

# Evaluating the benefit of finger gliding exercises after steroid injections for trigger finger

|  |   |   |
|--|---|---|
| <b>Submission date</b><br>31/03/2024   | <b>Recruitment status</b><br>No longer recruiting     | <input type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol            |
| <b>Registration date</b><br>03/04/2024 | <b>Overall study status</b><br>Completed              | <input type="checkbox"/> Statistical analysis plan<br><input checked="" type="checkbox"/> Results |
| <b>Last Edited</b><br>11/06/2024       | <b>Condition category</b><br>Musculoskeletal Diseases | <input type="checkbox"/> Individual participant data  |

## Plain English summary of protocol

### Background and study aims

Trigger finger (stenosing tenosynovitis) is a common musculoskeletal condition in primary care. It is thought to be due to inflammation and subsequent stenosis (narrowing) of the A1 pulley in the hand, which leads to pain, clicking and even locking of the affected finger. It has a lifetime risk of 2.6% and is the fourth most common reason for referral to a hand surgeon. As normal hand function is essential for daily activity and function, a trigger finger can be a frustrating and disabling condition that negatively impacts the quality of life. Corticosteroid injection has been the first-line treatment of trigger fingers and its success rate ranges from 67 to 90% after the first injection. However, studies have shown that the recurrence rate of trigger fingers ranges from 11 to 56%, with most recurrences occurring within the first year. Although risk factors for recurrent trigger fingers such as diabetes, carpal tunnel syndrome and multiple trigger fingers have been identified, studies on strategies to prevent recurrence have been lacking.

Tendon gliding exercises aim to increase the excursion of flexor tendons and maintain a full range of movement of the fingers. In trigger finger patients, the flexor tendons are caught when the digit is fully flexed. Finger flexor tendon gliding exercises can allow maximum excursion of the individual flexor tendon with respect to each other and the bone and flexor sheath. The exercises also force each of the digital joints to glide through its full potential range. It can ensure smooth movement of finger flexor tendons with the potential to prevent the formation of adhesions and inflammatory or degenerative processes of flexor tendons. As trigger finger is due to friction between the tendon sheath and flexor tendon, it is thought that maintaining the smooth sliding motion of the flexor tendon is essential for maintaining the normal function of the hand. Despite finger gliding exercises being suggested for patients with trigger fingers, their effectiveness for treating or preventing the recurrence of trigger fingers has not been studied. The aim of this study is to pilot test the feasibility and the measurement instrument of a digital-based finger gliding exercise for trigger finger in patients treated with steroid injections.

### Who can participate?

Patients aged 18 years and older with trigger finger who received a corticosteroid injection

What does the study involve?

Participants will be randomly allocated to the control group or the intervention group. Participants in the control group will receive usual care for trigger fingers and are required to submit an online questionnaire at 6 months of study. Participants in the intervention group will be taught finger-gliding exercises. They are required to do the exercises daily for 6 months and submit online exercise logs regularly. They are also required to answer a questionnaire at 6 months.

What are the possible benefits and risks of participating?

Finger gliding exercises might have the benefit of treating and preventing the recurrence of trigger finger. As these are simple exercises, the risk is minimal

Where is the study run from?

The Hospital Authority of Hong Kong

When is the study starting and how long is it expected to run for?

February 2021 to April 2023

Who is funding the study?

The Hospital Authority of Hong Kong

Who is the main contact?

Dr Yue Kwan Choi, [cyk768@ha.org.hk](mailto:cyk768@ha.org.hk)

## Contact information

### Type(s)

Public, Scientific, Principal Investigator

### Contact name

Dr Yue Kwan Choi

### ORCID ID

<http://orcid.org/0000-0001-9217-7599>

### Contact details

Family Medicine Specialist Clinic, 3/F, Li Ka Shing Specialist Outpatient Clinics (South Wing), Prince of Wales Hospital, 30-32 Ngan Shing Street, Sha Tin, New Territories

Institution email address:

Hong Kong

Hong Kong

000

+852 (0)97772561

[cyk768@ha.org.hk](mailto:cyk768@ha.org.hk)

## Additional identifiers

### EudraCT/CTIS number

Nil known

**IRAS number****ClinicalTrials.gov number**

Nil known

**Secondary identifying numbers**

2021.251

## **Study information**

**Scientific Title**

Clinical effectiveness of finger gliding exercise for trigger finger in patients with steroid injection: a pilot randomized clinical trial

**Acronym**

Finger GLID

**Study objectives**

It is hypothesized that compared to the control group, finger gliding exercises done by trigger finger patients after steroid injection will have more favourable clinical outcomes.

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

Approved 13/04/2021, Joint CUHK-NTEC Clinical Research Ethics Committee ( CREC) (Joint CUHK-NTEC Clinical Research Ethics Committee 8/F, Lui Che Woo Clinical Sciences Building, Prince of Wales Hospital Shatin, Hong Kong, Hong Kong, 000, Hong Kong; +852 (0)3505 3935; crec@cuhk.edu.hk), ref: 2021.251

**Study design**

Pilot interventional randomized controlled trial

**Primary study design**

Interventional

**Secondary study design**

Randomised controlled trial

**Study setting(s)**

Hospital

**Study type(s)**

Treatment

**Participant information sheet**

Not available

**Health condition(s) or problem(s) studied**

Trigger finger

## **Interventions**

Eligible participants will be randomly assigned to either the control or intervention groups in a 1:1 ratio. The allocation sequence will be concealed from the researcher and patients using sequentially numbered, opaque, sealed envelopes. The corresponding envelopes will be opened at the time of intervention assignment after all the enrolled patients have undergone all baseline assessments.

