



KEVIN MULDOWNEY, PT DISCLAIMER

- I HAVE BEEN TREATING EDS FOR OVER 10 YEARS
- MY PRACTICE SEES OVER 120 EDS PATIENTS PER WEEK. PRIMARILY CLASSICAL AND HYPERMOBILITY TYPES.
- I PERFORM 4-HOUR CONSULTATIONS IN WHICH I EVALUATE A PERSON'S ENTIRE BODY. WE CORRECT EACH JOINT AND VIDEO ALL TECHNIQUES THAT HELP.
- WE WROTE THE BOOK, "LIVING LIFE TO THE FULLEST WITH EHLERS-DANLOS SYNDROME," WHICH OUTLINES MY ENTIRE EXERCISE PROTOCOL.



EDS

• EHLERS-DANLOS
SYNDROME IS AN
INHERITED CONNECTIVE
TISSUE DISORDER THAT
AFFECTS COLLAGEN.
COLLAGEN IS THE GLUE
THAT SUPPORTS MANY
STRUCTURES IN THE BODY
SUCH AS SKIN, LIGAMENTS,
MUSCLES, ORGANS, AND
BLOOD VESSELS.





TO DECREASE YOUR PAIN, YOU NEED A TEAM APPROACH

- Geneticist
 - Primary care physician
 - Pain Doctor
 - Cardiologist
 - Neurosurgeon
 - Gastroenterologist
 - Nutritionist (food allergy test)

- Mast cell doctor
- Pulmonologist
- Dentist
- Physical therapist





HOW CAN PHYSICAL THERAPY HELP?

- JOINT PAIN DUE TO HYPERMOBILITY
- POOR POSTURE
- GAIT
- ENDURANCE
- STRENGTH (TONE)
- BALANCE
- COMMUNICATION WITH OTHER MEMBERS OF THE TEAM
- EDUCATING PATIENTS HOW TO LIVE WITH EDS





HOW DO WE LOOK AT A PATIENT?

WE LOOK AT ALL PROBLEMS THROUGH BIOMECHANICAL LENSES.

- BIOMECHANICS:
- THE STUDY OF THE MECHANICAL LAWS RELATING TO THE MOVEMENT OR STRUCTURE OF LIVING ORGANISMS

RESTORE PROPER BIOMECHANICS TO A SPECIFIC JOINT

- REFER TO PROPER HEALTHCARE TEAM TO HELP WITH ISSUES WE CANNOT HELP.
- MANUAL THERAPY:
 - MET, CST, MULLIGAN TECHNIQUE, MFR, TAPING, ECT
 - TEACH PATIENTS TO FIX THEMSELVES
- MY EXERCISE PROTOCOL
 - LOOK AT EXERCISES AND HOW THEY AFFECTED THE WHOLE BODY NOT JUST THE JOINT WE ARE WORKING ON.
 - SLOW PROGRESSION TO DECREASE RISK OF INJURY.



HOW CAN YOU DECREASE YOUR JOINT PAIN?

WHY DOES A JOINT SUBLUX?

- KISS: KEEP IT SIMPLE SOMETIMES
- WHEN THE EXTERNAL FORCES OF THE ENVIRONMENT ARE GREATER THAN THE LIGAMENTIOUS STRENGTH AND MUSCULAR STRENGTH OF THE JOINT, IT WILL SUBLUX. IF IT IS LESS, THE JOINT WILL NOT SUBLUX

HOW DO YOU GET A JOINT FROM SUBLUXING?

- STRENGTHEN MUSCLES
 AROUND THE JOINT SO THEY
 CAN ABSORB GREATER FORCES.
 (MY BOOK)
- MODIFY THE ACTIVITIY SO LESS FORCES ARE ON THAT JOINT
- BRACE FOR ACTIVITIES, NOT FOR LIFE.



WHAT CAUSES JOINT PAIN IN PEOPLE WITH EDS?

