Fitness 101 for Dental Professionals: *Preventing Pain for Peak Productivity*

UAB 10th Annual Dental Hygiene Symposium  
August 26, 2016  
Hoover, AL

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**RISK FACTORS** Contributing to Occupational Pain in Dentistry
- Prolonged, static postures.
- Forceful, repetitive movements.
- Poor flexibility.
- Improper positioning.
- Weak postural stabilizing muscles.
- Poor equipment.
- Improper adjustment of ergonomic equipment.
- Infrequent breaks.
- Mental stress.

**MICROTRAUMA** resulting from Prolonged, Static Postures:

1.
2.
3.
4.

**EXERCISE**
- Aerobic
- Stretching
- Strengthening (power vs. endurance)

**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**
- Choose at least 1 activity 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)**
Google ‘*Karvonen Formula Calculator*’ for an easy calculation of your personal target heart rate that includes your resting heart rate. Resting heart rate is best checked in the morning before getting out of bed.

*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.

POWER VS. ENDURANCE TRAINING
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.

TARGET MUSCLES FOR 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 with painful muscles.
- 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.
- Always check with your doctor before initiating any new exercise program.
- AVOID generic exercise routines that can worsen dental professionals’ muscle imbalances. Certain exercises in Pilates, P90X and especially CrossFit must be modified or eliminated altogether.

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POSTURAL AWARENESS EXERCISE

- Pull navel to spine, hold throughout the exercise.
- Stand tall, lifting your chest toward the ceiling.
- Stretch your head toward the ceiling.
- Breathe in and point your thumbs backward. Hold briefly.
- *Without letting your shoulders roll forward*, let your palms relax at your sides.
- Perform this exercise regularly.

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.

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5.

TRIGGER POINT SELF-THERAPY
Use a Backnobber tool, tennis ball or smaller hard rubber ball against a wall:

- Find the trigger point
- Apply deep pressure for 5 seconds, then massage for 5 seconds
- Alternate between deep pressure and massage for 1 minute per trigger point
- Aim at a pain level of 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

SLEEPING POSTURES

DRIVING POSTURES

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


Trigger Point Therapy Workbook – Clair Davies www.posturedontics.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

Buckwheat hull pillow - www.amazon.com

MediBeads moist heat wraps - www.amazon.com

Posture S’port body garment – www.posturedontics.com

Backnobber Trigger Point Tool - www.posturedontics.com

BQE Backsaver - Lumbar support for office chairs/cars – www.bqe-usa.com
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 and is clinical instructor of ergonomics at OHSU School of Dentistry in Portland, Oregon. A member of the National Speaker’s Association, Bethany lectures internationally and was invited to speak at the International Dental Ergonomics Congress in Krakow, Poland and the Asia Pacific World Dental Conference in Dubai. She has also provided expertise on dental ergonomics to faculty and students at numerous dental universities.

Bethany has published over 50 articles in peer-reviewed dental journals and has developed patient positioning and exercise DVDs specifically for dental professionals. She lives in Portland, Oregon with her husband, Dr. Keith Valachi, who operates a private dental practice. She offers free newsletters, articles and product reviews on her website at www.posturedontics.com.
Sample Chairside Stretches
from “Smart Moves in the Operatory: Chairside Stretching” DVD
All 20 Chairside Stretches available at www.posturedontics.com

NECK & SHOULDER COMBO
Elbow at 90 degrees and shoulder height. Gently pull arm across front of body with opposite arm. Look over shoulder being stretched. Hold 2-4 breath cycles.

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.

SHOULDER CIRCLES
Sit tall, shoulders relaxed. Breathe in deeply. As you slowly exhale, roll shoulders forward, up and backward in a complete circle, returning to the relaxed starting position. Repeat 5 times.

PECTORALIS STRETCH

THE UNTWISTER STRETCH
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.

CARPAL TUNNEL STRETCH
Turn the palm upward and hold the palm as you slowly extend the elbow until straight. Hold 2-4 breath cycles.
External Rotation
With door anchor at elbow height, hold a rolled towel between your elbow and body. Squeeze shoulder blades together then slowly rotate the arm outward, then return. Keep elbow pressed firmly against your side throughout the exercise. Perform 10-20 repetitions with each arm.

Lower Abdominals
Lie with both knees bent. Lift one leg until the hip is at 90 degrees, then slowly straighten, lightly touch the floor, hold, then return the leg to 90 degree position. Repeat with the same leg 5-10 times. Keep your neck relaxed and do not let your back arch off the floor.

Rowing
Position the door anchor at waist level. Pull navel to spine and squeeze shoulder blades together as you slowly pull both hands back towards your waist, keeping a thumbs up and forearms parallel to the floor. Pause briefly, and return to start position. Repeat 10-20 times.

Pointer Dog
Pull your navel toward your spine and hold this contraction throughout the exercise. Make sure your back is flat and hips are level. Slowly lift the right arm, thumb pointing up, hold 2-3 counts, then lower it. Repeat for each arm and leg, performing 5 lifts on each.

Advanced version: Lift the right arm and left leg together, hold 2-3 counts, then lower.