maternal substance abuse, youth in both groups experienced similar risk factors including early foster care placement and high levels of maltreatment. Current patterns of emerging risk behaviors were evident among youth in both groups as well as signs of resiliency including high levels of school attendance. These results underscore the importance of interventions for youth of substance abusing mothers, particularly those living in urban poverty.

15. McCart MR, Smith DW, Saunders BE, Kilpatrick DG, Resnick H, Ruggiero KJ. Do urban adolescents become desensitized to community violence? Data from a national survey. *Am J Orthopsychiatry.* 2007;77:434-442.

This study explored whether the response of urban adolescents to community violence exposure differs from their response to family violence and sexual assault. More specifically, the authors explored whether desensitization to community violence exposure was more common compared with desensitization to other violence-related stressors. Participants included 1,245 urban adolescents drawn from a national probability sample of 4,023 youth (aged 12-17 years) who were interviewed about their history of interpersonal violence exposure, symptoms of posttraumatic stress disorder (PTSD), and delinquency. A negative curvilinear effect of community violence exposure on PTSD combined with a positive linear effect of exposure on delinquency was considered evidence for desensitization. Results provided minimal support for the desensitization hypothesis and revealed increasing levels of PTSD symptoms and delinquent behaviors among boys and girls exposed to higher levels of all three violence types. ((c) 2007 APA, all rights reserved)

16. Ruchkin V, Henrich CC, Jones SM, Vermeiren R, Schwab-Stone M. Violence exposure and psychopathology in urban youth: the mediating role of posttraumatic stress. *J Abnorm Child Psychol.* 2007;35:578-593.

Understanding the mechanisms underlying the development of violence exposure sequelae is essential to providing effective treatments for traumatized youth. This longitudinal study examined the mediating role of posttraumatic stress in the relationship between violence exposure and psychopathology, and compared the mediated models by gender. Urban adolescents (n=1,358) were surveyed using the Social and Health Assessment. The proposed relationships were examined using Structural Equation Modeling. Posttraumatic stress fully mediated the relationships between victimization and depression and anxiety in girls, and partially so in boys. In addition, posttraumatic stress partially mediated the relationships between violence exposure and commission of violence in boys. Current

findings support the longitudinal effects of violence exposure on adolescent mental health. Posttraumatic stress represents a unique mechanism for the development of psychopathology in girls and is also related to negative outcomes in boys. These findings have direct implications for prevention and rehabilitation efforts among violence exposed youth.

17. Breslau N, Anthony JC. Gender differences in the sensitivity to posttraumatic stress disorder: An epidemiological study of urban young adults. *J Abnorm Psychol.* 2007;116:607-611.

The authors examine the relationship between 2 separate but interrelated findings in the epidemiology of posttraumatic stress disorder (PTSD): women's greater PTSD risk following traumatic events and the sensitizing effects of a prior trauma on the PTSD response to a subsequent trauma. Data come from a representative sample of 1,698 young adults from a large U.S. city. Analysis was conducted on the subset exposed to traumatic events. Women's risk for PTSD following assaultive violence was higher than men's. When assaultive violence preceded a later nonassaultive trauma in women, there was an increased risk (relative risk = 4.9) for PTSD, which was not observed in men. The relative risk estimate in women was significantly higher than in men. These findings suggest that assaultive violence elicits women's PTSD response directly and by sensitizing them to the effects of subsequent traumatic events of lesser magnitude.

18. Copeland-Linder N, Jones VC, Haynie DL, Simons-Morton BG, Wright JL, Cheng TL. Factors associated with retaliatory attitudes among African American adolescents who have been assaulted. *J Pediatr Psychol.* 2007;32:760-770.

