

# Research Poster

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# Does Kinesio Tape Improve Motor Function for Occupational Participation of Adults who have had a Stroke?

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## INTRODUCTION

- Strokes impact 15 million individuals per year worldwide resulting in 5 million deaths and leaving 5 million others severely disabled (Stroke Center, 2020)
- After a stroke 25 to 43 percent of individuals experience spasticity presenting as stiff, tightened muscles often in the fist, finger or forearm that resist stretching causing pain and difficulty with range of motion (Stroke Center, 2020)
- Kinesio tape is a therapeutic tape that is applied strategically to the body by health professionals to provide support, lessen pain, reduce swelling and improve performance (Healthline, 2020)
- Occupational therapy practitioners use kinesio tape as an intervention for clients who have had a stroke to address these side effects (Eung-beom & Young-dong, 2015)

## LEARNING OBJECTIVES

- After reviewing this posterboard readers will be able to determine if kinesio tape used on the upper extremities improves overall motor function in order to participate in occupation for adults who have had a stroke
- Readers will be able to identify if self care activities, pain or spasticity are improved by kinesio tape

## METHODS

Databases searched: CINAHL Plus with Full Text, OT Search, Cochrane Library, Health and Medicine, PubMed, MedLine and PsycINFO

8 studies met the inclusion criteria from years 2011-2019

Table 1: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Adults 18 and older	Kinesio tape combined with another modality
History of stroke	Kinesio tape used on a body part other than the upper extremity
Pain, spasticity, difficulty with motor function, or difficulty performing self-care activities of the upper extremity	Studies over 10 years old or that were not printed in English

Table 2: Interventions

## INTERVENTIONS

Articles	Average Age of Participant	Number of Participants	Variables Assessed	Setting Intervention Occurred	Interventions for Experimental Group with Kinesio Tape	Frequency of intervention	Outcome	Significance
Appeal, 2011	50 years	37	Self-Care Activities	Inpatient Hospital	Occupational Therapy (OT) or Physiotherapy of the shoulder	3 hours a day 5 times a week for 4 weeks	No difference between the control and experimental group	Not Significant
Eung-beom & Young-dong, 2015	68 years	30	Self-Care Activities	Inpatient Hospital	Task Practice of the shoulder	30 minutes 3 times a week for 28 weeks	No difference between the control and experimental group	Not Significant
Kalichman et al., 2016	60 years	11	Pain of the Shoulder	Inpatient Hospital	OT or PT of the hand	45 minutes of daily OT or PT sessions for one week	No differences before and after the intervention	No Significance
Pillastrini et al., 2016	66 years	32	Pain and Spasticity of the Shoulder	Outpatient clinic	Sessions of PT	45 minutes of daily PT sessions for five days	Statistically significant for decreased pain of shoulder	Statistically Significant (p=0.001)
Qafarizadeh et al., 2018	56 years	8	Spasticity of the hand	Outpatient clinic	Kinesio tape of the hand	Tape was changed every 3 days	No differences before and after the intervention	No Significance
Tenorio et al., 2018	42 years	8	Spasticity of the hand	Outpatient Clinic	Physical therapy (PT) of the hand	40 minutes a day 2 times a week for 15 sessions	Statistically Significant for improving spasticity of the hand	Statistically Significant (p=0.02)
Yu-Chi, 2019	50.5 years	31	Spasticity of the hand	Inpatient Hospital	Stretching and task training of the hand	2 times a day 5 times a week for 3 weeks	Statistically Significant for improving spasticity of the hand	Statistically Significant (p=0.001-0.035)
Yang, Yang & He, 2018	59.5 years	19	Pain of the Shoulder	Inpatient Hospital	Passive and active exercise of the shoulder	Once a day, 5 days a week for 4 weeks	Statistically Significant for improving shoulder pain	Statistically Significant (p < 0.05)

## CONCLUSIONS

- This review found kinesio tape is successful in improving pain and spasticity of the shoulder as well as spasticity of the hand when paired with physical therapy, task training or stretching and exercise. Kinesio tape does not improve an individual's ability to perform self-care activities (Appeal, 2011;Eung-beom & Young-dong, 2015;).
- The four studies that do not have statistically significant results when assessing spasticity of the hand and pain of the shoulder have a small sample size and are not randomized which may contribute to the differing results from other studies (Kalichman et al., 2018; Qafarizadeh et al., 2018).
- Based on these results more studies need to be done with an established protocol for wear time, frequency and other activities in order to prove the effectiveness of kinesio tape

## CLINICAL IMPLICATIONS

- An appropriate approach for using kinesio tape includes task repetition, stretching or passive and active exercise paired with a meaningful activity that supports the client's goals.
- Occupational therapy practitioners should have access to training for kinesio tape. This could be incorporated into the profession's curriculum through continuing education credits or training for therapists in clinics
- All frequencies used in the interventions were different and therefore one cannot be used as a recommendation
- Additional research needs to be done on these studies that use similar intervention settings and frequencies

## REFERENCES

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