

TTAPS PART 2

SCAR TISSUE AND REHABILITATION SEMINAR [STAR™]

COURSE SUBJECT: SEMINAR REGARDING: RESOLVING SCAR TISSUE DEPOSITS TO AFFECT RANGE OF MOTION, POSTURE, STRENGTH AND WALKING THROUGH RECIPROCAL INHIBITION

COURSE DESCRIPTION: 16 HOURS

USE OF ADJUNCTIVE OR SUPPORTIVE THERAPY TO SEPARATE, LOOSEN TREAT SCAR TISSUE IN SKIN, MUSCLE, NERVES, TENDONS, LIGAMENTS, ACUPOINTS, TRIGGER POINTS, BODILY ORIFICES AND JOINTS WITH INNOVATIVE TECHNIQUES, UTILIZING:

USE OF ADJUNCTIVE OR SUPPORTIVE THERAPY

- FINGERS AND FINGERTIPS
- ELBOWS
- T-BARS/S-HOOKS/SPRING LINKS
- FINGER COTS AND BLOOD PRESSURE CUFF BULBS, 6" Q-TIPS
- BALL-TIPPED STYLUSES

AND

INNOVATIVE EXERCISES AND STRETCHING TO QUICKLY RESOLVE TISSUE WEAKNESS, DECONDITIONING AND ATROPHY

THROUGHOUT THE HUMAN BODY TO RESOLVE CERTAIN CHRONIC NEURO-MUSCULAR DIAGNOSIS ENTITIES,

METHOD OF INSTRUCTION: VERBAL, HANDOUTS, STUDENTS WATCHING THE INSTRUCTOR AND INSTRUCTOR WATCHING AND CRITIQUING THE STUDENTS PERFORMING TREATMENTS

PROGRAM SPONSOR:

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Four Seminars:

1. **Reflexes** [and minimal scar tissue] causing nervous system abnormalities
2. **Scar Tissue** [dense, outside joints] causing nervous system abnormalities **and Rehabilitation Techniques for quick resolving of difficult issues**
3. **Adjusting, Manipulation and Mobilization Techniques** for scar tissue in and around joints
4. **Body Chemistry** Correction Methods for non-neurological causes

DETAILED HOUR-BY-HOUR SYLLABUS:

1st hour: recordkeeping and SOAP notes.

MAIN COURSE OF INSTRUCTION: 15 hours

Hours 2-5:

AEROBICS INSTRUCTORS AND CERTIFIED TRAINERS: I ok'd all the workouts for and certifications of an international group which trained aerobics instructors and certified trainers for 8 1/2 years.

SWIMMING CLUB: I was consultant to the swim club for 2 years. Prior to this they had perpetual shoulder and knee issues-ballistic motion at the ends of the ranges of motion

PROFESSIONAL TEAMS: I treated 12, including 3 foreign national football [soccer] teams, and was a nutritional and exercise consultant to several of them, increasing their strength, speed and endurance to the point that they made the playoffs for the first time in their history

DECATHLON: I was the first Junior College decathlon record-holder and set the State of Kansas University and Collegiate record

POWER LIFTING: I came within 40 lbs of the then world record in the bench press in my weight class

Jorge Espinosa, was called the "Magic Marker" in soccer, came in at age 34 with an ankle sprain in cast that wouldn't allow side-to-side movement. It was found that he sprained both ankles 17 years earlier and had his ankles taped tightly every practice and every game since. It was explained that was keeping his ankles from getting strong. He never taped them again, and I was credited with extending his career by 8 years.

Darry Thornton came to me having being told that he needed both knees and shoulders replaced. He couldn't squat with more than an empty bar and couldn't overhead press more than 10 lb dumbbells. I explained the importance of full range of motion exercise and proper nutrition and guided him to his first National Championship in Bodybuilding. He eventually got 3rd in the Mr. Universe in Germany.

GUYTON AND HALL

MUSCLE TESTING

IF THE NEUROLOGY TO THE MUSCLES AREN'T RIGHT, AND THE MUSCLES DON'T TEST STRONG, THEN THEY WILL NOT REHABILITATE PROPERLY

MUSCLE TESTING PLUS ORIGIN, INSERTION, EXERCISES AND STRETCHES

IT IS IMPOSSIBLE TO OPTIMALLY EXERCISE OR STRETCH OR TREAT ANY MUSCLE, TENDON, LIGAMENT OR JOINT WITHOUT KNOWING THE ANATOMY OF THE JOINT OR THE ORIGIN AND INSERTION OF THE MUSCLES THAT CONTROL THE JOINT

You will learn how to become a master tester of individual muscle strength, and how to strengthen ALL the weak muscles in your patients' bodies by tapping on just ONE individual muscle!-**flexor and extensor withdrawal reflexes, pain withdrawal with tapping**

***Crossed Reflex:** Stimulation of **one side of the body** often also causes a corresponding **response on the other side**, especially in the eye.*

Flexor reflex: Hot plate touched, arm draws away [biceps flexes]

Crossed Extensor reflex: Opposite side of the body extends to push body away; leg push away, torso twists, etc.

