

Health problems may increase as young people infected with HIV at birth get older

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A new study has found that U.S. youth infected with HIV around the time of their birth are at higher risk throughout their adolescence and young adulthood for experiencing serious health problems, poor control of the HIV virus or death. The report, led by researchers at Massachusetts General Hospital (MGH), has been published online in *JAMA Pediatrics*.

"Adolescents infected with HIV - either at birth or later in life - experience poorer [health](#) outcomes compared to adults with HIV in nearly every respect," says Anne Neilan, MD, MPH, of the MGH Division of Infectious Diseases and the Medical Practice Evaluation Center, who led the study. "The good news is that among those with good HIV control, serious health problems are rare."

Due to the use of effective antiretroviral therapy in recent decades, fewer than 200 infants per year are born with HIV in the U.S. There now are roughly 10,000 perinatally HIV-infected youth in the U.S., the majority of whom are over age 18. Study co-author George Seage III, DSc, of the Harvard T. H. Chan School of Public Health, says, "This is the first generation of perinatally HIV-infected youth living to adulthood, and they are some of the most inspirational, resilient individuals you have ever met."

Neilan explains, "One of the first reports of AIDS in children was in the early 1980s, by Dr. James Oleske of New Jersey Medical School at Rutgers, who is a co-author of our study. At that point, getting to the age

of 4 was a victory, and living until the third decade of life was unimaginable."

By combining data from two large, long-term U.S. studies - the [Pediatric HIV/AIDS Cohort Study \(PHACS\)](#) and the [International Maternal Pediatric Adolescent AIDS Clinical Trials \(IMPAACT\) Network](#) - the researchers were able to study the health of more than 1,400 perinatally HIV-infected children, adolescents and young adults ages 7 to 30 years between 2007 and 2015. They found that youth ages 13 to 30 were most likely to have poor HIV control - meaning higher levels of HIV virus and lower levels of the CD4 immune cells which are targeted by HIV - AIDS-related illnesses, and death compared to younger participants.

Among 18 to 30 year-olds, researchers found poor control of the HIV virus 35 percent of the time, increasing the risk that these youth would become resistant to certain HIV medications and could transmit HIV to others. While findings are consistent with other U.S. and European reports, says Neilan, "Despite being engaged in health care, the number of deaths among youth born with HIV in the U.S. is 6 to 12 times higher than for youth without HIV of the same age, sex and race."

Along with HIV-related [health problems](#), the most commonly reported health conditions concerned mental health and brain and nervous system development. Many women in the study also had sexually transmitted infections, a finding associated with lower CD4 immune cell counts. "This may suggest a biological mechanism for increased STDs or may reflect that patients who have difficulty with their medications are also engaging in more frequent risky sexual behaviors," says Andrea Ciaranello, MD, MPH, of the MGH Division of Infectious Disease, senior author of the study.

Neilan says, "We need to act to strengthen these services for youth, taking into account their developmentally specific needs. That might

include youth-friendly services that consider the substantial stigma many of these patients face, novel approaches to antiretroviral therapy delivery, and improving support for youth transitioning from pediatric to adult [health care providers](#)."

Ciaranello notes, "Understanding how to best care for these youth will not only improve care for youth born with HIV in the U.S., but will also have implications internationally. For example, HIV is a leading cause of death among African adolescents."

Seage adds, "A major goal of this study was to make the epidemiologic data available - in extensive online appendices - to other researchers as a launching point for further research to improve care for these [youth](#). Long-term follow-up in National Institutes of Health-supported studies like PHACS and IMPAACT P1074 is critical both for determining long-term safety data for antiretroviral drugs, as well as for understanding the health trajectories of these patients."

More information: *JAMA Pediatrics*, [DOI: 10.1001/jamapediatrics.2017.0141](#)

Provided by Massachusetts General Hospital

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