Participants in the control group will receive usual care for trigger fingers and are required to submit an online questionnaire at 6 months of study. Participants in the intervention group will be taught finger-gliding exercises. They are required to do the exercises daily for 6 months and submit online exercise logs regularly. They are also required to answer a questionnaire at 6 months.

Regular finger gliding exercise: the tendon gliding exercise prescription for the intervention group encompasses the exercise described by Wehbe and Hunter. It includes exercises in three basic fist positions:

1. Straight-fist position: the distal interphalangeal joint (DIPJ) extends while the metacarpophalangeal joint (MCPJ) and proximal interphalangeal joint (PIPJ) are flexed
2. Hook: MCPJ extends while DIPJ and PIPJ are flexed
3. Full fist: all the finger joints are fully flexed.

The straight-fist position provides maximum flexor digitorum superficialis (FDS) excursion while the full-fist position provides maximum flexor digitorum profundus (FDP) excursion. The hook position allows maximum differential gliding by providing more FDP than FDS excursion. As the thumb only involves one flexor tendon flexor pollicis longus (FPL), maximum gliding can be achieved by flexing the interphalangeal joint and MCPJ. Each fist position exercise should be done with 10 repetitions each time. Participants are suggested to do the finger gliding exercises two times per day.

## **Intervention Type**

Other

## **Primary outcome measure**

The feasibility of the trial will be measured in terms of:

1. Percentage of eligible patients recruited: the percentage of patients that are eligible to participate in the study among all those approached for the study during the recruitment period.
2. Recruitment rate and time: recruitment rate is defined by the percentage of patients recruited for the study among all those eligible for the study. Recruitment time is the time needed to recruit the requested sample size.
3. Exercise log response and compliance rate: an online exercise log will be sent to participants weekly at 1, 2, 3, 4, 8, 12, 16 and 20 weeks post baseline. It requests patients to have recalled exercise entries for the past 1 week. Exercise log response rate is the percentage of online exercise log submitted and compliance rate is the percentage of exercise entries recorded.
4. Follow-up rate: the percentage of participants who have submitted the online survey at 6 months among all those who participated in the study.

## **Secondary outcome measures**

The preliminary effectiveness of the finger gliding exercise collected via an online questionnaire at 6 months:

1. Self-rated change of finger condition measured by asking patients to indicate whether they have improved, no change or worsening symptoms

2. Overall finger pain severity measured by Numerical Pain Rating Scale (NPRS)
3. Severity of symptoms measured using Quinelle grading
4. Number of repeated injections: participants will report whether there has been a repeated injection of the trigger finger being studied from baseline until the time of answering the questionnaire
5. The occurrence of a new trigger finger site: participants will report whether there is emergence of a new trigger finger site besides the trigger finger being studied from baseline until the time of answering the questionnaire

**Overall study start date**

01/02/2021

**Completion date**

26/04/2023

## Eligibility

**Key inclusion criteria**

1. Trigger finger patients aged 18 years and over
2. Trigger finger patients with single finger digit problem at presentation
3. Trigger finger patients have corticosteroid injections and are fit for discharge at the subsequent follow-up visit

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Both

**Target number of participants**

76

**Total final enrolment**

67

**Key exclusion criteria**

1. Patients who do not have a smartphone
2. Patients with no internet access
3. Patients who cannot read Chinese

**Date of first enrolment**

12/08/2021

**Date of final enrolment**

11/08/2022

## Locations

### Countries of recruitment

Hong Kong

### Study participating centre

#### Family Medicine Specialist Clinic

3/F, Li Ka Shing Specialist Outpatient Clinics (South Wing)

Prince of Wales Hospital

30-32 Ngan Shing Street

Sha Tin

New Territories

Hong Kong

Hong Kong

000

## Sponsor information

### Organisation

Prince of Wales Hospital

### Sponsor details

30-32 Ngan Shing Street

Sha Tin

New Territories

Hong Kong

Hong Kong

000

+852 (0)3505 2211

pwh\_enquiry@ha.org.hk

### Sponsor type

Hospital/treatment centre

### Website

<https://www3.ha.org.hk/pwh/index.asp>

### ROR

<https://ror.org/02827ca86>

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

Hospital Authority of Hong Kong

## Results and Publications

**Publication and dissemination plan**

Planned publication in a peer-reviewed journal

**Intention to publish date**

01/02/2025

**Individual participant data (IPD) sharing plan**

The dataset will be available upon request from Yue Kwan Choi (cyk768@ha.org.hk). Sharing data include recruitment rate, follow-up rate, baseline characteristics of participants, clinical outcome (self-reported improvement, repeated injection, numerical pain rating score, finger grading), exercise log response rate and exercise compliance rate. All participants consented to data use for study purposes.

**IPD sharing plan summary**

Available on request

**Study outputs**

| Output type                   | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|-------------------------------|---------|--------------|------------|----------------|-----------------|
| <a href="#">Basic results</a> |         | 11/06/2024   | 11/06/2024 | No             | No              |