

AN INTRODUCTION TO INTEGRATED FUNCTIONAL EXERCISE

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- Declare of no conflict of interest

OBJECTIVES

- Therapeutic considerations for working with the EDS/HSD population
- Pain mechanisms involved with exercise and how to change them
- Integrated functional movements & exercises



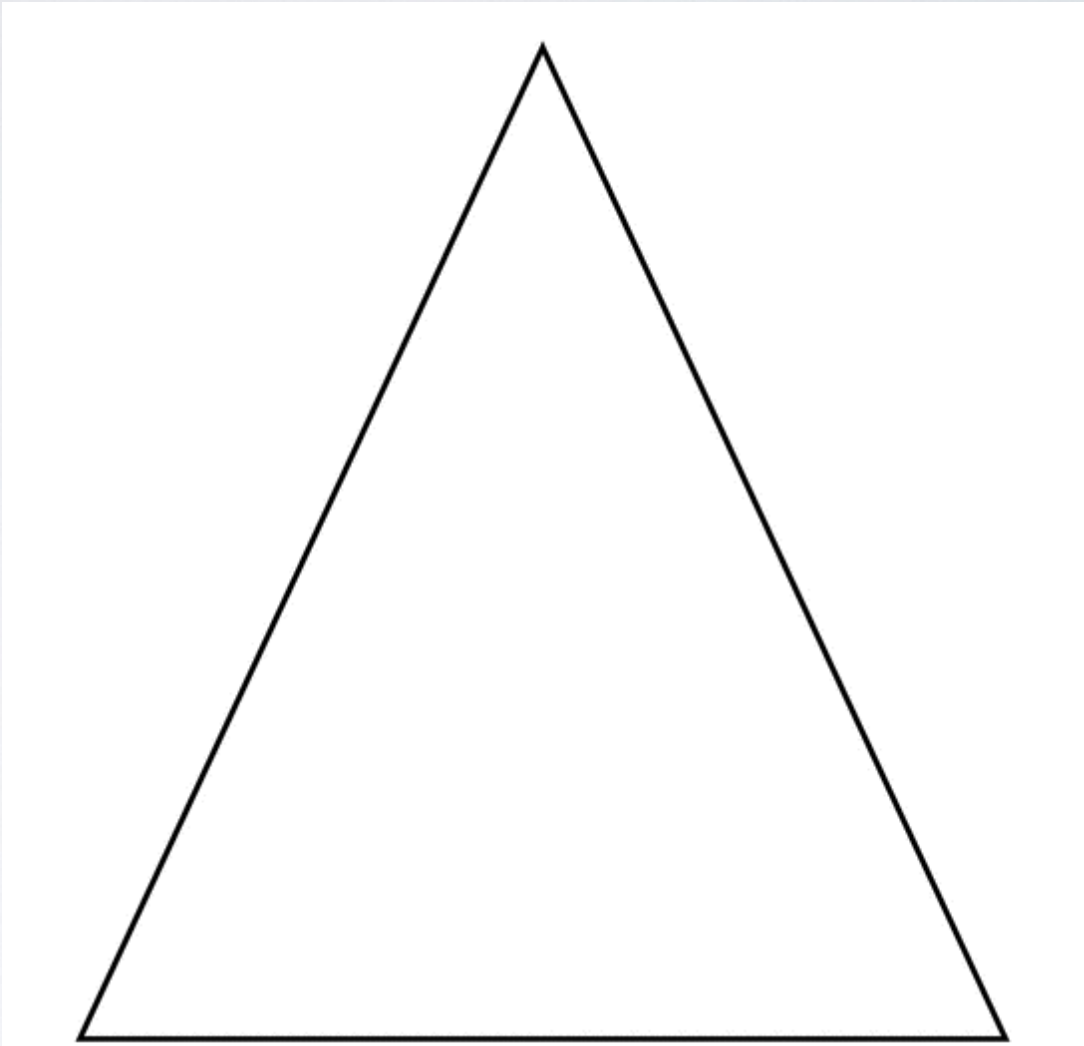


YOUR JOURNEY...YOUR STORY

WHERE DOES EXERCISE FIT IN?



