Strategic Direction for Child Maltreatment Prevention

Preventing Child Maltreatment Through the Promotion of Safe, Stable, and Nurturing Relationships Between Children and Caregivers

This document describes a five-year vision for the Centers for Disease Control and Prevention's (CDC) work in child maltreatment (CM) prevention. The overall strategy in preventing CM is to promote safe, stable, and nurturing relationships (SSNRs) between children and their caregivers.

Background

CM is a serious problem in the United States and around the world.[1, 2] It can be defined as any act or series of acts of commission or omission by a parent or caregiver that results in harm, potential for harm, or threat of harm to a child.[3] Acts of commission are deliberate and intentional, however, harm to a child may or may not be the intended consequence. Physical, sexual, and psychological abuse involve acts of commission. Acts of omission involve failing to provide for a child's basic physical, emotional, or educational needs or to protect them from harm or potential harm. Physical, emotional, medical/dental, and educational neglect; inadequate supervision or failure to supervise; and failure to protect from unsafe and violent environments when able, may all involve acts of omission.

The magnitude of CM in the United States is not easily determined, but it is clearly substantial. According to state Child Protective Service (CPS) agencies, about 900,000 children are confirmed as having been maltreated each year in the United States.[4] In these CPS cases, children under age three are at greatest risk and the majority of cases involve neglect. These confirmed cases of CM, however, represent only a fraction of the true magnitude of the problem because most cases are never reported to social service agencies or the police.[5–7] Survey data provide a more troublesome picture of this problem. Based on a nationally representative survey of 2–17 year-olds, about 1 in 8 children were estimated to have been maltreated by physical, sexual, or psychological abuse or neglect from 2002 to 2003.[8] Surveys of adults reveal that self-reported histories of CM is relatively common. In a national survey, 14.2% of men and 32.3% of women reported histories of sexual abuse and 22.2% of men and 19.5% of women reported histories of physical abuse.[9]

Substantial documentation exists in scientific literature of the association between CM and a broad range of emotional, behavioral, and physical health problems. These consequences may vary depending on a child's age when victimized, duration and severity of the abuse or neglect, the child's innate resiliency, and co-occurrence with other maltreatment or adverse exposures such as the mental health of the parents, substance

abuse by the parents, or violence between parents.[10, 11] Aggression, conduct disorder, delinquency, anti-social behavior, substance abuse, intimate partner violence, teenage pregnancy, post traumatic stress disorder, anxiety, depression, and suicide are among the emotional and behavioral problems associated with CM.[12–15] Maltreatment and other adverse exposures also have been associated with poor adult health status; specific health problems such as diabetes, ischemic heart disease, and sexually transmitted diseases; and a variety of health risk behaviors including smoking and obesity.[16–19] In addition, exposure to CM can have negative repercussions for cognitive development, including language deficits and reduced cognitive functioning.[20] One mechanism for these consequences is the harmful impact that chronic or recurrent exposure to stress, such as that caused by CM, can have on the inter-related brain circuits and hormonal systems that regulate stress (e.g., sympathetic-adrenomedullary system, hypothalamic-pituitary-adrenocortical system).[21–23] These brain systems are particularly malleable during early childhood, a time of heightened risk for severe maltreatment.[21] Changes in these brain systems can lead to a premature physiological aging of the body that increases vulnerability to mental and physical health problems.[22–23]

CDC's Mission and Niche in Violence Prevention

CDC's CM prevention program is coordinated by the Division of Violence Prevention (DVP) within the National Center for Injury Prevention and Control (NCIPC). DVP's mission is to prevent violence-related injuries and deaths through surveillance, research and development, capacity building and adoption, communication, and leadership. DVP's public health approach to violence prevention complements other approaches such as those of the criminal justice, mental health, and child welfare systems. Its unique features and niche include:

- **An emphasis on primary prevention of violence perpetration**. DVP emphasizes efforts to prevent violence before it occurs. This requires not only reducing the factors that put people at risk but also increasing the factors that protect people from becoming perpetrators of violence.
- **A commitment to a rigorous science base**. DVP adds to the base of what is known about violence and how to prevent it by monitoring and tracking trends using public health surveillance and other strategies, researching risk and protective factors, and rigorously evaluating interventions and learning how best to implement and disseminate them.

