Do you have a translational team that includes basic and clinical expertise?

Do you have a paradigm that measures a construct identified as important in CNTRICS?

NO / **YES** →

Does the paradigm have good evidence of construct validity, particularly in regards to neural systems?

NO → More Basic Research Needed

YES

Has the paradigm been studied in schizophrenia?

→ Do you know anything about the psychometric properties of the paradigm?

→ Do you know if the paradigm is sensitive to pharmacological or behavioral manipulation?

NO / **YES**

NO → Determine whether the paradigm is sensitive to cognitive dysfunction in schizophrenia

YES → What did the results say?

NO / **YES**

NO → Conduct initial studies to assess test-retest, practice effects, etc.

YES → Evaluate existing data and determine if improvements are needed -- if yes, implement modifications and reassess psychometric characteristics

NO / **YES**

NO → Determine whether the paradigm is sensitive to pharmacological or behavioral manipulations, potentially in healthy populations

YES → What did the results say?

Other avenues:
    Animal Homologues
    Imaging Paradigms (if not already)

→ Ensure that modifications maintain construct validity

Perception – Gain Control

- **Construct Definition:** The processes whereby neurons adapt their response levels to take into account their immediate context, in order to make best use of a limited dynamic signaling-range.

TASKS

- **Contrast-Contrast (CCE) Task**
- **Contrast Sensitivity**
- **Mismatch Negativity**
- **Prepulse Inhibition of Startle**
- **Steady state visual evoked potential to magnocellular versus parvocellular biased stimuli**

Perception – Gain control

Task	Construct Validity	Clarity of link to neural circuit	Clarity of link to cognitive mechanisms	Availability of animal model	Link to neural systems through neuropsychopharmacology	Amenable for use in human neuroimaging studies	Evidence of Impairment in schizophrenia	Linked to functional STATUS in schizophrenia	Good Psychometric Characteristics
Contrast-Contrast (CCE) Task	5	5	5	3	5	5	5	n/a	5
Contrast Sensitivity	-	-	-	-	-	-	-	-	-
Mismatch Negativity	3	5	5	5	5	5	5	3	4
Prepulse Inhibition of Startle	4	5	5	5	5	5	5	3	5
Steady state visual evoked potential to magnocellular versus parvocellular biased stimuli	5	5	5	3	5	5	5	3	4

Perception – Gain Control

Tasks with already mature, large data base, already in multi-site studies

- Mismatch Negativity
- Prepulse Inhibition of Startle

Tasks for encouraged development

- Contrast-Contrast (CCE) Task
- Steady state visual evoked potential to magno-vs parvocellular biased stimuli

Perception - Integration

- **Construct – Definition:** The processes linking the output of neurons – that individually code local (typically, small) attributes of a scene - into global (typically, larger) complex structure, more suitable for the guidance of behavior.

1. Task Contour Integration Task
2. Coherent Motion Detection
-**Modified to optimize assessment of integrative processes**

3. Babble Task – interesting, but unclear construct validity