



## Background

Neurofibromatosis type 1 (NF1) is an autosomal dominant disorder that presents with medical symptoms and increased risks of difficulties in various areas of cognitive functioning. Previous research has shown that children with NF1 often have difficulty with attention, with a large portion of them meeting criteria for Attention-Deficit/Hyperactivity Disorder (ADHD). The purpose of this study was to assess the correspondence between two commonly used computerized measures to evaluate attention. Specifically, we are interested in how well these measures capture attention problems for children with NF1.

## Participants

	NF Preschool (n = 22)	NF Attention (n = 18)
Sex	14 boys, 8 girls	12 boys, 6 girls
General Cognitive Ability	Mean 97.41 (SD=11.29)	Mean 101.06 (SD=10.96)
Age	Mean 4.95 (SD = .66)	Mean 5.45 (SD = .76)

No significant differences were found in levels of cognitive functioning or sex distribution across the samples. The K-CPT sample was significantly younger than the K-CPT-II sample.

## Procedure

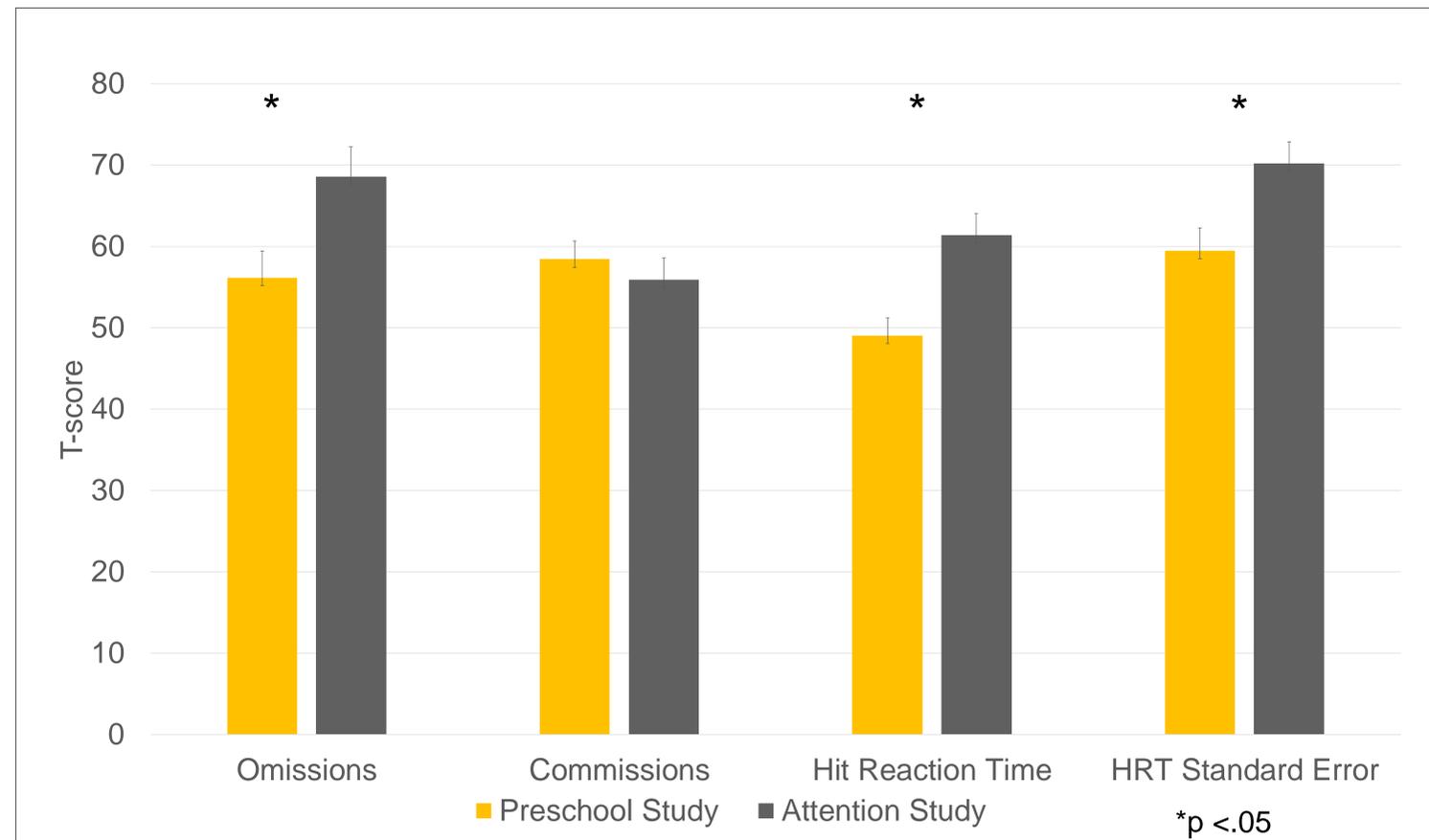
This project involves two different samples of preschoolers with NF1. The participants of the NF Preschool study were administered the original version of the Conner's Kiddie Continuous Performance Test (K-CPT). A later study (NF Attention) involved the K-CPT II version of the test. These measures were administered as part of a larger assessment battery.

## Measures

Both K-CPT (Conners, 2006) and the K-CPT-II (Conners, 2015) provide the following dependent variables:

<b>Omissions</b>	<ul style="list-style-type: none"> <li>Number of missed targets</li> <li>Slower responses may result in high omission error rates</li> </ul>
<b>Commissions</b>	<ul style="list-style-type: none"> <li>Number of nontarget ("X") responses</li> <li>Affected by response speed</li> </ul>
<b>Hit Reaction Time</b>	<ul style="list-style-type: none"> <li>Mean response time for all responses over all time blocks</li> <li>Slower response times results in high T-scores</li> </ul>
<b>Hit Reaction Time Standard Error</b>	<ul style="list-style-type: none"> <li>Measures consistency of response times</li> <li>High T-score indicates responses related to inattentiveness</li> </ul>

## Results



We found that the children in the KCPT group demonstrated better performance than the KCPT-2 group across the dependent variables noted in the figure above. There was no significant difference for Commissions. The standard scores for the Omissions ( $p=.015$ ), Hit Reaction Time (HRT) ( $p=.003$ ), and Hit Reaction Time Standard Error (HRT SE) ( $p=.006$ ) subscales were all significantly higher in the KCPT-2 group, reflecting greater difficulties.

## Discussion

Our analysis of performance of children with NF1 on the K-CPT and K-CPT-II indicated disparate outcomes, suggesting that the measures may differentially reflect attention problems in children with NF1. More specifically, the newer measure yields more difficulties, suggestive of greater sensitivity to attention difficulties. Examination of the test manuals for these measures suggest that perhaps differences between the normative group samples of the two tests (KCPT and KCPT-2) are significant enough to affect how well children with NF1 perform on each test in comparison to the normative data. Based on these results, clinicians and researchers may need to be cautious in their interpretations of attention symptomatology when using these measures with children with NF1, as different versions of the measure may yield different conclusions about the presence of attention difficulties in children with NF1.