Megan Andrews
ISHTA 200H TT Assignment
Mentor: Peter Ferko
February 5, 2022

Topic 1
What is ISHTA Yoga?

What does yoga mean to me?

From my perspective, yoga is ultimately a form of *homecoming*. I interpret homecoming as a return to one's innermost spiritual nature, while yoga is the vehicle that has the capacity to take me there.

Lower levels of cortisol, increased mobility, strengthened muscles, and improved quality of sleep are all measurable and tangible benefits of yoga that I have personally experienced and enjoyed. And while these physical benefits are signficant, as I've furthered my journey in yoga, I have found that there is the less tangible benefit of spiritual connection that has proven even more valuable. Part of this spiritual connection is the realization that we are intrinsically worthy and equal, as well as parts of a greater whole and interconnectedness. This has been profoundly comforting to me.

From childhood and onward, a person may have accumulated any number of labels, traumas, categorizations, diagnoses, or performance evaluations – either self-imposed or imposed by others. All of these labels can feel like defining characteristics upon which our self-worth relies. To my mind, practicing yoga offers a reprieve from this judgmental narrative. Comments like, "I should have done…" or "I dislike … about myself" are replaced with "I am enough" and "I am worthy." That is to say, my identity isn't solely comprised of my perceived achievements or failures, and I am not limited to a single categorical box. Rather, my value is unconditional and part of something much more vast and infinite. So I try to use yoga as an "undressing" of layers that compound a lot of stress, and alternatively, invite in self-acceptance and embrace my innate value as a living being.

I believe yoga offers this to me through the mindful harmonization of breath and posture. The repetition of movement and refocusing of the breath clears away neuroticism and cognitive distortion with something more primal. My *self* is no longer entangled with labels, past, trauma, or measurement. The major quality that remains through a good yoga practice is the present – and that is where *home* is.

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Topic 3
Anatomy I: Basics

3.1 Briefly describe each of these tissues and its function: Muscle, Ligament, Tendon, Cartilage.

Muscle

A muscle is tissue consisting of bundles of parallel fibers wrapped in fascia.

Properties:

- Excitable – Reacts to stimuli via innervation
- Contractible – May contract upon stimulation in 3 different ways
  - Concentrically - Muscle shortens
  - Eccentrically - Muscle lengthens
  - Isometrically - Muscle neither shortens or lengthens during contraction
- Extensible - May be stretched
- Elastic - Able to recoil

Roles:

- Agonist - Prime mover muscle
- Synergist - Supporting muscle to help the agonist in movement
- Antagonist - Opposes prime mover to slow and monitor movement
- Protects joint
- Stabilizer - A muscle that pairs with an opposing muscle to keep a bone in place

Ligament

A ligament is a dense piece of connective tissue that connects one bone to another bone.

- Protects joints
- Avascular - no blood supply
- Barely elastic → difficult to heal

Tendon

A tendon is a tough, fibrous continuation of muscle fascia that attaches muscle to bone.

- Stabilizes joint
- Transmits and supports muscle force
- Woven into the periosteum/outer shell of the bone

Cartilage

Cartilage is supplementary tissue to muscle providing strength, rigidity, and a little elasticity.

- Fibrocartilage
  - Cushioning, pillowy
  - Shock-absorbing
  - Avascular - no blood supply
- Hyaline Cartilage
  - Smooth, glassy
  - Reinforcing coat where bones rub against one another
  - Avascular - no blood supply

3.2 The elbow is a hinge joint and the hip is a ball-and-socket joint. (A) What are the movements of a hinge joint? Name the plane. (B) What are the movements of a ball-and-socket joint? In how many planes does a ball-and-socket joint move and what are the actions in each of the planes?

(A) The movements of a hinge joint are flexion and extension, and the plane is the Sagittal Plane.