- 1. SYSTEMIC ISSUES: POTS, GI ISSUES, MAST CELL, FOOD ALLERGIES, ECT.
- 2. NEUROLOGICAL: CCI, AAI, TETHERED CORD, CHIARI MALFORMATION, BULDING DISC, SPONDYLOLISTHESIS, ECT
- 3. INJURY: LABRAL TEAR, MENISCUS TEAR, FRACTURES, ECT
 - 1. WHEN IN DOUBT, REFER IT OUT!!!
- 4. BIOMECHANICAL ISSUES: JOINT HYPERMOBILITY, SUBLUXATIONS/DISLOCATIONS, MUSCLE / TENDON TEARS, MUSCLE SPASM, ECT
 - 1. PHYSICAL THERAPY HELPS THIS ISSUE



SYSTEMIC ISSUES

WHAT DOES IT DO?

- CAUSES GLOBAL INFLAMMATION
- INFLAMMATION IMPEDES MUSCLE ACTIVATION AND STRENGTH
- IF YOU ARE INFLAMED, YOU HAVE AN INCREASED CHANCE TO SUBLUX JOINTS





NEUROLOGICAL ISSUES





- A NERVE GOES INTO A MUSCLE & STIMULATES MOTOR UNITS TO FIRE
- A MUSCLE MADE UP OF 100 MOTOR UNITS
- IF 100 MOTOR UNITS FIRE, YOU WILL GET A MAX CONTRACTION OF THE MUSCLE
- IF 0 MOTOR UNITS FIRE, THEN THE MUSCLE IS FLACID & YOU GET NO CONTRACTION AT ALL
- A NERVE REGULATES HOW MANY MOTOR UNITS FIRE TO DECIDE HOW STRONG YOU NEED THAT MUSCLE TO CONTRACT FOR EACH ACTIVITY. (IE SHAKING HANDS)
- IF NERVE IS DAMAGED, THEN IT CANNOT FIRE AS MANY MOTOR UNITS AND MAY MAKE THE JOINT LESS STABLE AND MORE SUSCEPTIBLE TO SUBLUX.



INJURY

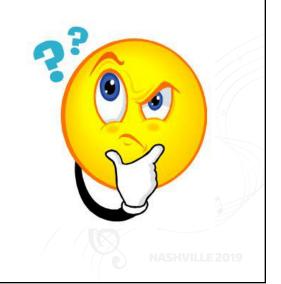
- PEOPLE WITH EDS CAN HAVE INJURIES
- IF NOT FIXED, IT WILL ALWAYS HURT
- FIX WITH TRADITIONAL PT TECHNIQUES & MODIFIED EXERCISES FROM MY BOOK
- MAY NEED SURGERY AS LAST RESORT.





HOW DO I ASSESS SOMEONE WITH EDS?

- WE DETERMINE IF WE NEED HELP (SYSTEMIC, NEUROLOGICAL, INJURY)
- I ASSESS EVERY JOINT IN THE BODY AND DETERMINE WHY IT HURTS (BOIMECHANICAL REASONS)
- WE DEVELOP A PROBLEM LIST
- WE DEVELOP A PLAN ON HOW TO TREAT YOUR PAIN
- WE DEVELOP WAYS TO MODIFY YOUR LIFE STYLE
- WE TEACH FAMILY MEMBERS HOW TO HELP PEOPLE WITH EDS
- WE TEACH YOU THE EXERCISES IN MY BOOK





TREATMENT PHILOSPHY

MANUAL THERAPY

- · TYPES:
 - MFR, CST,MET,DRY NEEDLING, MULLIGAN TECH, TAPING, ECT
- ALIGNS JOINTS
- DECREASES MUSCLE SPASM
- DECREASES INFLAMMATION IN JOINTS
- ALLOWS BODY TO HEAL
- DECREASES PAIN FOR AWHILE
- NEVER DO MANUAL THERAPY ON A JOINT THAT IS NOT BEING STRENGHTENED.

