



MOVEMENT
PRINCIPLES



&

PILATES
ESSENTIALS

THE ESSENCE
OF
PILATES

Your In-class
Learning Resource

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MOVEMENT PRINCIPLES AND PILATES ESSENTIALS

THE ESSENCE OF PILATES

Joy Puleo

Rae Lea Saxton, Lauren Brandt
Portia Page, Christine Crooks

IN CONSULTATION AND COLLABORATION WITH

Cara Reeser

2026 Edition

Balanced Body Inc, Sacramento California

**This course is dedicated to all teachers
who seek to unlock individual potential by nurturing
the learning process and who freely share knowledge
and expertise.**

"Better than a thousand days
of diligent study is one day
with a great teacher."
- Japanese proverb.

For Doris

IMPORTANT INFORMATION

This Manual is intended to be used as part of a Pilates teacher training program or for clients who are working under the supervision of a trained Pilates teacher. If you are using this manual to learn these Pilates exercises and you are not under the supervision of a trained Pilates teacher please keep in mind that the material presented is physically challenging and Balanced Body is not liable for any injuries caused by attempting these exercises without proper supervision. Balanced Body highly recommends that you get a thorough evaluation from a qualified health or fitness professional and work with a trained Pilates teacher in order to receive the maximum benefit from these exercises.

2026 Edition

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Email: education@pilates.com

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THE PILATES ESSENTIALS MOVEMENT GUIDE

The Essence of Pilates



Your
In-Class Learning
Resource

A BALANCED BODY EDUCATION PRODUCT

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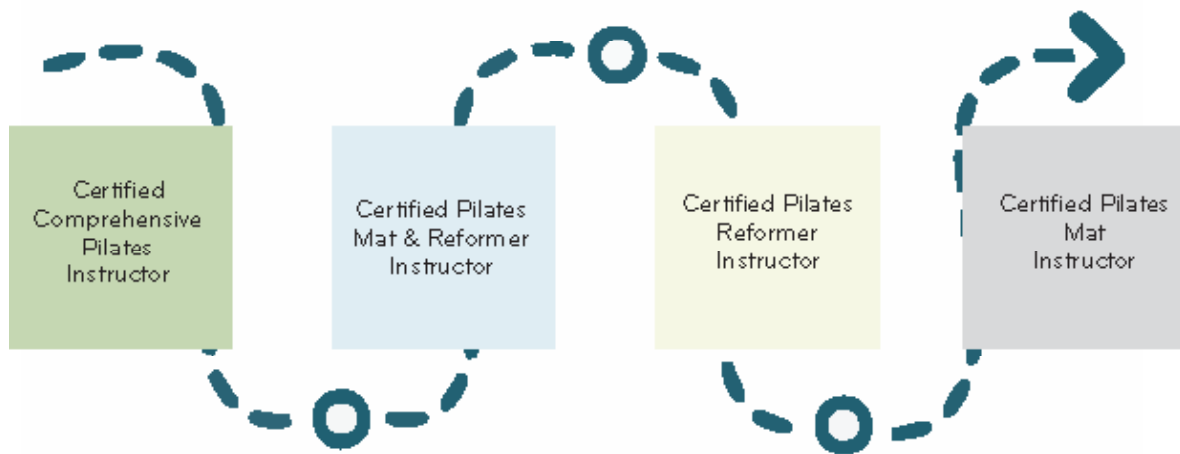
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BALANCED BODY INSTRUCTOR TRAINING

OUR PILATES PROGRAMS



Program Basics

- Movement Principles is your first course. Only an educator can give you permission to begin with either Mat 1 or Reformer 1 before Movement Principles.
- Mat 1 and Reformer 1 are your beginning Pilates movement courses. Each module builds on the next module and must be taken in numerical order.
- Mat 1 and Reformer 1 are required prior to attending any of the Apparatus coursework (Trapeze Table/Cadillac, Chair, Barrels or Apparatus 1, Apparatus 2, Apparatus 3).
- Anatomy is required prior to testing out for the following programs:
 - Mat/Reformer
 - Reformer
 - Comprehensive Certifications.
- Either BB Anatomy or an approved equivalent is required.
 - Anatomy in Three Dimensions is our preferred method of satisfying the anatomy requirement.
 - A minimum of 12-hours Anatomy training is required. If you choose to satisfy this requirement from a non-Balanced Body source or if you have taken college level anatomy and beyond, you will need to show proof of attendance and satisfactory course completion when you apply for your final test out.
 - Not all anatomy courses meet our Balanced Body standards. Online anatomy courses may or may not satisfy depending on organization. If you are unsure, please contact us at education@pilates.com.

Successful completion of the Balanced Body Comprehensive Training allows you to sit for the National Pilates Certification Program (NCPD) exam to become National Pilates Certified Teacher (NPCT). This is a preferred professional standard.

BALANCED BODY INSTRUCTOR TRAINING

COURSE OFFERINGS

Movement Principles and the Pilates Essentials

Your First Course. Introduction to the pre-Pilates Essentials

Mat

Mat 1

Mat Foundations

Mat 2

Intermediate and Advanced Mat

Mat 3

Mat with Props

Reformer

Reformer 1

Introduction to the Reformer

Reformer 2

Deepening Reformer Skills

Reformer 3

Advanced Reformer

Apparatus

Apparatus courses may be taken as mixed apparatus. These courses teach the Trapeze/Cadillac, Chair and Barrels exercises collectively as a system.

Apparatus 1

Introduction to the Trapeze Table, Chair, and Barrels

Apparatus 2

Deepening your Trapeze Table, Chair and Barrels Knowledge

Apparatus 3

Advanced Trapeze Table, Chair and Barrels.

Apparatus courses may also be taken as individual equipment modules.

