Neck, Back & Beyond: Preventing Pain for Peak Productivity
PART 2

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WHEELCHAIR TRANSFERS IN THE OPERATORY

Most patients should be transferred to the patient chair for optimal positioning and access to the oral cavity. Carefully assess the patient before the transfer to determine reason for confinement. Always use a gait belt during transfers.

- Sliding Board Transfer
- 1-person Transfer
- 2-person Transfer

EXERCISE

- Aerobic
- Stretching
- Strengthening (Power vs. Endurance training)

AEROBIC EXERCISE

- Rhythmic movement delivers oxygen and nutrients to muscles
- Improves circulation
- Improves healing & recovery time for muscles
- Controls weight & reduces stress

Considerations for selecting an aerobic activity

- Exercise that involves the upper trapezius.
- Symmetrical movement.
- Walking, cross-country skiing, running, swimming, cycling. (Pick one you enjoy)
- Perform 4-5X week for minimum of 30 minutes.
- Know your target heart rate.

TARGET HEART RATE (THR)

- Approximate THR:
  MPHR=Maximum Predicted Heart Rate
  MPHR = 220 – age
  For High intensity Exercise, Target Heart rate will be 85% of MPHR
  For Low intensity Exercise Target Heart rate will be 60% of MPHR

- More Accurate THR:
  Considers resting HR. See Karvonen Method Calculator at www.fitzone.com/members/Fitness/heartrate_zones.asp

- Most accurate THR:
  Consult a certified athletic trainer or personal trainer

Always check with your doctor before beginning any exercise program
CHAIRSIDE STRETCHING

How to Stretch Safely

- Move into and out of a stretch slowly. This insures you won’t overstretch and encourages relaxation of the nervous system.
- Assume the starting position, this is where the stretch begins.
- Breathe in and exhale slowly as you increase the stretch to a point of mild tension or discomfort.
- Hold stretch for 2-4 breathing cycles.
- Stretches should be repeated if possible.
- Do NOT stretch in a painful range. Discontinue stretching if pain increases following stretching.

MUSCLE FUNCTION (postural vs. mover muscles)

Postural muscles

- Deep and closer to the spine
- Provide the function of stabilizing the spine
- Designed for prolonged contractions and holding the body in one position for prolonged periods without fatiguing when properly strengthened
- Stabilize the spine and shoulder girdle to prevent injury.

Mover muscles

- Further from the spine & closer to the skin
- Function to move the body
- Designed for power
- When exercised correctly, these muscles can enhance specific sports or recreational activities.

POWER VS. ENDURANCE EXERCISE

Endurance training

- Good for targeting the postural muscles.
- Essential for preventing injuries and for maintaining optimal postures in prolonged, static postures.
- Focuses on high repetitions and low weight.

Power training

- Tends to target the more superficial mover muscles which are designed for power.
- Training focuses more on low repetitions and high weight.

ENDURANCE TRAINING:

- Postural stabilization muscles
  Transverse & oblique abdominals, quadratus lumborum, erector spinae and multifidus

- Scapular stabilizing musculature
  Middle & lower trapezius, serratus anterior

- Specific rotator cuff muscles
  Infraspinatus, subscapularis, teres minor
Exercise Guidelines

- *Never perform strengthening exercises if you have pain.*
- Strengthening should be done 3 times weekly. (Stretches can be performed daily)
- Exercises should be done regularly
- Always start out mildly and increase gradually.
- Exercise should not cause pain. Mild discomfort that lingers after you have stopped exercising is normal, but if you experience pain, stop the exercise.
- Pilates and/or Swiss ball – excellent for core strengthening, however generic Pilates programs should be modified for dental professionals.

*Always check with your doctor before initiating any new exercise program.*

Avoid overstrenthening specific muscles that can worsen pain.(anterior neck muscles, levator scapulae, upper trapezius, deltoids, rectus abdominus, pectoralis major and minor).

