

**STRETCHING EXERCISES FROM CHINESE MARTIAL ARTS AND PRE-
CONDITIONING PIANO EXERCISES WITH SCORES AND VIDEO
DEMONSTRATIONS TO PREPARE PIANISTS FOR PRACTICE AND
PERFORMANCE WITHOUT PHYSICAL TENSION**

by

ANSON KA-LIK SIN

A PROJECT

Presented to the School of Music and Dance of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Master of Music in Piano Pedagogy

June 1st, 2021

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REQUIREMENTS FOR THE MASTER OF MUSIC IN PIANO PEDAGOGY IN THE
SCHOOL OF MUSIC AND DANCE

THIS PROJECT HAS BEEN APPROVED AND ACCEPTED BY:

Claire Wachter

Dr. Claire Wachter, Chair of the Examining Committee

6/7/2021

Date

Committee in Charge: Dr. Claire Wachter, Chair

David Riley

Dr. David Riley

Grace Ho

Dr. Grace Ho

Accepted by:

Leslie Straka

Leslie Straka, Associate Dean and Director of Graduate Studies,
School of Music and Dance

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A handwritten signature in black ink, appearing to read 'Anson K. L. Sin', positioned above a horizontal line.

CURRICULUM VITAE

NAME OF AUTHOR

Anson Ka-lik Sin

EDUCATION

2021 – University of Oregon, Eugene OR, U.S.A.

Master’s Degree of Music in Piano Pedagogy

2019 – Southern Oregon University, Ashland OR, U.S.A.

Master’s Degree of Music in Performance

2017 – Hong Kong Baptist University, Hong Kong S.A.R.

Bachelor of Arts (Honours) in Music

CERTIFICATES

The Associated Board of the Royal Schools of Music –
Grade Eight Violin Performance

The Associated Board of the Royal Schools of Music –
Grade Eight Music Theory with merit

The Associated Board of the Royal Schools of Music –
Grade Eight Piano Performance with Distinction

AREAS OF SPECIAL INTEREST

Piano Performance

Piano Pedagogy

Collaborative Piano

Music Theory

Aural Skills

PROFESSIONAL EXPERIENCE

2019 – 2021 – University of Oregon, Eugene, Oregon, U.S.A.

Piano Pedagogy Program – Piano Instructor / Piano Accompanist

2017 – 2019 – Southern Oregon University, Ashland, Oregon, U.S.A.

Group Piano Instructor / Piano Accompanist (Instrumental and Choral) /

Teaching Assistant (Music Theory and Aural Skills)

2013 – 2017 – Private Teaching (Piano, Violin, Music Theory and Aural Skills based on Royal School of Music's Syllabus), Hong Kong S.A.R.

2011 – 2013 – Peninsula College, Port Angeles, Washington, U.S.A.

Group Piano Class – Piano Tutor

GRANTS, AWARDS AND HONORS

- 2021 – ISSS Endowed Scholarship Award, University of Oregon
- 2020 – George Hopkins Piano Scholarship Award, Kiwanis Club of Eugene
- 2019 – Petri Scholarship Competition, Oregon Music Teachers Association
- 2018 – 1st Place (alternate), Oregon MTNA-Steinway Young Artist Piano Competition, Oregon Music Teachers Association
- 2018 – Music Scholarship Award, Brookings-Harbor Friends of Music
- 2018 – First Prize Winner, GLORY Int'l Modern & Contemporary Classical Music Competition, GLORY Int'l Music Competition c/o Magnum opus Enterprises Ltd.
- 2018 – University of Guanajuato International Achievement Award, Southern Oregon University
- 2018 – Winner in Open Class, Concerto/Aria Competition, Grande Ronde Symphony
- 2017 – 3rd Place with silver award, Manhattan International Young Artists Music Festival Piano Competition, Concordia Music International Ltd., Steinway & Sons
- 2016 – Winner, Hong Kong Asia— Pacific Youth Piano Competition
- 2015 – Winner, Hong Kong (Asia) Youth Piano Competition, Hong Kong Youth Music Development Association
- 2014 – Second Place, the Open Class of 2014 Tchaikovsky and Kabalevsky Piano Competition of 14th Hong Kong (Asia Pacific) Piano Competition, Hong Kong Musician Association, Sponsored by London College of Music
- 2014 – Third Place, Scholarship Class of 7th Hong Kong Students Open Music Competition, Speech & Music Recital Development Foundation
- 2013 – Third Place, Young Artist Competition, Port Angeles Symphony Orchestra

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ABSTRACT

The project will focus on how warm-up exercises are a vitally important activity for pianists both mentally and physically. I will research the best methods for pianists to warm up before piano practice, lessons, and performance. Warm-up exercises should include a variety of physical and mental elements, such as: activating the kinesthetic sense, body mapping the arms/hands, creating a ready-to-play mode, breathing, as well as creating a positive mindset. The project will also illustrate how to apply these elements to optimize the warm-up exercises. Additionally, several stretching exercises from the Chinese martial arts (Qigong) will be explained and demonstrated as to how they are beneficial to piano warm-up exercises.

Pianists are often able to learn much better through practical application at the piano, rather than trying to absorb abstract information. Applying the above strategies will transform the ways pianists approach the piano to produce a better quality of movement, reduce tension and prevent pain. A pianist who is completely warmed up can better concentrate on the creation of sound, musical gesture, and interpretation.

Please note: In this document, I will use the word “warm up” as a noun, and “warm-up” as an adjective.

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Chapter I

WARM UP

i.) Definition of ‘Warm up’

The term “warm up” usually refers to the time spent before the actual practice session or piano performance begins. A warm-up routine produces significant major effects relating to body temperature and body mechanisms, including decreased muscle stiffness of muscles and joints, increased muscle’s inotropy and enhancing force, and improved thermoregulatory strain¹.

- 1.) Muscle stiffness: this is a condition when body muscles not only feel tight but are more challenging to move than normal. This usually happens after a long period of body rest. In general, stiffness will disappear on its own; some find relief with both consistent physical exercise and muscle stretching.
- 2.) Increased muscles’ inotropy (the strength of muscles’ stretching and contracting) and enhancing their force: As a body muscle fiber contracts, the muscle fiber is shortened in order to perform an external bodily activity. As a result, the changes in inotropy vary the force-velocity relationship (the relationship between the speed and force of muscle contraction then outputs power)².

¹ Bishop, David. *Warm Up II: Performance Changes Following Active Warm Up and How to Structure the Warm Up.* *Sports Medicine*, vol 33, no. 7, 2003, pp 485. Print.

² Boundless. “Boundless Anatomy and Physiology.” *Lumen*, courses.lumenlearning.com/boundless-ap/chapter/control-of-muscle-tension/.

3.) Improved thermoregulatory strain: Raising body temperature enhances the quality of body movement by the increase of blood flow to muscles and other structures; subsequently, there is more oxygen flowing to the muscle tissue. An increase in blood temperature also changes the pressure of blood gases in the veins. This allows more oxygen to escape from the blood and enter muscle tissue. Therefore, this process increases the temperature, triggering growth in metabolic and enzyme activity. This improves the efficiency of muscle contraction. Although there are many different body types, when body muscles are primed, the optimum *core* temperature of the human body reaches a particular range that is close to “normal” body temperature – 37 degrees Celsius (98.6-degree Fahrenheit). Consequently, the heating effect allows muscles and tendons to become more extensible; ideally, this makes stretching muscles and tendons easier and more effective in activities.

Several scientific studies regarding warm-up activities are cited by David Bishop in his article. It has additionally been hypothesized that the process of warming up may also have many positive psychological effects on the brain that increase the sense of preparedness³.

Athletes warming up their muscles before engaging in sports can effectively boost their circulation of blood flow, as well as helping to increase and sustain their overall muscle strength. The process helps athletes condition their bodies into a ready-mode and allows athletes to have a stronger awareness of their bodies as well as a higher level of flexibility. Similarly, warm-up

³ Bishop, David. “*Warm Up I: Potential Mechanisms and the Effects of Passive Warm Up on Exercise Performance.*” *Sports Medicine*, vol. 33, no. 6, 2003, pp. 439.

activities for musicians, especially for pianists, are necessary to condition the muscles in their fingers, arms, shoulders, back, core, etc. In short, warm-up exercises can increase a pianist's strength, flexibility, and coordination.

ii.) The 'Warm-up' Approach

Warm-up techniques can be generally categorized into two principal categories: passive and active warm up. Passive techniques consist of increasing muscle or core temperature through exterior means. This technique allows a performer to increase core and muscle temperature without reducing energy substrates. Active techniques utilize physical exercises, and the effects of active warm up can only be related to temperature-related mechanisms⁴.

Passive warm up involves the increase of core temperature (Abbrev.: 'T_c') and muscle temperature (Abbrev.: 'T_m') through external means and methods, such as taking hot baths, warm showers, steam bath, and diathermy, as well as using warming pads and heat packs. Passive warm up allows our bodies to tolerate and attain the intensification in T_c and T_m without draining energy from the body⁵.

In active warm up, temperature is raised by the energy released from the contraction of muscles. Active warm up tends to produce a higher level of metabolic and cardiovascular

⁴ Bishop, David. *"Warm Up II: Performance Changes Following Active Warm Up and How to Structure the Warm Up."* *Sports Medicine*, vol 33, no. 7, 2003, pp 484. Print.

⁵ Bishop, David. *"Warm Up I: Potential Mechanisms and the Effects of Passive Warm Up on Exercise Performance."* *Sports Medicine*, vol. 33, no. 6, 2003, pp. 440. Print

changes compared to passive warm up. Typical examples of active warm up include jogging, calisthenics, cycling and swimming. In the piano field, active warm up can involve movement of the piano-related muscles by swinging the arms, rotating the wrists, etc.

Overall, active warm up improves performance by increasing flexibility, boosting oxygen released into muscle tissues throughout the body, intensification of metabolism in energy systems, escalation in nerve conduction velocity, and decrease in peak tension time in muscle tissues. Active warm up can also raise the temperature in our body and benefits performance. Active warm up helps in boosting blood flow, significantly raising the baseline oxygen consumption, and also leads to the breaking up of actin (protein that is a vital contributor to the contractile property of muscle) and myosin (which drives sarcomere shortening and muscle contraction), which improves the body's flexibility. During the warm up, there is an overall increase in post-activation potential, and an increased sense of preparedness for a kinesthetic activity after active warm up⁶.

