

MATERNAL & CHILD HEALTH *THROUGHOUT LIFE*

By Kelly Mills

A photograph of a woman with her hair in a ponytail, wearing a white patterned shirt, holding a baby. They are outdoors, looking towards the right. The background is a soft-focus green landscape.

Researchers at the School show how biology, behavior, and environment influence the health of mothers and children across their lifespans.



PREGNANCY: THE PRESSURE TO REMAIN AT WORK

California is one of only five states that offer paid pregnancy leave. However, **Sylvia Guendelman**, professor of community health and human development, found that only one in three women with this benefit actually uses it. Those women who did take a leave from employment listed stress, medical reasons, and physical discomfort as the primary motivators behind utilizing the benefit. She also found some predictors of leave-taking were having young children at home, working the night shift, and having work flexibility.

The study helped demonstrate that women use the leave as a way to cope with overwhelming stress and fatigue, rather than as a way of promoting health. Guendelman also noted that women who had a postgraduate education and felt fulfilled at their jobs were less likely to use the leave benefit. However, women who worked for employers that did not offer leave benefits or health insurance were two times more likely to quit their jobs.

This work indicates that women are likely responding to a number of pressures to

remain at their place of employment for the duration of their pregnancy. In fact, only one in four of the women who did use the leave listed the availability of the benefit as the basis for their decision to take the time off. Guendelman plans to follow up this research with an investigation of the impact of leave on maternal and infant birth outcomes: whether pregnancy leave impacts the rate of complications such as Caesarian sections or premature birth, and whether it improves a woman's ability to breastfeed her children.

PREGNANCY

BIRTH OUTCOMES

BIRTH OUTCOMES: THE IMPACT OF STRESS

Traumatic events cause sudden stress, which can be measured by looking at factors such as blood pressure and hormone release. However, these methods aren't practical in determining how a large group collectively responds to ambient trauma. **Ralph Catalano**, professor of public health, has developed a method for studying the impact of stress on a community by examining birth weights and sex-ratios.

Catalano looked at birth rates around specific traumatic events and found that in times of stress, the number of boys born drops, and

the number of premature births rises. This is likely due to the release of corticosteroids in women, which causes an increase in the spontaneous abortions of males and speeds up the gestation process. The result is fewer male children, and more lower birth weight babies. Landmark studies of Swedish and East German birth data revealed and confirmed this pattern.

These findings were borne out in the population in New York following the 9/11 terrorist attacks. More women who were pregnant at the time of the attacks gave birth to premature infants, and they were more likely to spontaneously abort a pregnancy. Catalano states that the birth weights and ratios signal "communal bereavement," where the impact of a trauma is felt throughout a community.



MATERNAL AND CHILD HEALTH...



INFANCY: PREVENTING EXPOSURE TO TOXINS

Every day, many children are exposed to a variety of toxicants, from ambient tobacco smoke to traffic exhaust. **Brenda Eskenazi** has spent more than three decades researching the effects of toxicants on reproductive outcomes and child development. As principal investigator and director of the Center for Health Analysis of Mothers and Children of Salinas (CHAMACOS), she and other researchers have examined the impact of pesticides on the neurodevelopment and health of children living in the agricultural

area, and worked to develop interventions to prevent further exposures. Their work with children, many of whom have parents and relatives who are farmworkers, has raised serious concerns about current pesticide standards and the health risks associated with exposures.

For one study, investigators with CHAMACOS examined the impact of in utero exposure to DDT. They found associations between exposure to DDT and developmental delays in both mental and physical skills in children. The

mothers in the study most likely came in contact with DDT in Mexico, where organochlorine was used in agriculture until it was banned in 2000. However, children who were breastfed scored higher on developmental tests, despite the fact that DDT can be transmitted through breastmilk, indicating that the benefits of breastfeeding counterbalance the negative effects of the pesticide. These findings are vital at a time when many health authorities are considering increasing the use of DDT to fight malaria.