Trapeze Table/Tower

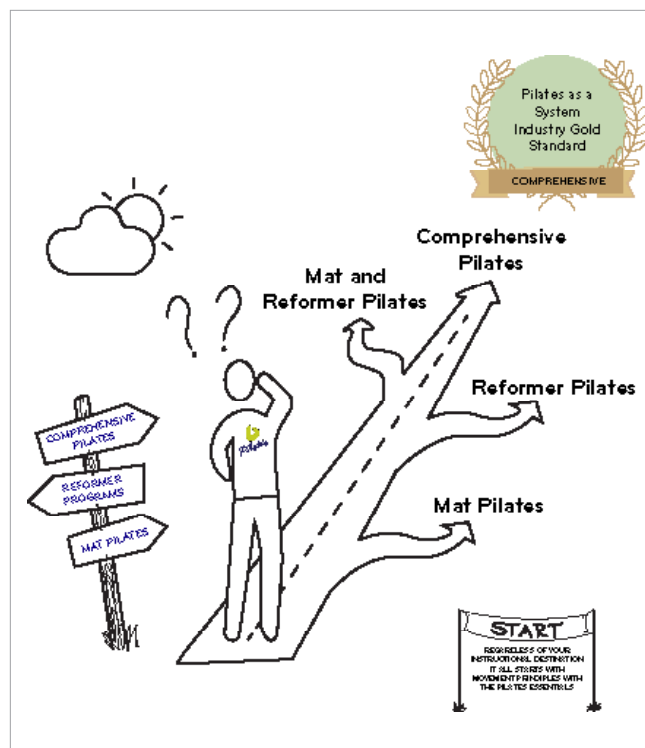
Chair

Barrels

Anatomy

Either Balanced Body Anatomy or Approved Equivalent.

Anatomy in Three Dimensions is our preferred method of satisfying your anatomy requirement.



BALANCED BODY INSTRUCTOR TRAINING

PROGRAM REQUIREMENTS

Pilates Course Work			
Movement Principles and the Pilates Essentials *includes video and in class practical Movement Principles is intended to be your first course . Only an educator can give you permission to begin with either Mat 1 or Reformer 1 before Movement Principles.	Mat Courses <u>Mat 1</u> - Foundations <u>Mat 2</u> - Advanced Mat <u>Mat 3</u> - Props	Reformer Courses <u>Reformer 1</u> – Introduction to Reformer <u>Reformer 2</u> – Deepening Reformer Skills <u>Reformer 3</u> – Advanced Reformer	Apparatus Courses <u>App 1</u> – Introduction to Trapeze Table, Chair and Barrels <u>App 2</u> – Deepening Trap, Chair Barrels Knowledge <u>App 3</u> – Advanced Trap, Chair and Barrels Or individual apparatus modules <u>Trapeze Table, Chair Barrels</u> To begin your Apparatus training you must complete Mat 1 and Reformer 1.
Anatomy Requirement: Either BB Anatomy or approved equivalent Anatomy in Three Dimensions™ is our preferred method of satisfying the anatomy requirement			

Comprehensive Training
Completion of all Course Work Movement Principles, Mat 1, 2 and 3, Reformer 1, 2 and 3, and Apparatus Anatomy (at least 12 hours - BB or comparable)
Practice hours <u>Personal Sessions:</u> 20 Mat, 30 Reformer, 45 Apparatus <u>Observation:</u> 15 Mat, 30 Reformer , 20 Apparatus <u>Teaching Hours:</u> 35 Mat, 90 Reformer, 85 Apparatus
Total Hours: 520 Certified after successful completion of final exam – Written and Practical as Balanced Body Comprehensive Pilates Instructor* *Successful completion of the Balanced Body Comprehensive Training allows you can sit for the National Pilates Certification Program (NCPD) exam to become a National Pilates Certified Teacher (NCPT). This is a preferred professional standard.

BALANCED BODY INSTRUCTOR TRAINING

MAT AND REFORMER AND REFORMER PROGRAM REQUIREMENTS

Mat and Reformer Training

Completion of all Mat and Reformer Course Work

Movement Principles, Mat 1, 2 and 3, Reformer 1, 2 and 3
Anatomy (at least 12 hours - BB or comparable)

Practice hours

Personal Sessions: 20 Mat, 30 Reformer

Observation: 15 Mat, 30 Reformer

Teaching Hours: 35 Mat, 90 Reformer

Total Hours: 332

Certified after successful completion of final exam – Written and Practical as

Balanced Body Mat and Reformer Pilates Instructor

Reformer Training

Completion of all Reformer Course Work

Movement Principles, Reformer 1, 2 and 3
Anatomy (at least 12 hours - BB or comparable)

Practice hours

Personal Sessions: 30 Reformer

Observation: 30 Reformer

Teaching Hours: 90 Reformer

Total Hours: 214

Certified after successful completion of final exam – Written and Practical as

Balanced Body Reformer Pilates Instructor

BALANCED BODY INSTRUCTOR TRAINING

MAT PROGRAM REQUIREMENTS

Mat Training

Completion of all Mat
Course Work

Movement Principles, Mat 1, 2 and 3
Anatomy (at least 12 hours - BB or comparable) is highly recommended

Practice hours

Personal Sessions: 20 Mat

Observation: 15 Mat

Teaching Hours: 35 Mat

Total Hours: 134

Certified after successful completion of final exam – Written and Practical as

Balanced Body Mat Pilates Instructor

BALANCED BODY INSTRUCTOR TRAINING

PROGRAM REQUIREMENTS

BALANCED BODY INSTRUCTOR

PATH STARTS HERE

YOUR INSTRUCTOR TRAINING JOURNEY

Choose your Path

Whichever Pilates instructional path you choose, it starts here. With the Movement Principles video resources and the Pilates Essentials presented in this manual, you have powerful education tools intended to support your personal journey to becoming a Pilates Instructor. In this course, you will learn how to develop and train the physical skills clients need to establish healthy movement patterns. These pre-Pilates skills are presented as an entrance into Pilates practice, and, as you will see, are excellent skill development tools for all movement practices. These skills are valuable in all exercise and wellness training environments. Welcome!