(B) The movements of a ball-and-socket joint and their corresponding planes are:

1. Rotation (internal and external) in the Transverse Plane
2. Flexion & Extension in the Sagittal Plane
3. Adduction & Abduction in Coronal Plane

- Circumduction involves all movements and planes in combination, except rotation in the Transverse plane

3.3 What is the job of an agonist? What is the job of a synergist?

An agonist is the prime mover muscle that does the bulk of the work in a movement. The synergist is a supporting muscle that assists the agonist in doing the movement or compensates if the agonist is injured/dysfunctional.

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Topic 4
Anatomy II: Spine

4.1 How many individual vertebrae are in the spinal column? How many vertebrae are in each curve?

There are 24 individual vertebrae in the spinal column. The curves and their respective number of vertebrae include:

- Cervical Vertebrae - 7
- Thoracic Vertebrae - 12
- Lumbar Vertebrae - 5
- Sacral Vertebrae - 4-5 fused together
- Coccygeal Vertebrae - 3-5 fused together

4.2 Which of the spinal curves are present when a baby is born? At what point of development do the others appear?

After birth, a baby takes the shape of a comma, so there is a kyphodic curve/convexity in both the thoracic and sacral vertebrae. When the baby begins to lift it's head, the lordadic cervical curve develops. When the baby begins to walk, the lordadic lumbar curve develops.

4.3 The cervical spine has the most freedom of movement in all directions. The thoracic and the lumbar areas have limited freedom in some directions. For each of these areas, list the actions and the structures that limit freedom of movement (Example: Thoracic spine: Flexion is limited by the ribs).

- Cervical Spine
  - Rotation (turning one's head completely around) is limited by inelastic ligaments in the spine
  - Lateral flexion may be limited by tension in the trapezius muscles and/or ligaments in the spine

- Thoracic Spine
  - Flexion and lateral flexion are limited by the ribs and ligaments on the posterior of the spine, and ligaments between the transverse processes respectively
  - Extension is limited by compression of the spinous processes and ligaments on the anterior of the spine
- Lumbar Spine
  - Rotation is limited by the shape and fit of the facet joints in this part of the spine
- Sacral Spine
  - Rotation, lateral flexion, flexion, and extension are limited by the fusion of the sacral vertebrae
- Coccygeal Spine
  - Rotation, lateral flexion, flexion, and extension are limited by the fusion of the coccygeal vertebrae

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Topic 7
Anatomy III: Hips and Pelvis

7.1 What muscles are the major hip extensors? Name two asanas that stretch these muscles and two that strengthen them.

Hip Extensor Muscles:
- Hamstrings
  - Stretch: Uttanasana
  - Strengthen: Chair, 3 legged dog
- Gluteus Maximus
  - Stretch: Pigeon
  - Strengthen: Half Bridge

7.2 Which muscle is the prime mover in hip flexion?

Hip flexion prime mover muscle:
- Psoas

7.3 How do the hip adductors help when inversions and in arm balances?

The hip adductors draw the inner thighs towards one another towards the midline of the body. This helps with centering and balance in inversions.

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Topic 8
Anatomy IV: Shoulder Girdle

8.1 What is the major fuction of the rotator cuff muscles?

They stabilize the humeral head and keep it in the scapula socket.

8.2 When you lift your arm in abduction or flexion beyond 45 degrees, what action must the scapula do?

Upward rotation.

8.3 Which 2 muscles stabilize the scapula on the back of the rib cage in Plank Poses and Chaturanga? In which direction does each muscle pull on the scapula?

Stabilizing Muscles:
- Serratus Anterior: Protracts the scapula
- Pectoralis Minor: Protracts and depresses the scapula

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Topic 9

Anatomy V: Nervous system
A&P of the Breath

9.1 The involuntary Nervous System is commonly called the Autonomic Nervous System. There are two parts to this system. (A) What is each part called? (B) What happens when each part is active?