POSTURAL AWARENESS EXERCISE

- Find your neutral seated posture.
- Pull navel to spine, hold throughout the exercise.
- Sit tall in your chair, lifting your chest toward the ceiling.
- Stretch your head toward the ceiling.
- Breathe in and point your thumbs backward, like a hitchhiker. Press shoulder blades down and together. Hold briefly.
  *Without letting your shoulders roll forward,* let your palms turn inward and relax at your sides.
- Hold the position for about 1 minute, then relax. Perform this exercise daily until this seated posture becomes a habit.

GOLF

**Risk Factor #1: Improper Set-up Posture**

- Pivot from the hips
- Avoid flexing spine forward
- Stretch hamstrings
- Strengthen abdominal stabilizing muscles

**Risk Factor #2: Poor Trunk Rotation**

- Develop good flexibility with trunk rotation, especially toward the backswing side

ACUTE PAIN

- Pain at rest – usually severe “7-8” range
- Swelling or heat in the area
- Sudden onset, usually lasts 3-5 days
- Restricted movement
- Early treatment EXTREMELY important during this phase
“SCRIPT”

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RED FLAG SYMPTOMS
When pain may NOT be musculoskeletal in origin. Call your doctor immediately!

- If your symptoms increase with rest and during the night.
- If you cannot reproduce the pain with body movement or positioning.
- If the symptoms cover a large, non-specific area and are hard to pin-point.
- If symptoms migrate from one joint to another.
- If you have a history of serious illness, especially cancer, or if you experience sudden weight loss or fever.
- Numbness and/or muscle weakness that does not subside.
- Dizziness, nausea, blurred vision, severe headache, loss of balance, or fever.

CHRONIC PAIN
- Most common type among dental professionals
- Moderate pain “3-6” on pain scale
- Pain usually localized, and felt “on & off”
- Often the result of years of awkward, repetitive posturing
- Takes longer to recover from, requires change of habits

TREATMENT FOR CHRONIC PAIN
1.
2.
3.
4.
5.
TRIGGER POINTS
Characteristics

Trigger Point Self-Therapy
Use a tennis ball or smaller hard rubber ball against a wall, or a Backnobber device.
• Find the trigger point
• Apply deep pressure for 5 slow counts, then massage slowly across the point for 5 counts
• Alternate between deep pressure and slow massage for one minute per trigger point
• Aim at a pain level that “Hurts so good” (about 4-5 on a scale of 1-10)
• Perform a 30-60 second stretch to the affected area.
• Repeat 3-5 times/day if possible
• Too much pressure can irritate and worsen trigger point pain

Problematic trigger points among dental professionals
• Upper trapezius
• Levator scapulae
• SCM
• Scalenes

STRESS
Risk Factors
• Time management
• Anxious patients
• Uncooperative patients
• Technical perfection
• Team member controls
• Heavy workload

Stress Management
• Breathing Strategies
• Progressive relaxation
• Visualization
• Autogenics
RESOURCES

Books

Practice Dentistry Pain-Free: Evidence-based Strategies to Prevent Pain and Extend your Career - Bethany Valachi  www.posturedontics.com
Low Back Disorders: Evidence-based prevention and rehabilitation - Stuart McGill  www.amazon.com
Sports Injury Prevention & Rehabilitation - Shamus & Shamus  www.amazon.com
Trigger Point Therapy Workbook – Clair Davies  www.amazon.com
Understand your Backache – Rene Cailliet  www.amazon.com

CDs

Journey into Deep Relaxation – Dorothy Blumenfeld  www.amazon.com
Delta Sleep System – Jeffrey Thompson  www.amazon.com

Exercise for Dental Professionals

Smart Moves for Dental Professionals on the Ball Exercise DVD Kit - Valachi  www.posturedontics.com
Smart Moves for Dental Professionals in the Operatory: Chairside Stretching DVD Kit-Valachi  www.posturedontics.com

Other Wellness Products
Tempurpedic NeckPillow:  www.tempurpedic.com
MediBeads Moist Heat Wraps.  www.painreliever.com
Posture S’port body garment – www.posturedontics.com
Backnobber Trigger Point Tool – www.posturedontics.com

