

# BIOMARKERS OF HEART HEALTH IN CHILDREN AND TEENAGERS LIVING WITH PERINATAL HIV (PHIV)

In the early 1990s, many children living with PHIV had serious heart problems. We wanted to see if there were any signs that HIV and ARVs had damaged the hearts of children and teenagers in the AMP study.

## WHO PARTICIPATED

402 children and teenagers from AMP participated.



- 246 youth were living with PHIV
- 156 youth were born without HIV to mothers living with HIV

## WHAT WE DID



**Did you know?** To test for these 10 biomarkers, we used blood samples from participants.

We tested the youth's blood for 10 **chemicals** (called **biomarkers**). Three of these tell us about damage to heart muscle, swelling of the heart, and heart stress. The other seven tell us how the body's immune system is working.

We also looked at a moving picture of their hearts.

## WHAT WE FOUND



Youth with PHIV who had higher viral loads (and lower CD4 counts)

**also had**



more inflammation (more immune system biomarkers)

Youth with HIV had higher levels of the biomarkers for heart muscle damage. They also had higher levels of some biomarkers measuring immune system activation (inflammation).

These youth tended to have worse heart function and seemed to have smaller hearts on average.

Youth with HIV who had higher viral loads and lower CD4 counts at their last checkup had higher average levels of some of the immune system biomarkers.

## WHAT WE LEARNED



Youth living with HIV may have higher levels of some biomarkers of heart health and immune system function. None of the children in either group had heart disease, but these children may have changes in heart size and how the heart works.

Taking ARVs to control HIV and regular heart check-ups are important for youth living with HIV.