EXERCISES

- ONLY THING THAT GIVE LONG LASTING RESULTS
- STRENGTHEN MUSCLES AROUND THE JOINT SO IT CAN ABSORB MORE EXTERNAL FORCES
- USE BRACES AND TAPE TO GET THROUGH THE PROTOCOL
- DO NOT HURT OTHER JOINTS IN THE PROCESS (MY BOOK)





- Exercise is the most important thing for people with EDS/hypermobility to do.
- We carefully analyzed every PT exercise and assessed if it would help the patient's problem and not hurt them.
- We thought of modifications for every exercise incase the patient had pain after performing that specific exercise.
- Our book lays out a plan which, for some people, could be the first time they ever received an effective comprehensive plan for how to improve their daily function.
- Every patient that we see buys a book and we systematically go through it with them, guiding them through the exercise protocol



MY EXERCISE PROTOCOL



- BOOK: LIVING LIFE TO THE FULLEST WITH EHLERS-DANLOS SYNDROME
- THREE CHAPTERS FOCUSING ON SPECIFIC PARTS OF THE BODY
- CHAPTER2=LOWBACK AND HIPS
- CHAPTER 3 = NECK/MIDBACK/SHOULDER/ ELBOWS/WRIST/HAND
- CHAPTER 4= FEET/ANKLE/KNEE
- WROTE FOR BOTH THE PT & THE PATIENT TO READ TOGETHER

- MY PROTOCOL IS A LAYERED APPROACH BEGINNING WITH MUSCLE ACTIVATION AND ENDING WITH HIGH LEVEL EXERCISES.
- NEED TO GO IN ORDER AND PROGRESS ALL EXERCISES AT THE SAME TIME TO ALLOW FOR SYMMETRY.
- BROKE UP BODY INTO 3 SECTIONS TO DECREASE FATIGUE AND EXERCISE INTOLERANCE.
- TRIAL AND ERROR
- I EVALUATE FROM THE BELLYBUTTON DOWN, THEN THE BELLYBUTTON UP



WHY DO SOME ACTIVITIES HURT?



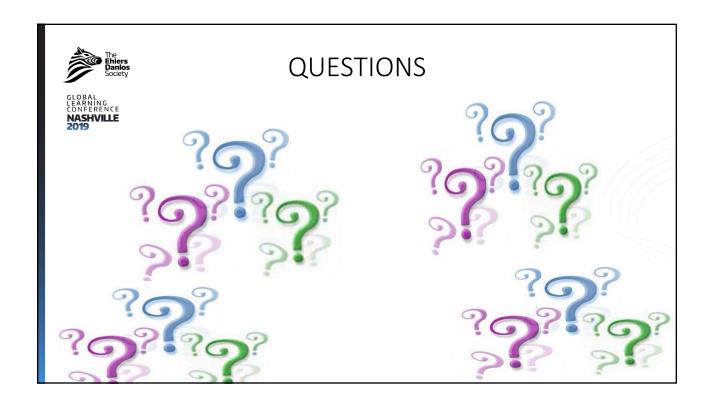
- NASHVILLE 2019 SLUMPED SITTING IS 150% OF YOUR BODY WEIGHT ON YOUR DISC.
 - CENTER OF GRAVITY= BELLYBUTTON
 - FORCE IS EQUAL TO MASS TIMES MOMENT ARM
 - GRF= 3X WALKING AND **10XRUNNING**
 - EVERY INCH MY HEAD IS FORWARD IS 10 POUNDS OF COMPRESSION ON MY HEAD

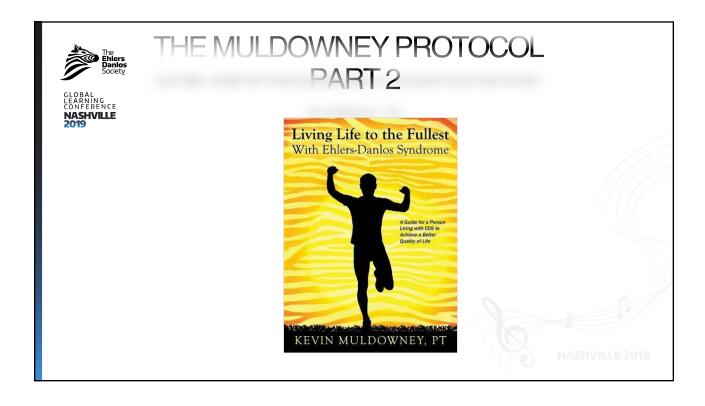
- USE TOWEL ROLL TO HELP **DECREASE SLUMPED POSTURE**
- CARRY OBJECTS CLOSEST TO BELLYBUTTON TO PROTECT YOUR **BACK**
- DO NOT PICK UP OBJECTS WITH ARMS STRAIGHT OUT
- DO NOT RUN OR JUMP UNLESS BEING CHASED BY A BEAR.
- SQUEEZE SHOULDER BLADES BACK AND DOWN AND LIFT HEAD UP