(A) Sympathetic System and the Parasympathetic System

(B)
Sympathetic system:
- Fight or flight system that is active when we are under stress
- Blood pressure and heart rate increase
- Blood directed to muscles of arms and legs
- Dilated pupils
- Skin is cool, wet, sweaty

Parasympathetic System:
- Maintains and conserves body during periods of low stress
- Responsible for breathing, digestion, elimination
- Blood directed to organs
- Pupils contract
- Warm skin

9.2 Briefly describe what the diaphragm does during inhalation and exhalation.

During inhalation, the diaphragm contracts and flattens while it moves downwards and presses against the abdominal organs. Therefore, there is more space inside the thoracic cavity. Duing exhalation, the diaphragm relaxes into its mushroom/parachute shape and rises upwards.

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Topic 11

Anatomy VI: Circulations & Inversions

11.1 Briefly explain how gravity affects blood pressure.

Blood is assisted back to the heart from the lower extremities, and this causes blood pressure to be the greatest in the head and the lowest in the feet.

11.2 Briefly describe how inverted postures might serve to lower one's blood pressure, and how they might serve to elevate one's blood pressure.

On the one hand, blood pressure will immediately increase in the head and upper body. However, on balance, inversions will decrease overall blood pressure through reflex hypotension.

11.3 Some students should not do inversions. List 5 contraindications for performing inversions.

1. Glaucoma
2. Detached retina
3. History of stroke
4. High or low blood pressure
5. Recent dental or facial surgery

11.4 List 2 Positive effects and 2 negative effects of performing inversions in a regular class (physiological or psychological).

Positive Effects:
- Teaches students to move in to their fears
- Can decrease overall blood pressure through reflex hypotension

Negative Effects:
- Potential risk to cervical vertebral discs and nerve damage
- Blood pooling on the head, no valves to assist blood flow back to the heart

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Topic 14

What is Energy: Shakti, Prana and Pranayama

Describe the anatomy and physiology of a Full Complete Breath. Describe how you would teach it to a beginner, in your own words. Why would you teach it that way?

Anatomy & Physiology

Full complete breath is a deep and deliberate way of breathing that works to draw the breath into all dimensions and directions of the torso. It slows and lengthens the inhalations and exhalations in a mindful way while one's attention turns inwards (pratyahara). It is effective in breathing softness into points of tension in the body, and is an effective salve for stress and anxious dispositions.

In order, the breath moves into the chest, swelling down into the ribs, and finally inflating the lower abdomen/belly. With this, the "parachute-like" diaphragm lowers.

Upon exhalation, the breath leaves the lower abdomen - where the navel draws closer to the spine), deflates in the ribs and, lastly, leaves the chest. The diaphragm floats back upwards in the thoracic cavity.

Teaching Full Complete Breath

- Start with laying on your back. Bend the knees and place the feet around mat-width distance apart, allowing the knees to fall in against one another.Try lifting the head and drawing the chin down slightly to lengthen the spine. Place one hand over the chest, and the other on top of your stomach.
- As you breathe in through the nose, feel the chest rise, the ribs expand in all directions, and finally - the belly rise.
- As you breathe out, feel the stomach sink back down towards the spine, the ribs deflate, and the chest lower back down.
- Try slowing down your inhalations and exhalations to savour all the sensations and movements in your abdomen. As you're breathing in, feel the hands move further apart from each other. On the exhale, feel the hands move closer to one another.

- Harness your breath, this life force (prana) for maximum expansion and softness. Feel empowered to make more room in your body for more of this life force.
- Notice:
  - Can you breathe fully into the back of the ribs, feeling them slightly press into the ground beneath you?
  - If the mind wanders, try to bring the focus back to the tangible aspects of the breath: the coolness of the air in your nostrils, the rise and fall of your abdomen beneath your fingertips.