CDC's Approach to Violence Prevention

- An emphasis on primary prevention of violence perpetration
- A commitment to a rigorous science base
- A cross-cutting perspective
- A population approach

- **A cross-cutting perspective**. Public health encompasses many disciplines and perspectives, making its approach well-suited for examining and addressing multifaceted problems like violence. Different sectors such as health, media, business, criminal justice, behavioral science, epidemiology, social science, advocacy, and education all have important roles in violence prevention. Different forms of violence are interrelated. For example, exposure to CM is associated with interpersonal violence and suicidal behavior in adolescence and adulthood.[24–25] Moreover, just as different forms of violence are related to each other, violence is also associated with and a risk factor for many other health problems.

- **A population approach**. Part of public health's broad view is an emphasis on population health—not just the health of individuals. Individuals experience violence acutely, but its consequences and potential solutions also affect society in general. The long-term goal of public health is to achieve lasting change in the factors and conditions that place people at risk by making changes at the individual, family, community, and societal levels of the social ecology that reduce rates of violence in populations.

Rationale for Promoting Safe, Stable, and Nurturing Relationships between Children and Caregivers

Safe, stable, and nurturing relationships (SSNR) between children and their caregivers are the antithesis of maltreatment and other adverse exposures that occur during childhood and compromise health over the lifespan. Young children experience their world through their relationships with parents and caregivers.[26] These relationships are fundamental to the healthy development of the brain and, consequently, the development of physical, emotional, social, behavioral, and intellectual capacities.[26–27] From a public health perspective, the promotion of SSNRs is, therefore, *strategic* in that, if done successfully, it can have synergistic effects on a broad range of health problems as well as contribute to the development of skills that will enhance the acquisition of healthy habits and lifestyles.

The three dimensions of SSNRs (i.e., safety, stability, and nurture) each represent important aspects of the social and physical environments that protect children and promote their optimal development. Each can be thought of as being on the positive end of a continuum that extends from safe to neglectful and violent relationships/environments, from stable to unpredictable and chaotic relationships/environments, and from nurturing to hostile/cold or rejecting relationships/environments. These dimensions overlap, but each represents important and distinct aspects of a child's relationships and environment that are crucial to their healthy development. These dimensions can be more fully defined and described in the following ways:

Safety. Safety refers to the extent to which a child is free from fear and secure from physical or psychological harm within their social and physical environment. Childhood exposure to physical, sexual, or psychological violence is a direct threat to a child's safety. Neglect or acts of omission affect safety as well. For example, failure to properly secure a child in a car seat or ensure that poisons are stored securely in the home are clear threats to safety. Caregivers ensure the safety of children by regulating their emotional response to their children; protecting children under their care from others that may harm them; disciplining their children in ways that do not cause harm and promote self regulation; monitoring their child's behavior and development; and ensuring the child's environment is hazard free.[27–28] The nature of these vital functions for parents and caregivers change as a child matures, but remain important through adolescence. The security of a child's broader social environment, which includes the magnitude of crime in a neighborhood and the presence of social supports within a community, is also an important aspect of this dimension.

Stability. Stability refers to the degree of predictability and consistency in a child's environment. It encompasses consistency in who children relate to as well as the nature of their interactions with caregivers, others in their environment, and the environment itself. A child's interaction with their environment is important for determining their working model of how the world works, what to expect, and how to interact appropriately with those around them. Stability is critical to providing the child with a sense of coherence, i.e., seeing the world as predictable and manageable.[29–30] Family structures and

routines that provide stability buffer the impact of stressful experiences on children.[31] Disruptions in the stability of a child's relationships or environment, whether by divorce, death, or frequently changing caregivers, may deprive a child of the secure and nurturing attachments needed for optimal development.[24] Moreover, the lack of stable relationships or environments may also increase the likelihood that a child will be exposed to relationships and environments that are stressful and unsafe.[32] Instability in the lives of parents as reflected by divorce, separation, or single parenthood are also well-established risk factors for maltreatment.[32] These disruptions in family dynamics may contribute to stresses associated with isolation or lack of social support that contribute to maltreatment.[32, 33]

