

Hands-on-Care



Specializing in Shoulder, Elbow, Wrist and Hand Therapy

Immediate Post-Op or Maximal Protection Phase



Whether it be wrist, elbow or shoulder this phase limits ROM and muscle activity. It aims to allow physiologic tissue healing, pain and inflammation management.

However, this is to the detriment of the non-involved muscles and soft tissues.

1-week immobilization in healthy adults leads to:

- Decreased Maximal Voluntary Contraction without structural muscle changes,
- Increased H-reflex amplitudes, Decreased motor neuron synchrony, and
- Possible changes in Proprioception of joint



3 simple additions to the maximum protection phase has the potential to decrease primary impairments associated with surgery and immobilization

- **Maintain and improve Strength – Via Contralateral extremity training**
- **Prevent Excessive ROM Loss – Via Motor imagery**
- **Pain Management and Preventing CRPS- Via Aerobic exercise**

With Contralateral Extremity Training - different mechanisms by which bilateral motor areas are stimulated

Recent meta-analysis of CET studies on contralateral strength on 2362 participants • % gain strength trained limb: 29% • % gain strength untrained limb: 18% • Cross body transfer: 64%



Motor Imagery – the mental representation of movement without any body movement



- Motor imagery practice, mental practice, visualization

Imagining movements stimulates similar areas of brain activity as actual task performance, which may accompany recovery of motor function, thus resulting in reduced deficit [or disability]

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20 healthy participants wore a plaster cast for 3 weeks on their non-dominant wrist/hand. One training session for imagery followed by HEP of visualization of movements 15 min/day and once weekly guided movement lead by a therapist.

- Differences noted for extension and ulnar deviation with moderate effects

Aerobic Exercise - physical exercise that depends primarily on the oxygen for energy generation, Not utilizing the extremity involved



Basic Science: exercise activates systemic (whole body) release of endogenous pain inhibiting chemicals which helps in preventing CRPS and Opioid dependence

6-8 weeks of regular physical activity prevents primary and secondary hyperalgesia (in mice) with muscle pain and neuropathic pain

- Theory: regular exercise enhances systemic pain inhibition efficiency
- Aerobic Exercise Promotes endogenous antinociceptive tone in the periphery and in the central nervous system – Opioids, Endorphins, Serotonin, Cannabinoids
- Improves immune and inflammatory regulation
- Improves psychological risk factors for persistent pain - Anxiety, depression
- It also helps decrease Disability, Healthcare consultation and Sick leave

So, all this can be achieved for your patients in just 1 pre-op visit to **Hands-On-Care. It is help to**

- **Improve patient satisfaction**
- **Reduce dependence on opioids**
- **Reduce complications**
- **Regain their function faster**

Therapists at HOC will train the patients prior to surgery or while in cast to follow this program to return to function /work faster!!

For more information please call our office and talk to one of our therapists.

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