

EXHIBIT 1

EXHIBIT A-2

**BASELINE NEUROPSYCHOLOGICAL TEST BATTERY AND SPECIFIC IMPAIRMENT
CRITERIA FOR RETIRED NFL FOOTBALL PLAYERS**

Section 1. Test Battery

Estimating Premorbid Intellectual Ability	Learning and Memory (6 scores)
ACS Test of Premorbid Functioning (TOPF), Reading Test Standard Score	WMS-IV Logical Memory I
Complex Attention/Processing Speed (6 scores)	WMS-IV Logical Memory II
WAIS-IV Digit Span	WMS-IV Verbal Paired Associates I
WAIS-IV Arithmetic	WMS-IV Verbal Paired Associates II
WAIS-IV Letter Number Sequencing	WMS-IV Visual Reproduction I
WAIS-IV Coding	WMS-IV Visual Reproduction II
WAIS-IV Symbol Search	Language (3 scores)
WAIS-IV Cancellation	Boston Naming Test
Executive Functioning (4 scores)	Category Fluency (Animal Naming)
Verbal Fluency (FAS)	BDAE Complex Ideational Material
Trails B	Spatial-Perceptual (3 scores)
Booklet Category Test	WAIS-IV Block Design
WAIS-IV Similarities	WAIS-IV Visual Puzzles
Effort/Performance Validity (8 scores)	WAIS-IV Matrix Reasoning
<i>ACS Effort Scores</i>	Mental Health
ACS-WAIS-IV Reliable Digit Span	MMPI-2RF
ACS-WMS-IV Logical Memory Recognition	Mini International Neuropsychiatric Interview
ACS-WMS-IV Verbal Paired Associates Recognition	
ACS-WMS-IV Visual Reproduction Recognition	
ACS-Word Choice	
<i>Additional Effort Tests</i>	
Test of Memory Malingering (TOMM)	
Medical Symptom Validity Test (MSVT)	

Section 2: Evaluate Performance Validity

Freestanding, embedded and regression based performance validity metrics will be administered to each Retired NFL Football Player during baseline and, if relevant, subsequent neuropsychological examinations. There will be at least seven performance validity metrics utilized during each assessment. The specific performance validity metrics utilized will not be released to the public in order to maintain the highest standards of assessment validity. The performance validity metrics employed will be rotated at intervals determined by the Appeals Advisory Panel in consultation with Co-Lead Class Counsel and Counsel for the NFL Parties.

Each neuropsychological examiner must complete a checklist of validity criteria as set forth in *Slick et al.* 1999, and revised in 2013 (see below) for every Retired NFL Football Player examined in order to determine whether the Retired NFL Football Player's test data is a valid reflection of his optimal level of neurocognitive functioning.

1. Suboptimal scores on performance validity embedded indicators or tests. The cutoffs for each test should be established based on empirical findings.
2. A pattern of neuropsychological test performance that is markedly discrepant from currently accepted models of normal and abnormal central nervous system (CNS) function. The discrepancy must be consistent with an attempt to exaggerate or fabricate neuropsychological dysfunction (e.g., a patient performs in the severely impaired range on verbal attention measures but in the average range on memory testing; a patient misses items on recognition testing that were consistently provided on previous free recall trials, or misses many easy items when significantly harder items from the same test are passed).
3. Discrepancy between test data and observed behavior. Performance on two or more neuropsychological tests within a domain are discrepant with observed level of cognitive function in a way that suggests exaggeration or fabrication of dysfunction (e.g., a well-educated patient who presents with no significant visual-perceptual deficits or language disturbance in conversational speech performs in the severely impaired range on verbal fluency and confrontation naming tests).
4. Discrepancy between test data and reliable collateral reports. Performance on two or more neuropsychological tests within a domain are discrepant with day-to-day level of cognitive function described by at least one reliable collateral informant in a way that suggests exaggeration or fabrication of dysfunction (e.g., a patient handles all family finances but is unable to perform simple math problems in testing).
5. Discrepancy between test data and documented background history. Improbably poor performance on two or more standardized tests of cognitive function within a specific domain (e.g., memory) that is inconsistent with documented neurological or psychiatric history.

6. Self-reported history is discrepant with documented history. Reported history is markedly discrepant with documented medical or psychosocial history and suggests attempts to exaggerate deficits.
7. Self-reported symptoms are discrepant with known patterns of brain functioning. Reported or endorsed symptoms are improbable in number, pattern, or severity; or markedly inconsistent with expectations for the type or severity of documented medical problems.
8. Self-reported symptoms are discrepant with behavioral observations. Reported symptoms are markedly inconsistent with observed behavior (e.g., a patient complains of severe episodic memory deficits yet has little difficulty remembering names, events, or appointments; a patient complains of severe cognitive deficits yet has little difficulty driving independently and arrives on time for an appointment in an unfamiliar area; a patient complains of severely slowed mentation and concentration problems yet easily follows complex conversation).
9. Self-reported symptoms are discrepant with information obtained from collateral informants. Reported symptoms, history, or observed behavior is inconsistent with information obtained from other informants judged to be adequately reliable. The discrepancy must be consistent with an attempt to exaggerate deficits (e.g., a patient reports severe memory impairment and/or behaves as if severely memory-impaired, but his spouse reports that the patient has minimal memory dysfunction at home).

Notwithstanding a practitioner's determination of sufficient effort in accordance with the foregoing factors, a Retired NFL Football Player's failure on two or more effort tests may result in the Retired NFL Football Player's test results being subjected to independent review, or result in a need for supplemental testing of the Retired NFL Football Player.