⁶ Gogte, Kedar et al. “*Effect of Passive, Active and Combined Warm up on Lower Limb Muscle Performance and Dynamic Stability in Recreational Sports Players.*” *Journal of clinical and diagnostic research* : JCDR vol. 11, 3 (2017): YC05-YC08.
doi:10.7860/JCDR/2017/24766.9595

Chapter II

COORDINATION OF PIANO PLAYING MOVEMENT

i.) Injuries

Playing any musical instrument, particularly piano, requires repetitive motions. Thomas Mark cites a report on stress injury that considers any task requiring 1,500 repetitions per hour to be “highly repetitive.”⁷ For most piano students, it is quite common to surpass that number. More considerably, movements that involve even insignificant amounts of tension can lead to serious injury when repeated hundreds or thousands of times a day in a given period.

Surprisingly, there seems to be a number of famous pianists who had piano-related injuries. Despite their stature in the professional world, their injuries suggest the possibility that these great artists may have had “flawed” techniques – at least, in regard to warm up and injury prevention. The ultimate goal for every pianist should be to play the piano without tension in order to prevent injury by having a good warm-up strategy.

There are many coordinated physical movements involved when pianists play the piano: finger movements, arm movements, torso movement and even leg movements. While the fingers are the obvious connecting point between our upper body and the keys of the piano, many pianists concentrate only on finger movements and ignore the rest of the body. A number of

⁷ Mark, Thomas. *What Every Pianist Needs To Know About The Body*. Chicago: GIA Publications, Inc., 2003. pp.141.

piano exercises and teaching methods are based on finger movement that is isolated from supporting movements in the rest of the body. For instance, C. L. Hanon, who wrote one of the most widely used methods for cultivating finger techniques, claimed that his exercises allow “the fingers to attain an astonishing facility of execution.” His methods concentrate almost exclusively on the fingers themselves. Although he did encourage the idea of “suppleness of the wrists⁸,” Hanon never considered the rest of the body in terms of technical development and correct related training.

In order to prevent injury, we must understand the four common major types of dysfunctional muscle tension which can lead to injury-related piano playing:

1. Co-contraction is when one muscle tissue is lengthened and released, and the opposing muscle must be tightened to allow a smooth and natural movement. In other words, one muscle stresses, and the opposing muscle relaxes in order to prevent injuries. If both muscle tissues remain stressed, they are contracting and tightening at the same time; this restricts movement and can cause injury.⁹

2. Awkward positions in the wrists and hands can easily strain the tendons.

3. Static muscular activity is when a muscle releases force without changing in length in an activity. This kind of movement is very stressful, as it obstructs the level of our blood circulation, triggering the muscle to become fatigued and making it prone to injury. In other

⁸ Mark, Thomas. *What Every Pianist Needs To Know About The Body*. Chicago: GIA Publications, Inc., 2003. pp. 2.

⁹ Mark, Thomas. *What Every Pianist Needs To Know About The Body*. Chicago: GIA Publications, Inc., 2003. pp.141.

words, muscles should be used effectively with appropriate relaxation and tension continually coordinating with each other in piano playing.

4. Using excessive force to play the piano. Pressing the keys on the piano does not require much force. Pianists who cultivate the bad habit of using more strength than is necessary are prone to injury.

ii.) Warm up and Stretching Help to Avoid Injuries

Warm up prepares not only the body, but also our mind and spirit for doing something we love – music-making. Physically, warming up creates positive energy to shift us into a “ready mode,” increasing both blood flow to the muscles and lubrication in the joints.

Mentally, the warm-up exercises focus attention and awareness of the movements on our joints and muscles. We call this type of attention to movement, “Kinesthetic Sense”, which helps to develop a greater awareness of the parts of the body in relation to each other. More interestingly, kinesthetic receptors are in the joints¹⁰.

When pianists continually neglect the warm-up process, the risk of injury multiplies. Cold muscle tissue is prone to fatigue, and vulnerable to excessive stretching and tearing. The pianist’s mindset needs to be focused on making beautiful and inspiring music. We need to create a peaceful mind (for some, similar to meditation, prayer, worship) and adjust our mindset to explore our inner self. Warming up nourishes pianists’ music making processes and their well-being. It is an essential part in preparing to play the piano.

¹⁰ Mark, Thomas. *What Every Pianist Needs To Know About The Body*. Chicago: GIA Publications, Inc., 2003. pp. 36

iii.) Warm up Helps Achieve a Natural Environment

The general purpose of warming up is to bring blood flow to the muscles as well as to create a feeling of warmth and suppleness. It is beneficial to begin playing at a moderate speed until the muscles are warm, avoiding any technically demanding passages¹¹. Warm-up activities not only serve the physical but also the mental aspect by orienting oneself to the “sacred” space and the seriousness of music-making. Warm-up exercises should also include deep breathing to help pianists achieve a sense of the “grounded moment.”

In terms of duration, it is suggested that warm-up exercises should take approximately ten to fifteen minutes. Ideally, after warming up, pianists will feel physically and mentally well-prepared without any feeling of fatigue. Scientifically, it is recommended that ten to twenty minutes of warm up can raise the temperature of muscles to reach a relative plateau. In addition to maximize the long-term performance, it is vital that the duration of the warm up is of sufficient length¹².

¹¹ Klickstein, Gerald, and Gerald Klickstein. *The Musician's Way : A Guide to Practice, Performance, and Wellness*, Oxford University Press, Incorporated, 2009. pp. 38.

¹² Bishop, David. "Warm Up II: Performance Changes Following Active Warm Up and How to Structure the Warm Up." *Sports Medicine*, vol 33, no. 7, 2003, pp 493. Print.

Chapter III

Martial Arts Stretching Exercises

i.) An Overview of Selected Martial Art Stretching Exercises

Since many piano-playing related movements of the hands and fingers are mostly accomplished by muscles in forearms, upper arms, shoulders, back and the brain, the selected stretching exercises are predominantly involved with these specific groups of muscles. Additionally, there are some exercises that focus more heavily on the mental aspect.

The eight exercises selected originated from Taichi (太極) and Qigong (氣功). Qigong is an ancient Chinese breathing exercise related to the concept of modern meditation, as a type of Chinese traditional medicine exercise. There are many people in different parts of the world nowadays utilizing Qigong to reduce stress levels, as well as healing and connecting their minds and bodies through the “energy flow.” In other words, this kind of exercise is an internal process that has external movements. Qi means “life force” – the power that provides energy to our body and spirit, while ‘gong’ has the meaning of gather and work. When ‘qi’ and ‘gong’ come together, that becomes a form of movement and mindset, applying self-intention and mindfulness to guide ‘qi’ to make ‘qi’ work¹³. In other words, conventional Qigong principle advocates that practitioner’s awareness to his/her senses, emotions, and parts of body, are all considered as

¹³ “Tai chi v Qigong What's the Difference? - Just Breathe – Tai chi: Qi gong: Yoga.” *Just Breathe – Tai chi | Qi gong | Yoga*, 16 Apr. 2016, zen.thisistruecs.com/taiji/tai-chi-v-qigong-whats-the-difference/.

his/her 'qi', or energy awareness.¹⁴ In the process, the 'qi' goes anywhere internally that his/her mind sends it. Generally, this martial art form focuses on the approach from a health and wellness perspective; whereas, Taichi contains more of a martial art component compared to Qigong. Taichi is a series of unhurried, moderate patterned movements which gives its name – “the moving meditation”. The martial nature of Taichi demonstrates itself in the complex and consecutive motions, while the standard Qigong movements are conspicuously less complicated and have a larger tolerance for modification. Although Taichi is a form of Qigong, Qigong is not a form of Taichi. Nevertheless, both of them are rooted in the martial arts application.

In modern day, Qigong has demonstrated beneficial effects on both physical ability and mental health in adults with chronic conditions. In addition, it is considered a cure for a variety of illnesses, including hypertension, gastric ulcers, anxiety neurosis, otitis media and cancer. Qigong has even been used as a form of anesthesia.¹⁵ More significantly, Taichi and Qigong both are adaptable for almost all fitness levels, and do not require any equipment. In addition, they can be performed in any place where a practitioner feels comfortable in space to move freely.

Before introducing the stretching exercises, the concept of *Counter-abdominal Respiration Method* is important in many movements from qi gong. This breathing method encourages a full oxygen level and allows for expelling carbon dioxide from the body, slows the heartbeat and lowers blood pressure. More importantly, Chinese medicine believes that the frequent movement of abdominal muscles activates most of the vital organs in body that boosts

¹⁴ “Schedule Your Appointment Online.” *The Difference between Tai Chi and Qi Gong*, www.piedmont.org/living-better/the-difference-between-tai-chi-and-qi-gong.

¹⁵ Koh, T.C., et al. “Qigong - Chinese Breathing Exercise.” *The American Journal of Chinese Medicine*, www.worldscientific.com/doi/abs/10.1142/S0192415X82000142.

the efficiency of the metabolism. As a result, the process of counter-abdominal respiration can prepare the body for general well-being as well as providing a performing state. This breathing method is similar to the common diaphragmatic breathing (also called “abdominal breathing” or “belly breathing”)¹⁶; however, step two and step three are *completely opposite* to the common diaphragmatic breathing in applying counter-abdominal respiration method.

¹⁶ Publishing, Harvard Health. “Learning Diaphragmatic Breathing.” Harvard Health, www.health.harvard.edu/lung-health-and-disease/learning-diaphragmatic-breathing?fbclid=IwAR2-bu0T3t4R1WE3T5x_SwqiqhGRykM7s8Lu3jG6EKJRX5z0XsKBF5sAiHc.

ii.) Illustrations on Selected Martial Art Stretching Exercises (Supplement of Video Demonstration)

Applying Counter-abdominal Respiration Method

Step One –

Place one hand on your upper chest and the other on your belly, just below your rib cage.

Step Two –

Breathe in slowly through your nose, letting the air in deeply, towards your lower belly. The hand on your chest should remain still, while the one on your belly should sink/cave. Tighten your abdominal muscles and let them fall inward as you inhale through your nose.

Step Three –

Breath out slowly through your pursed lips. The hand on your belly should move up to its original position. The hand on your chest should remain still, while the one on your belly should rise. Loosen your abdominal muscles and let them fall outward as you exhale.

Stretching Exercise No.1: Sink the Energy to the Diaphragm

(氣沉丹田/ qì chén dāntián)

Brief Introduction:

This exercise deeply focuses on inner and external awareness. More importantly, the *Counter-abdominal Respiration Method* must be applied in this exercise. In general, this exercise helps to develop the sense of inner awareness by scanning parts of the body and provides physical benefits by stretching the upper portion of the body.

Step One –

Stand straight > separate both feet about the distance of your shoulders, relax the back, shoulders, arms, hands and fingers > both arms are at your body sides¹⁷.

