

Table S1. (1) Quality assessment of studies by MEW.

| Reference | Question 1 | Question 2 | | Rating |
|-----------|------------|------------|-----------------------|--------------|
| | | Regimen | Duration of treatment | |
| [26]* | 2 | 1 | ✓ | Intermediate |
| [25] | 2 | 1 | ✓ | Intermediate |
| [24] | 2 | 1 | ✓ | Intermediate |
| [31] | 1 | 1 | ✓ | Intermediate |
| [30] | 1 | 1 | ✓ | Intermediate |
| [29]* | 2 | 1 | ✓ | Intermediate |
| [28]* | 2 | 2 | ✓ | High |

Table S1. (2) Quality assessment of studies by AJVR.

| Reference | Question 1 | Question 2 | | Rating |
|-----------|------------|------------|-----------------------|--------------|
| | | Regimen | Duration of treatment | |
| [26]* | 2 | 1 | ✓ | Intermediate |
| [25] | 1 | 1 | ✓ | Intermediate |
| [24] | 1 | 1 | ✓ | Intermediate |
| [31] | 1 | 1 | ✓ | Intermediate |
| [30] | 2 | 1 | ✓ | Intermediate |
| [29]* | 2 | 1 | ✓ | Intermediate |
| [28]* | 2 | 2 | ✓ | High |

*=Longitudinal studies. Questions 1-3 were classified as follows: 1) Did the study report on potential confounders and were these controlled for upon statistical analysis, including the controlling of multiple comparisons? 2) Did the study report on the background information of the mother and child which may have affected inflammatory levels and neurocognitive performance/development in the pediatric population (*i.e.*, maternal substance abuse, prematurity, ART duration and regimens and low birth weight). Each question was rated for 0 = no, 1 = partly and 2 = yes. Studies that addressed all the above questions and had a total rating of 4 were classified as high quality. Studies with a rating between 1 and 3 were considered as intermediate-quality and less than 1 as low quality.

Table S2. Studies reporting a relationship of immune markers and HIV-associated neurocognitive performance/development in pediatric populations when stratified according to viral suppression.

| Reference | Virally suppressed | Non-virally suppressed | Association with neurocognitive impairment/development | |
|-----------|--------------------|------------------------|--|----|
| | | | Yes | No |
| [26]* | | ✓ | ✓ | |
| [25] | | ✓ | ✓ | |
| [24] | ✓ | | ✓ | |
| [31] | | ✓ | | ✓ |
| [30] | | ✓ | ✓ | |
| [29]* | ✓ | | ✓ | |

*longitudinal studies.

Table S3. Studies reporting a relationship with HIV-associated neurocognitive performance when stratified according to nadir/current CD4 count.

| Reference | <200 cells/ μ L | | >200 cells/ μ L | | Association with neurocognitive impairment/development | |
|-----------|---------------------|---------|---------------------|---------|--|----|
| | Nadir | Current | Nadir | Current | Yes | No |
| [24] | | | | ✓ | ✓ | |
| [31] | | | ✓ | | | ✓ |
| [30] | | | ✓ | ✓ | ✓ | |