Note: Additional information relating to the evaluation of effort and performance validity will be provided in a clinician's interpretation guide.

Section 3. Estimate Reading Level

Test	Ability
Test of Premorbid Functioning (TOPF) Reading Test Standard Score	Reading

The Test of Premorbid Functioning (TOPF) Reading Standard Score should ordinarily be used to determine the Retired Player’s reading level. However, the TOPF Reading Standard Score should not be used if the examiner has a strong indication from the Retired Player’s history, behavioral observations, and other language test results suggesting that an acquired language disorder or severe learning disability is present, or if English was learned as a second language in adulthood. If a clinician documents a Retired Player’s reading score to be fundamentally inaccurate and not representative of his longstanding reading ability, that Retired Player could be classified as having “Average Reading Level” for purposes of using the impairment criteria set out in this document.

Note: Additional information relating to the use of the TOPF Reading Standard Score to determine a Retired Player’s reading level will be provided in a clinician’s interpretation guide.

Note: It is necessary to estimate reading level in order to use the criteria for impairment set out in this document. Estimated reading level will be assessed and classified as:

- Below Average Reading Level (below 90);
- Average Reading Level (between 90 and 109);
- Above Average Reading Level (above 110).

Section 4. Neuropsychological Test Score Criteria by Domain of Cognitive Functioning

There are 5 domains of cognitive functioning. In each domain, there are several tests that contribute 3, 4, or 6 age and education-adjusted, or age-only-adjusted test scores (for three tests where education corrections are not needed: Booklet Category Test, Boston Naming Test, Category Fluency) for consideration. These domains and scores are set out below.

The basic principle for defining impairment on testing is that there must be a pattern of performance that is approximately 1.5 standard deviations (for Level 1 Impairment), 1.7-1.8 standard deviations (for Level 1.5 Impairment) or 2 standard deviations (for Level 2 Impairment) below the person's expected level of premorbid functioning. Therefore, it is necessary to have more than one low test score in each domain. A user manual will be provided to neuropsychologists setting out the cutoff scores, criteria for identifying impairment in each cognitive domain, and statistical and normative data to support the impairment criteria.

Domain/Test	Ability
Complex Attention/Speed of Processing (6 Scores)	
Digit Span	Attention & Working Memory
Arithmetic	Mental Arithmetic
Letter Number Sequencing	Attention & Working Memory
Coding	Visual-Processing & Clerical Speed
Symbol Search	Visual-Scanning & Processing Speed
Cancellation	Visual-Scanning Speed
Executive Functioning (4 scores)	
Similarities	Verbal Reasoning
Verbal Fluency (FAS)	Phonemic Verbal Fluency
Trails B	Complex Sequencing
Booklet Category Test	Conceptual Reasoning
Learning and Memory (6 scores)	
Logical Memory I	Immediate Memory for Stories
Logical Memory II	Delayed Memory for Stories
Verbal Paired Associates I	Learning Word Pairs
Verbal Paired Associates II	Delayed Memory for Word Pairs
Visual Reproduction I	Immediate Memory for Designs
Visual Reproduction II	Delayed Memory for Designs
Language	
Boston Naming Test	Confrontation Naming
BDAE Complex Ideational Material	Language Comprehension
Category Fluency	Category (Semantic) Fluency
Visual-Perceptual	
Block Design	Spatial Skills & Problem Solving
Visual Puzzles	Visual Perceptual Reasoning
Matrix Reasoning	Visual Perceptual Reasoning

Impairment Criteria: *Below Average Reading Ability* (A1 – E1)

A1. Complex Attention (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 37
2. Level 1.5 Impairment: 4 or more scores below a T score of 37; or meet for Level 1 and 2 scores below a T score of 32
3. Level 2 Impairment: 3 or more scores below a T score of 32
B1. Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 37
2. Level 1.5 Impairment: 3 or more scores below a T score of 37; or meet for Level 1 and 1 score below a T score of 32
3. Level 2 Impairment: 2 or more scores below a T score of 32
C1. Learning and Memory (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 37
2. Level 1.5 Impairment: 4 or more scores below a T score of 37; or meet for Level 1 and 2 scores below a T score of 32
3. Level 2 Impairment: 3 or more scores below a T score of 32
D1. Language (3 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 39
2. Level 1.5 Impairment: meet for Level 1 and 2 scores below a T score of 37
3. Level 2 Impairment: 3 or more scores below a T score of 37
E1. Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 39
2. Level 1.5 Impairment: meet for Level 1 and 2 scores below a T score of 37
3. Level 2 Impairment: 3 or more scores below a T score of 37

Impairment Criteria: *Average Reading Ability* (A2 – E2)

A2. Complex Attention (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: 3 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
B2. Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: 3 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
C2. Learning and Memory (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 38
2. Level 1.5 Impairment: 4 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
D2. Language (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 38
3. Level 2 Impairment: 2 or more scores below a T score of 38
E2. Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 38
3. Level 2 Impairment: 2 or more scores below a T score of 38

Impairment Criteria: *Above Average Reading Ability* (A3 – E3)

A3. Complex Attention (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40
3. Level 2 Impairment: 3 or more scores below a T score of 38
B3. Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
C3. Learning and Memory (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40
3. Level 2 Impairment: 3 or more scores below a T score of 38
D3. Language (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 43
2. Level 1.5 Impairment: 3 scores below at T score of 43; or meet for Level 1 and 1 score below a T score of 40
3. Level 2 Impairment: 2 or more scores below a T score of 40
E3. Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 43
2. Level 1.5 Impairment: 3 scores below at T score of 43; or meet for Level 1 and 1 score below a T score of 40
3. Level 2 Impairment: 2 or more scores below a T score of 40