Step Two –

[Upward Direction through different layers]

Raise both hands through the wrists moving inwards towards front and center of the body (palms facing up) > Connectedly raising both forearms through biceps > Rotate both hands outward (palms facing down) > Push entire arms through deltoids all the way to the top (palms gradually facing up) > Hold in this position for 6 seconds

[Downward Direction through different layers]

(Literally reversing the upward direction): Rotate hands inwards (palms facing down) > Move entire arms through deltoids > Move forearms through biceps > Move both hands through wrists moving inwards (palms facing up)

¹⁷ Cheng, Kejin, *Tai ji yang sheng hui chun gong* = Taiji internal regimen caled huichungong. Chengdu Shi dai chu ban she, Chengdu Shi, 2008.

**One cycle = Upward and downward*

[Breathing pattern]

Exhale when you go downwards, and inhale when you go upwards.

[Inner awareness]

Scan all parts of the body where both hands travel during the exercise, for instance, chest, shoulder, neck, mouth, nose, eyes, forehead, etc.

Stretching Exercise No.2: Elbow-drawing Exercise

(龍形肘功/ Lóng xíng zhǒu gōng)

Brief Introduction:

This exercise focuses on stretching the back and arms, especially the joints between shoulder blades and upper arms (at the armpits). You will be able to sense the activation of all the joints of your arms after several cycles of this exercise.

Steps –

[Circular motion]

Stand still > Clasp hands together > Raise your clasped hands above your head > Palms face down > Circle the head in a left-right direction (as if a friendly bug is flying around your head) while feeling your entire arms relaxing (eyes look straight + natural breathing)

[Breathing pattern]

Exhale when you go downwards, and inhale when you go upwards.

[Reverse] Opposite direction from right to left: 6 times

Stretching Exercise no.3: Three Rings Circle the Moon

(三環套月 / Sān huán tà yuè)

Brief Introduction:

This exercise focuses intensively on the stretching of major muscles in the waist, back, neck, as well as the muscles in the entire arms. As a result, your waist and arms are fully stretched. No specific breathing method is required.

Steps –

[Circular motion]

Stand straight with arms hanging loosely at body sides > separate both feet about the distance of your shoulders > using a circular motion reach up as if shaping a moon (a circle) with your arms > Lower the circle in a counterclockwise motion by creating a bigger arc completely around the body while stretching, twisting the waist to its fullest (the upper body remains relaxed) > the shape of a full moon should remain throughout the entire process

[Breathing pattern]

Exhale when you go downwards, and inhale when you go upwards.

[Reverse] Opposite direction from right to left: 6 times

Stretching Exercise no.4: Two Dragons Play with a Pearl

(二龍戲珠/ Èr lóng xì zhū)

Brief Introduction:

This exercise focuses on the stretching of arm muscles, shoulder muscles, neck muscles, back muscles and waist. The eyes must follow the hands, as the upper body rotates with the neck and using the entire arm movement motion. No specific breathing style is required for this exercise.

Step One –

Stand straight with arms hanging loosely at body sides > Separate both feet about the distance of your shoulder width > Lower your body slightly over balanced legs (keep the knees within the area of your both feet to avoid hurting the ankles), relax back, shoulders, arms, hands and fingers > both arms continue to be loosely at your body sides¹⁸.

Step Two –

[Sideway on the left]

Raise your hands to waist level and curve the hands and fingers as if holding a tennis ball > the left hand is moving along to draw a big circle around the upper body and head using the deltoid muscle > the head and eyes should always follow the hand shape of holding the tennis ball while the waist is moving along in the direction of this circle stretching to its limit (you should feel the arm expanding to its limit) > after the big circle, a smaller circle is being newly created continuously through the wrist movement on the front side of the body in a circular motion > the

¹⁸ Cheng, Kejin, Tai ji yang sheng hui chun gong = Taiji internal regimen called huichungong. Chengdu Shi dai chu ban she, Chengdu Shi, 2008.

palms should always be facing up and remaining open as if holding the tennis ball at all times >
Using the entire arm rotate the wrist and bring the open hand around to the front of the body to
its original position

[Sideway on the right]

Raise your hands to waist level and curve the hands and fingers as if holding a tennis ball > the
right hand is moving along to draw a big circle around the upper body and head using the deltoid
muscle > the head and eyes should always follow the hand shape of holding the tennis ball while
the waist is moving along in the direction of this circle, stretching to its limit (you should feel the
arm expanding to its limit) > after the big circle, a smaller circle is being newly created
continuously through the wrist movement on the front side of the body in a circular motion > the
palms should always be facing up and remaining open as if holding the tennis ball at all times >
Using the entire arm rotate the wrist and bring the open hand around to the front of the body to
its original position

**One cycle = Left and Right*

Stretching Exercise no.5: Fingers Rolling

(收手指/ Shōu shǒuzhǐ)

Brief Introduction:

This exercise focuses on the stretching of muscles in the forearms, hands and fingers.

Steps —

[Inward]

Raise arms to waist level placing palms facing each other > Rolling inwardly using muscles in each finger continuously starting **from the pinky fingers to thumbs** (finger 5 > 4 > 3 > 2 > 1) > Keeping the wrist quiet while focusing on the rotating action of your fingers > Thrust the arms forward with palms straightforward for completion (Exhale through pursed lips)

[Outward]

Raise arms to waist level placing palms facing each other > Rolling outwardly using muscles in each finger continuously starting **from the thumbs to pinky fingers** (finger 1 > 2 > 3 > 4 > 5) > Keeping the wrist active while focusing on the rotating action of your fingers, wrists and forearms > Thrust the arms forward with palms straightforward for completion (Exhale through pursed lips)

Stretching Exercise no.6: Fingers Flicking

(彈手指/ Dàn shǒuzhǐ)

Brief Introduction:

This exercise focuses on stretching of the finger related muscles in the forearms, hands and fingers.

Steps –

Raise arms to waist level > Using thumbs and fingers on both hands form two flicking motions

Flicking **finger 2** (finger 1 against finger 2) – 3 times in a row

Flicking **finger 3** (finger 1 against finger 3) – 3 times in a row

Flicking **finger 4** (finger 1 against finger 4) – 3 times in a row

Flicking **finger 5** (finger 1 against finger 5) – 3 times in a row

Flicking **finger 5** (finger 1 against finger 5) – 3 times in a row

Flicking **finger 4** (finger 1 against finger 4) – 3 times in a row

Flicking **finger 3** (finger 1 against finger 3) – 3 times in a row

Flicking **finger 2** (finger 1 against finger 2) – 3 times in a row

Flicking **finger 1** (finger 1 against other four fingers) – 6 times in a row

[Breathing pattern]

Exhale through pursed lips as if blowing out a candle when you flick your finger.

Stretching Exercise no.7: Body Slapping

(拍打功/ Pāidǎ gong)

Brief Introduction:

This exercise helps to boost the speed of blood circulation and activate the body muscles.

There are several points/acupoints that you need to slap in this exercise.

Steps—

Slapping moderately **the upper chests** 6-12 times in a row

Slapping moderately **the kidney/lower-back sides** 6-12 times in a row

Slapping moderately **the upper biceps femoris (the position right below the butt cheek)** 6-12 times in a row

Slapping moderately **the back of the knees** 6-12 times in a row

Slapping moderately in **the order of sides of left lower legs, left knees, left upper legs, sides of right lower legs, right knees and right upper legs** 6-12 times in a row

Slapping moderately **the inner joints between left forearm and left upper arm** 6-12 times in a row

Slapping moderately **the inner joints between right forearm and right upper arm** 6-12 times in a row

Slapping moderately **the right armpit** 6-12 times in a row

Slapping moderately **the left armpit** 6-12 times in a row

Slapping moderately **the center of chest** 6-12 times in a row

Slapping moderately **the right shoulder** 6-12 times in a row

Slapping moderately **the left shoulder** 6-12 times in a row

[Breathing pattern]

Exhale through lips as if blowing out a candle when you slap.

Stretching Exercise no.8: Body Sweeping

(摔病氣/ Shuāi bìng qì)

Brief Introduction:

This exercise helps to boost the flow of lymphatic fluid and effectively activate the immune system. The exercise focuses on the back and front of the neck, center and sides of the body, sides of each leg.

Steps —

Sweeping with pressure strokes **from the back of the neck to the front** using both hands six times (using right hand on left neck > left hand on right neck > right > left > right > left)

Sweeping with pressure strokes **the front of the neck from top to bottom** six times (right hand > left hand > left > right > left)

Sweeping with pressure strokes **the sides of the waist from the armpit to the hip** six times

Sweeping with pressure strokes **the center of the body from the chest to the abdominal region** six times

Sweeping with pressure strokes **the sides of the right leg from hip to ankle** six times

Sweeping with pressure strokes **the sides of the left leg from hip to ankle** six times

[Breathing pattern]

Exhale through pursed lips as if blowing out a candle when you sweep.

[Important]

Both hands should be totally relaxed utilizing gravity after each sweeping.

Chapter IV

ANSON K. L. SIN PIANO WARM-UP TECHNIQUES

i.) An Overview of Anson K.L. Sin Piano Warm-up Exercises

Anson K. L. Sin Piano Warm-up Exercises are based on scientific research. The exercises are designed to be completed within a time frame of 15 to 20 minutes.

Pianists must finish the entire warm-up activity within that period of time in order to achieve the best result. In addition, these exercises target frequently used piano-playing related muscles: triceps, biceps, and the muscles in the palms of the hand (pollicis brevis, four lumbricals, abductor digiti quinti) and the finger muscles that extend into the forearms (Pronator quadratus, brachioradialis pronator teres, flexor carpi radialis, palmaris longus, and flexor carpi ulnaris). As a result, the piano-related muscles are warmed to facilitate an efficient movement. This process will also increase the pianist's awareness of the entire body's movement.

More importantly, pianists are guided by the visual instructions in the video demonstration; specifically, how to play with increased and expanded pianist's awareness of the body in order to have better playing. Ultimately, the Anson K. L. Sin Exercises demonstrate effective playing habits, which is the goal of these warm-up exercises. In addition, the Anson K. L. Sin Exercises are based on the teaching principles of Fryderyk Chopin's "*Sketch for a Method*"; more details are presented in the illustration section (iii) of this chapter.

ii.) Individualized Body Mapping

Mentally, pianists who cultivate a regular habit of the Anson K. L. Sin Exercises will be able to achieve a higher level of “body mapping.” The body map is the internal representation in the brain that governs body movement and includes the structure, size and function of the different parts of the body. Body mapping is an activity/moving process where information ceases to be external and becomes internal through the training of attention and the refinement of kinesthesia. When we move our bodies, the kinesthetic sense makes us aware of our body movement and position. Many receptors of the human’s kinesthetic sense are mostly located in our joints, connective tissues and muscles.

In order to master the body mapping technique, there are three principal phases: (a) training the senses, (b) cultivating an awareness of movement, and (c) the process of assessing, correcting and refining. The three phases are applied during the warm-up procedure. Pianists can effortlessly assess mistakes within their body maps, correct those mistakes, and bring self-perception into line with the reality of the body. Psychologically, the warm-up process can effectively and gradually boost confidence and prepare pianists for stage performance; they can then fully engage in the music-creating moment rather than focusing on their physical preparation.