REFERENCES


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About the Speaker

Bethany Valachi, PT, MS, CEAS is a physical therapist, dental ergonomic consultant and author of the book, “Practice Dentistry Pain-Free: Evidence-based Strategies to Prevent Pain and Extend your Career”. She is CEO of Posturedontics®, a company that provides research-based dental ergonomic education. Clinical instructor of ergonomics at OHSU School of dentistry in Portland, OR, Bethany has provided expertise on dental ergonomics to private clinicians, as well as faculty and students at numerous dental and hygiene schools, including faculty training at NYU School of Dentistry. Bethany lectures internationally and was guest lecturer at the 2009 International Dental Ergonomics Congress in Krakow, Poland.

She is widely published in the Journal of the American Dental Association (JADA), Australian Dental Practice, Dental Economics, Contemporary Oral Hygiene and numerous other peer-reviewed dental journals. Bethany is author of the ADAA Ergonomic Home Study Course and has produced chairside stretching and home exercise videos specifically for dental professionals. She lives in Portland, Oregon with her husband, Dr. Keith Valachi, who operates a private dental practice in St. Helens, OR.

She welcomes visitors to her website, www.posturedontics.com where she offers Continuing Dental Education & Online CE, videos, ergonomic products and free newsletters.
Sample Chairside Stretches
from “Smart Moves in the Operatory: Chairside Stretching” DVD

The Reversal
Support wrists on hips and slowly lean backward. Do not over-extend the head. Hold 2-4 breath cycles.

The Un-Twister
Legs in tripod position, bend to your left side, resting left elbow on left knee. Stretch right arm overhead and look toward ceiling. Hold 2-4 breath cycles.

Chin Nod
Strengthens postural neck muscles. Lift chest upward, shoulders back. Nod the head, dipping the chin slightly downward. Hold 1 slow

Scalene Stretch (Ear-to-Shoulder)
Anchor right hand behind your back or chair. Slowly bring left ear toward left shoulder. Hold 2-4 breath cycles.

Trapezius Stretch (Ear-to-Armpit)
Anchor right hand behind your back or chair. Slowly bring left ear toward left armpit. Hold 2-4 breath cycles.

Thoracic Stretch
Clasp fingers together behind occiput and slowly extend the upper back. Press the elbows outward to stretch the chest. Hold 2-4 breath cycles.

Overhead Stretch
Sit tall, clasp hands over head. Bend trunk to one side. Hold for 2-4 breath cycles.

Wrist Extensor Stretch
With straight elbow, point fingers downward and gently pull fingers and hand toward the body. Hold 2-4 breath cycles.

Carpal Tunnel Stretch
Turn the palm upward and hold the palm as you slowly extend the elbow until straight. Hold 2-4 breath cycles.
SAMPLE EXERCISES for Dental Professionals*
(from the DVD, "Smart Moves for Dental Professionals on the Ball"
All 20 exercises available at www.posturedontics.com.)

Doorway Stretch
With elbows at shoulder height, lean into a doorway, stretching chest musculature. Hold stretch 20 seconds. Repeat.

Swiss Ball Reversal
Slowly extend backward over ball. Extend arms to sides or overhead, as comfortable. Hold 15-30 seconds.

Reverse Pull-downs
With tubing attached in doorway above shoulder height, squeeze shoulder blades downward and together, bringing hands back to shoulders. Repeat 15-20 times.

Shoulder External Rotation
Grasp tubing in both hands. Keeping elbows tightly pressed against sides, rotate arms outward. Slowly return to beginning position. Repeat 15-20 times.

Piriformis Stretch
Lying on back, rest left leg on ball as shown. Cross right ankle over left knee as shown and roll ball toward buttocks. A stretch should be felt in the mid-buttock on the right. Hold 20 seconds. Repeat for other side.

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*Always consult your physician before beginning a new exercise program. See precautions in handout.