

## LETTER TO THE EDITOR

# Paediatric European Network for Treatment of AIDS Treatment Guideline 2016 update: antiretroviral therapy recommended for all children living with HIV

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The PENTA Steering committee now recommends antiretroviral therapy (ART) for all children and adolescents living with HIV. Priority should be given to infants and children under 3 years of age, to adolescents, and to children with symptoms and/or low age-specific CD4 counts.

The 2015 PENTA guideline recommended considering ART for all children diagnosed before their third birthday, with CD4 count guided thresholds for older children [1]. Following the results of the START - Strategic Timing of AntiRetroviral Treatment study, World Health Organization (WHO), US and European guidelines now recommend treatment for all HIV-infected adults and adolescents irrespective of CD4 count. Such recommendations take into account the benefits of universal treatment in reducing onward transmission, including mother-to-child transmission. WHO paediatric guidelines recommend treatment for all children, with prioritization of children under 5 years old and those with symptoms or low CD4 counts.

The Children with HIV Early Antiretroviral Therapy (CHER) study provided strong randomized controlled trial (RCT) evidence for early treatment of all infants. RCT evidence for the benefit of ART for children aged 1–10 years with good CD4 counts is lacking. Previous PENTA guidelines extended the recommendation for all children under 3 years because of the potential for rapid disease progression at higher CD4 counts [1]. Universal

treatment for all adolescents (WHO definition 10–19 years) can now be recommended based on extrapolation of adult START data and in prevention of onward transmission to partners as this population becomes sexually active. There is no equivalent to START data on short- to medium-term benefits of early ART in younger children, where there is no additional benefit of prevention of onward transmission.

We recognize that, in the absence of RCT data, there are potential concerns about the earlier start of lifelong ART in children, with insufficient data on cumulative toxicity and concerns regarding adherence because of poor palatability and limited combination paediatric formulations. However, there is increasing evidence of the longer term benefits of early ART, including reduced mortality in low- and middle-income countries, improved neurodevelopmental, growth and pubertal outcomes, improved immune reconstitution and reduced inflammation and latent reservoir cohort data also demonstrate a reduced risk of virological failure when ART is started in childhood compared with adolescence [2–5].

On this basis, we now also conclude that all children should be started on ART. For children with good CD4 counts, time can be taken to address adherence and psychosocial issues, but discussion on starting treatment should be initiated soon after the diagnosis, and children not on ART closely monitored.

While concern about the additional cost of providing ART to all children in low- and middle-income settings may require individual countries to analyse the financial impact when changing national guidelines, in European cohorts more than 90% of diagnosed children are already on ART.

The potential benefits of ART outweigh the potential problems for children of all ages living with HIV. The time is now right to recommend ART for all children with HIV infection.

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## Appendix 1: PENTA guidelines writing group

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