OBJECTIVES: (a) To describe attitudes regarding retaliation among adolescents who have been assaulted. (b) To examine assault/event characteristics, personal, parental, and environmental factors associated with the retaliatory attitudes of adolescents who have been assaulted. **METHODS:** African American youth aged 10-15 years presenting to two large urban hospitals with peer assault injury and a parent/caregiver completed interviews in their home after their emergency department visit. **RESULTS:** Multivariate analyses revealed that lower SES, older age, and adolescents' perceptions that their parents support fighting were related to endorsing retaliatory attitudes. Girls who were aggressive were more likely to endorse retaliatory attitudes. However, level of aggression did not impact boys' retaliatory attitudes. Affiliating with aggressive peers influenced the retaliatory attitudes of boys, but did not influence girls' retaliatory attitudes. Overall, youths' perceptions of their parents' attitudes toward fighting had the greatest impact on retaliatory attitudes. **CONCLUSIONS:** Adolescents' perceptions of their parents' attitudes toward fighting may be a factor in subsequent re-injury among youth. Violence prevention and intervention efforts need to involve components that assess parental attitudes and incorporate strategies to engage parents in violence prevention efforts. In addition, interventions for youth who have been assaulted may need to incorporate some gender-specific components in order to address the unique needs of girls and boys.

Topic C: Women's Health

19. Stueve A, O'Donnell L. Continued smoking and smoking cessation among urban young adult women: findings from the Reach for Health longitudinal study. *Am J Public Health.* 2007;97:1408-1411.

We examined smoking and smoking cessation among 538 young inner-city women who had been followed from early adolescence to young adulthood. Results showed that 14.3% of these young women had smoked in middle school, 26.4% had smoked in high school, and 21.9% had smoked at age 19 or 20 years, when many were rearing children, pregnant, or considering pregnancy. Young women who were raising children were more likely than those who were not to currently smoke or to have smoked in the past. Partner violence victimization was an independent risk factor for continued smoking. If improvements in smoking cessation rates are to be achieved, public health efforts must address factors underlying early and continued smoking.

20. Hill TD, Mossakowski KN, Angel RJ. Relationship violence and psychological distress among low-income urban women. *J Urban Health.* 2007;84:537-551.

In this paper, we examined the association between relationship violence and psychological distress among low-income urban women. Extending prior research, we considered the effects of relationship violence within the context of other chronic stressors that are common in the lives of these women. Using data from the Welfare, Children, and Families project (1999), a probability sample of 2,402 low-income women with children living in low-income neighborhoods in Boston, Chicago, and San Antonio, we predicted psychological distress with multiple measures of relationship violence, a wide range of sociodemographic variables, and several chronic stressors. Our results show that relationship violence is associated with higher levels of economic hardship, neighborhood disorder, and household disrepair. We also find that relationship violence is associated with higher levels of psychological distress, net of these other chronic stressors. Finally, we observe that the effects of relationship violence do not vary according to the chronic stressors under study. Because the adverse effects of relationship violence are similar for women despite other adverse circumstances, interventions and treatment efforts focused exclusively on relationship violence may make a unique contribution to the psychological well-being of low-income urban women.

21. Sato-Dilorenzo A, Sharps PW. Dangerous intimate partner relationships and women's mental health and health behaviors. *Issues Ment Health Nurs.* 2007;28:837-848.

This study investigated the relationship between dangerousness in intimate partner relationships and victims' mental health and/or health behavior problems. Health records of 387 women residents in a domestic violence shelter in an urban city on the East coast were reviewed. Of these, 177 women were eligible for this study. Dangerousness was determined by Danger Assessment Score (DA). Higher DA scores were significantly associated with mental health symptoms and health behaviors, including anxiety ($p = 0.0024$), depression ($p = 0.017$), difficulty concentrating ($p = 0.001$), memory loss ($p =$

0.008), suicidal attempts ($p = 0.013$), weight gain ($p = 0.014$), past history of smoking ($p = 0.027$), and past history of illicit drug use ($p = 0.047$).

22. Amaro H, Dai J, Arevalo S et al. Effects of integrated trauma treatment on outcomes in a racially/ethnically diverse sample of women in urban community-based substance abuse treatment. *J Urban Health*. 2007;84:508-522.

This study presents findings from a quasiexperimental, nonequivalent, group-design study with repeated measures that explored the effects of integrated trauma-informed services on the severity of substance abuse, mental health, posttraumatic stress disorder (PTSD) symptomatology among women with histories of trauma in urban, community-based substance abuse treatment. The study also explored if the model of integrated services was equally beneficial for women of various racial/ethnic groups. Participants in the study were 342 women receiving substance abuse treatment in intervention and comparison sites. Results indicated that at 6 and 12 month follow-ups, those in the trauma-informed intervention group, in contrast to the comparison group, had significantly better outcomes in drug abstinence rates in the past 30 days as well as in mental health and PTSD symptomatology. Results also showed that, overall, integrated services were beneficial for women across the different racial/ethnic groups in substance abuse treatment, although some differences appear to exist across racial/ethnic groups in improving addiction severity and mental health and PTSD symptomatology.