MOVEMENT PRINCIPLES: TRAINING FOR OPTIMAL PERFORMANCE

The Balanced Body Movement Principles

The Balanced Body Movement Principles are a training framework. By keeping the principles of Whole Body Movement, Trunk Integration, Lower Body Training, Upper Body Training, and Mobility and Restoration in your mind as you prepare your client's sessions and classes, you will inherently develop well rounded experiences with limitless programming possibilities. Your Educator, the Movement Principles videos, and its companion textbook, are your ongoing educational resources. There is plenty of anatomy, biomechanics, movement options and training suggestions to keep you engaged throughout your Pilates journey.

BALANCED BODY EDUCATION MOVEMENT PRINCIPLE MODULES



When determining a client or class training protocol, you should always ask yourself...

Did it touch upon all five of these principles?
Did I cue all five of these principles - What physical skills are needed for clients to optimize movement patterns?

MOVEMENT PRINCIPLES VIDEOS

Regardless of which learning path you choose, the Movement Principle videos are required for successful completion of the Balanced Body curriculum. The videos can be watched on demand and are parsed out over the length of your training. We are requiring viewing and quiz completion in conjunction with your Pilates coursework as follows:

Movement Principles

Video 1: Whole Body Movement

Video 2: Trunk Integration

Mat 1 / Reformer 1

Video 3: Lower Body

Mat 2 / Reformer 2

Video 4: Upper Body

Mat 3 / Reformer 3

Video 5: Mobility and Restoration

THE PRE-PILATES ESSENTIALS

THE ESSENCE OF PILATES

ESSENTIAL SKILL BUILDING MOVEMENTS

The Pilates Essentials are known by many names in the Pilates profession. You may hear them referred to as the 'Fundamentals', 'Foundations', and as 'Functional' movement patterns. Regardless of the terminology, they represent pre-Pilates skill-building movements. Mastering these movements creates a strong physical foundation and deepens experiential understanding of movement and the Pilates exercises you are about to learn.

These essentials are woven throughout the Pilates method and the Balanced Body curriculum. In this course, you will explore alignment, breath, limb differentiation, efficient spinal segmentation, and preparatory skill-based movements that link directly to all Pilates exercises. These movements form the common language of Pilates, place the client at the center of their own learning, and set the stage for client success, mindful engagement, awareness, and lasting change.

COURSE STRUCTURE

In this course we will explore movement fundamentals through three primary lenses: Aligning Practices, Wheels of Motion, Skill Building.

Aligning Practices

- Alignment
- Organization of the body in motion

Wheels of Motion

- Movements of the spine
- Integration of the bony masses of the head, rib cage, and the pelvis with spinal movement

Skill Building

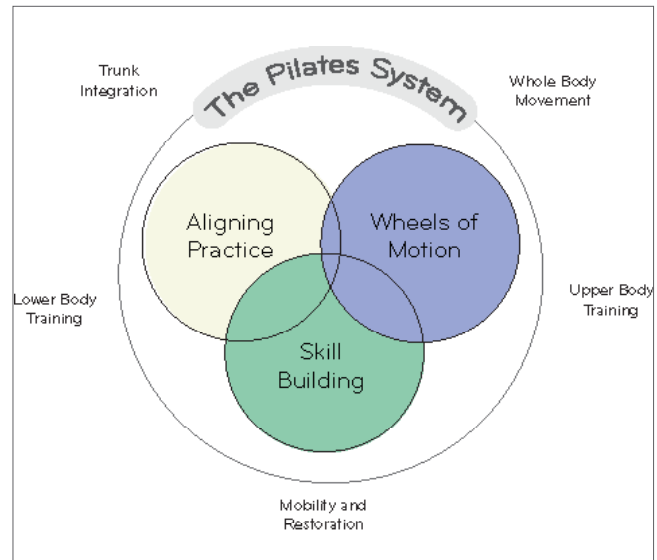
- Essential skill building movements

The Pilates System

Pilates exercises incorporate alignment, integration of discreet physical skills, and coordination of spinal movements in all planes of motion. Threading these concepts through the Pilates exercises develops strength, enhances flexibility and optimizes whole body movement patterns.

Movement Principles with the Pilates Essentials

The Essentials, within the training framework of the Movement Principles, creates a powerful method of training the whole body.



COURSE COMPLETION AND EXPECTATIONS

In order to complete all course requirements you must:

- Attend all 16 hours of the course
- Participate in class discussions, course experiential movements and teaching experiences as directed by your educator
- Complete on demand viewing of assigned Movement Principles videos and successfully complete associated quizzes.
 - Video 1: Whole Body Movement
 - Video 2: Trunk Integration

You will receive your proof of attendance for your in class participation and proof of completion when all online requirements have been satisfactorily met..

WHAT IS PILATES?

'PILATES IS COMPLETE COORDINATION OF BODY, MIND AND SPIRIT.' J. PILATES

Pilates is a whole-body methodology of movement that engages the mind, challenges the body and creates a positive physical environment for creating healthy change, enhancing wellbeing, and some might even say, elevating the spirit.

WHY IS PILATES SO POPULAR?

The intention of the method

Joseph H. Pilates developed a method of movement he called, Contrology. The guiding principles of Contrology include breath, precision, control, rhythmic movement, flow, concentration and whole body movement. The method was developed in part to combat the inactivity of a modern lifestyle. He made these assertions back in 1945 when writing "Return to Life" and long before the cell phone or laptop. Imagine if Mr. Pilates were alive today how he might adapt his teachings to meet the challenges, environmental and physical, that we face today. Current health and science advocates agree with Mr. Pilates original assessment as inactivity is now considered a world-wide 'global pandemic'* where public health interventions promoting a healthy lifestyle are being supported by governments worldwide.

Science acknowledges benefits of Pilates

Pain science, and the role of movement in support of clients with pain, has evolved over the past decade. According to the International Association for the Study of Pain 'Understanding that the brain plays a central role in pain perception and that movement is crucial for recovery can change the way individuals respond to pain.' This expands the curiosity of how mindful-based movement practices, such as Pilates, support managing beliefs around the pain experience.