Pre-conditioning Exercises For Pianists (2021)

Written by Anson K.L. Sin

The purpose of this pre-conditioning exercise is to prepare pianists both mentally and physically for piano playing, as a warm-up material. In this score, instructions are provided clearly in details. More importantly, pianists should be able to monitor their movement internally as well as to visualize and anticipate the movement of their body parts.

The musical score is written for piano in a key with three sharps (F#, C#, G#) and a common time signature (C). It consists of six sections, A through F, each with a boxed letter label above it.

- Section A:** Measures 1-8. Treble clef has a melodic line with slurs and accents. Bass clef has a supporting line. Dynamics: *pp*, *p*, *mp*. Section ends with a repeat sign.
- Section B:** Measures 9-11. Treble clef has chords. Bass clef has chords. Dynamics: *pp*, *p*, *mp*, *mf*. Section ends with a repeat sign.
- Section C:** Measures 12-15. Treble clef has chords. Bass clef has triplets. Dynamics: *mf*, *mp*, *p*, *pp*. Section ends with a repeat sign.
- Section D:** Measures 16-19. Treble clef has triplets. Bass clef has triplets. Dynamics: *p*, *mp*, *mf*, *mp*, *p*. Section ends with a repeat sign.
- Section E:** Measures 20-21. Treble clef has triplets. Bass clef has triplets. Dynamics: *mf*. Section ends with a repeat sign.
- Section F:** Measures 22-23. Treble clef has triplets. Bass clef has triplets. Dynamics: *mf*. Section ends with a repeat sign.

Technical markings include slurs, accents, and dynamic markings (*pp*, *p*, *mp*, *mf*). Section E includes a fingering diagram: $\begin{matrix} 4 & 5 & 4 & 5 & 4 & 5 \\ | & | & | & | & | & | \\ 1 & 2 & 1 & 2 & 1 & 2 \end{matrix}$. Section F includes a fingering diagram: $\begin{matrix} 3 & 4 \\ | & | \\ 2 & 1 \end{matrix}$. There are also some rhythmic markings like Red. and red. with slurs.

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28 3 2 4 1 3

35 **G** 4 5 1 2 3 4 5 3

43 **H** 5 3

50 **I**

4 57

1 3 5 1 2 3 5

64

70

75

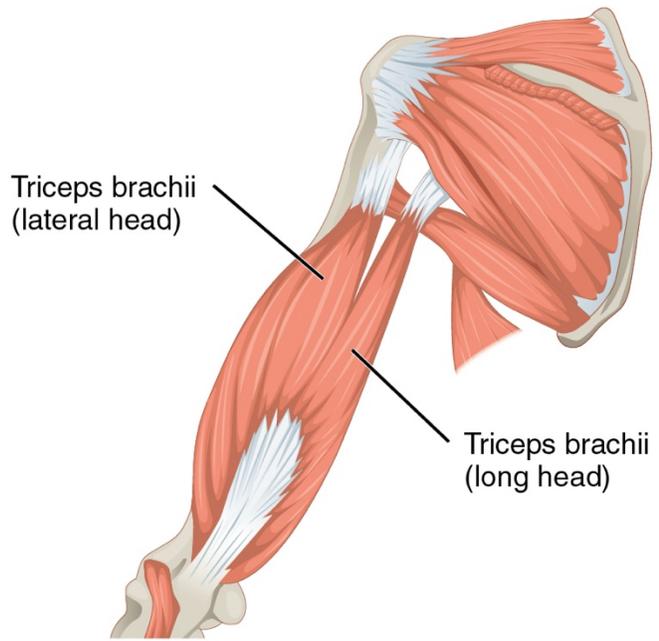
3 1 4 1 3 3 3 3

80 **L** 1 4 3 2 1 5 , , , , 5

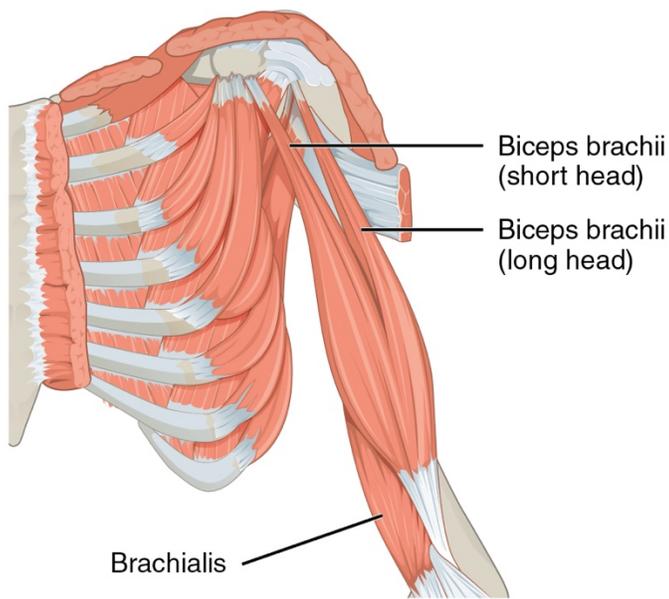
85 **M** 1 4 3 2 1 5 , , , , 4 5

91 **N** 2 2 2 2 3 3 3 3 2 2 2 2 3 3 3 3 **O** 1 2 3 1 2 3 5 ,

98 1 2 4 1 2 4 5' 1 2 3 1 2 3 5 9 5 4 2 1 4 2 1 9 5 4 2 1 4 2 1 9 4 2 1 4 2 1 2 9 5 4 2 1 4 2 1



Left upper arm muscles (posterior view)



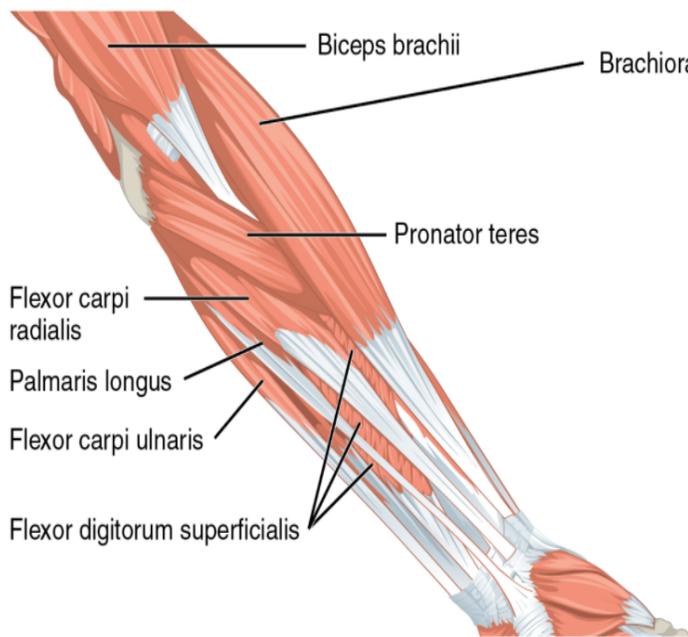
Left upper arm muscles (anterior lateral view)

File:1120 Muscles that Move the Forearm.jpg

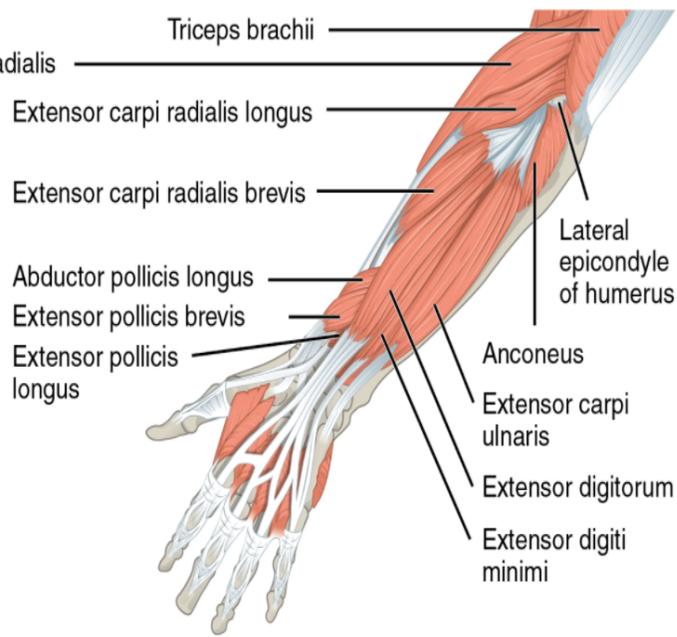
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Author: OpenStax

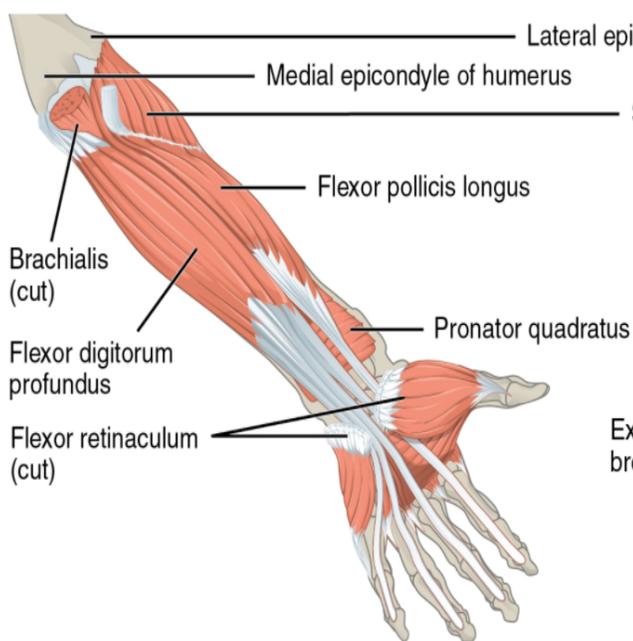
https://upload.wikimedia.org/wikipedia/commons/7/73/1120_Muscles_that_Move_the_Forearm.jpg