23. Arevalo S, Prado G, Amaro H. Spirituality, sense of coherence, and coping responses in women receiving treatment for alcohol and drug addiction. *Eval Program Plann*. 2007; [Epub ahead of print].

PURPOSE: To examine the role of spirituality, sense of coherence, and coping responses in relation to stress and trauma symptoms among women in substance abuse treatment. **DATA SOURCES/STUDY SETTING:** Data for the present analyses were obtained from baseline interviews of 393 women in an urban area of Massachusetts. Interviews were conducted from April 2003 to September 2006. Participants came from four substance abuse treatment programs (three residential and one outpatient) participating in the Mother's Hope, Mind and Spirit Study, an evaluation of an intervention funded by the Substance Abuse and Mental Health Services Administration (SAMSHA). **PRINCIPAL FINDINGS:** Stress was significantly associated with drug addiction severity and trauma symptoms were significantly related to alcohol addiction severity. Spirituality, sense of coherence, and coping responses did not mediate the relationship between perceived stress, and posttraumatic stress, and alcohol and drug addiction severity. However, negative and significant associations were found between perceived stress and spirituality, sense of coherence and coping responses, and between posttraumatic stress symptomatology and sense of coherence. **CONCLUSION:** Enhanced substance abuse treatments that increase spirituality, sense of coherence, and coping responses may be beneficial in helping women in substance abuse treatment to manage stress and posttraumatic stress symptoms. However, further research is needed to identify the pathways through which spirituality, sense of coherence and coping responses may mediate the effects of stress and posttraumatic stress symptoms on alcohol and drug addiction severity.

24. Lin CJ, Block B, Nowalk MP et al. Breast cancer risk assessment in socioeconomically disadvantaged urban communities. *J Natl Med Assoc.* 2007;99:752-756.

During 2005, a risk assessment tool based on the Gail model was used to calculate the five-year risk of developing breast cancer for 445 women who live in socioeconomically disadvantaged urban communities in western Pennsylvania and who attended health fairs and other community-sponsored activities. This tool allowed us to evaluate each woman and advise her of her risks in a process lasting 15-20 minutes. Of the 445 women, 71.7% were black and 21.6% had a higher than average risk. The proportion of white women at high risk was significantly greater than the proportion of black women at high risk (33.3% vs. 16.9%; $P < 0.01$). The Gail model assessment tool for use in low-income and minority populations holds promise because it is noninvasive, is easy to use and provides immediate data about risk. This risk communication may help encourage minority and low-income women to receive screening mammography. It has the potential to improve breast cancer screening rates.

25. Lawsin CR, Borrayo EA, Edwards R, Belloso C. Community readiness to promote Latinas' participation in breast cancer prevention clinical trials. *Health Soc Care Community.* 2007;15:369-378.

The high breast cancer (BC) mortality rates that exist among Hispanic women (Latinas) are a health disparity burden that needs to be addressed. Prevention clinical trials are a burgeoning area of cancer prevention efforts and may serve to promote parity. Unfortunately, Latinas, along with other ethnic minority women, continue to be under-represented in this form of research. Previous studies have examined individual barriers to ethnic minorities' participation, but none have assessed community factors contributing to Latinas' under-representation in these studies. The present study addressed these limitations from a community perspective by exploring which factors might inhibit Latinas' participation in clinical trials, specifically BC prevention trials. Using the Community Readiness Model (CRM), 19 key informants were interviewed in four communities, two rural and two urban, in Colorado, USA. The key informant assessment involved a semistructured interview that measured the level of community readiness to encourage participation in BC prevention activities. The results reflected a community climate that did not recognise BC as a health problem that affected Latinas in participating communities. Compared to other healthcare priorities, participation in BC prevention clinical trials was considered a low priority in these communities. Overall, leadership and community resources were not identified or allocated to encourage the participation of Latinas. The results highlight the lack of awareness regarding clinical trials among both community members and leaders. According to the CRM, strategies to enhance awareness at multiple levels in the community are necessary. This study demonstrates how the CRM can be used to better understand a community's perspective on BC, and specifically, the under-representation of Latinas in clinical trials.