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Topic 15

Pranayama Techniques I

Describe how to teach Ujjayi breath in your own words to a beginner

- Find your way to a comfortable seat. Allow the sit bones to sink down into the ground, with the pelvis stacked evenly over top. Let this foundation support the spine effortlessly.
- Take your time to arrive in a place of effortlessness, of ease. Nothing in the body should feel strained. Tweak your position as needed. You're welcome to close the eyes or soften your gaze downwards to a point on the ground.
- Bring awareness to the natural breath. Can it flow smoothly in through the mouth and down the length of the spine? Is there any tension in the body obstructing its passage?
- Now place the palm in front of the mouth, and exhale into your hand, as if you were trying to fog a piece of glass before cleaning it – eyeglasses for instance.
- *Demonstrate*
- To create this sort of breath, you might notice a slight constriction in the back of your throat. Stay with this sensation, and when you feel used to it, continue it with your mouth closed. Observe the sound it makes inside the throat. It reminds me of a wind passing through trees, or the ebb and flow of an ocean tide.
- Now apply this whispery constriction to both your inhale and exhale. Notice and embrace the effect it has on the pace and length of your breath.

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Topic 19
Prenatal Yoga

List 5 contraindicated poses during pregnancy. List 5 poses to replace them, which at least accomplish some component of the contraindicated pose.

Jumping back to plank — Stepping back to plank

Wheel — Bridge

Bow — Seated side leans to open breathing space

Kapalabhati — Citali

Marichasana — Seated Angular Twists

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Script 1

Virabhadrasana I / Warrior I

Transition from Downward Dog

- Inhale: Look between your hands and send the right foot gently between the palms. *Exhale*
- Swivel the back foot to about 45 degrees, keeping the outer edge of the foot firmly planted
- Inhale: Rise up, arms stretched upwards, and welcome to warrior one *Exhale*
- As you arrive in Virabhadrasana, start to notice in which ways your body could use more support and ease.
  - Maybe allow your hips more space by moving the feet wider apart/toward the edges of the mat
  - Play with the position of the arms
    - They don't have to be beside the ears, they can be slightly in front
- Stay with your breath
- What feedback are you getting from your feet? Allow the stability from your feet to spread up through the legs, so that each leg supports your weight equally with the torso well balanced in the center
- Imagine the pelvis is a bowl filled with liquid that you want to keep contained
  - It doesn't tilt too forward or backward
  - Can you square your pelvis with the front of your mat?
- Draw the navel to the spine and start to lengthen up to the crown of your head
- Breathe in through the crown, down the spine, through the feet and into the ground below

Transition Out

- *Inhale*
- Exhale: Frame the front foot with your hands
- Inhale: Step back to downward dog
- Exhale: Release all the air out of your body and settle into downward dog for 5 breaths

Repeat Other Side

Modification

- If you feel discomfort, you're welcome to come to a high lunge instead
  - Just swivel the back foot forward and lift the heel

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Script 2

Trikonasana

(Preparation: Keep one block close to the front of your mat.)

Transition from Warrior 2 (right leg forward)

- Straighten the right leg and shorten your stance, but try to keep that bouncy microbend in the front knee. Turn the left foot inward slightly.
- Take a moment to notice that all four corners of the feet are rooted firmly in the ground. Let this be the foundation from which you draw all your stability and balance.
- Inhale: lengthen the spine up through the crown of the head
- Exhale: Let the right arm lead the torso forward over the right leg, as if you're reaching for something. Allow the left hip to slide back and draw the torso over the right leg.
- Drop the right arm, placing your hand on the block nearby. Keep the integrity of the spine and the waist equally long on both sides. Use the height of the block that allows you to maintain this balance.
- Allow the left arm to float up towards the sky, reaching the fingertips upwards to continue the line of your lower arm.
- Inhale: Roll the chest open slightly towards the sky, perhaps allowing the gaze to follow if it doesn't strain the neck.
- Exhale: Find expansion in the chest for the breath to flow in and out, and take any adjustments as needed.