In addition, the benefits of low impact exercise and Pilates, is featured everywhere from academic research to casual news feeds. All manner of health associations are also attributed to low impact mindful exercise including support and regulation for ADHD, sleep disorders, and metabolic dysfunction. These findings are in addition to the musculoskeletal, motor learning, and arthrokinematic studies specific to rehabilitation that have already identified Pilates as an excellent companion to traditional forms of physical rehabilitation.

General Population sees value add of Pilates

Post Covid the general population adopted a wellness mindset. Magazines, news media, tv shows, celebrities, and movies casually reference Pilates and its benefits.

Professional athletes, from all sports, attribute longevity of performance to Pilates and Pilates instructors are portrayed as health partners and fitness gurus who offer smart and effective training advice and support.

Social media has made Pilates a go to inspirational fitness workout. Group apparatus instruction is on the rise, with the Reformer leading the way and group Reformer format classes and spaces continuing to grow.

Availability of equipment and education

The equipment is more available and has also evolved. The lighter and more durable materials available today give rise to innovation in design and exercise application. Education is also more accessible with in person, video on-demand, and online live instruction all seen as effective methods of instruction.

Trademark lawsuit and Pilates identified

Today, Pilates not only survives, it thrives. What was once an elite activity is now available and accessible to all. Education is widely available, equipment is abundant and the name Pilates, thanks to a trademark lawsuit won by Ken Endelman in 2000, is available for instructors and studios to identify and characterize practices and instruction. Prior to the trademark lawsuit an instructor could only say they... 'taught exercises based on the historical principles of Joseph H. Pilates'. Quite a mouthful and hard to market!

The client is 'sticky'

It has always been the client at the heart of the Pilates experience. After Joseph H. Pilates death in 1967, it was the client who kept Contrology alive. One of the key clients, and a friend to both Joseph and Clara Pilates, is John Howard Steele. In his book, 'Caged Lion', Mr. Steele refers to the effort to keep the original studio running after Mr. Pilates death as... 'exciting at the beginning, like a love affair. And perhaps as mindless.'

*Kohl HW 3rd, Craig CL, Lambert EV, Inoue S, Alkandari JR, Leetongin G, Kahlmeier S; Lancet Physical Activity Series Working Group. The pandemic of physical inactivity: global action for public health. Lancet. 2012 Jul 21;380(9838):294-305. doi: 10.1016/S0140-6736(12)60898-8. PMID: 22818941.

A PILATES PARADIGM

FROM THE INSIDE OUT

This love was shared by many first generation teachers including Kathy Stanford Grant, Eve Gentry, Carola Trier, Romana Kryzanowska, Jay Grimes, Ron Fletcher and Lolita San Miguel, and many others.

All of these first generation teachers taught their understanding of the method by created pathways to the intention of Contrology and served students and clients so well that Pilates as a method continued, even after the passing of the creator.

The clients were 'sticky', the teachers were passionate, and Pilates survived.

It Works!

When all is said and done Pilates is popular because it works. The exercises move the body and the mindfulness brings awareness. Add a novel apparatus, such as the Reformer, which applies forces in multiple directions, and asks the body to move through all planes of motion and you have what almost feels like magic. Clients feel stronger and they are stronger. Clients feel better and they move better. Clients feel physically empowered because they are more connected to themselves. Clients believe in their body's abilities because they are more able. Simply put, it works!

BALANCED BODY EQUIPMENT AND EDUCATION

Balanced Body takes the responsibility of supporting Pilates seriously and we seek to meet this moment of growth through creativity, innovation, and education. The equipment provides the training environment and the education sets the intention of the client experience. When you train with Balanced Body, and on Balanced Body equipment, you are invited to learn and explore with resources that keep the client experience and the Pilates intention central in all the ways we show up in the industry.

PILATES: A MODEL FOR MOVEMENT EDUCATION

Learning your scales

In every Balanced Body course, we will explore the depth and breadth of Pilates by teaching foundational movement skills, identifying the primary Contrology exercise intention while also exploring the contemporary evolution and application. You learn how to adapt and apply to the person(s) in front of you. With every cue, transition, and experience, you learn how to keep the client experience in the center and how to utilize Pilates, much the way a musician utilizes scales, as a base for creativity, exploration and self expression.

The client in the center

Pilates is a client-centered training approach taught on the mat and/or specialty Pilates apparatus and equipment. A session may be taught in a clinic, fitness facility or identified Pilates studio with the base of a program consisting of Pilates movements inspired by the Joseph H. Pilates' movement methodology, Contrology, and taught by qualified Pilates Instructors.

The Pilates Experience

The Pilates experience supports the whole human system by grounding itself in current movement science, while allowing space for individual awareness and personal experience. Pilates instruction fosters empowerment and autonomy through embodiment and practice. Skill development movements are taught with a mindful, non-judgemental, and non-competitive approach, promoting healthy movement patterns. Clients are encouraged to engage with curiosity, explore their own experience, and develop a deeper connection to the body.

Balanced Body Pilates Paradigm

A CONCEPTUAL PILATES MODEL



The diagram above is a conceptual model. If all of these components exist in a session, or class, the client is experiencing Pilates.

PILATES ESSENTIALS LEARNING OBJECTIVES

STUDENT SELF ASSESSMENT

Becoming a Pilates instructor requires classroom time, personal practice, observation, and teaching. This course is designed for you to experience, as well as learn, the pre-Pilates essentials exercises and their relationship to the practice and teaching of Pilates. These movements create the language of Pilates and your cuing will have roots in the skills that they develop. These skills, when integrated, become the foundation for the Pilates repertoire of exercises.

