1. Date of test:
2. Neurological Level of Injury from the ISNCSCI (Right): (Left):
3. Type of stimulation (Choose all that apply):  Heat  Cold  Vibration
4. Outcome (Choose all that apply)**:**

Cold perceptual threshold

Cold pain threshold

Vibration perceptual threshold

Heat perceptual threshold

Heat pain threshold

1. Specify sequence of testing (i.e., which type of stimulation applied first, second, third):
2. Testing methodology:(Choose all that apply)

Heat:  Method of limits  Method of levels  Other methodology used, specify

Cold:Method of limits Method of levels Other methodology used, specify

Vibration:  Method of limits  Method of levels  Other methodology used, specify

1. Equipment used for testing: Type of Stimulator

Thermal:

Vibration:

1. Exam room temperature at the time of testing: TBD  ○F  ○C

## Cold Perceptual Threshold and Cold Pain Threshold

1. Participant’s/subject’s baseline skin temperature: TBD  ○F  ○C
2. Rate of decrease of stimulation (e.g., o Celsius/second): TBD  N/A
3. Rate of increase of stimulation (e.g., o Celsius/second):TBD  N/A
4. Duration between stimuli/inter-trial intervals: TBD  seconds  minutes
5. Specify maximum safe stimulation used

(If no response, then "NR" will be recorded): TBD  ○F  ○C

Table 1 Quantitative Sensory Testing

Left Right

| Dermatome | Cold Perceptual Threshold  Trial 1 | Cold Perceptual Threshold  Trial 2 | Cold Perceptual Threshold  Trial 3 | Average | Cold Pain Threshold  Trial 1 | Cold Pain Threshold  Trial 2 | Cold Pain Threshold  Trial 3 | Average | Comments:  e.g., modality mismatch/paradox |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |

Add additional rows as needed

## Heat Perceptual Threshold and Heat Pain Threshold

1. Participant’s/subject’s baseline skin temperature: TBD  ○F  ○C
2. Rate of increase of stimulation (e.g., o Celsius/second): TBD  N/A
3. Rate of decrease of stimulation (e.g., o Celsius/second): TBD  N/A
4. Duration between stimuli/inter-trial intervals: TBD  seconds  minutes
5. Specify maximum safe stimulation used

(If no response, then "NR" will be recorded): TBD  ○F ○C

Table 2 Quantitative Sensory Testing Table

Left Right

| Dermatome | Heat Perceptual Threshold  (Trial 1) | Heat Perceptual Threshold (Trial 2) | Heat Perceptual Threshold (Trial 3) | Average | Heat Pain Threshold  (Trial 1) | Heat Pain Threshold  (Trial 2) | Heat Pain Threshold  (Trial 3) | Average | Comments: e.g., modality mismatch/paradox |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |

Add additional rows as needed

## MECHANICAL VIBRATION PERCEPTUAL THRESHOLD

Frequency of vibration used (include units):  N/A

Table 3 Frequency of vibration used

Left Right

| Dermatome | Vibration Perceptual Threshold  (Trial 1) | Vibration Perceptual Threshold  (Trial 2) | Vibration Perceptual Threshold (Trial 3) | Average | Dermatome | (Vibration Perceptual Threshold  (Trial 1) | Vibration Perceptual Threshold  (Trial 2) | Vibration Perceptual Threshold  (Trial 3) | Average | Comments: e.g., perception of vibration in remote dermatomes? |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |

Add additional rows as needed

# **Quantitative Sensory Testing (QST) Imaging CRF Module Instructions**

## General Instructions

All testing should be conducted by one assessor.

Important note: None of the data elements on this CRF Module are classified as Core (i.e., required for all SCI studies). The remaining data elements are classified as Supplemental or Exploratory (i.e., non Core) and should only be collected if the research team considers them appropriate for their study.

SCI-Pediatric Specific Recommendation:

Although relevant for pediatrics, in its current form is likely to not be tolerated well by younger children. Subjects need to report intensity of stimulation and this may be difficult for younger children. The data elements on this form are recommend as Supplemental for SCI-Pediatric studies and should only be collected if the research team considers them appropriate for their study. In general these tests should only be performed when there is clinical cause, not as part of studies.

QST is previously not tested in children younger than 6 years old and is recommended for children 8 years and older.

## Specific Instructions

Reference data derived from control subjects should be obtained from the same testing facility under identical conditions. Investigators should, where possible, standardize protocols to align with previously reported protocols in SCI patients or, in the specific case of using QST to assess neuropathic pain, should also consider standardized protocols and reference data that have been reported as consensus positions e.g., Rolke et al., 2006a; Rolke et al., 2006b; Magerl et al., 2010.

Please note that perceptual threshold and pain threshold should be assessed separately.

**References**

Magerl W, Krumova EK, Baron R, Tölle T, Treede RD, Maier C. Reference data for quantitative sensory testing (QST): refined stratification for age and a novel method for statistical comparison of group data. Pain. 2010;151(3):598–605.

Rolke R, Magerl W, Campbell KA, Schalber C, Caspari S, Birklein F, Treede RD. Quantitative sensory testing: a comprehensive protocol for clinical trials. Eur J Pain. 2006a;10(1):77–88.

Rolke R, Baron R, Maier C, Tölle TR, Treede RD, Beyer A, Binder A, Birbaumer N, Birklein F, Bötefür IC, Braune S, Flor H, Huge V, Klug R, Landwehrmeyer GB, Magerl W, Maihöfner C, Rolko C, Schaub C, Scherens A, Sprenger T, Valet M, Wasserka B. Quantitative sensory testing in the German Research Network on Neuropathic Pain (DFNS): standardized protocol and reference values. Pain. 2006b;123(3):231–243.

**Pediatric-Specific References**

Savic, G., Bergstrom, E. M., Davey, N. J., Ellaway, P. H., Frankel, H. L., Jamous, A., & Nicotra, A. (2007). Quantitative sensory tests (perceptual thresholds) in patients with spinal cord injury. J Rehabil Res Dev, 44(1), 77-82.