Transition Out

- Inhale: Bend the front knee generously and press the feet in to the ground
- Exhale: Activate the lower abdomen and start to raise the torso back up

Repeat Other Side

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Script 3

Urdva Danurasana

Transition from Laying Down

- Come to lay down on your back
- Engage full complete breath, breathing in to all directions of the ribcage from the belly up to the chest
- Use this breath create more space in the thoracic cavity

Transition from Setu Bandha Sarvangasana

- Return to your regular breath
- Bend your knees, placing your feet underneath your knees, close to your seat
- Notice that the feet are spaced about hip-width apart
- Place the arms by your side, palms faced down and pressing in to the ground
- Tuck in your elbows and shoulder blades towards the midline of the body
- Press your feet in to the ground to lift the thighs and hips towards the sky

Urdva Danurasana

- Extend arms over head, fingers directed towards the heels
- Tuck in the shoulder blades
- Inhale: As you inhale, press through the hands and feet, to lift the chest and heart center upwards
- Attention to the neck: Keep it in line with the rest of the spine or allow the head to hang loose

Transition Out

- Exhale: On the next exhale, slowly bend the elbows to lower yourself down while you begin to tuck in your chin
- Starting with the back of your head, lower your spine down in a wave: from the back of the head to the sacrum.

Modification

- Option to stay in bridge or supported bridge pose.

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Script 4

Sirsasana

Preparation

- Have the mat placed in front of a wall before you enter Adho Mukha Svanasana/-Downward Dog

From Adho Mukha Svanasana to Catur Svanasana

- Lower down onto your forearms, keeping the elbows beneath the shoulders
- Interlace the fingers
- Inhale: Allow your forearms to bear more of your body weight as you tip-toe the feet closer to the shoulders. Eventually stack your hips above your shoulders.
- Exhale: Lower the crown of your head on to the mat between the forearms.
- Pause for a couple breaths in Dolphin Pose
- Inhale: Press through the shoulders and fold the knees in towards your abdomen
- Feel that the weight pours into your forearms more than your head
- Exhale: Uncurl the legs and extend them up towards the ceiling, pointing your toes (plantar flexion)
- Maintain your breath and picture the spine mimicking that of a Tadasana spine.
- Have your focal point directly in front of you to assist with balance

Transition Out

- Exhale: With strong engagement of the core and pelvic floor, start to bend at the hips and curl the knees back in towards the abdomen
- Keep using the support of your forearms
- Allow the toes to touch back to your mat
- Inhale: Release the head
- Exhale: Send the seat back towards your heels for a yummy Child's Pose

Modifications

- Stay in Dolphin Pose/Catur Svanasana to experiment with gradually introducing more weight and load into both the forearms and shoulders.
  - Option to lift one leg at a time in Dolphin Pose
  - Practice routinely for upper body strengthening

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Script 5

Janu Sirsasana

Transition From Dandasana

- Come to sit with your legs straight in front of you with flexed feet (dorsal flexion)
- Keep your legs active with a microbend in the knee
- Breathe length in the spine, allowing the crown to reach toward the ceiling
- Bend in the left knee, such that the sole of the foot presses against the upper thigh of the opposite leg
- Inhale
- Exhale: Rotate the torso to "face" the extended leg
- Inhale: Breathe space in to the midline of the body
- Exhale: Hinge from the hips to slowly fold over the extended leg
- Finding the "edge:"
  - Go as far as your body can without compromising important components of the posture:
    - Keep the spine naturally curved, as opposed to rounded
    - Do not collapse the chest, keep your collarbones wide
    - Strive to move "forward" as well as downwards
    - IF the belly reaches the thigh, you may allow for a rounding of the spine

Coming out of the Pose

- Inhale: Engage the core and lift the torso back upwards
- Exhale
- Straighten both legs and give them a bit of a jiggle

(*Repeat other Side*)

Modifications

- Elevate your seat on a blanket
- Use blocks for your hands to rest on