Neuromuscular ultrasound becomes ever more present in the neurophysiology lab, but cost-effectiveness is unknown. Fryback and Thornbury proposed a 6-level hierarchical model to assess efficacy of diagnostic imaging tests. Levels 1-4 have been fulfilled in published literature describing validity, reliability, and accuracy of ultrasound in focal neuropathy. Cartwright et al. fulfilled the 5th level with a prospective trial showing improved outcomes from use of ultrasound in focal neuropathy. To fulfil of the 6th and final level, quality adjusted life year (QALY) is required prior to formal cost-effectiveness analysis.

**Objective:**

To assess whether diagnostic ultrasound in focal neuropathy improves patient QOL, measured in QALYs.

**Methods:**

- Using the individual SF-36 values provided from the original prospective study, we extracted the SF-6D scores, a measurement of QALY, through applying a validated published algorithm.
- Patients who had surgery just prior to final follow were excluded to avoid QALY interference from the recent surgery.
- Significance and magnitude of differences between groups and subgroups were evaluated using Generalized Estimating Equations.
- Subgroup analysis included Surgery, Carpal tunnel syndrome (CTS), and their combinations.

**Results:**

- Whole cohort: ultrasound increased QALY by 0.042 (p<0.055), a clinically meaningful amount (>0.03 QALY)
- Surgery group: 0.072 QALY (p<0.026)
- Non-surgery group: 0.024 QALY (<0.003)
- CTS + Surgery: 0.084 QALY (p<0.039)
- CTS, No Surgery: 0.012 (<0.260)
- In CTS only and non-CTS only groups, there were strong trends but no significant differences:
  - CTS: 0.042 (<0.096)
  - Non-CTS: 0.042, <0.175

**Conclusion:**

- Diagnostic neuromuscular ultrasound in focal neuropathy improves QOL, as measured in QALYs.
- The increasing use of ultrasound with neurophysiology testing appears appropriate.
- As well as supporting efficacy of neuromuscular ultrasound in focal neuropathy, this study lays the foundation for a cost-effectiveness analysis to fulfill Fryback and Thornbury’s model for assessing efficacy of a diagnostic test.