26. Buki P, Jamison J, Anderson J, Cuadra M. Differences in predictors of cervical and breast cancer screening by screening need in uninsured Latina women. *Cancer.* 2007; [Epub ahead of print].

BACKGROUND.: Latina women experience higher mortality for cervical cancer and lower 5-year survival for breast cancer than non-Latina White women. Adherence with screening recommendations can increase chances of survival, yet the factors that influence screening behaviors in uninsured women are not well documented. **METHODS.:** Uninsured Latina women (N = 467) recruited in four US cities participated in the study. Logistic regression was used to model adherence to recommendations by screening type (cervical or breast cancer) and screening need (needs to obtain initial screening, overdue for rescreening, up-to-date with rescreening). **RESULTS.:** Predictors differed by type of screening and screening need. Women who reported exposure to cancer education were more likely to have had a mammogram and to be up-to-date with Pap smear screening than women without such exposure. Women who were younger, had more than a sixth grade education, and/or had children were more likely to have had a Pap smear. Older women who had been in the US the longest were more likely to be overdue for a Pap smear. Women with incomes 5000 to 7000 were more likely to have obtained a mammogram. Regional differences were found with respect to mammography screening and maintenance behaviors. **CONCLUSIONS.:** Exposure to cancer education is an important predictor of screenings among uninsured urban Latina women. The potential of creating educational interventions that can increase screening rates among women who evidence health disparities is encouraging. Recruitment strategies to reach women in need of screenings are provided. Cancer 2007. (c) 2007 American Cancer Society

27. Savage CL, Anthony J, Lee R, Kappesser ML, Rose B. The culture of pregnancy and infant care in African American women: an ethnographic study. *J Transcult Nurs.* 2007;18:215-223.

In Hamilton County, Ohio, the infant mortality rate for African American infants in 2002 was 18.1 per 1,000 live births compared with 14.4 for the United States. It is essential to engage community residents and leaders in identifying the underlying cultural factors contributing to this disparity. The purpose of the study was to explore the cultural contexts of prenatal and infant care practices among African American women of childbearing age living in an urban community located in Hamilton County, Ohio. This was an ethnographic community-based participatory research study. Seven participants were recruited for the study. Family support from mothers and sisters in obtaining needed resources related to pregnancy and child care emerged as the central theme. A strong family-based social network was core to the culture of pregnancy and infant care for these women. Nurses should consider developing family-centered interventions to reduce disparity in infant health.

28. Speck BJ, Hines-Martin V, Stetson BA, Looney SW. An environmental intervention aimed at increasing physical activity levels in low-income women. *J Cardiovasc Nurs.* 2007;22:263-271.

BACKGROUND: Regular physical activity is a health promotion and disease prevention behavior. Of all demographic groups, low-income women report the lowest levels of physical activity. **RESEARCH OBJECTIVE:** The purpose of this study was to test an intervention aimed at reducing community environmental barriers to physical activity in low-income women. **METHODS:** The research design was mixed methodology: (1)

quantitative (quasi-experimental, pretest-posttest, cohort design in which no treatment partitioning was possible) and (2) qualitative (focus groups). The setting was a church-sponsored community center centrally located in a low-income urban neighborhood. The comparison group was recruited first followed by the intervention group to control for setting. The sample consisted of 104 women (comparison group, n = 53; intervention group, n = 51) between the ages of 18 and 63 years who were residents of neighborhoods served by the community center. RESULTS: No between-group differences were found for physical activity behavior. Significant between-group differences in cholesterol (P = .007) and perception of physical activity (P = .033) were observed. Significant intervention group increases from pretest to posttest were found related to advanced registered nurse practitioner support, friend support, and more positive physical activity environment at the community center. Qualitative data supported and enriched the quantitative data. CONCLUSIONS: Physical activity levels were not significantly different between the groups. In a sample of low-income women who have multiple barriers, improving attitudes, expanding their knowledge of community resources, and providing physical activity opportunities in their neighborhoods are important intermediate steps toward initiation and maintenance of regular physical activity.

29. Foster RP. Treating depression in vulnerable urban women: A feasibility study of clinical outcomes in community service settings. *Am J Orthopsychiatry*. 2007;77:443-453.

