

# PRINCIPLES OF EXERCISE FOR FLUTISTS

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### MUSCLE BASICS

Fiber Types: Classified by fatigability and/or by metabolism

Fast Fatigable (Fast Oxidative): for short bursts of strength and power

Fast Fatigue-Resistant (Fast Oxidative-Glycolytic): for mixed or intermediate activity

Slow (Slow Oxidative): for prolonged, endurance activities and postural control

### STRENGTH VS ENDURANCE

As flutists, we rely more on the postural, endurance muscles, but we do need strength as well

### MUSCLES FLUTISTS TYPICALLY USE

Upper trapezius and levator scapulae  
Middle trapezius and rhomboid  
Deltoid  
Suboccipital group  
Paraspinal group  
Abdominal group

### Force Couples

Muscle groups work in an agonist/antagonist way to control joints  
One group shortens as the other lengthens to allow balanced motion  
Short, tight muscles are stronger/long, loose muscles are weaker

## PRINCIPLES OF EXERCISE

### Active Warm Up

5-10 minutes of easy, gentle active motion  
should involve embouchure, upper extremities and trunk

### Practice Appropriate Lengths of Time

30-40 minutes and then rest  
stop **before** excessive fatigue sets in

### Cool Down

similar to warm up  
should not stop warm muscles abruptly

## EXERCISE SUGGESTIONS

***You can bench press until you're blue in the face, but it won't help your flute playing***

ROM: cervical, upper extremities, trunk, chest

Chin Tucks

Variations on a Theme Called Rowing: Interscapular stabilization

"Core Strengthening": Pelvic neutral and the abdominal brace

## REFERENCES

McArdle, W; Katch FI; Katch, V: Essentials of Exercise Physiology. Lea & Febiger, 1994

Kendall, FP; McCreary, EK; Provance, PG. Muscles Testing and Function. Williams and Wilkins

## **Ellen Shapiro, MS, PT**

Ellen Shapiro did her early flute studies with Ruth Freeman Gudeman. She received her Bachelor of Music degree from Ithaca College in 1979, where she studied with Hanoch Tel-Oren and David Berman.

She received her Bachelor of Science degree in Physical Therapy from SUNY Downstate Medical Center in 1986, and a Master of Science degree in Musculoskeletal Physical Therapy with a minor in Education from Long Island University in 1990.

She was an adjunct faculty member at LIU from 1988-1990, and then a full time faculty member at Russell Sage College in Troy, NY from 1990-2001, where she taught the Kinesiology and Musculoskeletal Evaluation and Treatment courses.

In 1994, she was certified as an Orthopedic Clinical Specialist by the American Board of Physical Therapy Specialties, part of the American Physical Therapy Association.

Ms. Shapiro currently is employed by St. Peter's Healthcare Services in Albany, NY, working in their outpatient clinic in Slingerlands, NY. She is second flute of the Capital Region Wind Ensemble in Schenectady, NY, and co-principal flute of the Sage City Symphony in Bennington, VT.

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