LAW OF AVALANCHE: Hypothetical law assumed by Ramonh Cajal, that **multiple sensations may be aroused** in the brain **by a simple sensation at the periphery**

[TTAPS introduces a simple sensation to make multiple changes in muscle weakness]

***LAW OF DIFFUSION:** **Any** process set up in the nerve centers **affects the organism throughout** by a process of diffused motion*

***PFLUGER'S LAWS:**

LAW OF UNILATERALITY: If a **mild irritation is applied to one or more sensory nerves**, the movement will take place usually on **one side only**, and **that side which is irritated**

***LAW OF SYMMETRY:** If the stimulation is sufficiently increased, **motor reaction** is manifested, not only by the irritated side, but also in similar muscles on the **opposite side of the body**

***Inhibition** refers to **the prevention or diminution of a reflex muscle contraction** and is believed to be produced in or near anterior horn cells. Two types of central inhibition have been recognized: Indirect inhibition refers to inhibition consequent to subnormal period of recovery nerve; **direct inhibition** is said to be **due to polarization of adjacent neurons essential to the transmission of the reflex which is inhibited**.*

Flexion reflex represents a withdrawal mechanism by means of which an extremity may be removed from a harmful stimulus. **A single afferent nerve may stimulate many motor units;**

***in general, the smaller nerve branches to the skin are more effective than the deep sensory nerves in exciting flexor motor units. [skin changes muscle tone and joint movement] ***

Continued discharge of motor neurons after cessation of the afferent stimulus in the simple spinal reflex is designated as **after-discharge** and is presumably due to **continued discharge** among **internuncial reflex circuits**.

Chronic semiflexed postures, with atrophy of the relaxed, reciprocally innervated extensors, may be observed in **arthritis of the knee joint**.

Extensor reflexes are concerned with resisting the action of gravity upon body posture. The stretch (myotatic) reflex, whose receptors are in muscle, is the basis for the extensor reflex. During intervals of constant stretch, **stretch reflexes** may produce **continued prolonged muscle tension without alteration or fatigue**. Upon increased stretch, more motor units are brought into action.* **When extensor muscles contract, antagonistic flexor muscles relax.***

The **final common pathway** refers to motor units **upon which there is convergence from many afferent sources**. Thus, sensory impulses from many segments, involving many types of receptors, may influence the anterior horn cells for a time.

When reflexes produce the same pattern of movement, they may be classed as **allied reflexes**. Such reflexes may be active simultaneously or successively. The **stretch reflex** and the positive supporting reaction, both of which produce sustained extensor muscle contraction, are allied reflexes. **Antagonistic reflexes** are those which **produce opposite effects**. **When stimuli act which would produce different or opposing reflexes, the resultant response depends upon which stimulus is the more powerful.***

In general, **nociceptive reflexes** are dominant.

Nociceptive reflexes are initiated by **painful stimuli**.

Hour 6:

SCAR TISSUE

CONVERGENCE AND SUMMATION

***Spatial summation**, in which a recipient neuron **receives almost simultaneous impulses from many afferent neurons**, is believed to play an important role in synaptic transmission of impulses.*

[most doctors and therapists are totally unaware of this]

Temporal summation refers to the repeated stimuli occurring within a short excitable period of the synapse, is not believed to play a significant role in synaptic transmission.

***LAW OF FACILITATION:** When an impulse has passed once through a certain set of neurons to the exclusion of others, it will tend to take the same course on a future occasion, and each time it traverses this path the resistance will be smaller. (when something goes wrong in the nervous system, it tends to stay wrong)

DAVIS' LAW: If muscle ends are brought closer together the pull of tonus is increased, which shortens the muscle (may even cause hypertrophy [increased size]), and if muscle ends are separated beyond normal, tonus is lessened or lost (thus becomes weak)

Denervation supersensitivity-scarred nerve endings

Sympathetic inhibition for recovery

Tickling and itching are forms of pain

Reciprocal Inhibition for recovery: such as biceps/triceps or gait

Ticklishness and Itching are forms of pain

Think of gristle in a steak, and putting the butt-end of a knife through it to separate it.

Now think of whether straight paper or perforated paper is easier to tear when it's thick.

Put in position of aggravation, perforate scar tissue, then stretch [know origin and insertion of muscle/tendon/ligament to stretch properly]

MAIN CAUSES OF SCAR TISSUE: immobilization, inflammation, NSAIDS, prescription pain killers

SCAR TISSUE IS NORMAL REPARATIVE TISSUE

NORMAL scar tissue forms with **pseudo-elasticity [folds]**, such as tendons and ligaments have

TRUE ELASTICITY defines muscular filament action

ABNORMAL scar tissue forms in a **MATTED** fashion, which restricts and inhibits motion

AS SCAR TISSUE AGES IT DEHYDRATES AND SHRINKS [contracts], causing **MATTED** scar tissue to further inhibit motion and causing muscle tissue to stay contracted and trapping nerves [causing them to either be irritated and over function, or to under function], while **NORMAL** scar tissue continues to stay normal

DD Palmer stated that 95% of subluxations caused hyper function, and 5% hypo function of nerves

Fibrous ankylosis of a joint is the main reason necessitating performance of an impulse cavitation adjustment

POSITIONAL TREATMENT: **provocation** identifies point to treat; sometimes **hormone fluctuations** provoke

Structures MUST **glide** over and through each other: **skin** over muscles, ligaments and bone; **muscles** over muscles and bone; **nerve trunks and blood vessels** through or between muscles and bone; **bone** over bone; **organs** over muscles, other organs, peritoneum, and pleura

Scar tissue inhibits or prohibits this gliding motion, causing relative or complete immobilization, with resulting deconditioning or atrophy, and may compress blood vessels, lymphatic vessels, nerves and other organs, possibly causing obstruction, irritation or inflammation of organ, vessel or nerve function.