There is a paucity of literature on direct treatment outcomes for impoverished minority populations. The current study supports the feasibility of successfully treating women for depressive symptoms in community settings where they typically seek care, adding to the small but growing direct knowledge base in this area. The sample of the 2-site study consisted of 91 women seeking treatment for depressive complaints at a homeless shelter program and a municipal hospital psychiatric clinic for Latino patients. Participants were randomly assigned to either a 16-week cognitive-behavioral group or a 16-week supportive/exploratory group for depression. Best-practice features with this population were integrated throughout. Findings showed that both treatment conditions were equally effective in decreasing depressive symptoms (BDI, CES-D) up to 4 months after treatment termination. These changes were paralleled by improvements in self-reported physical health (Duke Physical Profile). No significant differences between treatment conditions were found. Directives for next steps in the current research agenda are offered in efforts to broaden the direct evidence base for treating vulnerable urban women at high risk for depression and other forms of mental illness. ((c) 2007 APA, all rights reserved)

Topic D: Men who Have Sex with Men (MSM)

30. Mustanski B, Garofalo R, Herrick A, Donenberg G. Psychosocial Health Problems Increase Risk for HIV Among Urban Young Men Who Have Sex With Men: Preliminary Evidence of a Syndemic in Need of Attention. *Ann Behav Med*. 2007;34:37-45.

Background: Young men who have sex with men (YMSM) experience disparities in HIV rates and potentially in mental health, substance abuse, and exposure to violence. Purpose: We assessed the extent to which these psychosocial health problems had an additive effect on increasing HIV risk among YMSM. Methods: An urban sample of 310 ethnically diverse YMSM reported on psychosocial health problems, sexual risk behaviors, and HIV status. A count of psychosocial health problems was calculated to test the additive relationship to HIV risk. Results: The prevalence of psychosocial health problems varied from 23% for regular binge drinking to 34% for experiencing partner violence. Rates of sexual risk behaviors were high and 14% of YMSM reported receiving a HIV +/- test result. Psychosocial health problems cooccurred, as evidenced by significant bivariate odds ratios (ORs) between 12 of the 15 associations tested. Number of psychosocial health problems significantly increased the odds of having multiple anal sex partners (OR = 1.24), unprotected anal sex (OR = 1.42), and an HIV-positive status (OR 1.42), after controlling for demographic factors. Conclusions: These data suggest the existence of cooccurring epidemics, or "syndemic," of health problems among YMSM. Disparities exist not only in the prevalence of HIV among YMSM but also in research to combat the epidemic within this vulnerable population. Future research is needed to identify risk and resiliency factors across the range of health disparities and develop interventions that address this syndemic.

31. Halkitis PN, Palamar JJ, Mukherjee PP. Poly-club-drug use among gay and bisexual men: a longitudinal analysis. *Drug Alcohol Depend.* 2007;89:153-160.

OBJECTIVE: We sought to delineate patterns of poly-club-drug use among gay and bisexual men. Data were drawn from a large-scale 12-month longitudinal investigation of club drug use and sexual behavior among 450 racially, ethnically, and geographically diverse sample of gay and bisexual men in New York City. METHODS: Using community-based sampling, we recruited the sample from numerous venues and assessed the self-reported use of five drugs and their relation to one another: cocaine, ecstasy, GHB, ketamine, and methamphetamine. Multivariate hierarchical linear modeling (HLM) was utilized to examine associations of usage over the 12-month data collection period. RESULTS: Use of the five club drugs was highly related as noted by both parametric and non-parametric analyses of the cross-sectional data. Patterns of use over time also indicated significant longitudinal associations. Specifically, the use of methamphetamine over time was related to both the use of ecstasy and GHB. CONCLUSIONS: The analyses suggest that usage patterns of individual club drugs such as methamphetamine, ecstasy, and GHB among gay and bisexual men are highly related across time. These findings hold implications for the treatment approaches that are utilized to address substance abuse in this segment of the population, and suggest that practitioners focus on the totality of the substance abuse behaviors and not necessarily individual drugs which are administered.

32. O'leary A, Purcell DW, Remien RH, Fisher HE, Spikes PS. Characteristics of bisexually active men in the Seropositive Urban Mens' Study (SUMS). *AIDS Care.* 2007;19:940-946.

Characteristics of bisexually-active men were compared with those of their homosexually-active counterparts in a study of HIV-seropositive men who have sex with men (MSM).