Nurture. Nurture refers to the extent to which a parent or caregiver is available and able to sensitively respond to and meet the needs of their child.[26] These include physical (e.g., food, shelter, hygiene, medical care), developmental (or experiences necessary for development), and emotional (e.g., affection, empathy, acceptance, affirmation) needs. Nurturing relationships reduce a child's fear in novel situations, allowing them to explore their world with confidence.[24] Early nurturing relationships contribute to the growth of a broad range of skills, competencies, and personality characteristics that children use throughout their lives, including their interest in and capacity for learning, self-worth, social skills, and an understanding of important building blocks of human relationships such as emotions, commitment, and morality.[23, 34] The negative consequences of the absence of nurturing for the emotional development of children due to, for example, parental mental illness (e.g., maternal depression) or hostility, has been well documented in developmental research and studies of brain functioning.[35–37] A lack of nurturing in a caregiver-child relationship is a distinct feature of child maltreatment in that it can be expressed as both neglect or hostility towards a child.

Promoting Safe, Stable, and Nurturing Relationships as a Prevention Strategy

There is substantial evidence that promoting SSNRs can be effective in reducing child maltreatment. The most basic approach to facilitating SSNRs is teaching parents positive child-rearing and management skills and strategies that are safe and nurturing. There is substantial evidence that parent training programs or behavioral family interventions delivered in clinical settings and focused on influencing children's behavior through positive reinforcement are effective at influencing the child-rearing practices of families.[38, 39] Some evidence also suggests that these types of programs can reduce CM. For example, a hospital-based program that disseminated information to new parents before discharge about the detrimental effects of violently shaking an infant was found to have a substantial impact on reducing rates of abusive head trauma to infants.[40] Parent child interaction therapy (PCIT) has also been effective in reducing physical child abuse in families who have been referred to child protective services or who are at risk of maltreatment for other reasons.[41] PCIT is an intensive behavioral intervention for parents and children that involves training parents on specific skills using live coaching and dyadic parent-child sessions. Each of these programs confers information and skills to parents that enable them to keep their children safer and nurture them more effectively.

SSNRs can also be facilitated by providing social support to parents and families. The availability, adequacy, and use of social support by families has long been established as an important correlate of CM.[42–44] Economic deprivation combined with a lack of social support place children at higher risk of maltreatment.[42, 43, 45] Social support can help to buffer the effects of chronic and situational stress.[43, 44, 46] Support with baby-sitting or childcare appears to be particularly helpful in reducing parental behaviors that are harmful or neglectful to children.[43] Moreover, emerging evidence indicates that social support is

one of the most important environmental factors in promoting resiliency among maltreated children to depression, even in the presence of a genotype associated with a greater vulnerability for psychiatric disorder.[47]

Parenting information and training and social support are often included within multi-component child development programs. Comprehensive child-parent centers, for example, that provide a stable, enriched learning environment and that actively promote parental involvement and parent-child interaction have been associated with lower levels of substantiated CM in participating families.[48] Early child home visitation is a way of delivering programs for families that include, to varying degrees, teaching parents about child care, development, and discipline as well as self-improvement strategies for parents (e.g., GEDs, promotion of economic self-sufficiency).[49] Certain types of home visitation programs have been found in systematic reviews of available evidence to be effective in reducing child maltreatment.[49–50]

SSNRs can also be established in social environments that children encounter outside of the home and extended to relationships with caregivers other than the parents of the child. Both within and outside their home environment, children are exposed to a variety of caregivers other then their parents, including siblings, aunts, uncles, grandparents, family friends, daycare providers, school personnel, and camp counselors. CM can occur at the hands of these caretakers; consequently the nature and quality of these relationships is also important to healthy childhood development. In addition, providing SSNRs outside the home (e.g., high quality child care) might have the potential for buffering the lack of SSNRs in the home. Organizations that serve children can adopt policies and practices that may help to keep children safe and promote SSNRs. For example, to address the potential for child sexual abuse, such organizations should consider strategies for screening and selecting employees and volunteers, guidelines for appropriate interactions between caretakers and children, policies for responding to inappropriate behaviors, and employee/volunteer training about child sexual abuse prevention.[51]

Key Focus for Promoting Safe, Stable, and Nurturing Relationships. This strategic direction is intended to be broad enough to encompass a wide array of interventions and policies that may help to prevent CM, but retain SSNRs as an identifiable focus. One facet of promoting SSNRs and preventing CM believed to be critical to making substantive progress is addressing social determinants.