Atrophy vs. Deconditioning: atrophy is an extreme form of deconditioning wherein striations are lost from muscle, bone demineralizes, nerves shrink and tendons and ligaments lose tensile strength

MUSCLES

SAME MUSCLES AS THOSE TESTED, PLUS:

1. LEVATOR SCAPULA
2. QUADRATUS LUMBORUM
3. PUBORECTALIS
4. PROSTATE
5. VAGINA
6. NIPPLES

PREGNANT WOMAN IN HOSPITAL, VOMITING, EYES RED WITH BLOOD, CAN'T VISUALIZE SCLERA

LYMPHATICS

WHERE ARE LYMPHATICS LOCATED? ON **SURFACES** OF ORGANS, NONE ARE LOCATED **IN** MUSCLES OR BONE. [CUNNINGHAM'S ANATOMY]

MY POSTULATION IS: LYMPHATIC CONGESTION [WITH RESULTING DISTENTION] CAUSES TRIGGER POINT PAIN REFERRAL ZONES AND IS ANALYGOUS TO INTESTINAL DILATION CAUSING ORGAN REFERRED PAIN ZONES

WHEN SCAR TISSUE IS BROKEN UP, LIGHTLY PRESS UNTIL THE POINT STOPS CHANGING

Reciprocal Innervation and Reciprocal Inhibition

Hour 7:

Chronic fever

EUSTACHIAN TUBES AND SOFT PALATE

SLEEP APNEA: back of soft palate [adenoids], tonsils, digastricus, superior mediastinum, subclavicular

Meniere's Syndrome: Many of these can be resolved by opening the Eustachian tubes

Eustachian tube closure/Eustachian tube deafness/ear tubes-finger tip opens and swipes up, then swipe back of soft palate

Eustachian tube deafness

Sleep Apnea: Tonsils and adenoids

ENDONASAL TECHNIQUE

Cotton-tip swab, different diameter sticks, small finger with lubrication

Balloon nasoplasty

Ear syringe up nose and inhale/press at same time

EAR TREATMENT

Tinnitus

LOSS OF HEARING

ENLARGED PROSTATE

Prostate massage

Pubococcygeus and Iliococcygeus-prolapsed vagina/uterus, enlarged prostate

Dizziness/vertigo: SCM, upper trapezius, digastricus, coracobrachialis, Sartorius

INTERNAL ORGAN MANIPULATION:

- Brody arm test
- SUPRA OCULAR NERVE FOR UPPER ORGANS
- ANY ABDOMINAL ORGAN OR THYROID

***LAW OF AVERAGE LOCALIZATION**: Visceral pain is most accurately localized in **the least mobile viscera** and least accurately in the most mobile* [this supports **VISCERAL MANIPULATION**]

***Depressor Reflex**: A reflex to stimulation resulting in **DECREASED ACTIVITY OF THE MOTOR CENTER**.* [eg, AK muscle testing, Brody-ARMS, Van Rumpft-FEET, Truscott-KNEES]

Tongue-organs, tongue-neck

PROD

Periosteal pecking-Mann

Chronic shingles pain, Regional pain syndrome [small ball tip]: small ball tipped prod to skin of affected area

Old fracture pain [large ball tip]: large ball tipped prod to callous over fracture site

Surface of bone [large ball tip]: loosens scar tissue on periosteum

Small ball tip of prod to phalanx joints and visible scars [surgical, cuts, abrasions]

Small ball tip of prod to tendons

Large ball tip of prod to surface of bone [periosteum]: scalp, mandible, shin, elbow, patella, ribs, costal cartilages, sternum, clavicle, upper first rib, greater and lesser trochanter, maleoli,

styloid process of skull, mastoid, head of humerus and furcula, mandible, maxilla, gums, iliac crest, radial head, medial ulna, radial and ulnar styloid

PROD RATIONALE

***ELLIOTT'S LAW:** The activity of epinephrine (adrenalin) is due to a stimulation of the endings of the sympathetic nerve, and adrenalin acts upon those structures innervated by sympathetic nerve fibers

Guyton's Physiology:

Sympathetic tone is 5-20Hz

Mechanical Stimulation: Crushing, pinching or pricking a nerve fiber can cause...an action potential.

VISIBLE SCARS

How to successfully treat **visible scars**: surgical, cuts, abrasions, chronic herpes zoster, chicken pox and other

Dermal and subdermal scars: TTAPS

Minor scars: microadhesions: TTAPS

Scars around nerve roots

SCARS IN WRINKLES

Forehead, palms of hands and feet, crease of buttocks, breasts, nipples, front of neck, arm pits, under toe and fingernails, both sides of: elbows and knees, digits, wrists, ankles

Hour 8:

FRACTURE CALLOUS

ACUPUNCTURE, TRIGGER AND MOTOR POINTS

Felix Mann:

Acupuncture points can be found in any square mm of skin.

Janet Travell:

Trigger Points can be found anywhere and refer symptoms anywhere.

Melzack and Wall:

Acupuncture points, Trigger points and Motor points **are the same entities.**

Acupuncture Laws:

- 50% of the time the cause is on the opposite side or end of the body
- Always treat scar tissue where you find it
- A meridian/acupuncture point affects mostly what it's named for and where it courses to

SEIZURES:

- POINTS MIDLINE UP CHIN TO TOP OF FOREHEAD
- HIGH FAT DIET [AT LEAST 30%]

NASIUM:

EYE BROW AND SOCKET:

MASTOID:

ZYGOMATIC ARCH:

CHEEKBONE:

TMJ:

MANDIBLE:

TEMPLE BEHIND EAR:

SUTURES:

STYLOID PROCESSES:

OCCIPITAL PROTUBERANCE AND LINES:

CLAVICLE:

AC JOINT:

CORACOID PROCESS:

SC JOINT:

MANUBRIUM:

GLADIOLUS:

XYPHOID:

COSTAL CARTILAGES:

RIBS:

COSTOCLAVICULAR JUNCTION:

SPINOUS PROCESSES:

HEAD OF HUMERUS:

INNER SHAFT OF HUMERUS:

SUPRASPINATUS TENDON GOING INTO CAPSULE OF HUMERUS HEAD:

SPINE OF SCAPULA:

SUPERIOR ASPECT OF SERRATUS ANTICUS:

ELBOW:

ILIAC CREST:

ISCHIUM:

PUBIS:

PUBIC SYMPHYSIS:

GREATER TROCHANTER:

CONDYLES:

FEMUR ABOVE PATELLA:

HEAD OF FIBULA:

HEEL [CALCANEUS]:

MALLEOLI:

FLEXOR AND EXTENSOR RETINACULI:

CARPALS, TARSALS AND THEIR JOINTS:

SURFACE OF DIGITS, METATARSALS, METACARPALS:

JOINTS OF FINGERS AND TOES:

TIPS OF DISTAL DIGITS:

SURFACE OF PATELLA:

CIRCULAR LIGAMENT OF RADIAL HEAD:

SKIN ROLLING:

DIFFICULT: LOW BACK, SCOLIOSIS, KNEE, ANKLE, SHOULDER, WRIST, SHIN, COMPARTMENT SYNDROMES

***Hilton's law of Physiology:** The nerve that innervates a joint also innervates the muscles that move the joint and the skin that covers the attachments of those muscles.