The objectives below are to ensure you are focusing your learning to maximize your success. The metric standards are: **Got It!** Which means you understand the underlying movement concepts and can apply to self practice. **Needs Practice**, indicates a hesitation or challenges exists, and **Not Yet**, means the concepts are not integrated in your teaching and your body. Self evaluate and use the objectives to guide your progress. A printable copy of this lives in your CLARA resource

Knowledge of Exercises/Theory	Got It!	Needs Practice	Not Yet
▶ Apply the concepts of the pre-Pilates essentials exercises when teaching self or others.	☐	☐	☐
▶ Memorize Pilates Essentials exercises with correct setup, movement sequence, and execution.	☐	☐	☐
▶ Understand and locate the alignment landmarks relevant in Pilates exercises.	☐	☐	☐
▶ Understand and implement the Movement Principles as a training framework.	☐	☐	☐

Personal Practice	Got It!	Needs Practice	Not Yet
▶ Increase awareness of your body's strengths and area for improvement through the Pilates Essentials.	☐	☐	☐
▶ Develop a consistent personal Pilates practice and be able to independently guide yourself through a pre-Pilates Essentials workout, performing the exercises to the best of your personal ability and utilizing modifications as needed.	☐	☐	☐
▶ Embody the pre-Pilates sequences and identify where to focus personal practice.	☐	☐	☐

Cuing, Coaching, Teaching	Got It!	Needs Practice	Not Yet
▶ Confidently teach and cue all Pilates Essentials exercises before progressing to the next level.	☐	☐	☐

Programming, Safety, and Special Populations	Got It!	Needs Practice	Not Yet
▶ Learn how to verbalize informed consent when teaching individuals or groups. "Is it okay to touch?"	☐	☐	☐
▶ Cue another individual to the best of THEIR ability and movement tolerance	☐	☐	☐

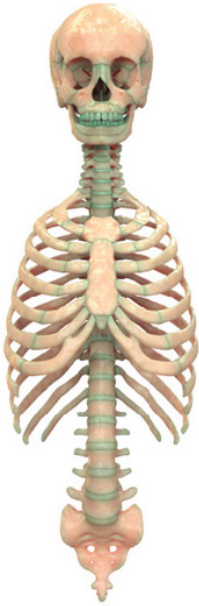
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How would you define Pilates? What
does Pilates mean to you?

ALIGNING PRACTICE

BODY ORGANIZATION AND RELATIONSHIPS

Static upright posture is not a fixed mark but a moment of ease where the whole structure, in relationship to gravity, uses just enough tension/effort to support itself. When observing posture globally, the bones, and bony landmarks, and their relationship to each other are an important way to see alignment and structural organization.



Axial Skeleton



Appendicular Skeleton

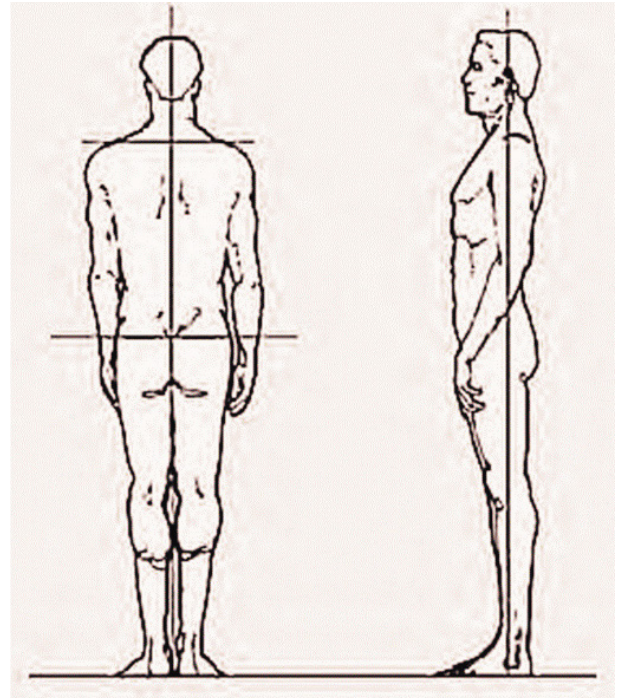
THE AXIAL SKELETON

The skull, vertebral column, sacrum, and rib cage make up the central framework of the human body. Notice how the head, rib cage, and sacrum align over one another and are connected through the interlocking chain of the vertebral column of the spine. The head is balanced on top of the spine. The ribs are attached to the thoracic vertebrae. The sacrum is both the base platform for the spine, and the central keystone of the pelvis.

Through the axial skeleton the limbs are connected to the girdles, (the shoulder girdle and the pelvic girdle) and to the limbs, (the upper limb, arms, and lower limb, legs).

THE APPENDICULAR SKELETON

The arms, legs, scapula, clavicle, and pelvis make up our external, freely movable limbs and the attachments of our frame.



POSTURE

Posture is the way someone holds themselves when standing and sitting. According to the Oxford dictionary, posture is defined as "a particular way of dealing with or considering something; an approach or attitude."

ALIGNMENT

Alignment is the position of the body parts in relationship to each other. Oxford dictionary goes further and defines alignment as "arrangement in a straight line, or in correct or appropriate relative positions." It is a position of "alliance" or "agreement".

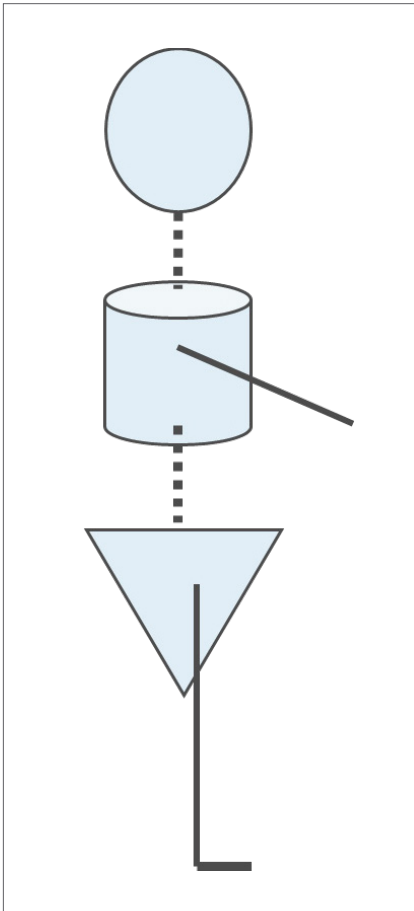
OPTIMAL POSTURE

In relationship to gravity, the alignment of the bony structure minimizes stress around joints and surrounding tissues. This moment of ease is a sort of whole body 'neutral' positioning or 'home base'. In this place, the soft tissue (connective tissue, ligaments and muscles) use just enough energy to support the joints and our framework in gravity. Not too much, not too little...just right!

