Supplemental Methods

After deriving logistic equations, receiver operating characteristic curves were constructed to determine the accuracy of the models. The ROC curve displays the sensitivity (probability that a test will produce a true positive result) and specificity (probability that a test will produce a true negative result) as its discrimination threshold is varied (1). The area under the curve (AUC) with 95% confidence intervals was used as indicator of the probability that a randomly chosen respondent would be correctly distinguished based on their screened neurocognitive variables (2). AUC values can range from 0.5 (indicates that an instrument can discriminate between groups no better than chance) to 1.0 (represents perfect discriminatory performance).

Supplemental Results

Discriminative Ability of Neurocognition in Detecting Functional Status

Receiver operator characteristic curves were generated to determine the ability of processing speed to discriminate between good and poor functioning individuals (Figure S1). Social and role scores were transformed into dichotomous variables in which poor functioning was labeled 1 and good functioning was labeled 0 (cut-point of ≤ 6 for poor and > 6 for good functioning). For social functioning, the AUC was 0.71 (95% CI, 0.64-0.78, p<0.001), indicating that for any randomly drawn pair of participants from these two functioning groups, the probability that the participant with poor social functioning would have lower processing speed scores was 0.71. At a cutoff of .50, 44.8% of cases with poor role functioning would have been correctly identified (95% CI, 0.38-0.51), whereas 13.6% of cases with good role functioning would have been misclassified (95% CI, 0.81-0.91). For role functioning, the AUC was 0.71 (95% CI, 0.64-0.78, p<0.001), indicating an acceptable discriminative ability. At a cutoff of .50,

45.6% of cases with poor role functioning would have been correctly identified (95% CI, 0.38-0.52), whereas 20.0% of cases with good role functioning would have been misclassified (95% CI, 0.74-0.85).

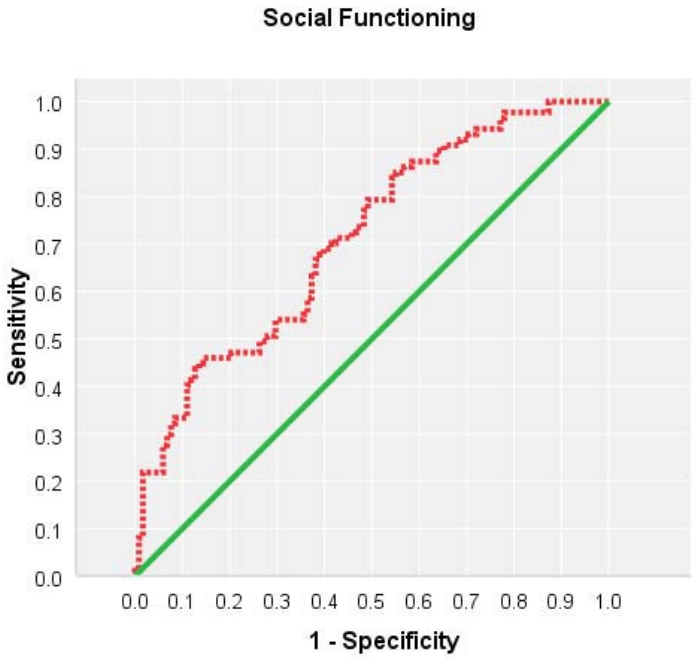
Combining Neurocognition and Functioning to Detect Individuals at Clinical High-Risk for Developing Psychosis

Receiver operator characteristic curves were constructed to determine the ability of the combination of processing speed scores, and social and role functional status (cut-point of ≤ 6 for poor and > 6 for good functioning) to detect participant group membership (Figure S2). As shown in Figure S3, the AUC for the combination of processing speed, and social and role functional status was 0.94 (95% CI, 0.91-0.97, $p<0.001$), indicating that for any randomly drawn pair of participants from these two participants groups, the probability that an individual at clinical high-risk would have lower processing speed scores, poor social functioning, and poor role functioning was 0.94. At a cutoff of .50, 89.0% of individuals in the clinical high-risk positive group would have been correctly identified (sensitivity, 95% CI, 0.85-0.92), whereas 10.3% of individuals in the clinical high-risk positive group would have been misclassified (1-specificity, 95% CI, 0.83-0.94). Thus, sensitivity and specificity was good and group separation was robust.

References

1. Altman DG, Bland JM: Diagnostic tests, 1: sensitivity and specificity. BMJ 1994; 308:1552
2. Hanley JA, McNeil BJ: The meaning and use of the area under a receiver operating characteristic (ROC) curve. Radiology 1982; 143:29–36

FIGURE S1. Receiver operating characteristic curves of the ability of processing speed scores to discriminative between good and poor social and role functional status. The ROC curve plots the true positive rate (sensitivity) against the false-positive rate (1 – specificity) for different cut-points. The more closely the curve follows the top and left-hand border of the ROC space, the more accurate the test.



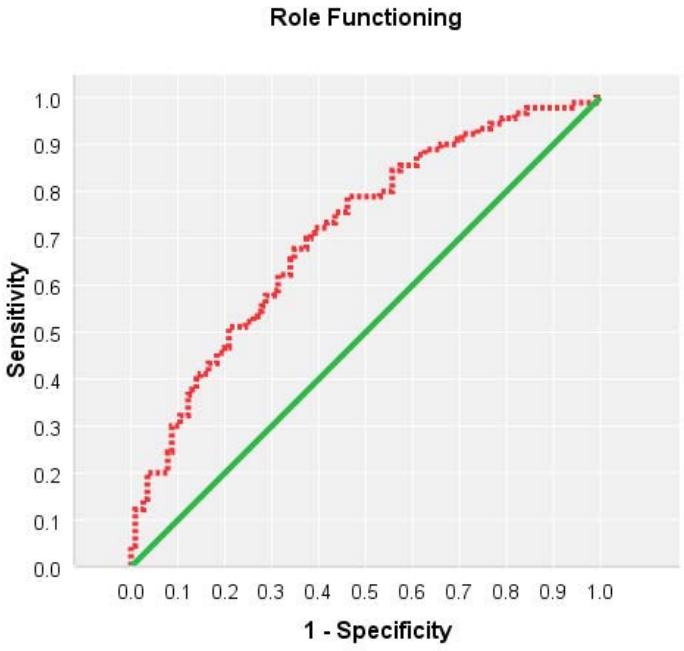


Figure S2. Receiver operating characteristic curves of the ability of processing speed scores, social functional status, and role functional status to discriminative between clinical high-risk and healthy comparison subjects.