Hour 9:

BURSAE, TENDONS and LIGAMENTS:

BURSAE

SCARS THAT TRAP TENDONS

Nuchal ligament: EOP-C7

Linea Alba: Xyphoid-pubic symphysis

Supraspinatus, bicipital grooves, around Achilles tendons, tibialis anticus

Scar trigger points

Compartment syndromes-fascial infiltratation with scar tissue causes contracture and compression of vessels

Acupuncture and scars

Bursa exist only in pathology?

Superior mediastinum: gag, trouble swallowing [esophageal], coughing, painful throat that won't go away, asthma, bronchitis

Cyriax: Transverse friction, how to do it, time and numbered of treatments and strength involved

Leahy: How to do it and number of treatments involved

Graston: Spooning in acupuncture

Tendon sheaths: trigger finger, pes anserinus, carpal and tarsal tunnel syndromes

Tendons lengthwise bound to bone

Pinch and move tendons

SCIATICA:

- ORTILANI AND BARLOW MANEUVERS

Resistant sciatica: hip rolls, piriformis group, popliteus, **impacted wisdom tooth**

Resistant carpal tunnel syndrome: **impacted molar**

Resistant sciatica: **impacted wisdom tooth**

Continuous passive motion to stimulate the joint to produce lubrication and to stimulate chondrocytes to produce new cartilage

Imbibition to rehydrate the disc: full range of motion torso rotation [**AVOID BALLISTIC MOTION AT THE ENDS OF THE RANGE OF MOTION**]

Pettibon Piezoelectric effect: Correct biomechanical stress on bone keeps the density in the bone, incorrect stress draws it out to form spurs

IT BAND SYNDROME: DeJarnette: **butt of hand against internal rotation of thigh, patient prone and knee bent to 90°.**

PES ANSERINUS: pinch and pull skin around insertion of tendons, then have patient perform 10 full squats with you stabilizing sitting in front of them, blocking their feet and holding their hands.

ULNAR NERVE: small knot on ulnar nerve just above extended elbow, rub S-I-S, three times, stretch elbow

VASTUS LATERALIS TENDON: small knot just above outer kneecap, rub S-I-S, three times, stretch knee

Triceps tendon

Biceps tendon with radius and ulna

Biceps tendon with coracoids process and supraglenoid tuberosity

Menisci –soleus, gastrocnemius, semitendinosus, semimembranosus, biceps femoris, Iliotibial band, Gluteus Maximus, Tensor Fascia Lata, medial and lateral collateral ligaments

Collateral ligaments of elbow and knee

Triangular ligament of ankle: anterior and posterior talofibular, calcaneofibular

Deltoid ligament of ankle: anterior and posterior tibiotalar, tibiocalcaneo and tibionavicular

Medial and lateral talocalcaneal

Planar calcaneonavicular “spring” ligament

Palmar and dorsal tarsometatarsal and carpometacarpal ligaments

Ulnar and radial collateral ligaments of wrist

Pubic symphysis-pyramidalis

Poupart’s ligament [inguinal, ilioinguinal]

Round ligament

Annular/circular ligament of radial head

Interosseous ligaments: metatarsals, metacarpals, radius and ulna, tibia and fibula

Sacroiliac ligaments

Sacrococcygeal ligaments

Radioulnar ligaments [proximal and distal]

Tibiofibular ligaments [proximal and distal]

Interspinous ligaments

Chondosternal ligaments

Sternoclavicular ligament

Acromioclavicular ligament

Coracoclavicular ligament

Superior costotransverse ligament: rib above to transverse below

Costotransverse ligament: rib to same transverse

Lateral costotransverse ligament: tip of transverse to same rib

Hour 10:

Joint capsule: rib articulates with rib above and below at disc, capsule surrounds it

Costotransverse joint with rib above it

Glenohumeral capsular ligament

Coracoacromial ligament

Manubriogladiolar ligament

Xyphogladiolar ligament

TMJ ligaments

Linea alba of rectus abdominus

Loose abdominal ring vs inguinal hernia

Pelvic organs supported by true and false pelvic muscles, iliopsoas

Drainage of cysts

Plantar fascia

Palmar fascia

Ligaments between carpals and between tarsals

Costochondral ligaments

Tarsal tunnel

Carpal tunnel

Ulnar tunnel

Radial tunnel

Guyon tunnel/canal-hook of hamate

Turf toe-Jorge Espinosa

Pes planus

Hammer toe

Claw toe

Shin splint-tibialis anticus or tibialis posticus

Trick knee-vastus medialis

Trick ankle-peroneus

Hiatal hernia-stomach and diaphragm

Weak inguinal ring: inguinal hernia

Vaginal and uterine prolapse-pubococcygeus and iliococcygeus

Intercostals-ridged T-bar, Spring link

Iliolumbar ligament-T-bar, S-hook

Hour 11:

Seated quadratus lumborum-thumbs into either side

Seated transverses abdominus-finger pads

Flexor digitorum longus-behind lateral shin bone

Quadratus plantae: inserts into flexor digitorum longus tendon-heel spur

4 main heel spurs: quadratus plantae and flexor digitorum brevis, abductor digiti minimi, abductor hallicus, Achilles tendon

Piriformis group [piriformis attaches to anterior of sacrum]-cause of many sciaticas