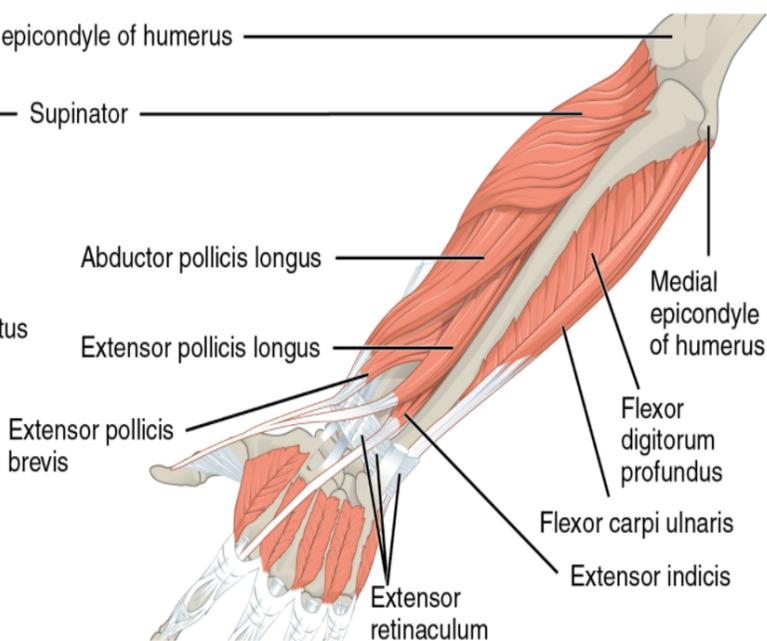
Left forearm superficial muscles (palmar view)



Left forearm superficial muscles (dorsal view)



Left forearm deep muscles (palmar view)



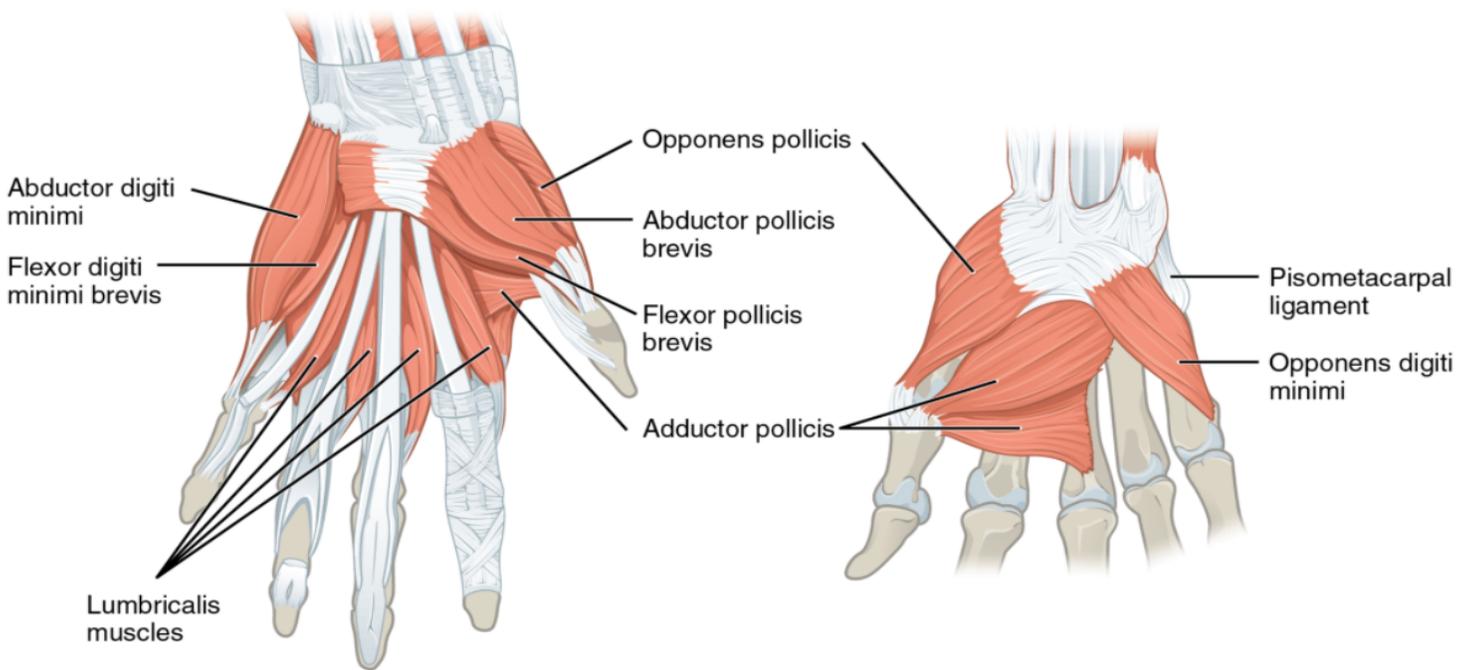
Left forearm deep muscles (dorsal view)

File:1120 Muscles that Move the Forearm.jpg

Version 8.25 from the Textbook OpenStax Anatomy and Physiology Published May 18, 2016

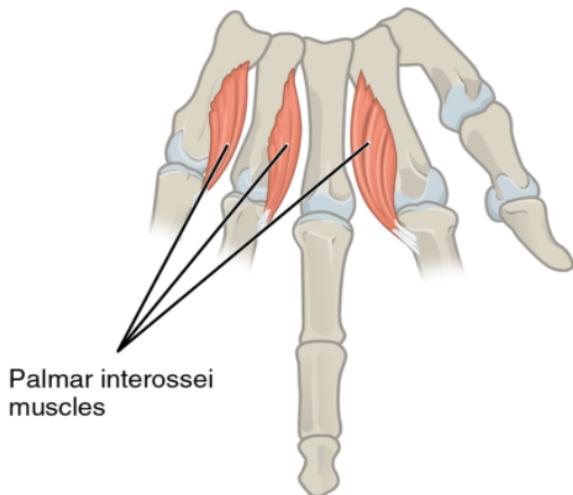
Author: OpenStax

https://upload.wikimedia.org/wikipedia/commons/7/73/1120_Muscles_that_Move_the_Forearm.jpg

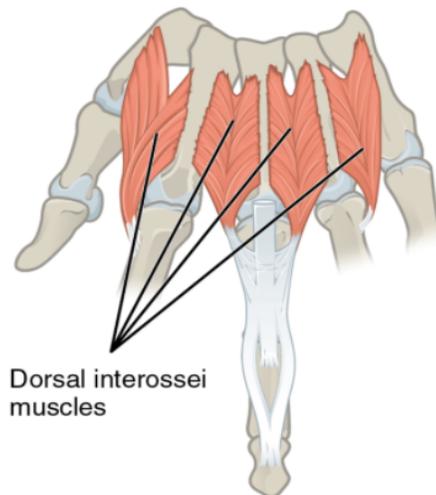


Superficial muscles of left hand (palmar)

Deep muscles of left hand: (dorsal view)



Interossei muscles of left hand (palmar view)



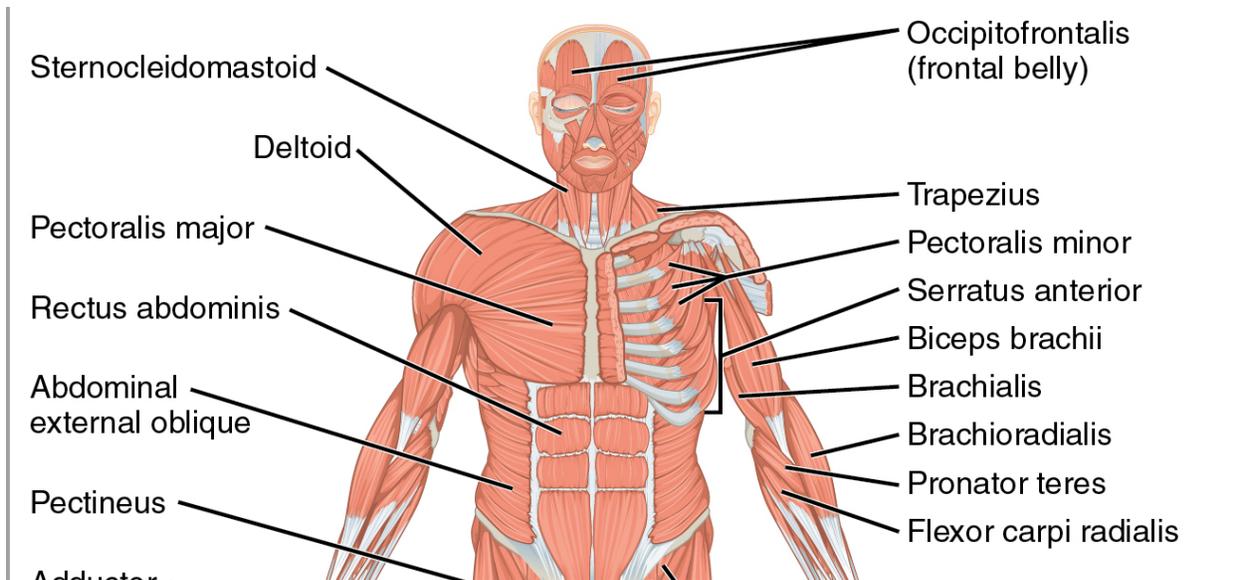
Interossei muscles of left hand (dorsal view)

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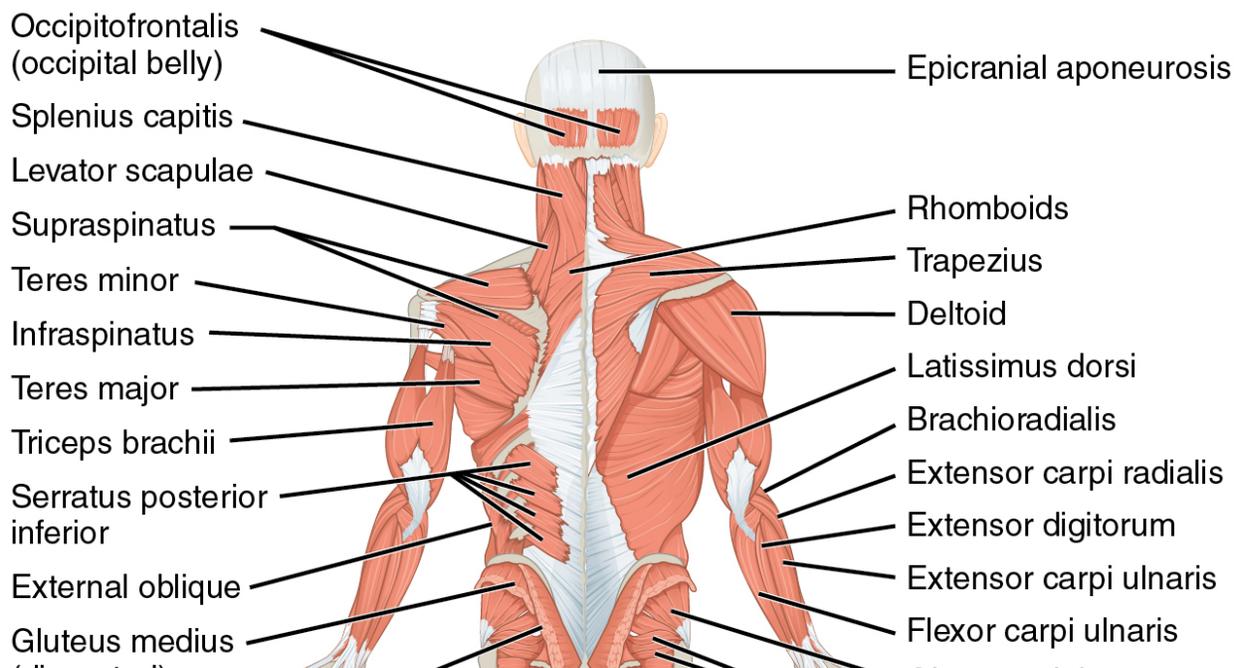
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Body Muscles