GRADUATE OF THE MULDOWNEY PROTOCOL







 WHEN IN DOUBT, REFER IT OUT
 IF A PATIENT CAN FIX IT, THEN TEACH THEM TO FIX IT THEMSELVES

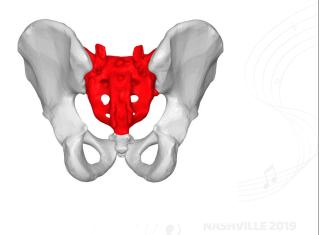
COMMON EDS ISSUES PHYSICAL THERAPY CAN HELP GLOBAL GENERAL GE





SIJ AND LOW BACK AND HIP PAIN

- SIJ DYSFUNCTION: ALMOST ALL EDS PATIENTS HAVE THIS ISSUE AND IF UNTREATED, IT CAN CAUSE HIP, KNEE, FOOT, MID BACK, NECK AND SHOULDER PAIN
- GRF: 3- 10X BW WITH WALKING RUNNING AND JUMPING
- NO MUSCLE CROSSES THE SIJ. ONLY LIGAMENTS AND ONLY PASSIVE MOVEMENT OCCURS IN THIS AREA
- RX: MET TO ALIGN SIJ AND TEACH FAMILY MET TECHNIQUES. CORE AND HIP STRENGTHENING, POSTURAL EDUCATION AND ADL EDUCATION (CHAPTER 2 OF MY BOOK)

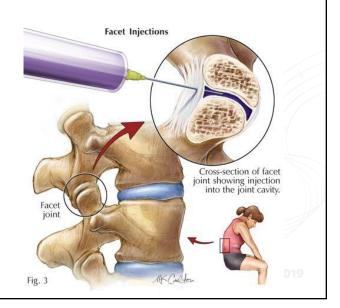




SIJ AND LOW BACK AND HIP PAIN



- LOW BACK PAIN
 - FACET JOINT PATHOLOGY
 - BULDGING DISC
 - HYPERMOBILITY
 - SPONDYLOLISTHESIS
 - MUSCLE SPASM DUE TO SIJ DYSFUNCTION
 - CLEAR NEURO AND SYSTEMIC
 - RX: MET FOR FACET JT PATHOLOGY, MCKENZIE PROTOCOL FOR DISC AND STRENGTHENING FOR SPONDYLOLISTHESIS AND HYPERMOBILITY





THE HIP RUNS THE SHOW

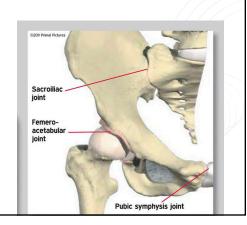


IF YOU DO NOT FIX THE HIP, THE SIJ AND LOW BACK PAIN WILL NOT GET BETTER.

LABRAL TEAR

USUALLY DOES NOT DISLOCATE/SUBLUX, BUT RATHER TRANSLATES FORWARD IN SOCKET AND **HEAD OF FEMUR RUBS ON ANTERIOR** ACETABULUM COULD CAUSE LABRAL FRAYING **OVER TIME**

RX: MANUAL TECHNIQUES TO HELP HIP, TAPING OF HIP, HIP AND CORE EXERCISES AND SLOW WALKING FOR HIP.





TREATING LOW BACK PAIN



- SIJ=MET
 - FACET JOINT=MULLIGAN/MET/NMR
 - DISC=MCKENZIE
 - HIP=STTENGTHEN AND TAPE
 - HYPERMOBILITY= STRENGTHEN **AND TAPE**
 - ONLY TAPE JOINTS AFTER FIXING THEM.
 - ROCK TAPE= LESS ALLERGIC REACTIONS THAN KINESIOTAPE