Vastus medialis [involved in 98% of knee problems]

Adductor longus [mimics upper LB disc herniation]

Adductor magnus [responsible for **pelvic pain** and **hip socket pain**, foot steps to or crosses center]: walks leading with heel internally

Sartorius: can't cross legs

Gracilis [bowed legs]

Tibialis anticus [high arches]

Peroneus [ankle easily turns]

Popliteus [posterior knee pain]

Plantaris [posterior knee pain]

Supraspinatus [shoulder hunches trying to lift elbow to side and can't take hand behind hip]

Infraspinatus [can't internally rotate arm]

Subscapularis [can't externally rotate arm]

Tennis elbow: Wrist and finger extensors [can't flex wrist/fingers]

Golfer's elbow: Wrist and finger flexors [can't extend wrist/fingers]

Latissimus dorsi: low back hurts when **reaching forward**

Serratus anticus: can't lift arm straight to front

Deltoids: can't overhead press

Pectoralis minor and subclavicular: hunched shoulders/kyphosis

Iliacus: drags hip

Psoas: can't lift knee

Soleus [pain at base of heel, shin splints, SI, TMJ]

Gastrocnemius [inner head for inner knee pain, outer head for outer knee pain]

Tensor fascia lata [steps to outside]

Rectus femoris tendon attaches to anterior and posterior [a groove above the acetabulum] portion of anterior inferior iliac spine

Gluteus minimus and medius

Gluteus maximus-bent forward at hips or arched back at hips

Coccyx [piriformis and semimembranosus/semitendinosus attaches to this]

Pectoralis major [clavicular, sterna, costal, abdominal]-shoulders forward

Upper trapezius-can't breathe deeply

Teres major and minor: attach to posterior outer scapula, has common tendon with latissimus at humerus-posterior shoulder joint pain

Latissimus dorsi: humerus, scapula, T6-coccyx, iliac crest, lower 4 ribs [pulls up]

Serratus posticus inferior: T11-L2, lower 4 ribs [pulls down]

Manipulation of tragus: cartilage presses on tympanic membrane or distracts away from it, disrupting hearing

Ear cartilage: pinna and external canal

Scar on ulnar nerve above elbow

Small ball tip to tendon sheaths: Dupuytren's contracture, trigger finger, pes anserinus tendino-bursitis

Ulnar nerve-loss of grip/pinch

Chondral cartilages-abdominals, **diaphragm**

T6-L3 back pain-**diaphragm**

Pitting edema-**diaphragm**, pelvic diaphragm

Diaphragm: T6 to L3, all lower ribs, penetrated by cisterna chyli [drains all lower extremity and abdominal organ lymph], 3 major veins, abdominal aorta, esophagus to stomach [hiatal hernia, reflux esophagus, esophageal spasm]

Behind mid clavicle, **whole arm numbness**

Humerus head, **arm numbness**

Inner upper arm-**depression**

Nose [nostrils/conchae]:

Whiplash

Fibros ankylosis/arthritis joints

Bone pain/sclerotomy pain

Fibromyalgia

Necessity of using a Cane or walker to walk (from leg weakness)

Herniated or bulging disc

Thoracic outlet syndrome

Female cyclical pain/cramps

Osgood-Schlatter's-rectus femoris contracture

ALS:

- FIRST RIB ADJUSTMENT
- FEET ADJUSTMENT
- ATLAS ADJUSTMENT

MS:

- SCAR TPs
- PROD

PARKINSON'S

- PROD
- LEG RESISTANCE EXERCISE

GUILLAN BARRE'S

- HIP ROTATION MANEUVERS
- PROD-BOTTOMS OF FEET, TOE TIPS, NOSE

Migraines

Fibrocystic breast disease

Chondromalacia patella: holding superior patella while contracting quad is painful in knee- move patella to each side and press up under posterior aspect, then down in trough, then press on kneecap A-P lightly and push S-I and back

Superior Mediastinum: gagging, asthma, bronchitis, esophageal spasm, reflux esophagitis

Frozen shoulder/rotator cuff exercise [untraps supraspinatus tendon at shoulder]:

1. Stand with fingers intertwined, palms down and arms extended downward. Swing them forward and up to overhead with palms up, arms still straight. Swing hands fully right to left and back to right 3 times with arms straight. Duck head down and position hands behind head, then bring head erect and pull elbows back, drawing shoulder blades together 5 times. Pull one elbow into side, flap 3 times, then the other, 3 times each. With hands behind erect head and elbows back, pull hands 4-5 inches behind head 5 times. Place hands palms up on top of head and push them overhead with arms straight. Swing hands down and forward to front of pelvis.
2. Grab wrist of side of affected shoulder, pull up and behind head and swing down and to the side to full arm extension, skirting the face and chest. Repeat 5 times.

ANKYLOSING SPONDYLITIS:

- PERIOSTEAL POINTS ALONG INFERIOR NASAL BONE EDGES
- PERIOSTEAL POINTS ALONG INNER BORDERS OF PUBIC BONES
- PUBIC SYMPHYSIS

MENSTRUAL CYCLE PAIN:

- MEDIAL AND LATERAL BILATERAL CALCANEUS
- TRIGGER POINTS THAT FLARE DURING THE PERIOD, BUT NOT OTHERWISE

Hour 12:

REHABILITATION

BRACES AND SPLINTS AND TAPE

--Should be worn only when injured area is in stress--

SLIGHT resistance to re-energize muscle, re-establish the brain/body connection and let the brain know that you really can do the movement

Sometimes pain is the body's cry for exercise

The importance of exercise through a **full range of motion**

Swim club and ballistic motion at the end of the range of motion

Exercise to mediate pain-older patients with arthritis, pain was calmed by exercise

Deconditioning vs Atrophy

MD in Wichita that died hang-gliding Dr. Sweet and _____

Hour 13:

FOOT/FOOT DROP

Mazion: Strumpell's Tibialis Anterior Sign: Patient supine, place one hand under the patient's knee in the popliteal space and the other hand over the middle anterior tibial third, **strongly flex hip** on pelvis and **firmly flex knee** with the other hand, causing **dorsiflexion** and possibly **adduction**.