Men who had had sex with women in the prior year were younger and more likely to be African American than those reporting sex only with men. They reported higher levels of internalised homophobia and less participation in the gay community. They tended to be recruited through friend referral rather than public sex environments or AIDS service organisations. However, they did not seek sex partners from different venues than other participants. Implications for HIV transmission risk-reduction interventions for this population are discussed.

Topic E: Injection Drug Users

33. Coffin PO, Tracy M, Bucciarelli A, Ompad D, Vlahov D, Galea S. Identifying injection drug users at risk of nonfatal overdose. *Acad Emerg Med.* 2007;14:616-623.

OBJECTIVES: Drug overdose is the second leading cause of accidental deaths among U.S. adults aged 15-64 years. Emergency physicians have a unique opportunity to provide overdose prevention interventions, because habitual drug users are in frequent need of medical care. The authors evaluated associations between individual-level risk factors and experiencing an overdose in the past six months to determine which characteristics and behaviors may be most predictive of overdose. **METHODS:** The authors used data from a sample of street-recruited habitual drug users who participated in face-to-face interviews about overdose from November 2001 to February 2004. This analysis was restricted to 772 respondents who had been injecting for at least one year and who had injected heroin within the past two months. **RESULTS:** A total of 16.6% of participants had overdosed in the past six months. Characteristics and behaviors that were independently associated with an increased risk of a recent overdose were having had a prior overdose (odds ratio [OR], 28.58; 95% confidence interval [CI] = 14.10 to 57.96), using cocaine/crack in the past six months (OR, 2.07; 95% CI = 1.25 to 3.45), using alcohol in the past six months (OR, 1.90; 95% CI = 1.01 to 3.57), experiencing serious withdrawal symptoms in the past two months (OR, 2.70; 95% CI = 1.58 to 4.61), and younger age. **CONCLUSIONS:** Drug users who have previously experienced a nonfatal overdose are at very high risk of experiencing future overdoses. Further longitudinal studies are needed to identify robust predictors of overdose risk over time in habitual drug users, but these data suggest that drug users who have overdosed warrant aggressive prevention efforts such as agonist maintenance treatment or provision of take-home naloxone.

34. Neaigus A, Gyarmathy VA, Miller M et al. Injecting and sexual risk correlates of HBV and HCV seroprevalence among new drug injectors. *Drug Alcohol Depend.* 2007;89:234-243.

We examine injecting and sexual risk correlates of hepatitis B (HBV) and hepatitis C (HCV) seroprevalence among new injecting drug users (IDUs) (age 18-30 years, injecting < or =6 years). Participants were interviewed/serotested (HIVab, HBVcAb, HCVab) in New York City, February 1999-February 2003. Gender-stratified, multivariate logistic regression was conducted. Participants (N=259) were: 68% male; 81% white. Women were more likely to test HCV seropositive (42% versus 27%) and men HBV seropositive

(24% versus 12%); HIV seroprevalence was low (3%). Among both men and women, HBV seropositivity was associated with ever selling sex, and HCV seropositivity with ever having had infected (HIV, HBV or HCV) sex partners (among those ever sharing injecting equipment). Among women only, HBV seropositivity was associated with ever having had infected sex partners (regardless of ever sharing injecting equipment), and HCV seropositivity with $>$ or $=300$ lifetime drug injections. Among men only, HCV seropositivity was associated with $>$ or $=40$ lifetime number of sex partners (among those never sharing injecting equipment). In this new IDU sample, HBV and HCV seroprevalence differed by gender and were considerably higher than HIV seroprevalence. Early interventions, targeting injecting and sexual risks and including HBV vaccination, are needed among new IDUs to prevent HBV, HCV and, potentially, HIV epidemics.

35. Tseng FC, O'brien TR, Zhang M et al. Seroprevalence of hepatitis C virus and hepatitis B virus among San Francisco injection drug users, 1998 to 2000. *Hepatology*. 2007; [Epub ahead of print].

