

**Supplementary Materials**

**Tables**

Table S1. Distribution of NIH Toolbox-CB fully corrected T-scores

|  | Stroke<br>CVA, N=26 |             | Sickle Cell Disease<br>SCD, N=64 |             |
|--|---------------------|-------------|----------------------------------|-------------|
|  | n                   | M(SD)       | n                                | M(SD)       |
| <b>NIH Toolbox-CB</b>                    |                     |             |                                  |             |
| Flanker inhibitory control and attention | 26                  | 40.7 (7.4)  | 50                               | 40.6 (10.2) |
| Pattern comparison processing speed      | 26                  | 37.6 (16.0) | 51                               | 45.3 (15.3) |
| List sorting working memory              | 24                  | 47.7 (8.8)  | 52                               | 45.0 (9.4)  |
| Picture sequence memory                  | 26                  | 45.7 (11.4) | 51                               | 52.1 (8.6)  |
| Oral reading recognition                 | 25                  | 55.4 (9.8)  | 52                               | 52.2 (9.8)  |
| Picture vocabulary                       | 26                  | 53.1 (10.2) | 52                               | 53.5 (9.9)  |
| Dimensional change card sort             | 25                  | 45.9 (11.3) | 50                               | 41.8 (13.8) |
| Crystallized cognition composite score   | 25                  | 55.0 (9.8)  | 48                               | 52.8 (10.6) |
| Fluid cognition composite score          | 24                  | 40.9 (11.7) | 46                               | 43.0 (12.3) |
| Total cognition composite score          | 24                  | 47.6 (11.0) | 46                               | 48.0 (10.0) |

Note. Fully corrected T-scores are adjusted for age, education, sex, and race/ethnicity.

Table S2. Percent agreement of impairment classification by subtest

| NIH Toolbox | Legacy Measure | Sample | % Agreement |
|-------------|----------------|--------|-------------|
| FL          | CWI 3          | CVA    | 67%         |
|             |                | SCD    | 59%         |
|             | CWI 4          | CVA    | 73%         |
|             |                | SCD    | 66%         |
| PCPS        | Coding         | CVA    | 69%         |
|             |                | SCD    | 60%         |
| PSM         | Figure Recall  | CVA    | 81%         |
|             |                | SCD    | 81%         |
|             | Story Recall   | CVA    | 77%         |
|             |                | SCD    | 74%         |
| ORR         | List Recall    | CVA    | 69%         |
|             |                | SCD    | 74%         |
|             | WRAT4          | CVA    | -           |
|             |                | SCD    | 93%         |
| DCCS        | Trails 4       | CVA    | 86%         |
|             |                | SCD    | 69%         |
|             | Fluency 3      | CVA    | 75%         |
|             |                | SCD    | 66%         |
|             | CWI 4          | CVA    | 72%         |
|             |                | SCD    | 64%         |