- NEUROLOGICAL ISSUES
- SYSTEMIC ISSUES
- SIJ ISSUES
- SHOULDER SUBLUXATIONS MAJOR ISSUE
- T7-C1 ROTATIONS/FACET JOINT PATHOLOGY
- RIB PAIN/ 1ST AND 2ND MOST IMPORTANT
- POSTURE
- MUSCLE SPASM
- TMJ ISSUES





POSTURE

- INCREASED LUMBAR LORDOSIS
- INCREASED THORACIC KYPHOSIS
- INCREASED CERVICAL FLEXION
- INCREASED OA EXTENSION
- HEAD WEIGHS ABOUT 12 LBS
- EVERY INCH THE HEAD IS FORWARD EQUALS 10 LB OF WEIGHT OF PRESSURE ON YOUR CERVICAL SPINE
- EXAMPLE 3 INCH FORWARD HEAD= 42 LBS OF PRESSURE ON CERVICAL SPINE



NASHVILLE 2019



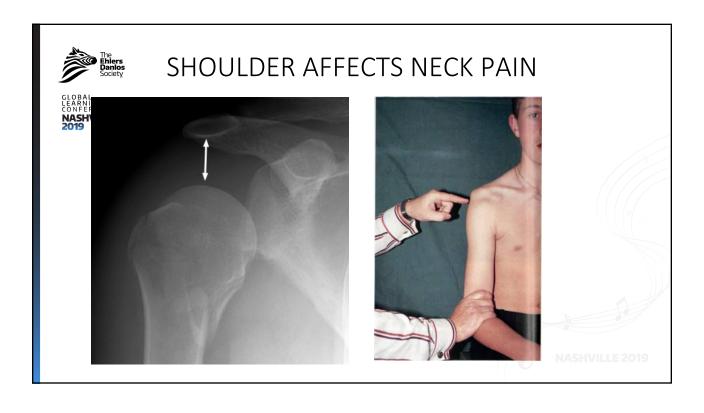
FORWARD HEAD POSTURE

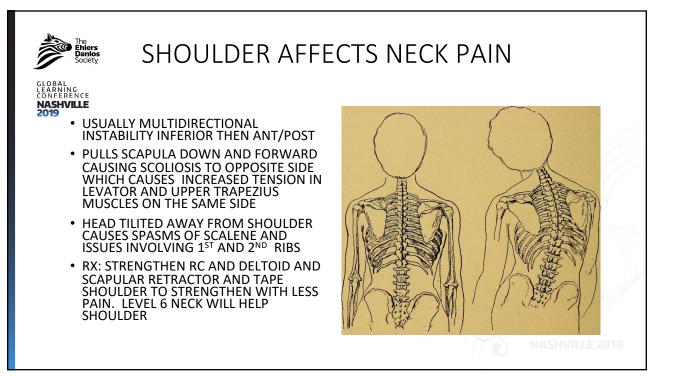
LOW BACK AND HIPS

- INCREASED LUMBAR LORDOSIS= TIGHT ILIOPSOAS AND LUMBAR EXTENSOR MUSCLES AND WEAK ABDOMINAL MUSCLES. YOUR FACET JOINTS LOCKED IN EXTENSION CAUSING LBP. COG BACKWARDS CAUSING FORWARD HEAD POSTURE
- CHAPTER 2 OF MY BOOK
 - STRENGTHEN CORE AND HIP:
 - ALIGN SIJ AND LUMBAR SPINE USING MUSCLE ENERGY TECHNIQUES MODIFIED AND INDIRECT TECHNIQUE FOR FACET JOINTS
 - TEACH FAMILY MEMBERS TO FIX SIJ AT HOME
 - BE CAREFUL OF RELEASEING PSOAS BEFORE AT LEVEL 3 OF THIS CHAPTER
 - MULDOWNEYPT.COM

MID BACK AND SHOULDER

- INCREASE THORACIC KYPHOSIS= TIGHT PECTORALIS MUSCLES AND STRETCHED SCAPULAR MUSCLES INCREASED STRESS ON RIBS AND PULL SHOULDER ANTERIOR
- CHAPTER 3 OF MY BOOK
 - STRENGTHEN MID BACK MUSCLES AND ROTATOR CUFF MUSCLES
 - INDIRECT TECHNIQUES FOR T-SPINE AND RIBS
 - TAPE SHOULDER TO ALLOW TO STRENGTHEN
 - MFR TO PECS BUT BE CAREFUL WITH PEC STRETCH TO NOT SUBLUX SHOULDER