Key Focus for Promoting Safe, Stable, and Nurturing Relationships

Addressing social determinants of child maltreatment and safe, stable, and nurturing relationships

- **Addressing social determinants of CM and SSNRs.** CM and SSNRs emerge from and are sustained within the social contexts that help create and support them. Various studies, for example, have found that social determinants such as neighborhood economic distress and disadvantage, housing stress (e.g., density of vacant housing, residential instability), low social capital, low family income, low parental education, and lack of social support, are associated with CM.[2, 32, 41–45, 52–54] Previous etiologic research on CM, however, has focused primarily on individual- and family-level influences, with relatively limited attention paid to community- and societal-level factors (e.g., policies, social norms, and collective efficacy). Additionally, intervention strategies that operate at a community or societal level might reach broader segments of a population and be influential in widespread promotion of SSNRs and reductions in CM. Understanding the role that social determinants play in contributing to CM and SSNRs as well as establishing the impact on CM and SSNRs of interventions that modify them, therefore, may be very important to improving our ability to devise and implement effective population-based prevention policies.

Strategy

DVP's strategy is to prevent CM by promoting SSNRs between children and their caregivers. This strategy is organized around four general areas of public health research and practice: measuring impact, creating and evaluating new approaches to prevention, applying and adapting what we know, and building community capacity for implementing preventive strategies.

MEASURING IMPACT

- **Improve capacity to monitor nonfatal CM at national and state levels.** Routinely collected data for monitoring the incidence and prevalence of nonfatal CM are limited. Moreover, there are widespread concerns about sensitivity and representativeness of current data.[5–7] New surveillance systems for CM may use existing injury data systems, population surveys, be based on indicators of behaviors or actions associated with maltreatment (e.g., out of home placements), or some combination of these approaches. Analyses are needed to determine the most helpful and efficient approaches. Surveillance systems for nonfatal CM are needed to support prevention efforts by providing data that can help raise awareness, evaluate programs, and monitor progress.
- **Improve ability to monitor fatal CM through the National Violent Death Reporting System.** We currently lack a standard system to monitor and describe CM-related homicides across states and over time. CDC's National Violent Death Reporting System (NVDRS) and the National Center for Child Death Review Policy and Practice's Child Death Review System (CDR) collect data on child fatalities due to violence and neglect. By linking NVDRS and CDR data where feasible, a valuable and rich source of data could be created for designing CM prevention efforts, leveraging social and political will for CM prevention, and monitoring the success of prevention initiatives at the state and local level.
- **Improve operationalization, measurement, and monitoring of SSNRs.** The promotion of SSNRs will be enhanced by clearer operationalization and specification of valid and reliable measures of safety, stability, and nurturance. Once SSNR measures are developed and incorporated into surveillance systems we will be able to better monitor health impact through the enhancement of these protective factors.
- **Identify and quantify the social and economic burden of CM.** CM victims are at risk for many detrimental health outcomes, including biologic, psychological, and social deficits.[12–20] CM not only negatively affects its victims, but society as a whole by increasing the risk for future violent and criminal behavior.[21] Additionally, substantial economic costs are incurred for victims of maltreatment in terms of medical and nonmedical resources consumed, losses in productivity, and human capital development. Further research that will quantify the social (including health- and non-health-related outcomes) and economic burden (i.e., direct and indirect costs) of CM is warranted. A greater understanding of the social and economic burden of CM can help us better determine the benefits of and need for evidence-based interventions and policies for prevention.