MSK, jt instability
CCI, tethered cord



EDS TRIFECTA

Dysautonomia
POTS, HPA

MCAS
GI, Immune

MECHANISMS INVOLVED IN THE MANAGEMENT OF EDS

- Trifecta: systems involved - Instability, POTS, MCAS
- Lifestyle: sleep, fatigue, injuries, pain management, work/life balance, diet, psychosocial factors
- Acute inflammation/injuries vs chronic pain spectrum
 - nociceptive pathways vs central sensitization

A DAY IN THE LIFE...

- What does a good day look like? A bad day?
- Goals: What is most important to you?
Short and long term - realistic? attainable?
- What obstacles limit your daily function?
- Use ADL's as a way to set goals and daily exercise

HOW IS THE PERSON EXISTING?

- Types of posture
 - Accordion - scoliosis, compressed, difficulty uprighting
 - Swaying flagpole - poor sensory-motor integration - test w e/o, e/c
 - Mismatched stacking blocks - 'Jenga' structural adaptation
 - Deflated balloon / marionette - poor muscle tone, proprioception
- What postural & movement strategies are they using?

OSTEOPATHY

- Structure and function are interrelated
- The body is a functional unit
 - Beyond the MSK - biopsychosocial model
 - Fascial, nervous, circulatory, and visceral
- Auto-regulation - restoring adaptability

POSITIVE EFFECTS OF EXERCISE

- Pain modulating effects on CNS
 - Exercise-Induced Hypoalgesia - decreased pain
- Immune boosting response
- Brain regulation: ANS, HPA axis, emotion centres
- Increase strength, CV, balance, body awareness

EXERCISE IN CHRONIC PAIN - POSSIBLE MECHANISMS

- Pain modulating effects on CNS - IMPAIRED
 - Central sensitization & decreased pain threshold
 - Joint pain - poor strength, stability, kinesthetic awareness
- Immune boosting response - REDUCED
 - MCAS, increased inflammation, pain, and fatigue
- Brain: Dysautonomia, low PSNS, anxiety/depression/stress

THE GOOD NEWS IS...

- Flares are temporary and not usually a sign of tissue damage but a signal of the brain's overactive response
- Non-painful exercise can have a positive effect on pain modulation: green, yellow, red light activities
- Combine exercise with pain science ed & CBT/MBSR
- Recovery Strategies Pain Guidebook - Greg Lehman
www.greglehman.ca

EXERCISE: AN ART AND A SCIENCE

- “Awareness Through Movement” - experiential learning with integrated functional movement
- identify barriers: biomechanical, psychological, social
- perceived threats both conscious & unconscious
- explore moving from a different perspective: meaningful, safe, and gradual

AN INTEGRATED APPROACH

- Breathing
- Body awareness (kinesthetic and interoception)
- Strength and stability: body as an integrated functional whole
- (Gentle) stretching
- Proprioception and balance (relative to gravity)
- Cardiovascular

THERAPEUTIC INTERVENTION

- Listen - to the person, observe
- Explore - valued functional activities
- Reflect - what was the body's response?
- Adapt - find new movement strategies
- Problem Solve - be creative and flexible



