

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

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Mission:

The mission of the NICHD is to ensure that every person is born healthy and wanted, that women suffer no harmful effects from reproductive processes, and that all children have the chance to achieve their full potential for healthy and productive lives, free from disease or disability, and to ensure the health, productivity, independence, and well-being of all people through optimal rehabilitation. To reach this goal, the NICHD:

- Conducts and supports laboratory research, clinical trials, and studies with people that explore health processes. NICHD researchers examine growth and development, biologic and reproductive functions, behavior patterns, and population dynamics to protect and maintain the health of all people.
- Examines the impact of disabilities, diseases, and defects on the lives of individuals. With this information, the NICHD hopes to restore, increase, and maximize the capabilities of people affected by disease and injury.
- Sponsors training programs for scientists, doctors, and researchers to ensure that NICHD research can continue. By training these professionals in the latest research methods and technologies, the NICHD will be able to conduct its research and make health research progress until all children, adults, families, and populations enjoy good health.

Selected Achievements and Initiatives:

Multi-vitamins during pregnancy and after birth delay progression of HIV in women: At a time when Tanzania was unable to provide anti-HIV drugs to most of its pregnant women with HIV, researchers were able to use high doses of vitamins B, C, and E, during pregnancy and for five years after birth, to slow significantly the progression of HIV in women without access to drug therapies. These findings are from the first large-scale, placebo-controlled trial of multi-vitamin therapy in pregnant women with HIV for whom standard drug therapies were unavailable. The researchers also found significantly higher levels of infection-fighting cells and lower levels of the HIV virus in women who took the multi-vitamin supplements, compared with those in the study's control group who did not receive the supplements. The findings indicate that the vitamins strengthened the women's immune systems and reduced the rate at which the HIV virus replicated itself. While giving vitamin supplements during or after pregnancy — regardless of HIV status — is routine in developed countries, this is not generally the case in the developing world. The low cost of the vitamin regimen could enable more countries with limited resources to keep women with HIV healthier, longer, while directing antiretroviral drugs to women in advanced stages of the infection.

Changes in key protein levels may cause preeclampsia: Preeclampsia affects about 5 percent of all pregnancies and is a leading cause of maternal and fetal morbidity, disability, and death. A pregnant woman with preeclampsia has dangerously high levels of blood pressure and the condition can progress to seizures and coma (eclampsia). While the high blood pressure and the seizures can be treated, the only cure for preeclampsia is delivery. Surviving infants, often premature, are likely to require intensive

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neonatal care. In an important step forward, researchers found earlier and more pronounced changes in levels of several proteins in blood samples of pregnant women who developed preeclampsia, compared with those experiencing normal pregnancies. The researchers caution that a larger trial would be needed to determine whether the protein abnormalities would enable clinicians to identify women at risk of preeclampsia and begin treatment before the condition occurs. However, their discovery may ultimately enable clinicians to prevent or cure preeclampsia by administering certain proteins to correct an underlying imbalance of factors that cause it.

Imaging study reveals that brain function of poor readers can improve: NICHD-supported researchers demonstrated that after children with developmental dyslexia received structured intervention and overcame this reading disability, their brains began to function like those of good readers. Previous research had shown that a phonetics-based instruction method based on awareness of sounds produced by particular letters can help reading-disabled children become fluent readers. In the latest study, researchers used functional magnetic resonance imaging (fMRI), a brain imaging technology, to compare brain activity in reading-disabled children instructed in this method with brain activity in a control group receiving standard instruction. Those children receiving the specialized instruction outpaced the other children in reading skills and researchers found changes in their brain organization, both at the time of the initial intervention and a year later. These findings show that effective reading instruction not only improves reading ability, but also changes the brain's functioning to better perform reading tasks.

Early television exposure linked to attention problems in children: Researchers have had evidence from cross-sectional studies that television viewing at an early age may be associated with decreased attention span in children. However, they had no data from long-term studies to support this observation until NICHD-funded researchers designed an observational study to test a hypothesis: that television exposure at one and three years of age was associated with attentional problems at age seven. The researchers analyzed data on more than 2,600 children who were part of the National Longitudinal Survey of Youth. Using advanced statistical methods, researchers found that the more television very young children watched, the more likely they were at age seven to have attention problems. The researchers cautioned that since they used a special definition of such problems, their findings did not necessarily indicate that early television viewing is associated with clinically-diagnosed attention-deficit/hyperactivity disorder (ADHD) in the older children. Their findings suggest, however, that parents could reduce the risk of such problems by limiting television viewing of children in the early years, when their brains are still rapidly developing.

Appropriations History

(\$ in thousands)

FY 2001	\$975,766 (+13.7%)
FY 2002	\$1,111,674 (+13.9%)
FY 2003	\$1,205,927 (+8.5%)
FY 2004	\$1,242,361 (+3.0%)
FY 2005	\$1,270,321 (+2.3%)

Extramural Research Project Grants

(Includes SBIR/STTRs)

FY 2001	1,728
FY 2002	1,869
FY 2003	1,917
FY 2004	1,860
FY 2005	1,802

Success Rate — Research Project Grants

FY 2001	27%
FY 2002	28%
FY 2003	27%
FY 2004	17%
FY 2005	15%

Research Training Positions Supported

FY 2001	833
FY 2002	825
FY 2003	840
FY 2004	859
FY 2005	861

Research Centers

FY 2001	60
FY 2002	53
FY 2003	48
FY 2004	45
FY 2005	48