CREATING AND EVALUATING NEW APPROACHES TO PREVENTION

- **Examine the development of SSNRs and CM perpetration to identify populations at risk, modifiable risk and protective factors, and optimal times and settings for interventions.** Caregiving behaviors occur in many different contexts and develop with time. Understanding the development of caregiving behaviors and how the contexts in which they occur influence child

development is key to understanding which interventions and policies promote SSNRs and reduce CM. To gain a full understanding of the ideal timing and settings for intervention strategies, research is needed that examines how SSNRs and negative caregiving behaviors (including CM) develop and the role that social determinants have in supporting or suppressing SSNRs. Finally, understanding the development of different forms of CM perpetration (e.g., emotional, physical, and sexual abuse and neglect) is critical because the different forms of CM might have different etiologies and thus require different intervention strategies and timing.

DVP's strategy is organized around four general areas of public health research and practice:

- Measuring impact
- Creating and evaluating new approaches to prevention
- Applying and adapting effective practices
- Building community readiness

- **Evaluate the effectiveness of parenting-focused strategies for preventing CM and promoting SSNRs.** Healthy caregiver-child relationships are fundamental in protecting children from maltreatment and consequently the development of children's physical, emotional, social, behavioral, and intellectual capacities. These healthy caregiver-child relationships are not just the product of the influence and skills of parents and families, but also of the social contexts in which these relationships exist. Parenting programs include those that teach parents or caregivers to provide appropriate physical and emotional care and manage their children's behavior by using positive parenting strategies and non-coercive discipline strategies as well as programs designed to provide social support to parents raising children under difficult circumstances. The effectiveness of parenting-related policies for primary prevention of CM and promoting SSNRs such as welfare reform and parental leave should be evaluated, paying special attention to their effectiveness in different settings and populations. Additional research areas should include moderators of intervention effects, such as differences in effects by population or methods used. This evaluation research also should document the economic efficiency of these approaches to prevention.

- **Evaluate the effectiveness of public and organizational policies for preventing CM and promoting SSNRs.** Public and organizational policies can play a key role in preventing CM . Public policy is expressed through laws, regulations, judicial decisions, and government action. An organizational policy is reflected in the rules and regulations governing its operation. These policies can be critical in shaping the environment in which CM occurs. Public and organizational policies should be evaluated to determine if they are effective in promoting SSNRs and preventing maltreatment. The economic efficiency of evidence-based policies should also be determined where feasible.

APPLYING AND ADAPTING EFFECTIVE PRACTICES

- **Accelerate adoption and adaptation of evidence-based strategies for preventing CM by promoting SSNRs**. Promising strategies for preventing CM by promoting SSNRs do exist (e.g., nurse home visitation, parent-child interaction therapy, skills-based parent training programs). All of these programs have components that address SSNRs. However, these approaches have not been integrated into public health practice nor widely or effectively translated, disseminated, implemented, or adopted by communities. Research is needed to build knowledge that can be

used within the public health system on methods, structures, and processes to implement these and other evidence-based interventions, programs and policies to prevent CM. This research should bridge the gap between prevention research (knowledge) and public health practice (action) by examining how evidence-based violence prevention strategies are best disseminated, implemented, and sustained for widespread use by communities and policy makers.