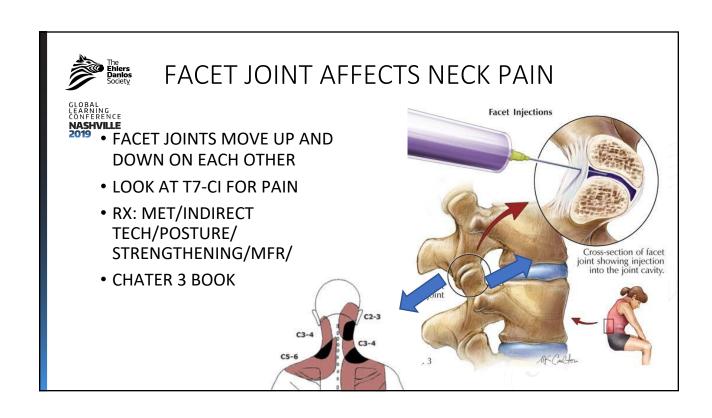


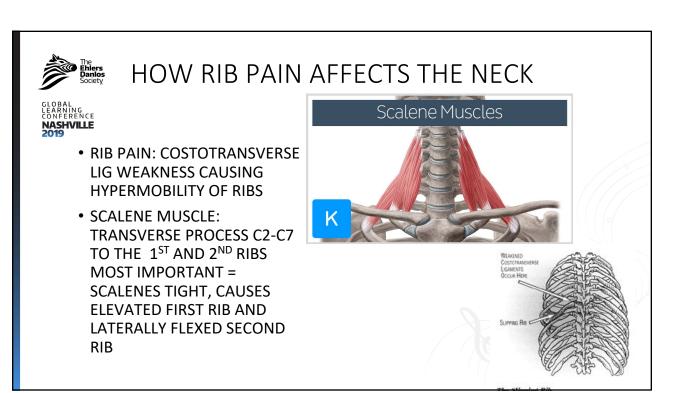


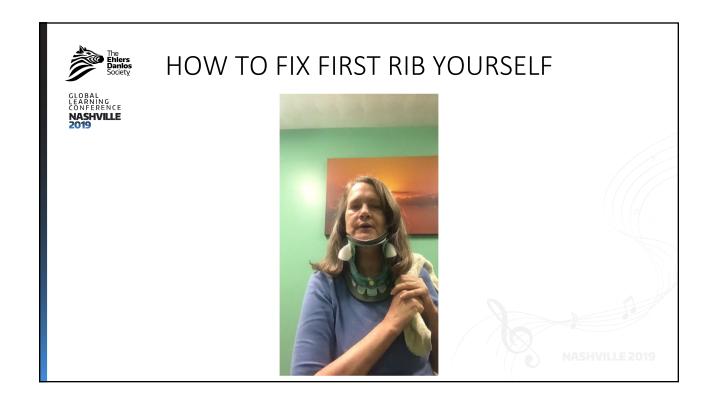
TAPING SHOULDER

- TAPE FOR ACTIVITY, NOT FOR LIFE.
- D/C TAPE ONCE REACH LEVEL 7 OF MY NECK PROTOCOL (CHAPTER 3 OF MY BOOK)
- GO TO MY FACEBOOK PAGE, "LIVING LIFE TO THE FULLEST WITH EHLERS-DANLOS SYNDROME" AND FIND THE SHOULDER TAPING VIDEO THERE.











TREATMENT OF EDS NECK PAIN



- INFORM PCP WHAT OTHER TEAM MEMBERS NEED TO HELP THIS PATIENT
- FIX LOW BACK AND SIJ AND TEACH FAMILY MEMBER HOW TO HELP PATIENT, TAKES ABOUT 4 WEEKS
 - HAVE PATIENT COMPLETE LEVEL 2 NECK OF MY BOOK BEFORE MANUAL THERAPY OF NECK BEGINS
 - TAPE SHOULDERS IF PROBLEMS DOING LEVEL 2 NECK AND TYI EXERCISES AS WELL AS TEACH FAMILY MEMBER HOW TO HELP
 - ISOMETRIC NECK IN GOOD/BETTER POSTURE

- ONCE BEGIN LEVEL 3 NECK, PT CAN BEGIN MANUAL THERAPY ON NECK
 - MFR: TRAPS, SCM, LEVATOR, SCALENE REMEMBER THE SPASICITY COULD BE HOLDING THE NECK TOGETHER SO BE CAREFUL
 - INDIRECT TECHNIQUE FOR RIB, THORACIC AND CERVICAL SPINE.