File:1105 Anterior and Posterior Views of Muscles.jpg

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Author: OpenStax

https://upload.wikimedia.org/wikipedia/commons/9/91/1105_Anterior_and_Posterior_Views_of_Muscles.jpg

iii.) Illustrations of Anson K.L. Sin's Piano Warm-up Exercises (Supplement of Video Demonstration)

Overview

From exercise A to K, the key of B major is specifically applied, rather than popular key of C major. As Chopin points out in his unfinished "*Sketch for a Method*," C major is the easiest to read on a music score, but it is the most difficult for the hands. He suggests that pianists should seek the most comfortable and most natural position of both hands in relation to the keys; this is to obtain the best sound quality from the piano. Chopin strongly recommends that B major and F-sharp major are the most comfortable hand positions among all the major scales, with the three longest fingers on the higher/black keys and the two comparatively shorter fingers on the lower/white keys¹⁹. Regarding the tempo of the exercises, there is no standard tempo, as the most important purpose of these exercises is to coordinate and focus on the piano-related muscles aligning with our body map/inner self.

In this illustration section, there are several terms that are applied, such as *Chain of Movement* and *one arm gesture*. The explanations/definitions of those terms are provided below:

Chain of (Arm) Movement is the notion that these joints and segments have an effect on one another during movement. When one is in motion, it creates a chain of events that affects the movement of neighboring joints and segments (Thinking Process: Imagination/visualization > body mapping/ recognizing parts of the body > big muscle to trigger the movement >

¹⁹ Eigeldinger, Jean. *Chopin: Pianist and Teacher as Seen by His Pupils*. Cambridge University, 1999. Page 194

automatically move other smaller parts of the body > to create the reality... a person in this mode is staying “present” through mindful control of their body.

One Arm Gesture: Normally, it refers to a big phrase without a break both musically and physically.

Exercise A: 'Legato Five-finger Position'

For Piano

A

pp p mp

Instructions:

- (a) Repeat three times at different dynamic levels, respectively $pp > p > mp$, as written in the score. In playing with dynamic contrast, more weight should be applied for each of the different dynamic groups (pp = less arm weight, p = more arm weight than pp , etc.)
- (b) Follow the breath marks (') to breathe through the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement.
- (c) Listen carefully to the sound production and keep the volume similar on every note within the same dynamic group (no sudden accents are allowed, but gradual louder and softer are required through slurs; one slur equals one arm gesture).

Instruction—Physical aspect:

- (1) Position your body gesture through being aware of the movement of the back, connecting shoulders, arms, wrists and fingers.
- (2) Move both wrists up and down by making circles while the fingertips freely connect to the keys > play the first notes using both hands, then the second notes while holding the first notes, and release the first notes after third notes are played. Overlap the two notes while both hands are moving left or right/sideways

Instruction—Mental aspect:

- (1) Visualize the Chain of Movement (body mapping: deltoid muscles > elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the deltoid muscles that are initially used to trigger the entire *chain of arm movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise B: 'Swinging Chords'

The image shows a musical score for 'Exercise B: Swinging Chords'. It consists of two staves. The top staff contains eight chords, each with a dynamic marking below it: *pp*, *p*, *mp*, *mf*, *mf*, *mp*, *p*, and *pp*. Above the staff, there are breath marks (') indicating where to breathe. The bottom staff shows the same sequence of chords with a 'Ped.' marking and a series of slurs indicating pedaling.

Instructions:

- (a) Repeat four times in different dynamic levels, respectively $pp > p > mp > mf$ and reverse, as written in the score. In playing with the dynamic contrast, more weight should be applied in each different dynamic groups (pp = less arm weight, p = more arm weight than pp , etc.)
- (b) Follow the breath marks (') to breathe the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement.
- (c) Listen carefully to the sound production of the notes in a chord. Every single combination of notes must be played evenly in order to produce a warm and blended sound (no sudden accents are allowed, but gradual louder and softer are required).

Instruction—Physical aspect:

- (1) Make certain that fingertips connect to the piano keys at all times.

- (2) Deltoid muscles actively lead the entire arm movement.
- (3) Wrists are raised to be ready and brought down to press the piano key to create sound, while elbows move freely in circles. More importantly, fingers are moved “passively” by both wrists and elbows throughout the entire process.

Instruction—Mental aspect:

- (1) Visualize the Chain of Movement (body mapping: deltoid muscles > elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the deltoid muscles that are initially used to trigger the entire chain of arm movement.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the chords before playing.

Exercise C: 'Legato Three-note Patterns'

The image shows a musical score for Exercise C, titled 'Legato Three-note Patterns'. It is written for piano in D major (indicated by three sharps: F#, C#, G#) and common time (C). The score consists of two staves: a treble clef staff for the right hand and a bass clef staff for the left hand. Both staves contain six groups of triplets of eighth notes. The right hand starts on D, E, F#, G, A, and B respectively. The left hand starts on D, E, F#, G, A, and B respectively. Dynamic markings are placed below the notes: p (piano) under the first triplet, mp (mezzo-piano) under the second, mf (mezzo-forte) under the third, mp under the fourth, and p under the fifth. Breath marks (') are placed above the notes in the right hand. The score begins with a repeat sign. A small icon of a document is in the top left corner of the image.

Brief Review:

This exercise is technically similar to Exercise A, 'Legato 5-finger Position', but Exercise C is in a group of three conjunctive notes and at a comparatively faster tempo in the rhythm of triplets.

- Repeat three times in different dynamic levels, respectively $p > mp > mf$ and reverse, as written in the score. In playing with the dynamic contrast, more weight should be applied in each of the different dynamic groups (p = less arm weight, mp = more arm weight than p , etc.).
- Follow the breath marks (') to breathe through the using nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement.
- Listen carefully to the sound production and keep the volume similar on every note in each of the dynamic groups (no sudden accents are allowed, but gradual louder and softer are required through slurs; also, one slur equals one arm gesture).

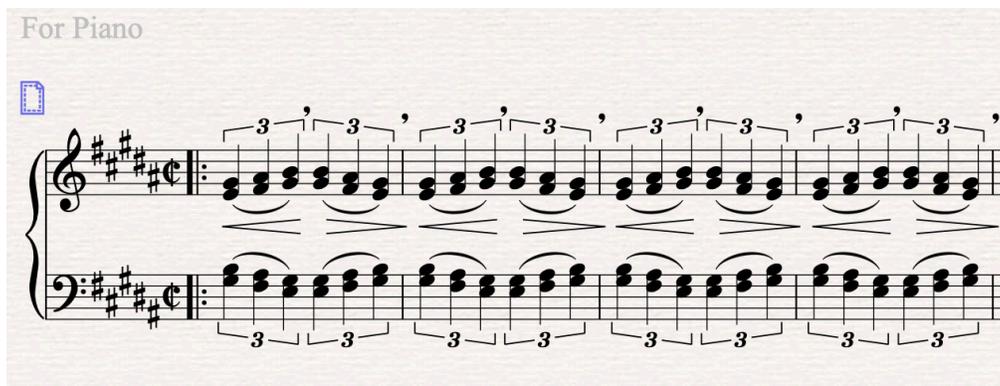
Instruction—Physical aspect:

- (1) Be aware of the movement of the back, connecting shoulders, arms, wrists and fingers.
- (2) Wrists are raised to be ready and brought down to press the piano keys to make sound, while elbows move freely in circles. More importantly, fingers are moved “passively” by both wrists and elbows throughout the entire process.
- (3) Playing the first notes using both hands, then the second notes while holding the first notes, and release the first notes after third notes are played. Overlap two notes while both hands are moving left or right/sideways.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: deltoid muscles > elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the deltoid muscles that are initially used to trigger the entire *chain of arm movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise D: 'Legato Double Stops'



Brief Review:

Technically, this exercise is a combination of Exercise B, 'Swinging Chords' and Exercise C, 'Legato Three-note Pattern'.

- (a) Following the breath marks (') to breathe through the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement.
- (b) Listen carefully to the sound production of the notes in a chord. Every single note must be played evenly in order to produce a warm blending sound (no sudden accents are allowed, but gradual louder and softer are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect:

- (1) Make certain that fingertips connect to the keys at all times.
- (2) Deltoid muscles actively lead the whole arm movement.
- (3) Wrists are raised to be ready and lowered to press the piano keys to make one gesture of sound through a group of notes connected by a slur, while elbows move freely and draw a

circle through a slur. More importantly, fingers are moved “passively” by both wrists and elbows throughout the entire process.

(4) Slightly emphasize the outer high and low notes by using little more arm weight. In this exercise, the notes are G#, A#, B, B, A#, G# on the right hand, and G#, F#, E, E, F#, G# on the left hand.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: deltoid muscles > elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move the appropriate parts of the body, we should be aware of the deltoid muscles that are initially used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise E: 'Chopin's Thirds'

The image shows a musical score for Exercise E, titled 'Chopin's Thirds'. It is a piano exercise in G-sharp minor, starting at measure 20. The score is written for piano and features a treble and bass clef. The key signature has three sharps (F#, C#, G#). The exercise consists of a series of chords, primarily triads, with slurs and breath marks (') indicating phrasing. The first few measures include fingering instructions: 1 2 1 2 1 2 and 1 2 4 5. There are also triplets indicated by a '3' over a group of notes. The copyright notice at the bottom reads 'Copyright © Anson Sin Music Library'.

Brief Review:

This exercise is inspired from Chopin's Etude Op.25, No.6 (*'Double Third'*), in G-sharp minor, a technical study focusing on thirds.

- (a) Follow the breath marks (') to breathe through the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main point of working on these exercises is to warm the muscles.
- (b) Listen carefully to the sound production of the notes in a chord. Every single note must be played evenly in order to produce a warm blending sound (no sudden accents are allowed, but gradual louder and softer are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect:

- (1) Make certain fingertips connect to the keys at all times.
- (2) Deltoid muscles actively lead the whole arm in a circulating movement.

(3) Wrists are moving in a circular motion to make one gesture of sound through a group of notes connected by a slur, while elbows should be relaxed and positioned as low as possible; this allows fingers to move freely using this particular technique. More importantly, there is no room for continuous tension, especially the muscles in the area of the upper top and lower bottom forearm throughout the entire process.