BUILDING COMMUNITY READINESS

- **Build community receptivity, capacity, and competence to implement evidence-based approaches to preventing CM.** The concept of a public health approach to CM prevention is still relatively new. Evidence-informed framing, communication, and dissemination strategies will help communities and their leaders understand the magnitude of the problem and the long-term benefits of investments in primary prevention. Building community receptivity and capacity facilitates the dissemination and implementation of evidence-based prevention strategies. Building community competence focuses on building infrastructure and skills to sustain and evaluate the use of evidence-based approaches to CM prevention. These efforts may increase community participation by overcoming barriers to cooperation and outlining key actions to foster a multidisciplinary, collaborative approach to CM prevention and SSNR promotion.
- **Develop prevention and strategy tools for communities and organizations.** Developing tools, products, and processes that help communities and organizations apply CM prevention strategies is critical for facilitating knowledge transfer. Tools may include guidance that helps planners and practitioners select the appropriate type and mix of SSNR promotion efforts for CM prevention in their community. Products can include synthesized findings from evidence-based strategies that are translated into practitioner-friendly resources such as an interactive web portal, compendium of effective practices, and practitioner guides for CM prevention. Processes can include defined action steps leading to implementing and applying knowledge. This would also include tools to help communities monitor the programs they implement to ensure the expected outcome.
- **Establish and nurture partnerships that facilitate the dissemination and successful implementation of evidence-based CM prevention strategies in communities**. Partnerships at national, state, and community levels are critical for facilitating the adoption of evidence-based CM prevention strategies. DVP will nurture existing partnerships while continuing to develop new ones to increase awareness of the public health perspective among key stakeholders and develop a common view of CM prevention. DVP will also continue to convene partners to address this issue in a more coordinated fashion. Additionally, through these partnerships, DVP can leverage resources and relationships more effectively to collaborate with diverse fields (e.g., health, mental health, law, education) and the respective networks of federal, state, local, and non-governmental partners. These efforts can help promote connectedness among key organizations working in this field and direct and redirect limited resources toward evidence-based prevention strategies and programs.

References

1. World Health Organization and International Society for Prevention of Child Abuse and Neglect. Preventing child maltreatment: a guide to taking action and generating evidence. Geneva (Switzerland): WHO; 2006.

2. Runyan D, Wattam C, Ikeda R, Hassan F, Ramiro L. Child abuse and neglect by parents and caregivers. In: Krug E, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, editors. Geneva, Switzerland: World Health Organization; 2002. p. 59–86.

3. Leeb RT, Paulozzi L, Melanson C, Simon T, Arias I. Child maltreatment surveillance: uniform definitions for public health and recommended data elements, version 1.0. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.

4. Department of Health and Human Services (US), Administration on Children, Youth, and Families. Child maltreatment [online] 2004 [cited 2006 Aug 10]. Available from url: www.acf.hhs.gov/programs/cb/pubs/cmo4/index.htm.

5. Zellman GL, Faller KC. Preventing and reporting abuse. In: Myers JEB, Berliner L, Briere J, Hendrix CT, Reid T, Jenny C, editors. The APSAC handbook on child maltreatment. Thousand Oaks, CA: Sage Publications; 1996. pp. 449–75.

6. MacMillan HL, Jamieson E, Walsh CA. Reported contact with child protection services among those reporting child physical and sexual abuse: results from a community survey. Child Abuse and Neglect 2003;27:1397–408.

7. Everson MD, Smith JB, Hussey JM, English D, Litrownik AJ, Dubowitz H, et al. Concordance between adolescent reports of childhood abuse and child protective service determinations in an at-risk sample of young adolescents. Child Maltreatment 2008;13(1):14–26.

8. Finkelhor D, Ormrod R, Turner H, Hamby SL. The victimization of children and youth: a comprehensive, national survey. Child Maltreatment 2005;10(1):5–25.

9. Briere J, Elliott DM. Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. Child Abuse and Neglect 2003;27:1205–22.

10. Chalk R, Gibbons A, Scarupa H. The multiple dimensions of child abuse and neglect: new insights into an old problem. Child trends research brief. Washington (DC): Child Trends; 2002.

11. Caspi A, McClay J, Moffitt TE, Mill J, Martin J, Craig IW, et al. Role of genotype in the cycle of violence in maltreated children. *Science* 2002;297:851–4.

12. Putnam FW. Ten-year research update review: child sexual abuse. Journal of the American Academy of Child and Adolescent Psychiatry 2003;42(3):269–78.

13. Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse childhood experiences and the risk of depressive disorders in adulthood. Journal of Affective Disorders 2004;82:217–25.

14. Dube SR, Anda RF, Felitti VJ, Edwards VJ, Williamson DF. Exposure to abuse, neglect and household dysfunction among adults who witnessed intimate partner violence as children. Violence and Victims 2002;17(1):3–17.

15. Anda RF, Chapman DP, Felitti VJ, Edwards V, Williamson DF, Croft JP, et al. Adverse childhood experiences and risk of paternity in teen pregnancy. Obstetrics and Gynecology 2002;100(1):37–45.

16. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. The relationship of adult health status to childhood abuse and household dysfunction. American Journal of Preventive Medicine 1998;14:245–58.

17. Kendall-Tackett KA. Treating the lifetime health effects of childhood victimization. Kingston (NJ): Civic Research Institute, Inc.; 2003.

18. Repetti RL, Taylor SE, Seeman TE. Risky families: family social environments and the mental and physical health of offspring. Psychological Bulletin 2002;128(2):330–66.

19. Walker EA, Gelfand A, Katon WJ, Koss MP, Von Korff M, Bernstein D, et al. Adult health status of women with histories of childhood abuse and neglect. The American Journal of Medicine 1999;107:332–9.

20. Kendall-Tackett KA, Echenrode J. The effects of neglect on academic achievement and disciplinary problems: a developmental perspective. Child Abuse and Neglect 1996;20:161–69.

21. National Scientific Council on the Developing Child, Excessive Stress Disrupts the Architecture of the Developing Brain. Working Paper No. 3. [online] 2005 [cited 2006 Aug 10]. Available from url: www.developingchild.net/reports.shtml.

22. McEwen BS, Seeman T. Protective and damaging effects of mediators of stress: elaborating and testing concepts of allostasis and allostatic load. In: Adler NE, Marmot M, McEwen BS, Stewart J, editors. Socioeconomic status and health in industrial nations: social, psychological and biological pathways. Annals of the New York Academy of Science 1999;896:30–47.

23. Seeman TE, Singer B, Horwitz R, McEwen BS. The price of adaptation-allostatic load and its health consequences: McArthur studies of successful aging. Archives of Internal Medicine 1997;157:2259–68.

24. Widom CS, Maxfield M. An update on the "cycle of violence." National Institute of Justice Research Brief. Washington (DC): National Institute of Justice, 2001:1–8.

25. Dube SR, Anda RF, Felitti VJ, Chapman D, Williamson DF, Giles WH. Childhood abuse, household dysfunction and the risk of attempted suicide throughout the life span: findings from Adverse Childhood Experiences Study. Journal of the American Medical Association 2001;286:3089–96.

26. National Scientific Council on the Developing Child. Young children develop in an environment of relationships. Working Paper No. 1. [online] 2004. [cited 2006 Aug 10]. Available from url: www.developingchild.net/reports.shtml.

27. Board on Children, Youth, and Families, National Research Council and Institute of Medicine. From neurons to neighborhoods: the science of early childhood development. Committee on Integrating the Science of Early Childhood Development. In: Shonkoff JP, Phillips DA, editors.Washington, DC: National Academy Press; 2000.

28. Barnard KE, Solchany JE. Mothering. In: Bornstien MH, editor. Handbook of Parenting. Vol. 3. New Jersey: Lawrence Erlbaum Associates, Publishers; 2002. pp. 3–25.

29. Ainsworth M. Patterns of infant-mother attachments: antecedents and effects on development. Bulletin of the New York Academy of Medicine 1985;61:792–812.

30. Bowlby J. Developmental psychiatry comes of age. American Journal of Psychiatry 1988;145:1–10.

31. Antonovsky A. How the sense of coherence develops over the lifespan in: unraveling the mystery of health. How people manage stress and stay well. San Francisco: Jossey-Bass; 1987. pp. 89–127.

32. Sidebotham P, Heron J. Child maltreatment in the "children of the nineties": a cohort study of risk factors. Child Abuse and Neglect 2006;30:497–522.

33. Seagull EAW. Social support and child maltreatment: a review of the evidence. Child Abuse and Neglect 1987;11:41–2.

34. Waters E, Kondo-Ikemura K, Posada G, Richters JE. Learning to love: mechanisms and milestones. In: Gunnar M, Sroufe L, editors. Self processes and development. Minnesota Symposium on Child Psychology. Vol. 23. New Jersey: Erlbaum; 1991. pp. 217–55..

35. Shaw DS, Gilliom M, Ingoldsby EM, Nagin DS. Trajectories leading to school age conduct problems. Developmental Psychology 2003;39:189–200.