- SHOULDER SUBLUXATION
 - SUBLUX INFERIOR THEN ANT/POST
 - RC/ LABRAL TEARS
- 1ST AND 2ND RIBS STUCK
 - 1ST RIB ELEVATED
 - 2ND RIB LATERALLY FLEXED
 - SCALENES ATTACHED TO BOTH RIBS
- NECK SEVERELY UNSTABLE
 - LOOK AT T7-CI AND RIBS
 - MOSTLY STRENGTHENED FROM BOOK
 - SUPINE SHLD IR/ER
 - NO TYI, BUT ROWS WITH PINK, MAROON, RED TUBING WITH HANDLES
 - MAY NEED NECK BRACE TO STRENGTHEN

- CCI, AAI, CHIARI MALFORMATION
 - IF PATIENT HAS INCREASED DIZZINESS. LOC. NAUSEA, WITH CHIN TUCKS, THEN GO ONLY HALF WAY. IF STILL DIZZY, USE ASPEN COLLAR WITH EXERCISES. IF STILL DIZZY, OR NAUSEAS, THEN RED FLAG FOR CCI, AAI OR CHIARI AND SOMETIMES TETHERED CORD???. STAY WITH ISOMETRIC NECK AND ASK FOR NEURO CONSULT. CONTINUE STRENGTHENING SHOULDERS AND MID BACK AS TOLERATED.
- WRIST/ HAND/FINGER PAIN
 - TIE TUBING AROUND FORARM
- PATIENT NOT COMPLIANT WITH EXERCISE
 - BUSY LIFE
 - HATE EXERCISE
 - EXERCISES HURT

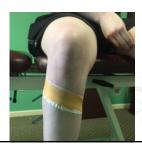


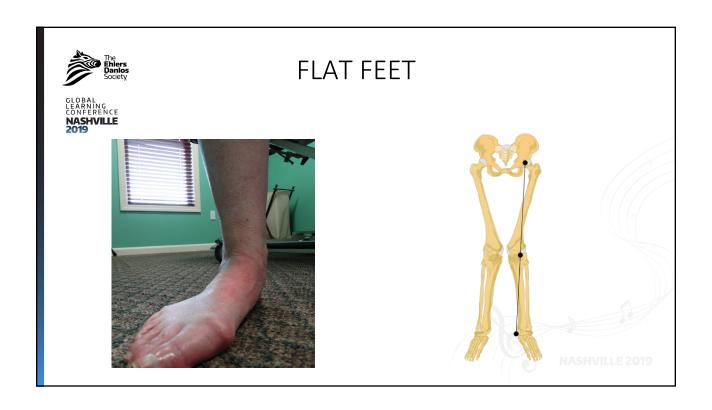


FOOT AND KNEE PAIN

- FOOT RUNS THE SHOW
 - PRONATED WITH NAVICULAR AND CUBOID SPLAYED
 - NEED ORTHOTICS TO CONTROL PRONATION
 - PRONATION=INCREASED VALGUS OF THE KNEE
 - TIBIA ER AND FIBULA LATERALLY FLEXED
 - CAUSE KNEES PAIN AND PATELLA TO SUBLUX LATERALLY
 - LONG LEGS HURT

 RX: ORTHOTICS/ BRACING/ MANUAL THERAPY TO FOOT, KNEE AND SIJ/STRENGTHEN CORE, HIP, KNEE, FOOT/GAIT/ BALANCE







LEGS

- VALUG STRESS= TIBIA ROTATES OUT AND FIBULA PUSHES BACK
- WATCH OUT FOR PERONEAL NERVE
- TALUS TRANSLATES FORARD= CAUSES FRONT ANKLE PAIN WHEN WALING