ALIGNING PRACTICE

GRAVITY, THE SPINE, AND BALANCING FORCES

Another way to explore posture and alignment is through the organization of the large bony masses of the head, the rib cage and the pelvis relate to one another is another way to look at alignment. When these structures align in upright the stress on surrounding and supporting structures, ligaments, muscles, and fascia, is minimal. This place of ease, economy, and efficiency is an optimal place to explore movement potential.



FINDING EASE, ECONOMY AND EFFICIENCY

Alignment, Gravity, and Tension

Tensile forces, tensioning forces, are how gravitational demands are translated from bone to supporting structures. Good tension, is when these forces are dialed just enough to coordinate and anticipate the demands of movement. This starts with finding ease, economy and efficiency in the relationships between the three primary weight centers.

The three principle units of weight include the

- Head
- Rib cage
- Pelvis (includes the sacrum)

When aligned

- Overall effort on ligaments and muscles is reduced, when the head, rib cage and pelvis are balanced in relation to the force of gravity. This is relative to body position, i.e. upright, supine, seated, prone.

TENSIONAL INTEGRITY

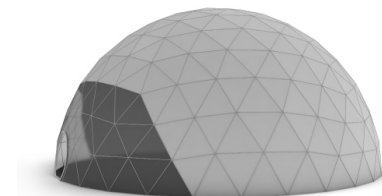
Tensegrity (tensional integrity)

Tensegrity is an architectural concept where tension and compressive forces create a balanced structure which can sustain itself. Think of a geodesic dome pictured below.

Bio-tensegrity

Bio-tensegrity uses the architectural principles of tensegrity as it applies to our interconnected anatomical structure and biological functions.

When observing posture and alignment, what is the role of tension in maintaining structural integrity?



Geodesic Dome

ALIGNING PRACTICE

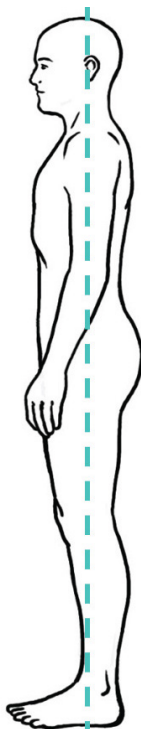
BODY MAPPING

When Observing Posture Alignment

- ▶ Take a 360 degree view by looking at the front, side and back of the body.
- ▶ Notice structural relationships (i.e. head, rib cage, pelvis).
- ▶ Observe joint relationships and bony landmarks relative to each other. (i.e. notice if the patella of each knee joint is level)
- ▶ Keep an open mind, look for balance and symmetry, but do not assume that a deviation is a problem.

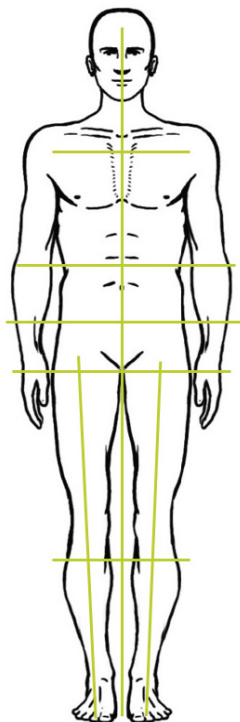
SIDE VIEW - PLUMB LINE

- ▶ Head, rib cage, and pelvis relationship
- ▶ Tip of the earlobe
- ▶ The shoulder
- ▶ Center of the rib cage
- ▶ High Point of the iliac crest
- ▶ Pelvis organization on top of the femurs
- ▶ How the sitting bones relate to the heels
- ▶ Center of the knee just in front of the lateral malleolus



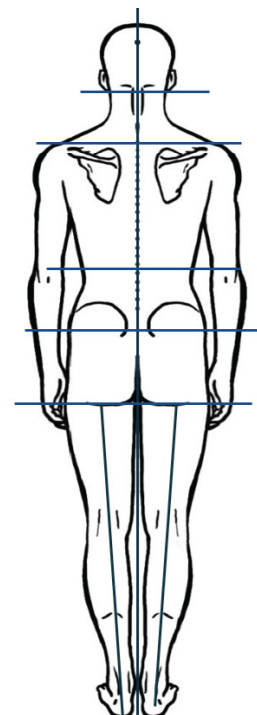
FRONT VIEW HORIZONTAL

- ▶ Eyes on horizon
- ▶ Shoulders level
- ▶ Distance between arms and torso
- ▶ High point of the iliac crests level
- ▶ Anterior Superior Iliac Spines (ASIS) level
- ▶ Greater trochanters level (Where is the hip joint?)
- ▶ Top of patella (knees) level
- ▶ Equal turnout on both feet



BACK VIEW HORIZONTAL

- ▶ Ears level
- ▶ Shoulder blade alignment on the back wall of the rib cage
- ▶ Equal distance between the spine and the sides of the ribs
- ▶ High point of iliac crests level
- ▶ Gluteal folds level
- ▶ Achilles tendon alignment