(4) Slightly emphasize the outer high and low notes by applying a little more arm weight. In this case, the notes are G#, A natural on the right hand, and G#, F# on the left hand.

Instruction—Mental aspect:

(1) Visualize the *Chain of Movement* (body mapping: deltoid muscles > (low) elbows > wrists > fingers) in your mind before playing.

(2) Respect and be aware of the specific parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.

(3) When we move the appropriate parts of the body, we should be aware of the deltoid muscles that are initially used to trigger the entire *Chain of Arm Movement*.

(4) Think of the connecting angle/approach to the piano keys.

(5) Imagine the sound of the music before playing.

- (1) Make certain that fingertips connect to the keys at all times.
- (2) Deltoid muscles actively lead the whole arm in a circulating movement.
- (3) Wrists are moving in a circular motion to make one gesture of sound through a group of notes collected by a slur, while elbows should be relaxed and positioned as low as possible; this allows fingers to move freely in this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm, throughout the entire process.
- (4) Slightly emphasize the outer high and low notes by applying a little more arm weight. In this case, the notes are G#, A natural on the right hand, and G#, A on the left hand.

Instruction—Mental aspect:

- (1) Visualize *the Chain of Movement* (body mapping: deltoid muscles > (low) elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the deltoid muscles that are initially used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise G: 'Chopin's Sixths'

The image shows a musical score for Exercise G, 'Chopin's Sixths'. It is in D major (two sharps) and 3/4 time. The score begins at measure 35. The right hand part features sixths with fingering 4-1 and 5-1, while the left hand part features sixths with fingering 3-1. The exercise is divided into two systems, each containing four measures. The first system includes a box labeled 'G' with fingering 4-1 and 5-1. The second system includes a box labeled 'G' with fingering 4-1 and 5-1. The piece concludes with a double bar line and repeat dots.

Brief Review:

This exercise is inspired from Chopin's Etude Op.25, No.8 ('Sixths'), in D major, a technical study focusing on the sixths being played in both hands. In the exercise G, it focuses only on the sixths played by the right hand 4-1 and 5-1.

- (a) Follow the breath marks to breathe through the nose to inhale and pursed lips to exhale.

This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.

- (b) Listen carefully to the sound production of the notes in a chord. Every single note must be played evenly in order to produce a warm blending sound (no sudden accents are

allowed, but gradual louder and softer are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect:

- (1) Make certain fingertips connect to the keys at all times.
- (2) The bicep muscles actively lead the whole arm up and down movement.
- (3) Wrists are passively raised to play on the finger pattern of 5-2 and dropped to play on the finger pattern of 4-1, while elbows should be relaxingly positioned as low as possible. This allows the fingers to move freely for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.
- (4) Slightly emphasize the outer high and low notes by applying a little more arm weight. In this exercise, the notes are C# and D# on the right hand, and A, B on the left hand.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: bicep muscles > (low) elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the bicep muscles that are initially used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise H: 'Third Apart'

The image shows a musical score for Exercise H, 'Third Apart', starting at measure 43. The score is written for piano in a key signature of three sharps (F#, C#, G#) and a 3/4 time signature. It consists of two staves: a treble clef staff and a bass clef staff. The treble staff begins with a box containing the letter 'H' and a '3' below it, indicating a triplet. The melody in the treble staff is a series of eighth notes, with slurs and breath marks (comma) above it. The bass staff features a steady eighth-note accompaniment, also with slurs and breath marks. There are several accents (>) placed above notes in both staves. The exercise concludes with a final chord in the treble staff.

Brief Review:

This exercise is inspired from the playing of tremolos a third apart, which is sometimes encountered in piano repertoire, especially in orchestral piano reduction arrangements.

- (a) Follow the breath marks to breathe through the nose to inhale and pursed lips to exhale.

This breathing helps to achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles.

- (b) Follow the accent marks (>) to allow your arms to create a sense of ease as well as a sense of the rhythmic pattern.

- (c) Listen carefully to the sound production of the notes in a chord. Every single note must be played evenly in order to produce a warm and blended sound (no sudden accents are allowed, but gradual louder and softer sounds are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect:

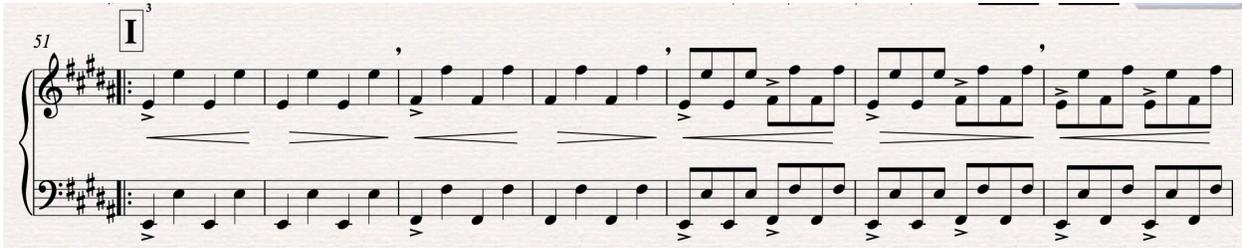
- (1) Make certain fingertips connect to the keys at all times.

- (2) *Chain of movement* illustrated by the opening of a door knob, actively turning the entire hands/wrists to rotate from a horizontal to a vertical position.
- (3) Wrists and elbows both remain loose and should be relaxed, positioned as low as possible. This allows fingers to move easily for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom of the forearm throughout the entire process.
- (4) Slightly emphasize the outer high and low notes by applying a little more arm weight. In this exercise, the notes are B on the right hand, and E on the left hand.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: movement of forearms' rotation/ 'opening a door') in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the forearms' rotation that is used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise I: 'Octave Apart'



Instructions:

This exercise focuses on tremolos, which appear in many solo piano works, accompaniments, and piano reductions of orchestral arrangements.

- (a) Follow the breath marks (') or crescendo and decrescendo marks (< , >) to breathe through the nose to inhale (crescendo) and pursed lips to exhale (decrescendo). This breathing helps achieve mental and physical relaxation for better inner observation (body mapping) and attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles.
- (b) Follow the accent marks (>) to allow your arms to create a sense of ease as well as a sense of rhythmic pattern.
- (c) Listen carefully to the sound production and keep the volume similar on every note.

Instruction—Physical aspect:

- (1) Make certain fingertips connect to the keys at all times.
- (2) *Chain of movement* illustrated by the opening of a door actively turning the entire hands/wrists to rotate from a horizontal to a vertical position.

- (3) Wrists and elbows both remain loose and should be relaxed and positioned as low as possible. This allows the fingers to move easily for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.
- (4) Slightly emphasize the accented notes by applying a little more arm weight.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: movement of forearms' rotation/ “opening a door”) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the forearms' rotation that is used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise J: 'Clippety-clop'

The image shows a musical score for Exercise J, 'Clippety-clop', in G major (one sharp). The score is written for piano and consists of three systems of music, each with a treble and bass clef staff. The first system starts at measure 47 and ends at measure 63. A box labeled 'J' is placed above the first measure of this system. The second system starts at measure 64 and ends at measure 70. The third system starts at measure 70 and ends at measure 76. The music features a rhythmic pattern of eighth notes, often grouped in pairs or triplets, with various fingerings indicated by numbers 1, 2, 3, 4, and 5. The piece concludes with a double bar line and repeat dots.

Instructions

This exercise is inspired by the piano works of many composers in the Classical era, such as Haydn, Mozart, and the early works of Beethoven. This musical pattern appears in many solo piano works, accompanying music and orchestral piano reduction arrangements. For instance, the first movement of Beethoven's Sonata for Cello and Piano in G minor, Op. 5. No. 2 makes extensive use of this pattern. The name of Exercise J is inspired by the horse's walking sound (clippety-clop), as the motion and the rhythm are like this sound, especially when you do the finger exercise on a table.



(Beethoven Sonata for Cello and Piano Op.5, No.2, Allegro)

- (a) Follow the breath marks (') or crescendo and decrescendo marks (< , >) to breathe through the nose to inhale (crescendo) and pursed lips to exhale (decrescendo). This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.
- (b) Listen carefully to the sound production and keep the volume similar on every note. (No sudden accents are allowed, but gradual louder and softer sounds are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect:

- (1) Make certain that fingertips connect to the keys at all times.
- (2) *Chain of movement* illustrated by the opening of a door actively turning the entire hands to rotate from a horizontal to a vertical position.
- (3) Wrists and elbows both remain loose and should be relaxed, positioned as low as possible. This allows fingers to move easily on this particular technique. More

importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.

(4) Slightly emphasize the accented notes by applying a little more arm weight.

(5) You should be able to feel the movement of ‘Clippety-clop.’

Instruction—Mental aspect:

(1) Visualize the *Chain of Movement* (body mapping: movement of forearms’ rotation/ ‘opening a door’) in your mind before playing.

(2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.

(3) When we move, we should be aware of the forearms’ rotation that is used to trigger the entire *Chain of Arm Movement*.

(4) Think of the connecting angle/approach to the piano keys.

(5) Imagine the sound of the music before playing.

Exercise K: 'Trills'

Instructions

The trill appears widely throughout the piano repertoire. The finger pattern of 3-1, 3-2, 4-2 and 4-1 are commonly used. In this exercise, the finger pattern of 3-1 and 4-1 are highlighted; it helps the pianist to play the trill rhythmically and evenly with the sense of rhythmic pattern.

- (a) Follow the crescendo and decrescendo marks (< , >) to breathe through the nose to inhale (crescendo) and pursed lips to exhale (decrescendo). The breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.
- (b) Follow the accent marks (>) to allow your arms to create a sense of easiness as well as a sense of rhythmic pattern.
- (c) Listen carefully to the sound production and keep the volume similar on every note. (No sudden accents are allowed, but gradual louder and softer sounds are required through slurs; also, one slur equals one arm gesture).

Instruction—Physical aspect

- (1) Make certain that fingertips connect to the keys at all times.

- (2) *Chain of movement* illustrated by the opening of a door actively turning the entire hands/wrists to rotate from a horizontal to a vertical position.
- (3) Wrists and elbows should both remain loose and relaxed, positioned as low as possible for this exercise. This allows the fingers to move easily for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.
- (4) Slightly emphasize the accented notes by applying a little more arm weight.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: movement of forearms' rotation/ 'opening a door') in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the forearms' rotation that is used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise L: 'Turns and Leaps'



Instruction

This exercise focuses on the “turn.” This musical device is often used in the piano repertoire, especially in works from the baroque and classical era such as J.S. Bach’s dance suites and Haydn’s Sonatas. The finger pattern of 1-4-3-2-1 is frequently used. This exercise helps pianists to play the turn rhythmically and evenly, feeling the rhythmic pattern. The turn combined with an octave leap appears in music by Beethoven, for example, in the G minor Sonata for Cello and Piano, Op. 5, No. 2.