Previous studies suggest that most injection drug users (IDUs) become infected with hepatitis C virus (HCV) and hepatitis B virus (HBV) soon after initiating drug use. The Urban Health Study (UHS) recruited serial cross-sections of IDUs in the San Francisco Bay area from 1986 to 2005. In the current study, we determined the prevalence of antibody to HCV and HBV (core) among UHS participants during 1998 to 2000. To examine whether the time from onset of injection to acquisition of viral hepatitis has increased, we also compared the findings among recent (<10 years) initiates to drug use who participated during 1998-2000 with those who participated in 1987. Of 2,296 IDUs who participated during 1998-2000, 91.1% had antibody to HCV and 80.5% to HBV. The number of years a person had injected drugs strongly predicted infection with either virus ($P(\text{trend}) < 0.0001$). HCV seroprevalence among recent initiates in 1998-2000, by years of injection drug use, was: ≤ 2 , 46.8%; 3 to 5, 72.4%; 6 to 9, 71.3%. By comparison, HCV seroprevalence among 1987 participants was: ≤ 2 years, 75.9%; 3 to 5, 85.7%; 6 to 9, 91.1% ($P < 0.0001$). A consistent pattern was observed for HBV ($P < 0.0001$), and these findings were not explained by demographic differences between 1987 and 1998-2000 participants. During 1987, however, 58.7% of recent initiates had shared syringes within the past 30 days compared with 33.6% during 1998-2000 ($P < 0.0001$). Conclusion: HCV and HBV seroprevalence among newer initiates to injection drug use in the San Francisco Bay area decreased markedly between 1987 and 1998-2000. This decrease coincided with the implementation of prevention activities among this population.

Topic F: Motor Vehicle Impacts on Health

36. Clifton KJ, Kreamer-Fults K. An examination of the environmental attributes associated with pedestrian-vehicular crashes near public schools. *Accid Anal Prev*. 2007;39:708-715.

This paper examines pedestrian-vehicular crashes in the vicinity of public schools, the severity of injuries sustained, and their relationship to the physical and social attributes near the schools. Multivariate models of crash severity and crash risk exposure were estimated as a function of social and physical characteristics of the area immediately

surrounding schools in Baltimore City, Maryland. Results show that the presence of a driveway or turning bay on the school entrance decreases both crash occurrence and injury severity. Conversely, the presence of recreational facilities on the school site is positively associated with crash occurrence and injury severity of crashes. Findings related to neighborhood characteristics were mixed but the significant variables - transit access, commercial access, and population density - are generally associated with increased pedestrian demand and should be interpreted with care. The results of this study are relevant for Safe Routes to School projects and point to areas meriting further study.

37. Perez K, Mari-Dell'Olmo M, Tobias A, Borrell C. Reducing road traffic injuries: effectiveness of speed cameras in an urban setting. *Am J Public Health*. 2007;97:1632-1637.

OBJECTIVES: We assessed the effectiveness of speed cameras on Barcelona's beltway in reducing the numbers of road collisions and injuries and the number of vehicles involved in collisions. **METHODS:** We designed a time-series study with a comparison group to assess the effects of the speed cameras. The "intervention group" was the beltway, and the comparison group consisted of arterial roads on which no fixed speed cameras had been installed. The outcome measures were number of road collisions, number of people injured, and number of vehicles involved in collisions. We fit the data to Poisson regression models that were adjusted according to trends and seasonality. **RESULTS:** The relative risk (RR) of a road collision occurring on the beltway after (vs before) installation of speed cameras was 0.73 (95% confidence interval [CI]=0.63, 0.85). This protective effect was greater during weekend periods. No differences were observed for arterial roads (RR=0.99; 95% CI=0.90, 1.10). Attributable fraction estimates for the 2 years of the study intervention showed 364 collisions prevented, 507 fewer people injured, and 789 fewer vehicles involved in collisions. **CONCLUSIONS:** Speed cameras installed in an urban setting are effective in reducing the numbers of road collisions and, consequently, the numbers of injured people and vehicles involved in collisions.

38. Brugge D, Durant JL, Rioux C. Near-highway pollutants in motor vehicle exhaust: a review of epidemiologic evidence of cardiac and pulmonary health risks. *Environ Health*. 2007;6:23.:23.