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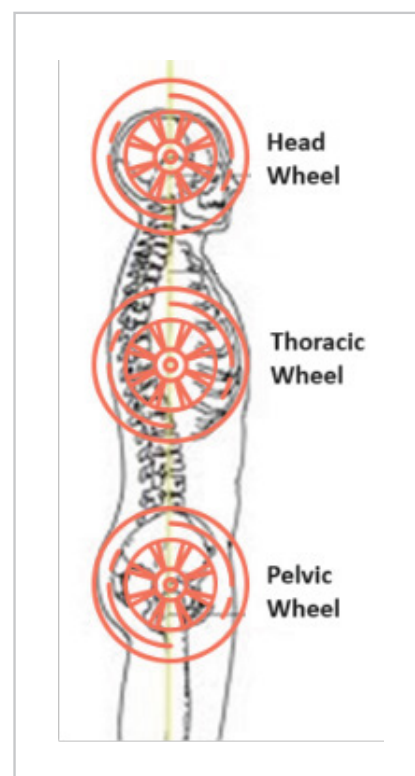
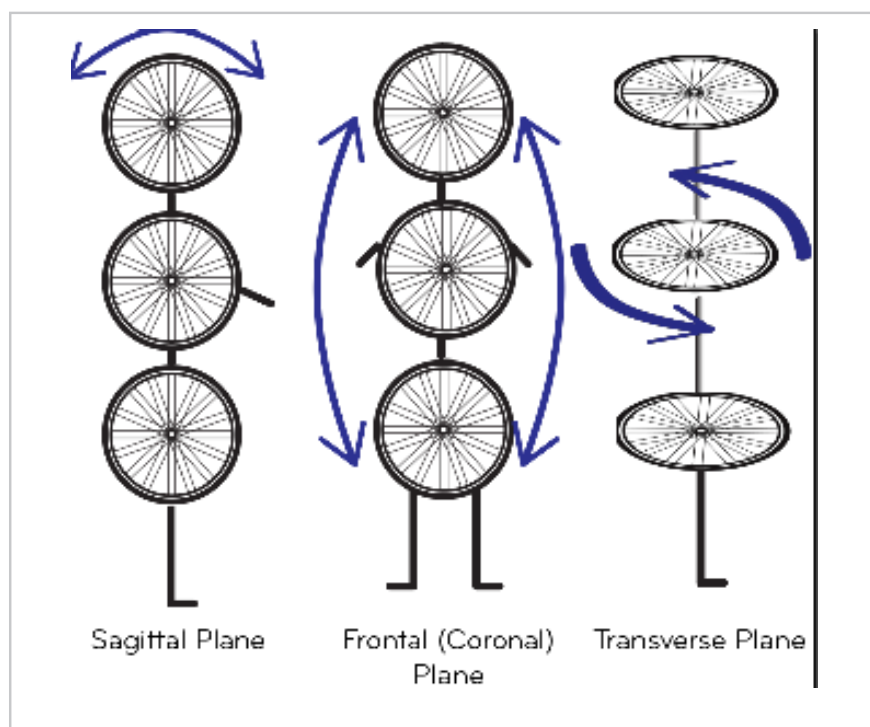
WHEELS OF MOTION

HEAD, RIB CAGE, AND PELVIC MOTION

Understanding our alignment in static posture is one thing. Moving our masses through space is another. The head, rib cage, and pelvis, move in relationship to each other and in all planes of motion. The spine, the spinal muscles, ligaments and fascia, create the dynamic connections between these large bony masses, and collaborate to support, direct, and coordinate whole body spinal movement.

THE WHEELS OF MOTION

If the three dimensional bony structures - head, rib cage, and pelvis - were rotating, like wheels, around an imaginary axis, they would promote sequential movements of the spine.



“ When getting in and out of car, what plane of motion are you moving in? What about when getting out of bed in the morning or when playing Pickleball?

WHEELS OF MOTION

HEAD, RIB CAGE, PELVIS AND SPINAL MOVEMENT ABILITY

The spine creates efficient, coordinated, and graceful human motion in all planes of motion and in all positions relative to gravity. The bony organization of the spine moves us, protects the spinal cord and nerve roots, connects the head, ribs, and pelvis (the wheels). As imagery, the wheels are a way to see directionality of movement. Moving from the bony masses encourages the length and space to maximize the fullness of spinal movement ability.

THE WHEELS IN THE PILATES ENVIRONMENT



Flexion
Sagittal Plane



Extension
Sagittal Plane



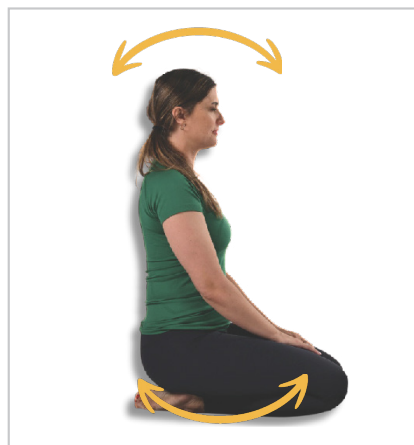
Rotation
Transverse Plane



Lateral Flexion
Frontal/Coronal Plane

WHEELS OF MOTION

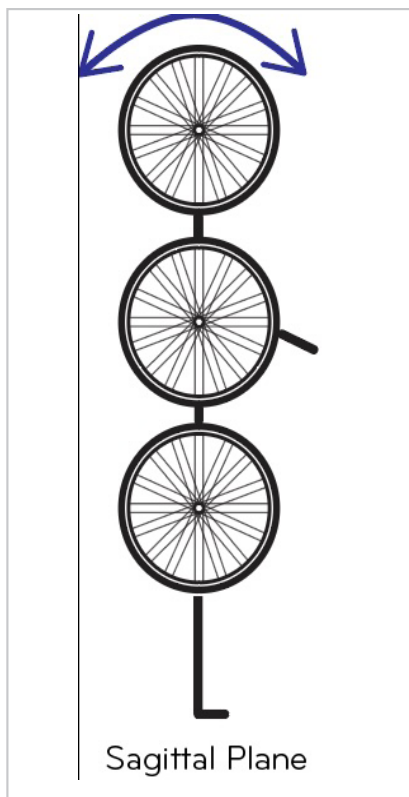
MOVING FROM ABOVE AND BELOW IN THE SAGITTAL PLANE



The Crown and The Seat

The spine moves as the bony masses move. Initiating from above, the 'crown'; helps to drive the movement while also lengthening through the cervical spine.