INFANCY

CHILDHOOD

CHILDHOOD: SCHOOL NUTRITION MAKES A DIFFERENCE

Obesity has become a major threat to the health of children in this country. For this reason, the **UC Berkeley Center for Weight and Health** has focused many projects on ways to intervene with kids to reduce obesity and promote healthy behaviors and choices. Improving children's nutritional decisions will not only combat the current crisis of childhood obesity, but optimally will aid children in leading healthier lives throughout adulthood.

The center has turned its focus on schools and nutrition for a number of studies. While parents look to schools to provide a

positive influence on children, they may not realize that, unfortunately, many schools serve lunches high in fat and calories; have soda vending machines every few feet; and offer little in the way of fruits and vegetables. California recently passed legislation to phase out sodas and other high-sugar beverages from school grounds, and the state offers subsidies to schools for serving additional fruits and vegetables at breakfast. The legislature also set standards for foods served and sold

in schools. The Center is evaluating the effectiveness of these measures, as well as other nutritional interventions. The Center also conducts research on nutrition education for communities, and develops and evaluates interventions that target specific racial and ethnic groups. Obesity is on the rise among many immigrant groups, and many ethnic groups are at high risk for diseases related to nutrition, such as Type II diabetes. The center partners with many community organizations to examine the "best practices" in food and lifestyle education.





ADOLESCENCE: INVOLVING YOUTH IN THEIR OWN HEALTH PROMOTION

For years, adults have tried to intervene to protect the health of teens, but these programs typically haven't involved meaningful input from the teens themselves. **Emily Ozer**, assistant professor of community health and human development, recently initiated a five-year research program with teens in San Francisco and Oakland public schools to address two main questions: Does including adolescents as collaborators in school-based prevention programs strengthen the effectiveness of the programs? And what are the effects for students who serve in a collaborative research and leadership role? This research

is currently under way in public high schools in Oakland and San Francisco, and is funded by the William T. Grant Foundation and the Centers for Disease Control.

In order to strengthen school-based prevention programs, Ozer and her team gather student and teacher feedback on the programs, then help to develop and evaluate locally-adapted prevention programs that are consistent with the principles of the existing programs. They also examine the benefits of a collaborative research role for teens by engaging students in a participatory research class. The class teaches

students how to identify, research, and intervene in school and community issues that they themselves consider important. The researchers then follow these students over time and compare them to students who participate in a peer mentoring program that does not directly engage them in research to improve their school or community. The goal of the entire research program, Ozer says, is "to use systematic research to assess the benefits of engaging adolescents in a different kind of way than is typical as collaborators rather than as only recipients of health programs."

ADOLESCENCE

THROUGHOUT LIFE

THROUGHOUT LIFE: THE IMPORTANCE OF PHYSICAL ACTIVITY

For most of us, sitting in a car takes up far more of our day than time spent riding bicycles or walking to and from destinations. **Richard Jackson**, pediatrician and adjunct professor, contends that the design of many of our current neighborhoods and cities has helped engineer the activity out of our lives, and this contributes to a host of chronic diseases related to obesity and a sedentary lifestyle.

Jackson notes that "sprawl" necessitates the use of cars to get to and from work and school, for errands, and for recreational

activities. In addition, most neighborhoods lack safe paths for pedestrians and cyclists, and concern about cars and crime keeps many people from walking. Many neighborhoods do not have parks or other areas for outdoor play and sports.

The consequences of an inactive lifestyle affect both adults and children. Lack of physical activity has contributed directly to a num-

ber of health threats, including heart disease, asthma, diabetes, and depression. As a result of increased obesity in youth, chronic illnesses that were previously seen almost exclusively in adults are now more common among children. Working with city planners, architects, government officials, and community designers, Jackson is raising awareness about the impact of sprawl on health, and developing solutions that will help children and adults lead active lives. 🌀