36. Dawson G, Asman DB. On the origins of a vulnerability to depression: the influence of the early social environment on the development of psychobiological systems related to risk of affective disorder. In: Nelson CA, editor. The effects of early adversity on neurobehavioral development. Minnesota Symposia on Child Psychology 2000. New Jersey: Erlbaum. pp. 245–79.

37. Dawson G, Frey K, Panagiotides H, Yamada E, Hessl D, Osterling J. Infants of depressed mothers exhibit atypical frontal electrical brain activity during interactions with mother and with a familiar nondepressed adult. Child Development 1999;70:1058–66.

38. Taylor TK, Biglan A. Behavioral family interventions for improving child-rearing: a review of the literature for clinicians and policy-makers. Clinical Child and Family Psychology Review 1998;1(1):41–60.

39. Lundahl B, Risser HJ, Lovejoy MC. A meta-analysis of parent training: moderators and follow-up effects. Clinical Psychology Review 2006;26:86–104.

40. Dias MS, Smith K, deGuehery K, Mazur P, Li V, Shaffer ML. Preventing abusive head trauma among infants and young children: a hospital-based, parent education program. Pediatrics 2005;115(4):470–7.

41. Chaffin M, Silovsky JF, Funderburk B, Valle LA, Brestan EV, Balachova T, et al.. Parent-child interaction therapy with physically abusive parents: efficacy for reducing future abuse reports. Journal of Consulting and Clinical Psychology 2004;72:500–10.

42. Garbarino J, Crouter A. Defining the community context of parent-child relations: the correlates of child maltreatment. Child Development 1978;49:604–16.

43. Hashima PY, Amato PR. Poverty, social support, and parental behavior. Child Development 1994;65:394-403.

44. Kotch JB, Browne DC, Ringwalt CL, Dufort V, Ruina E. Stress, social support, and substantiated maltreatment in the second and third years of life. Child Abuse and Neglect 1997;21(11):1025–37.

45. Garbarino J, Kostelny K. Child maltreatment as a community problem. Child Abuse and Neglect 1992;16:455–64.

46. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychological Bulletin 1985;98(2):310–57.

47. Kaufman J, Yang B, Douglas-Palumberi H, Houshyar S, Lipschitz D, Kyrstal JH, et al. Social supports and serotonin transporter gene moderate depression in maltreated children. Proceeding of the National Academy of Sciences 2004;101(49):17316–21.

48. Reynolds AJ, Temple JA, Ou SR. School-based early intervention and child well-being in the Chicago Longitudinal Study. Child Welfare 2003;82:633–58.

49. Bilukha O, Hahn RA, Crosby A, Fullilove M, Liberman A, Moscicki E, et al. The effectiveness of early childhood home visitation in preventing violence: a systematic review. American Journal of Preventive Medicine 2005;28(2S1):11–39.

50. MacMillan HL, Feightner JW, Goldbloom R, et al. Preventive health care, 2000 update: prevention of child maltreatment. CAMJ 2000;163:1451–8.

51. Saul J, Audage NC. Preventing child sexual abuse within youth-serving organizations: getting started on policies and procedures. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2006.

52. Freisthler B, Merritt DH, LaScala EA. Understanding the ecology of child maltreatment: a review of the literature and directions for future research. Child Maltreatment 2006;11(3):263–80.

53. Coulton CJ, Crampton DS, Irwin M, Spilsbury JC, Korbin JE. How neighborhoods influence child maltreatment: a review of the literature and alternative pathways, Child Abuse and Neglect 2007;31:1117–42.

54. Runyan DK, Hunter WM, Socolar RRS, Amaya-Jackson L, English D, Landsverk J, et al. Children who prosper in unfavorable environments: the relationship to social capital. Pediatrics 1998;101(1):12–8.

For more information:

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
4770 Buford Hwy, NE
MS F-64
Atlanta, GA 30341-3717
Phone: 1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348
Fax: 770-488-4760
E-mail: cdcinfo@cdc.gov
Web: www.cdc.gov/injury