My procedure is to firmly flex knee in Yeoman's Femoral Stretch position.

The right way to stretch: 3x 15-20 seconds, 3-5/day, **do NOT** use ballistic motion at the end of range!!!

The right way to exercise: 3x5 repetitions for 3 weeks, then 3x8 for 3 weeks, then 8,6,4,2,1

If lat rowing first, then no warm up for biceps

If bench first, then no warm up for triceps or deltoids

ALWAYS begin with FULL range of motion and very light weights

Prelude with 10 minutes of walk or walk-jog, then lift, **1/3-1/2 should be reverse or reverse elliptical**

Don't lift first, then run

MILD stretching after 10 min warm up, then **HEAVY** stretching at end of workout

Heavy stretching tells the muscle to shut down

If you stretch heavy at start of workout, you are more susceptible to a strain or pull

Stretch heavily at **END** of workout

SPRAIN/TEAR:

If there is swelling and bruise, it's a **SPRAIN** [torn capillaries], if not, it's a **STRAIN**

GRADE 1: 25% width tear

GRADE 2: 50%

GRADE 3: 75%

GRADE 4: 100% full separation

Achilles tendon turns 90 degrees, John Grayson

Butt squats, Quad squats: keep tension through full range of motion, both eccentric and concentric

Teres major with lower cables: begin palms posterior, pull elbows behind back with palms up

Rhomboid major pull downs: lean forward and drive elbows back till shoulder blades stop movement [bar should be at about mid head level] vs lat pull downs: alternate pulling down to tops of shoulders and clavicle

Row with flat back

Arch-ups butt with flat back

Arch-ups hams with tensed butt

Bicep stretch to back with hands pronated

Carpal and ulnar tunnel stretch with fingers spread

Spread fingers with all other fingers spread

Toe spread with help from fingers [for foot pain]

Triceps stretch with hand on shoulder and elbow over head

Digital flexor stretch with elbow locked

Upper trap stretch facing shoulder

Levator scapula stretch face down, facing away from shoulder, shoulder down

Lat and serratus posticus inferior stretch with arm next to head, leaning away and rotating torso forward

Subscapularis stretch with upper arms straight with shoulders and external rotation

Infraspinatus stretch with arm internally rotated behind back and fingers pointed up to head

Patellar tendon, suprapatellar and infrapatellar bursa, and retropatellar [chondromalacia patella] treatment

Thumb stretches-**ALWAYS with pressure on the distal joint**, NEVER on the finger tip!!!!

Big toe stretches

Neck lateral stretches

Neck flexion stretches

Neck extension stretches

Torso rotational stretches catty-corner in chair

McKenzie stretches for abdomen

Torso flexion stretches

Torso side stretches with arm up and beside head

Thigh adductor stretches [knee]

Quadriceps stretches, thigh flexed, heel to buttock

Rectus femoris stretches thigh extended, heel to buttock

Semimembranosus standing to side stretches

Biceps femoris stretches

Patellar side to side stretches

IT band stretches-stand with affected side bent back, pulling foot up till it stops, then back [heel to butt will stretch rectus femoris]

IT band overlaps quads and hams and can mimic either

IT band disorder can cause knee, thigh, ham, quad, hip, low back, side, scoliosis or lower rib issue

Worn continually, it will act like a cast and cause deconditioning and possibly atrophy

Civil war: officers who had compound fractures of leg were perfectly set and put on bed rest. Enlisted men were set in offset manner, wrapped and sent back to work. Officers never recovered, and enlisted men regained full strength in a short period of time.

Remodeling of bone goes on for years after fracture. One study showed remodeling of tibia still going on 11 years after fracture.

Hour 14:

BRACES AND WRAPS

8" brace for back to stabilize localized painful area of lower thorax and lumbosacralpelvic allows the patient to focalize the stabilization instead of including surrounding unaffected areas

3-4" SI brace for SI allows specific stabilization

Weight lifting belt should be worn around SI in order to get best leg and hip strength

3" brace for forearm

3" brace for wrist

Mobile cock-up splint for carpal or ulnar tunnel syndrome [studies show wrist splints don't help Carpal Tunnel Syndrome]

Wrist-thumb brace for thumb

Open patella brace for knee

Tongue suppressor splint for digits

Cho-pat brace for patella [many times ABOVE knee instead of below]

Figure 8 brace for ankle, provides lift to outside of ankle

Saddle brace for neck

Dr. Scholl's bunion pad for **dropped transverse and cuboid arches**

THERAPIES

ULTRASOUND: pulsed only when inflammation or swelling, continuous for other

RUSSIAN STIMULATION: best for exercising muscle

PULSED EMS: when swelling is present and when muscle is deconditioned

CONTINUOUS [80-200hz] EMS: to break spasm

TNS: 1-2 hz when hypertonic sympathetic [normotonic is 0.5-2hz], 20 when hypotonic, place positive over affected area, and negative over hoku for upper body and over lateral anteroinferior ankle for lower body

PNS [ACUPUNCTURE WITH ELECTRICITY]: see TNS protocol

HEAT AND COLD: when inflammation or swelling is present, use **COOL** pack [such as cold tap water with 2 or 3 ice cubes in a zip-lock baggy], 10 minutes per half hour or 20 minutes per hour maximum. Moist heat or cold for same periods when inflammation or swelling not present. **The body will bring in circulation to carry off excess heat or to warm up cold, which will cause more swelling and more pain a few hours later.** Cool packs will **gently** constrict the tissue to move out the excess fluid.