There is growing evidence of a distinct set of freshly-emitted air pollutants downwind from major highways, motorways, and freeways that include elevated levels of ultrafine particulates (UFP), black carbon (BC), oxides of nitrogen (NO_x), and carbon monoxide (CO). People living or otherwise spending substantial time within about 200 m of highways are exposed to these pollutants more so than persons living at a greater distance, even compared to living on busy urban streets. Evidence of the health hazards of these pollutants arises from studies that assess proximity to highways, actual exposure to the pollutants, or both. Taken as a whole, the health studies show elevated risk for development of asthma and reduced lung function in children who live near major highways. Studies of particulate matter (PM) that show associations with cardiac and pulmonary mortality also appear to indicate increasing risk as smaller geographic areas are studied, suggesting localized sources that likely include major highways. Although less work has tested the association between lung cancer and highways, the existing

studies suggest an association as well. While the evidence is substantial for a link between near-highway exposures and adverse health outcomes, considerable work remains to understand the exact nature and magnitude of the risks.

39. Hoffmann B, Moebus S, Mohlenkamp S et al. Residential exposure to traffic is associated with coronary atherosclerosis. *Circulation*. 2007;116:489-496.

BACKGROUND: Long-term exposure to fine-particulate-matter (PM_{2.5}) air pollution may accelerate the development and progression of atherosclerosis. We investigated the associations of long-term residential exposure to traffic and fine particulate matter with the degree of coronary atherosclerosis. **METHODS AND RESULTS:** We used baseline data on 4494 participants (age 45 to 74 years) from the German Heinz Nixdorf Recall Study, a population-based, prospective cohort study that started in 2000. To assess exposure differences, distances between residences and major roads were calculated, and annual fine particulate matter concentrations, derived from a small-scale dispersion model, were assigned to each address. The main outcome was coronary artery calcification (CAC) assessed by electron-beam computed tomography. We evaluated the association between air pollution and CAC with logistic and linear regression analyses, controlling for individual level risk factors of coronary atherosclerosis. Compared with participants living >200 m away from a major road, participants living within 50, 51 to 100, and 101 to 200 m had odds ratios of 1.63 (95% CI, 1.14 to 2.33), 1.34 (95% CI, 1.00 to 1.79), and 1.08 (95% CI, 0.85 to 1.39), respectively, for a high CAC (CAC above the age- and gender-specific 75th percentile). A reduction in the distance between the residence and a major road by half was associated with a 7.0% (95% CI, 0.1 to 14.4) higher CAC. Fine particulate matter exposure was associated with CAC only in subjects who had not been working full-time for at least 5 years. **CONCLUSIONS:** Long-term residential exposure to high traffic is associated with the degree of coronary atherosclerosis.

40. Clougherty JE, Levy JI, Kubzansky LD et al. Synergistic effects of traffic-related air pollution and exposure to violence on urban asthma etiology. *Environ Health Perspect*. 2007;115:1140-1146.

BACKGROUND: Disproportionate life stress and consequent physiologic alteration (i.e., immune dysregulation) has been proposed as a major pathway linking socioeconomic position, environmental exposures, and health disparities. Asthma, for example, disproportionately affects lower-income urban communities, where air pollution and social stressors may be elevated. **OBJECTIVES:** We aimed to examine the role of exposure to violence (ETV), as a chronic stressor, in altering susceptibility to traffic-related air pollution in asthma etiology. **METHODS:** We developed geographic information systems (GIS)-based models to retrospectively estimate residential exposures to traffic-related pollution for 413 children in a community-based pregnancy cohort, recruited in East Boston, Massachusetts, between 1987 and 1993, using monthly nitrogen dioxide measurements for 13 sites over 18 years. We merged pollution estimates with questionnaire data on lifetime ETV and examined the effects of both on childhood asthma etiology. **RESULTS:** Correcting for potential confounders, we found an elevated risk of asthma with a 1-SD (4.3 ppb) increase in NO₂ exposure solely among children with

above-median ETV [odds ratio (OR) = 1.63; 95% confidence interval (CI), 1.14-2.33]. Among children always living in the same community, with lesser exposure measurement error, this association was magnified (OR = 2.40; 95% CI, 1.48-3.88). Of multiple exposure periods, year-of-diagnosis NO₂ was most predictive of asthma outcomes.

CONCLUSIONS: We found an association between traffic-related air pollution and asthma solely among urban children exposed to violence. Future studies should consider socially patterned susceptibility, common spatial distributions of social and physical environmental factors, and potential synergies among these. Prospective assessment of physical and social exposures may help determine causal pathways and critical exposure periods.