

## A MULTIDISCIPLINARY APPROACH TO THE MANAGEMENT OF TRAUMATIC UPPER LIMB INJURY

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# UPPER LIMB INJURIES

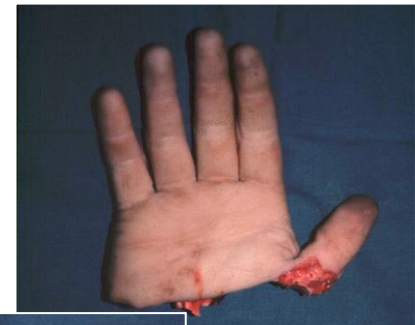
Hand Injuries are common but exact incidence is hard to determine

In the EU, 31.5% of accidents at work were wounds and superficial injuries- the hand was the most commonly injured body part [HSE 2018]

The dominant hand is more likely to be injured [Gupta et al 2013]

Negative impact of a hand injury can exceed initial expectations:

- Timescales for tendon healing
- Reduction in function
- Pain and loss of normal sensation
- Current and future employment – financial issues
- Personal care / caring responsibilities
- Emotional wellbeing



# YOUR GREATEST TOOLS

The hand is capable of a diverse range of functions

Achievement of this diversity is achieved through complex mechanical structure and high level neurological control

Anatomical differences between individuals

Acquired variation through occupation / hobbies

“The hand is the cutting edge of the human brain”



# WHY WESSEX REHAB?

Multi-disciplinary approach

Affiliated with the Regional Plastic Surgery Service

Upper limb team led by an Accredited Hand Therapist

Evidence based practice

Ability to provide vocational rehab for a range of occupations

1:1 treatment combined with group exercise and appropriate tasks

Intensive yet flexible programme

Peer support

Cost efficient approach

Rapid assessment after referral



# DIVERSE THERAPY

Diverse functional needs require varied and extensive therapy solutions

Wessex Rehab can provide Upper Limb therapy opportunities beyond what can be provided elsewhere

Expert Splint fabrication

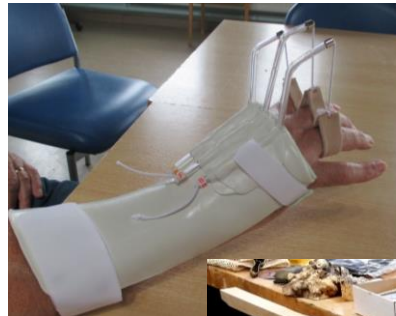
1:1 standard hand therapy

Therapist directed group activities

Hydrotherapy

Industrial workshop tasks

Vocational Rehab

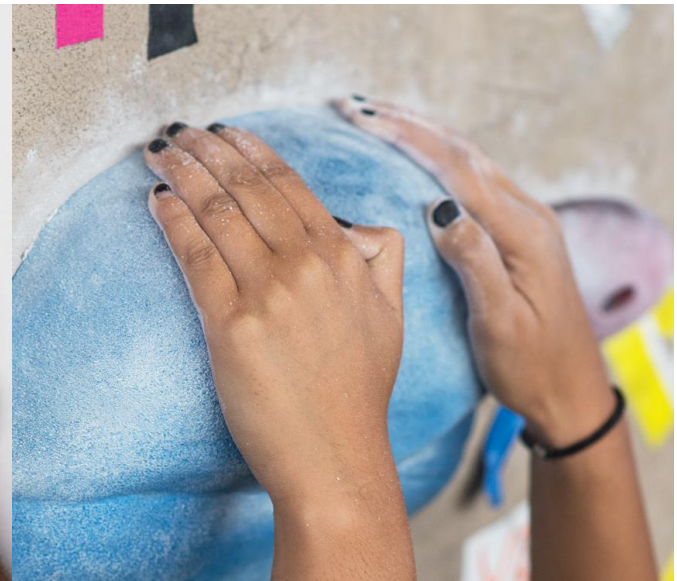




# BOULDERING?

Development of spaces with Wessex Rehab

Bouldering is a whole body exercise that can be made more specific with purpose designed routes



# OUTCOMES

All patients have the Quick Dash outcome measure administered pre and post intensive rehab

Self reported measure of disability in the upper limb and hand, rated from 100% disability to 0% disability.

Last 20 patients with discharge data finalised:

Average Pre-Rx score	Average post-Rx score	Average improvement (score)	Average improvement (percentage)
47.35%	20.13%	27.25	<b>57.55%</b>

Higher disability scores initially tend to show greatest improvements

Pre-Rx	Post-Rx	Improvement (score)	Improvement (percentage)
68%	23%	45	<b>66%</b>
76%	34%	42	<b>55%</b>
90%	48%	42	<b>46%</b>
73%	3%	70	<b>96%</b>

# CASE STUDY

## RIGHT DOMINANT THUMB / WRIST LACERATION WITH CIRCULAR SAW

### Background

Industrial injury – family business

42 year old manual worker

Tendon and nerve damage- wrist joint breached

Problems:

- Hypersensitivity

- Reduced range of movement (ROM) at thumb

- Reduced ROM at wrist

- Pain- both mechanical and neuropathic

- Decreased functional ability

  - Strength / grip

  - Dexterity



# CASE STUDY

## Approach

Attended 4 days/ week for 6 weeks to mimic work routine- maintains mental well being

Group and 1:1 sessions

Accessing multiple therapy environments:

- Dexterity workshop

- Gym

- Sports Hall

- Industrial Workshop

- Garden

- Kitchen

Peer support

Follow up outpatient appointment 6 weeks later

# CASE STUDY

## Treatment

Splints used to position thumb correctly at rest and to block dominant movement to activate specific muscle group

Highly specific home exercise program

Scar management

Education including access to Explain Pain

Contact with Consultant Anaesthetist to improve specificity and tolerance of pharmaceuticals

ROM exercises / activities

Clinical Psychology

Dexterity activities

Origami / paper tearing / card making

Glass project work in Industrial Workshop

Strengthening activities

Wood project in Industrial Workshop

Theraputty

Targeted weights exercises

Functional / vocational rehab

Baking

Gardening

Wood prep / workshop tasks

Use of tools

General wellbeing / health promotion

Pilates

Team games

T'ai Chi

Relaxation

# CASE STUDY

## Outcomes

Improved understanding and ability to manage condition

Increased ROM at thumb and wrist

75% improvement in wrist flexion

65% improvement in thumb flexion

Increased power grip

Increased tolerance of aggravating activities

Has not yet returned to work. Further improvements expected. Rehab is continuing

# In Summary



Wessex Rehab Upper Limb team can provide treatment for hand and upper limb injuries that cannot be provided elsewhere locally

The impact of a hand injury is often greater than expected and referral to this service should not be delayed

“Because there is nowhere better”

[Patient comment card September 2019]