EXERCISE: Concentric and eccentric [negative] contractions are equally important **through a full range of motion.** The **point where the muscle fails is the point of injury and the point at which the patient MUST not fail to resist** if they are to improve. **4 repetitions against light resistance is all that is necessary.**

Movements can be performed **without added resistance** and with muscles tense through all movements and ranges of motion.

Patient may provide resistance for most upper and some lower body movements with their hand(s) or fingers.

Some movements may require **minimal** exercise band resistance through a full range of motion.

Assisted contraction by patient or provider can be used when movement is too painful or weak.

Hour 15:

ISSUES POSSIBLY NECESSITATING REHABILITATION OR SCAR TISSUE TREATMENT:

Foot pain: can't fan toes

Ulnar nerve: can't grip or pinch

SCM: headache

Digastricus: sinuses won't stop draining

External pterygoid: chews on one side, jaw tilted to one side, prone to seizures, low blood sugar, low blood pressure

Internal pterygoid: bruxism, prone to high blood pressure, blocked Eustachian tube

Eye pain/squinting: orbicularis oculi

Sore throat: areas around throat cartilages and hyoid

Walk *slightly* to outside of foot for **pes planus**

Pes cavus high arch: Tibialis Anticus

Masseter and buccinators: inner ear pain

Bicipital tendonitis: often wrongly called rotator cuff syndrome, arm straight and raised to side with palm up causes shoulder pain

Meralgia paresthetica: adductor magnus, especially against thigh bone

Fingers:

- Spread and fan fingers while moving wrist in circular motion
- Grip, then extend fingers one at a time, then extend one at a time
- Fingers extended and together, spread fifth, return, fourth, return, third, return, second, return

Wrists, with fingers gripped, then spread:

- Palms inward, then down, then up: adduct, abduct, adduct, abduct, etc.

Pectoralis major and triceps:

- Wall pushups with elbows straight out from shoulders and elbows bent to 90° then 45° down, then straight down, bend till forehead touches wall, extend fully, bend, extend, etc.: the further feet are away from the wall, the more difficult

Shoulder adductors, arms straight and bent 90°:

- Resist light lateral motion, then press medial lightly, repeat

Subscapularis:

- Arm at 90° bent into abdomen, opposite hand putting light pressure against front of wrist, rotating arm externally while abducting, then resist against light pressure in opposite direction, repeat

Dumbbell exercises for shoulders:

Shoulders: Triceps, deltoids, biceps, rotator cuff

- curls palms forward, thighs to top of head-MEDIAL BICEPS HEAD
- curls palms outward, thighs to top of head-LATERAL BICEPS HEAD
- palms down, wrist and elbow slightly bent, thigh to level with top of head-DELTOIDS
- elbows touching side, hands up and palms forward, push straight up and down-DELTOIDS AND TRICEPS
- palms together, wrist and elbow slightly bent, thigh directly to sides to level with top of head-DELTOIDS
- palms together, pull up to sides with elbow at 90° and hand in vertical position-INFRA SPINATUS
- palms together, pull up directly over and behind head-DELTOIDS
- palms together, pull elbows directly to sides with elbows at 90°-DELTOIDS
- palms toward thigh, wrists slightly bent, pull up at 45° angle to side to level with top of head-SERRATUS ANTI-CUS
- thumbs down, elbow and wrist straight, pull up at 10-15° to side to level with shoulder-SUPRA SPINATUS
- with elbows at side and at 90°, rotate inward and outward completely, repeat-SUBSCAPULARIS

Brachialis:

- palms forward and arms at side, curl with elbow at side

Butt [keeping butt tense], Knee [keeping knee tense], Hams [keeping hams tense]:

- put foot on chair with front of heel butted against seat with torso erect, leg extended and back foot directly beneath torso, bend knee as much as possible, then push back straight
- turn 90°, and repeat
- for more difficulty, step forward as much as possible with torso erect, bend knee as much as possible, extend, repeat

Gluteus medius and minimus:

- on hands and knees, take one leg up to side and oscillate up and down while slowly arcing to the back, then back again, repeat
- lay on side, lift leg and oscillate with inner foot parallel with floor, then rotate inward and oscillate, repeat

Butterflies:

- interweave fingers behind neck, lightly touch, don't press forward, tilt head back and pull elbows back and head back at the same time, oscillating, turn face right and repeat, turn face left and repeat. If standing, don't lean back.

Airplanes

- lay prone with fingers interweaved behind neck, arch up and dip and weave side to side.

Parachutes

- lay prone with arms beside torso, arch up and raise head, shoulders, hands and feet as high as possible, repeat.

Psoas/Iliacus:

- straight leg lift, then lift hips till feet past head 1-2', assisted if necessary, then resist during lowering movement-DO NOT DROP AT ANY POINT, as that is the weakest part of the muscle, repeat

Abdominals:

- supine, knees bent to about 90°, sit up till fingers touch ankles, assisted if necessary, then resist during lowering movement
- repeat taking opposite elbow outside opposite knee, lower, then same to other knee, repeat

Low back:

- stand erect and slowly round low back and trace fingertips down front of thigh and leg, slowly go back up, repeat

Door squats: butt [keeping butt tense], knees [keeping knees tense]

- stand erect with knees slightly bent about 6" from and facing door jam, holding as low as possible, bend knees as much as possible, then raise to erect position

Calf:

- stand erect with the ball of one foot on a step, and the other flat on the same step, lower heel completely, then slowly contract completely, **toes in, then toes straight, then toes out**

Toes:

- press transverse arch completely up with opposite thumb in pad between outer knuckles till arch stops, curl toes with same side fingers, then curl, release, curl, release, etc.
- fan and wiggle toes
- spread toes with fingers that won't spread, contract, release, contract, release, etc.