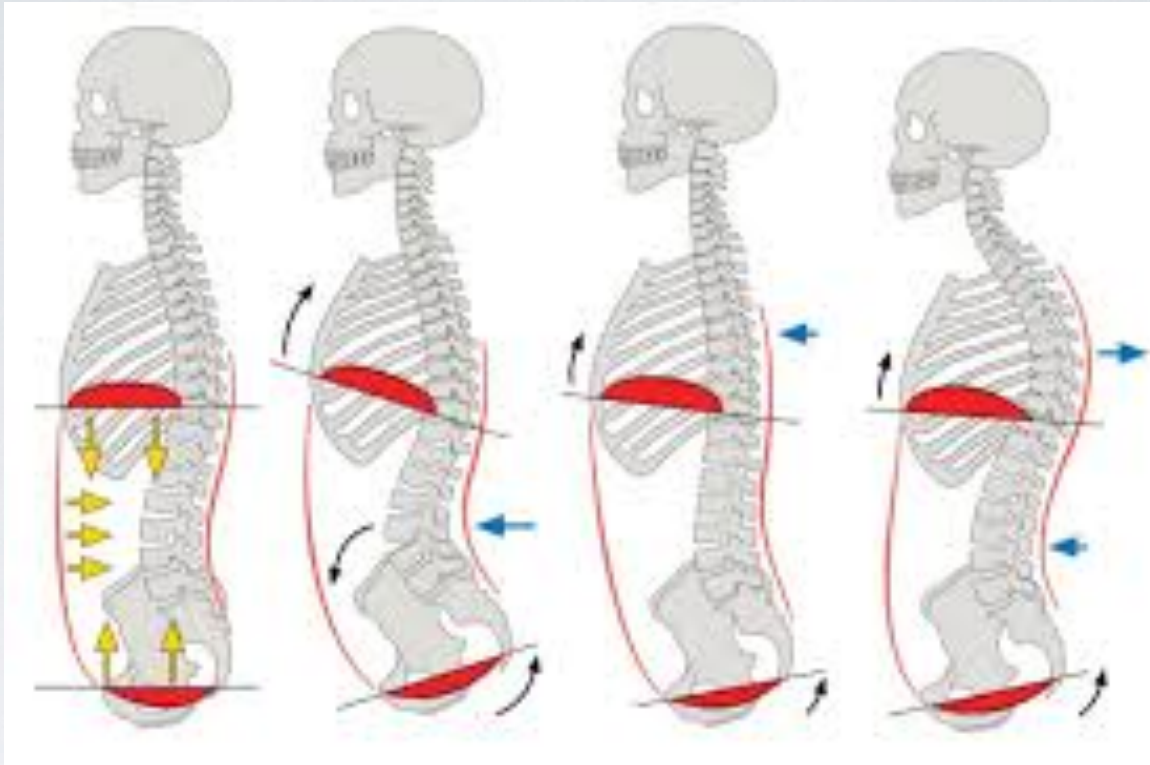
YOUR TOOLS...

BEFORE YOU BEGIN

- Pacing: Slow and smooth movement to determine tolerance, fatigue response, down regulate NS
- Utilize your strengths and abilities
- Focus on movement quality & body awareness
- Work from a place of comfort - sit, stand, lay



- Dysfunctional breathing can negatively impact all body systems via mechanical, chemical or psychological pathways
- Proper breathing improves body awareness and mindfulness; positive effect on posture, muscle function, joint placement
- Helps to balance the ANS & HRV



- Balanced stabilizing muscles creates symmetrical loading of the spine and peripheral joints
- Poor stabilizing leads to overloading of the spine and joints and results in overworking postural muscles = pain, spasms, TP



A 3-Month-Old Supine Position

Visualize your core as a cylinder

BREATHING PRACTICE

- Core muscles = abdominal wall with all its layers; deep spine stabilizers, back muscles, pelvic floor
- Shoulders, chest and hips relaxed
- Breathe 'longer, smoother, softer'
- Visualize 3D cylinder: front back sides top bottom

DEEP NECK STABILIZERS

- Need to activate first before bigger movement
- Use eyes, and/or image of wanting to move head to feel deep muscles 'turn on'
- Performed on your back, stomach, side
- Image of keeping head balanced on spine (to T4)

CENTRED SHOULDERS & HIPS

- Shoulder complex: pecs, lats, rotator cuff, serratus anterior, deep neck flexors, diaphragm
- Hips & pelvis: glutes, hamstrings, adductors, quads, psoas, pelvic floor and diaphragm
- Closed chain, integrate whole body exercises with stabilizing breath











BALANCE

- sit on ball, stand using wall, one leg raise, eyes open/closed
- align: feet, pelvis, ribcage, shoulders, head
- backwards walking - uses posterior musculature
- Tai Chi, Qi Gong, Pilates, Yoga
- use kinesiotape for added joint proprioception





CARDIOVASCULAR

- Walking: Treadmill, Nordic poles, rebounder
- Recumbent cycling/elliptical, arm/leg ergometer
- Swimming, aquatic exercises
- Dancing
- Start slow - 5-10 min, 3 times per week

BEST PATIENT OUTCOMES

- Management of MCAS/POTS/instability
- Health care team of GP/PT/specialists, etc
- Lifestyle factors: sleep, exercise, stress, positive relationships, diet, eliminate triggers
- Exercise with MBSR/CBT/pain neuroscience ed.

LIFE IS EXERCISE!

- Daily activity with purpose and awareness
- Being a good observer and listener
- Pacing and moderation
- Many little changes can add up to visible results



*Your speed doesn't matter,
forward is forward*

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