

BEFORE THE FIRST NOTE: THE PHYSICAL FLUTIST

Susan Fain

1. The trunk and legs

- a. Posture vs. alignment – semantics or battle between viewpoints? *DYNAMIC*
 - b. Position of ease – jt. between 1st vertebra & skull, hip jt., forward of knee & ankle
 - c. Bones of the Vertebral Column
 - i. Stacked discs (cushioning) and processes (muscle attachments)
 - ii. Cervical, thoracic, lumbar, sacral, coccyx sections
 - iii. Curves – kyphosis, lordosis
 - iv. Spinal nerves exit through foramina - stenosis
 - v. Aging – bone condenses, ligaments stay the same, laxity
 - vi. AO jt. (“yes”), AA jt. (“no”); C1-C2 - 58% rotation occurs here
 - d. Muscles of the back
 - i. Muscles of the neck – left rotation required
 1. deep flexors, scalenes (brachial plexus runs through), SCM, trapezius
 2. levator scapulae, rhomboids, trapezius
 - ii. Muscles of the trunk
 1. Postural muscles – along the spine, psoas, quadratus lumborum (last two tend to get tight in sedentary people), abdominals; designed for endurance
 - iii. Abnormalities
 1. Scoliosis – uneven hem, raised shoulder, rib hump
 2. Forward head/lower crossed syndrome
 - iv. Importance of core strength – beginning of kinetic chain
 - v. Position and rotation of spine in flutist’s stance – minimize lumbar and thoracic rotation, dynamic alignment with gentle motion, move from knees
 - e. Stance and the legs
 - i. Feet and ankles – COG, BOS ; make it wide
 1. Ramifications of high heeled shoes – increased contractions of gastrocnemius, quadriceps, gluteals; ↑ lordosis & kyphosis, ↓ BOS
 - ii. Thigh, knee, and calf
 1. male/female differences
 - a. angle of femur, PFP syndrome
 - b. importance of quad and gluteal strength (gluteus medius – abduction and external rotation)
 - iii. Hips and sitting issues – increase angle of thigh to trunk (foam wedge)
 1. Bending from the hips or “waist”? No! Bend from the knees.
- ### 2. The arms and hands (Or why flute playing can be a pain in the neck)
- a. Shoulder
 - i. SC joint – only joint attaching arm to axial skeleton; mobility
 - ii. Rotator cuff– SITS: supraspinatus, infraspinatus, teres minor, subscapularis

- iii. Scapular loading – **pectoralis** major & **minor**, coracobrachialis, **serratus anterior**, triceps, biceps, rotator cuff, rhomboids, levator scapulae, trapezius, deltoid, teres M, latissimus dorsi, omohyoid
 - iv. Brachial plexus (TOS) goes right through the scalenes!
 - b. Arms
 - i. Rotation of arms, abductors & external rotators (teres minor & infraspinatus) holding up flute; keep elbows down!
 - ii. Normal imbalance of flexors and extensor, keeping fingers flexed fixed (some tension required)
 - c. Wrist complex
 - i. Neutral vs. functional position
 - ii. Problems with Rockstro position
 - iii. Avoiding CTS (Carpel Tunnel Syndrome) – keep contents in the tunnel
 - d. Hands
 - i. Extrinsic vs. intrinsic muscles of the hands
 - 1. Interossei and lumbricals
 - 2. Flexor and extensors of wrist and fingers
 - ii. Extensor expansions and hypermobility
 - iii. Tendinous interconnections of fingers, genetics, don't clutch, move small
- 3. The head
 - a. The jaw
 - i. Temporal-mandibular joint
 - ii. Forward and back motion safer with teeth apart; drop jaw
 - iii. Connection between forward head posture and TMJ
 - iv. Hyoid bone and connecting muscles – use this also to ↑oral cavity
 - b. Face
 - i. Muscles – (orbicularis oris (purse-string) & anguli oris (levator & depressor)
 - ii. smiley vs. turned-out embouchure
 - iii. resting position of tongue (up) so you have to think about it to get it down
 - iv. Vibrato – vocal folds, connection to singers, widespread oscillations
- 4. Breathing
 - a. primary and accessory muscles of inspiration
 - i. Scalenes (again!)
 - b. importance of controlling exhalation
 - c. air volumes – tidal, forced inspiration & expiration
- 5. Exercises
 - a. Mostly stretches, should feel a pull but not pain.
 - b. If you are in pain or if these exercises cause you pain, don't do them! Make an appointment with your doctor and get a referral to a good physical therapist. They can help you get the individualized help that you need.

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sfain1@cox.net

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