Hams:

- patient prone curls leg against light resistance at heel through full range, then resists against light pressure in the opposite direction, repeat

Quadriceps:

- patient in seated position with leg curled completely under table or bench, push against light resistance to complete extension, then resist lightly in the opposite direction, repeat-this exercise will allow someone on a **cane or in a wheelchair** due to weakness [not paralysis] to walk unaided again

Thigh abductors, knees straight and bent 90°:

- supine, legs spread, resist light pressure medial, then push against light resistance lateral, repeat

Thigh adductors, knees straight and bent 90°:

- supine, legs together, resist light lateral pressure, then push against light resistance medial, repeat

Hour 16:

FATAL ERRORS WHEN LIFTING WEIGHTS:

1. Bouncing weight or with weight [**ballistic at the end of the range of motion**-swim club]
2. **Ducking chin** when exerting
3. Pec deck
4. Shoulder machine
5. Neck machine
6. Do not fully extend knee when pushing, as in a sled or squat
7. Do not pop knee on leg extension

Curl leg completely on leg curl machine and slightly arch up

Start leg curl in complete curl position

Full range of motion in all movements [**Starling's Law**-the longer the muscle, the more forceful the contraction]

Teres Major move with 2 cables

Biceps curl to top of head because of attachment over shoulder

Kick-backs for triceps because of attachment to shoulder blade

Leg lifts over head because of psoas attachment

Exercise psoas, knee up and out with straight back, on side spinous tips are pointing

Neck rotations both ways putting slight pressure on cheek [not jaw]

Vit E and scar tissue, freezing, PUFAs

Sciatica stretch: sitting on a bed or bench or 2 chairs with your heel hanging off the edge, then slowly leaning forward with your back straight and your knee lax.

When you get to the stick point, hold it and straighten and release the knee for 15-20 seconds, alternate from side to side 3 times each, and repeat 3-5 times per day.

Pectoral stretch: put hand on the wall with palm forward at about shoulder height and turn until hitting a dead stop, repeat as above.

FEET:

- NECK AND SHOULDER PAIN
- SHOE EVALUATION: collapsible heel cup, level heel, no insole bumps, arches correct size, stand on it to make sure with weight-bearing
- **TRANSVERSE ARCH LIFTS: BUNION PAD**
- INNER LARGE TOE FOR NECK PAIN
- 1st DORSAL INTEROSSEOUS AGAINST TARSALS FOR LUMBAR AND THORACIC PAIN
- ADJUSTMENTS OF FEET FOR CHRONIC NECK AND SHOULDER PAIN
- INGROWN TOENAIL ADJUSTMENT-DISTAL JOINT OF LARGE TOE

HOW TO BUY SHOES:

- NON-RIGID HEEL CUP
- LEVEL HEELS
- BACK OF SHOE STRAIGHT UP AND DOWN
- FEEL FOR BUMPS OR ROLLS OR NAILS IN INSOLE
- ARCH TOO FAR FORWARD OR BACK OR TOWARD OUTSIDE

HOW TO GET IN AND OUT OF VEHICLE:

- SIT, **KEEP KNEES TOGETHER** AND PUT FEET IN FIRST, THEN KNEES
- REVERSE TO GET OUT
- STEP UP WITH FOOT NEAREST DOOR, WITH TRUCKS OR HIGH CARS

HOW TO SIT:

- HIPS SHOULD NOT BE BELOW KNEES
- BOTH LEGS SHOULD NOT BE EXTENDED AT SAME TIME, EXCEPT WHEN RECLINING
- WHEN BACK OF KNEES TOUCH SEAT, SUPPORT SHOULD BE AT BACK OF HIPS

HOW TO STAND:

- PLUMB LINE FROM EXTERNAL EAR CANAL
- THRU MID-SHOULDER
- THRU MID-HIP
- THRU JUST IN FRONT OF ANKLE
- SHOW OF BALANCE TO NOT SWAY FORWARD OR BACKWARD

HOW TO WALK:

- BODY LEAN
- KNEE BENT SLIGHTLY
- NO HEEL STRIKE

HOW TO JOG:

- BODY LEAN
- KNEE SLIGHTLY BENT
- NO HEEL STRIKE
- WRIST CATCH POSITION
- ELBOW ANGLE
- HAND AND WRIST BOB INTO CHEST
- HAND BACK JUST PAST HIP
- ELBOW NOT BENT OVER 90°

HOW TO SLEEP:

- MATTRESS SHOULD FEEL LIKE PROPER STANDING POSITION WHEN LAYING SUPINE
- UNLESS HAVE KYPHOSIS, THIN PILLOW ON BACK WITH SHOULDERS RIDING UP ON PILLOW
- WHEN LAYING ON SIDE, FOLD PILLOW TO KEEP CERVICAL SPINE IN LINE
- KEEP KNEES TOGETHER, BUT CAN PUT SOMETHING BETWEEN THEM
- DON'T DUCK CHIN OR PULL KNEES UP TOO HIGH [PUTS LORDOTIC CURVES IN WEAKENED POSITIONS
- ON SIDE, DON'T DROP UPPER KNEE DOWN TO BED, AS IT TWISTS SPINE UP TO T5, BUT CAN PUT PILLOW UNDER IT TO PROP IT UP
- INSTEAD OF LAYING ON BACK, GET BODY PILLOW AND ROLL CATTY-CORNER ON IT TO KEEP PROPER CURVES IN BACK

Stabilizers of shoes make it like a cast, weakening the intrinsic and extrinsic muscles of the foot and ankle, so that when you sprain, it's much worse

Walk barefoot in grass 15 minutes per day stimulates the sympathetic nerves on the bottom of the feet, increases body circulation, and the soft, uneven surface forces the intrinsic and extrinsic muscles of the foot and ankle to work

Flip flops

Let loose of tension when you feel it, as it keeps the spasm guarding what's been healed already

Avoid lifting with a twist [LB herniation]

Avoid planting a foot and twisting [ACL]

GOLF

Golfing to add 30-50 yards to the drive, shift weight to balls of feet and pivot on balls

Hold club head higher at beginning and at follow-through