1. Was the grip strength fatigue testing done?  Yes  No
2. Date Performed:
3. Handedness:  Left hand  Right hand  Both Unknown

Table 1 Grip Strength Fatigue

| Handedness | Grip Device Width Setting | Max Grip –  Trial 1  (Indicate units: pounds, kilograms or newtons) | Max Grip –  Trial 2  (Indicate units: pounds, kilograms or newtons) | Target  (Indicate units: pounds, kilograms or newtons) | 100% of Target (seconds) | 90% of Target (seconds) | 80% of Target (seconds) | 70% of Target (seconds) | 60% of Target (seconds) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Left | Data to be filled in by site | lb  kg  N | lb  kg  N | lb  kg  N | % not reached | % not reached | % not reached | % not reached | % not reached |
| Right | Data to be filled in by site | lb  kg  N | lb  kg  N | lb  kg  N | % not reached | % not reached | % not reached | % not reached | % not reached |

## General Instructions

Important note: Please see the Data Dictionary for element classifications.

This CRF includes data typically recorded when measuring the maximum strength of the hand and forearm muscles.

All the data elements on this CRF Module are classified as Exploratory for ME/CFS and MS (i.e., elements that are emerging or not yet validated for ME/CFS and MS clinical studies to collect but important enough to include).

Note from ME/CFS Recommendations: All the data elements on this CRF Module are classified as Exploratory for ME/CFS studies as a convenient, objective, standardized measure of symptom provocation for ME/CFS fatigability and PEM studies. This CRF includes data typically recorded when measuring the maximum strength of the hand and forearm muscles. *NOTE: Instructions are needed on the target value for this measurement.*

Note from ALS Recommendations: Investigators should use either a Manual Muscle Test or Quantitative Dynamometry to measure muscle strength. If a Manual Muscle Test is selected the MMT/MCR is the recommended element. If Quantitative Dynamometry is used, there are several to choose from depending on what is most appropriate for the study being conducted. No one test is superior, thus the ALS study should include at least one test from this sub-domain.

All the data elements on this CRF Module are classified as Supplemental for ALS, Congenital Muscular Dystrophy (CMD) and Myotonic Muscular Dystrophy (DM).

## Specific Instructions

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module.

* Grip strength performed date and time–The date/time should be recorded to the level of granularity known (e.g., year, year and month, complete date plus hours and minutes, etc.) and in the format acceptable to the study database.
* Hand preference–Choose one. The predominant hand does not have to be the hand that he/she writes with. Unknown should be known in the scenario for rare instances when handedness cannot be known.
* Maximum measurement–Answer for each hand side in pounds, kilograms or newtons.
* Fatigue percentage of target value–Answer for each hand side in seconds. If the percent was not reached, record as ‘percent not reached.
* Fatigue percentage of target reached duration–Answer for each hand side in seconds. If the percent was not reached, record as ‘percent not reached.

## References

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### General Association Studies for Hand Grip Strength and mortality and morbidity:

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