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?

Lifestyle Factors

- Sleep Quality
- Diet & Nutrition
- Emotional Wellbeing
- Personal Relationships
- Exercise & Movement
EDS
TRIFECTA

MSK, jt instability
CCI, tethered cord

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
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
REFERENCES


http://www.greglehman.ca/