(Beethoven Sonata for Cello and Piano in G minor, Op. 5, No. 2, last movement)

- (a) Follow the breath marks (‘) to breathe through the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner

observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.

- (b) Listen carefully to the sound production and keep the volume similar on every note.

Instruction—Physical aspect

- (1) Visualize the *Chain of Movement* (body mapping: deltoid muscles > elbows > wrists > fingers) in your mind before playing.
- (2) Make certain that fingertips connect to the keys at all times.
- (3) This combination of both exercises require both hands closing and expanding; therefore, in this specific exercise a pause between a turn and an octave can be added.
- (4) Allow the wrists to follow the fingers while the wrists are making a small semi-circle passively and open your hands to feel the octave.
- (5) Wrists and elbows should both remain loose and relaxed positioned as high as possible. This allows fingers to move easily on this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom of the forearm throughout the entire process.
- (6) Lift the wrists slightly after playing the last note of a measure/group.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: movement of arm's rotation/ 'opening a door') in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.

- (3) When we move, we should be aware of both the deltoid muscles and the rotation of the arms that are used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise M: 'Octaves'



Instructions

This exercise focuses on octave technique. Octaves are widely used in the piano repertoire. This exercise will help pianists to play octaves rhythmically and evenly, feeling the rhythmic pattern.

- (a) Follow the breath marks (') to breathe through the nose to inhale and pursed lips to exhale. This breathing helps achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.

Instruction—Physical aspect:

- (1) Make certain that the fingertips stay close to the keys at all times, even though both hands and arms are constantly moving.
- (2) The bicep muscles actively lead the whole arm in an up-and-down movement, vertically.
- (3) The wrists are passively raised throughout the entire process. More significantly, you must raise your wrist slightly higher when you play the only black key (F#) in this exercise, while elbows should be relaxed and positioned as low as possible. This allows fingers to move freely for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.
- (4) Ideally, the angle between forearms and upper arms should remain at 110 degrees, rather than 90 degrees; this helps to ease the tension to make a smooth *Chain of Arm Movement*.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: bicep muscles > (low) elbows > wrists > fingers) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the bicep muscles that are initially used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Exercise N: 'Direct Jump'



Instructions

This exercise was inspired by the last movement of the C minor Sonata for Violin and Piano, Opus 30 by Beethoven, where passages require a direct jump from one note to another by the same finger. In the physical aspect, the deltoid muscle is being used to move the entire arm in a sideway motion (as if wiping off a table) to approach to the correct key accurately.



(Beethoven Sonata for Violin and Piano in C minor, 4th movement)

- (a) Follow the breath marks (') to breathe through the nose to inhale and pursed lips to exhale. This breathing helps the pianist to achieve mental and physical relaxation for a better inner observation (body mapping) in order to attain effortless and efficient movement. Also, the breath marks can be treated as a pause/break from playing in this

exercise, since the main purpose of working on these exercises is to warm the piano-related muscles and other appropriate parts of the body.

- (b) Follow the tenuto marks (-) to allow the arms to create a sense of ease on the tenutos and a sense of rhythmic pattern.

Instruction—Physical aspect:

- (1) Make certain that fingertips stay close to the keys at all times, despite both entire hands and arms are constantly moving.
- (2) The deltoid muscles actively lead the whole arm sideways movement, horizontally.
- (3) Wrists and elbows remain loose and should be relaxed, positioned as low as possible.

This allows arms to move easily for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of upper top and lower bottom forearm throughout the entire process.

- (4) Slightly emphasize the tenuto notes by applying a little more arm weight and longer rhythmic value.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: deltoid muscles > (low) elbows > fingers) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should be aware of the deltoid muscles that are used to trigger the entire *Chain of Arm Movement*.
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

- (3) All muscles in the arm remain loose and should be relaxed, with the arm positioned as high as possible. This allows arms to move easily for this particular technique. More importantly, there is no room for continuous tension, especially muscles in the area of the upper top and lower bottom forearm throughout the entire process.
- (4) You should play all the notes in the right hand lightly, without hitting the bottom of the keys, to achieve a quick response and movement (less arm weight is preferable).
- (5) As a result, the arpeggio is played without spreading the fingers, neither reaching ahead to anticipate the next note nor lingering over a note already played.

Instruction—Mental aspect:

- (1) Visualize the *Chain of Movement* (body mapping: Body core muscles > (high) wrist > fingertips) in your mind before playing.
- (2) Respect and be aware of the specific piano-related parts of the body, including the back, shoulders, elbows, forearms, wrists, hands, fingers and fingertips.
- (3) When we move, we should apply the body core muscles that are used to trigger the entire *Chain of Arm Movement*. (Elbow and wrist both are moved passively by the body's leaning motion).
- (4) Think of the connecting angle/approach to the piano keys.
- (5) Imagine the sound of the music before playing.

Bibliography

Alcantara, Pedro de. *Indirect Procedures : A Musician's Guide to the Alexander Technique*. New York: Oxford University Press, Incorporated, 2013.

Benson, Herbert, and Miriam Z. Klipper. *The Relaxation Response*. HarperTorch, 2000.

Bishop, David. "Warm Up I: Potential Mechanisms and the Effects of Passive Warm Up on Exercise Performance." *Sports Medicine*, vol. 33, no. 6, 2003, pp. 439–454.

Bishop, David. "Warm Up II: Performance Changes Following Active Warm Up and How to Structure the Warm Up." *Sports Medicine*, vol 33, no. 7, 2003, pp 483-498. Print.

Bobo, Jana S., and Richard S. Bobo. *Pianists' Guide to Progressive Finger Fitness*. Prescott, 1994.

Brislin, Tom. "The Well-Balanced Practice Session: Use a Variety of Methods to Create Your Own Personal Practice Plan." *Keyboard* 27.5 (2001): 144. Web.

Camp, Max W. *Developing Piano Performance : A Teaching Philosophy*. Chapel Hill: Hinshaw Music, 1981. Print.

Cheng, Kejin, *Tai ji yang sheng hui chun gong = Taiji internal regimen caled huichungong* (Di 1 ban). Chengdu Shi dai chu ban she, Chengdu Shi, 2008.

Conable, Barbara, and Benjamin Conable. *What Every Musician Needs to Know about the Body: the Practical Application of Body Mapping to Making Music*. Andover Press, 2000.

Conable, Barbara, and Timothy H. Phelps. *The Structures and Movement of Breathing: a Primer for Choirs and Choruses*. GIA Publications, 2000.

- Cui, Wang. "On the Influence of Tactile Key Techniques on Piano Performance in Piano Performance." *Convivium* (Barcelona) 39 (2020): 640-48. Web.
- Davidson, Jane W. "Qualitative Insights into the Use of Expressive Body Movement in Solo Piano Performance: A Case Study Approach." *Psychology of Music* 35.3 (2007): 381-401. Web.
- Eady, Ashley. "MajoringInMusic." *Music Major - Majoring in Music*, 30 Apr. 2019, majoringinmusic.com/body-mapping-helps-musicians/.
- Flückiger, Matthias, Grosshauser, Tobias, and Tröster, Gerhard. "Influence of Piano Key Vibration Level on Players' Perception and Performance in Piano Playing." *Applied Sciences* 8.12 (2018): 2697. Web.
- Furuya, Shinichi, and Altenmueller, Eckart. "Flexibility of Movement Organization in Piano Performance." *Frontiers in Human Neuroscience* 7 (2013): *Frontiers in Human Neuroscience*, 2013-07-16, Vol.7. Web.
- Castellano, Ginevra. "Automated Analysis of Body Movement in Emotionally Expressive Piano Performances." *Music Perception* 26.2 (2008): 103-4. Web.
- Gerig, Reginald R. *Famous Pianists & Their Technique*. Indiana University Press, 2007.
- Gogte, Kedar et al. "Effect of Passive, Active and Combined Warm up on Lower Limb Muscle Performance and Dynamic Stability in Recreational Sports Players." *Journal of clinical and diagnostic research : JCDR* vol. 11, 3 (2017): YC05-YC08.
doi:10.7860/JCDR/2017/24766.9595
- Gries, Peter. *Continuity as a Basic Perspective for Piano Teaching : A Discussion of Analytical Techniques and Playing Coordinations for Achieving Aesthetic Continuity in Piano Performance*. U of Oregon, 1978. Print.

Herbert, Rob D., and Michael Gabriel. "Effects Of Stretching Before And After Exercising On Muscle Soreness And Risk Of Injury: Systematic Review." *BMJ: British Medical Journal*, vol. 325, no. 7362, 2002, pp. 468–470. JSTOR, www.jstor.org/stable/25452208. Accessed 14 Oct. 2020.

Mark, Thomas. *What Every Pianist Needs To Know About The Body*. Chicago: GIA Publications, Inc., 2003.

Marsh, Lisa. *Coordinate Movement for Pianists*. Ed. Bryan Gibson. Chicago: GIA Publications, Inc., 2019.

Matthay, Tobias. *Musical Interpretation, Its Laws and Principles, and Their Application in Teaching and Performing*. The Boston Music Co., 1913.

Nakahara, Hidehiro, Furuya, Shinichi, Francis, Peter R, and Kinoshita, Hiroshi. "Psychophysiological Responses to Expressive Piano Performance." *International Journal of Psychophysiology* 75.3 (2010): 268-76. Web.

Kleinman, Judith, and Peter Buckoke. *The Alexander Technique for Musicians*. Methuen Drama, 2018.

Klickstein, Gerald, and Gerald Klickstein. *The Musician's Way : A Guide to Practice, Performance, and Wellness*, Oxford University Press, Incorporated, 2009.

Paull, Barbara, and Christine Harrison. *The Athletic Musician: a Guide to Playing without Pain*. Scarecrow Press, 1997.

Smith, CA. "The Warm-Up Procedure: to Stretch or Not to Stretch. a Brief Review." *The Journal of Orthopaedic and Sports Physical Therapy*. 19.1 (1994): 12-7. Print.

“Tai Chi v Qigong What's the Difference? - Just Breathe - Tai Chi: Qigong: Yoga.” *Just Breathe - Tai Chi | Qigong | Yoga*, 16 Apr. 2016, zen.thisistruecs.com/taiji/tai-chi-v-qigong-whats-the-difference/.

Woo, Laehyung. *Building an Effective Piano Technique while Avoiding Injury: A Comparison of the Exercises in Alfred Cortot's "Rational Principles of Pianoforte Technique" and Carl Tausig's "Daily Studies for the Pianoforte"*, dissertation, May 2017; Denton, Texas.