# Systematic review and patient perceptions of tendon transfers in inclusion body myositis to improve hand function

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## BACKGROUND & HYPOTHESIS

Hand dysfunction in inclusion body myositis (IBM) leads to marked impairment in quality of life (QOL) and function. Our objective is to systematically assess the potential for tendon transfer surgery to improve hand function in IBM patients.

Tendon transfer in the upper extremity is a versatile tool for the reconstructive surgeon, and have been used for high median nerve injuries, which IBM hand weakness initially mirrors. Tendon transfers have been used with varying degrees of success, though are limited to case reports and were not followed with objective outcome measures

## METHODS

The data sources were the databases of PubMed, CINAHL, and MEDLINE were searched from inception to December 2021 for studies of inclusion body myositis and tendon transfers. Two investigators independently selected studies.

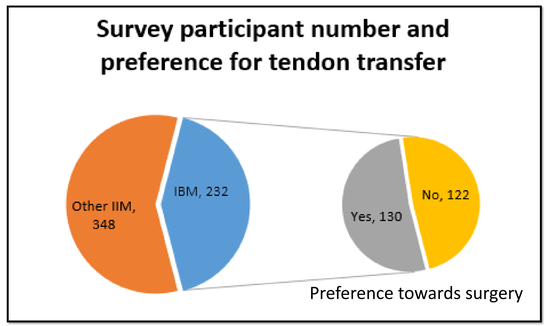
Standardized data abstraction was used to extract surgical technique and measures of hand function. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRIMSA) reporting guideline was followed. The main outcome was improvement in hand function (e.g. patient reported outcome measures (PROMs), range of motion, pinch/grip strength, muscle grade). Recorded information included indications and tendon transfer techniques with post-operative protocol.

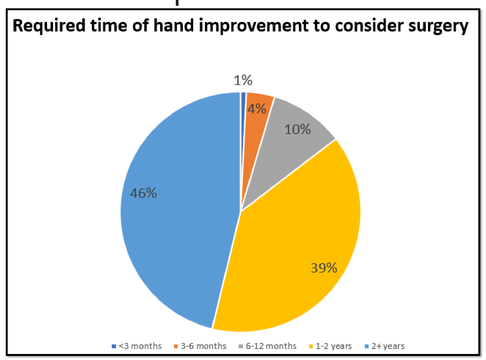
Surveys were developed and administered through REDCap. The survey underwent beta-testing facilitated by Myositis Support and Understanding, who later administered the global survey.

## RESULTS

Three case reports were analyzed. Indications for tendon transfer in all 3 cases involved grip/pinch strength limitations that affected QOL. All patients had improvement in gross hand function for at least 2 years. In all three patients, wrist extensors were used to reconstruct finger flexors.

Specific transfers included: (1) brachioradialis (BR) to flexor digitorum profundus (FDP) and extensor carpi radialis longus (ECRL) to flexor pollicis longus (FPL) transfers, (2) BR to FPL and ECRL to FDP, and (3) ECRL to FPL and extensor carpi ulnaris to FDP. Post-operatively, patients were immobilized for 4 weeks prior to starting hand therapy. Standardized measures of hand function or QOL were not reported.




## CONCLUSIONS

1) Evidence is limited to case reports regarding the utility of tendon transfer in improving hand function in IBM; however, tendon transfers are commonly used in orthopedics to treat muscle-tendon unit dysfunction and may provide a viable option for temporary improvement for IBM patients.
2) Patients are open to the idea of temporary improvement of hand function in IBM with varying degrees of expectation for the duration of improvement.
3) We propose a 24-month surgical trial using a modified Burkhalter transfer with end-to-side coaptation using a Pulvertaft weave with systematic assessment of hand function with a hand exam, pinch and grip dynamometry, and PROMs as well as early mobilization at 2 weeks for hand rehabilitation.

## REFERENCES

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