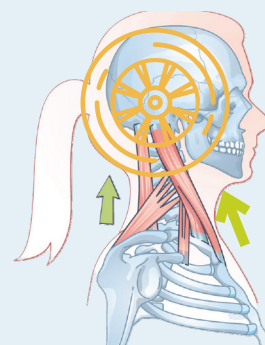
Initiating from the sitting bones of the pelvis initiates the movement from the 'seat'. Initiating from the seat, or the base of the pelvis, encourages leg muscles to participate and support, while also lengthening the lumbar spine.



The Crown

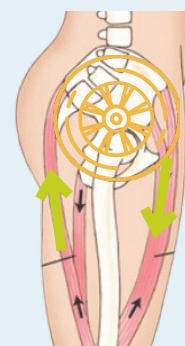
The head balances on the cervical spine at the atlanto-occipital joint.

The neck extensors and flexors balance the weight of the head when upright and support flexion and extension of the cervical spine.



The Seat

The hip extensors, hamstrings (semitendinosus, semimembranosus and biceps femoris) and hip flexors (rectus femoris) act like pulley cables on the pelvic wheel from below.



“When moving from the head and the sitting bones in the sagittal plane, the head and the pelvis move from flexion to extension. How does the rib cage respond?

What does this look like in the coronal/frontal plane? Transverse Plane?

WHEELS OF MOTION

FLEXION AND EXTENSION FROM THE CROWN

Head Rocking

From a seated posture, align the head, rib cage and pelvis.

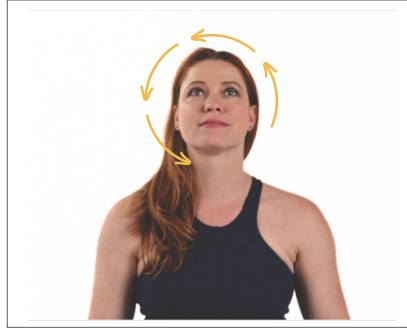
Nod 'yes'. This is a small range of motion initiated from the atlanto-occipital joint (where the head and C1 - the Atlas - meet).



Nose Circles

From a seated posture, align the head, rib cage and pelvis.

Draw small circles with the nose. Try to touch every point on an imaginary circle.

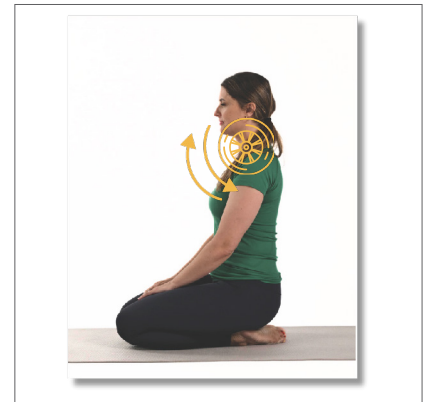


Flexion and Extension

From a seated posture, align the head, rib cage and pelvis.

Turn the head like a wheel to look straight down toward the lap. Stack back up to re-align, then let the eyes gaze look up.

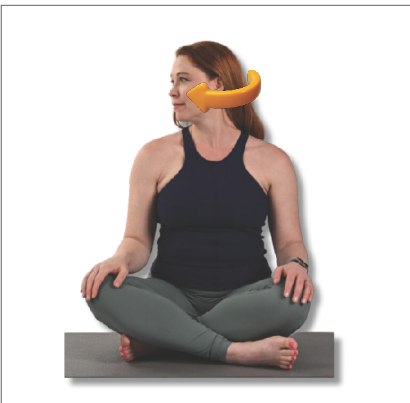
This is also known as capital flexion and extension. and is a larger range of motion than the head rocking



Cervical Rotation

From a seated posture, align the head, rib cage and pelvis.

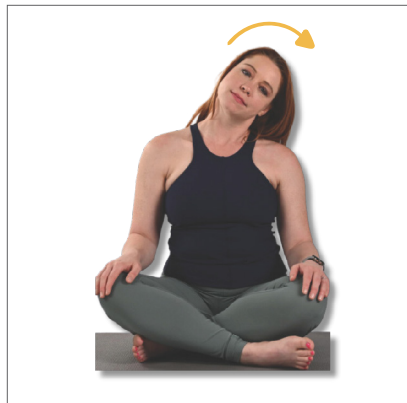
Rotate the head to one side. Imagine turning the head wheel from behind.



Cervical Lateral Flexion

From a seated posture, align the head, rib cage and pelvis.

Lengthen through the crown of the head and turn the head to side bend laterally. This is turning the head wheel in the frontal plane.



Let your senses lead you

Lead with the eyes and continue to look in the direction of the rotation and notice. Does this enhance rotation ability.

“ How do the movements of the head influence the cervical spine?

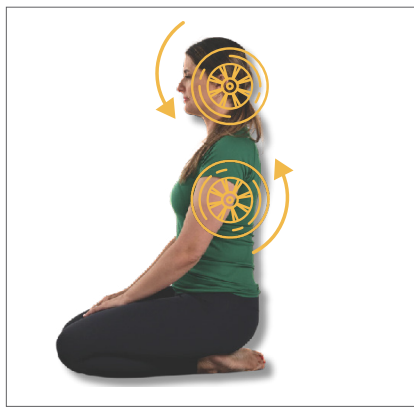
WHEELS OF MOTION

HEAD AND RIB WHEEL INTEGRATION

Flexion

From a seated posture, align the head, rib cage and pelvis. Lengthen through the crown and root through the seat.

From the head nod forward, as if bowing. Continue to flex forward, deepening the bow, until the shoulders and thoracic spine move into flexion.



Extension

From a seated posture, align the head, rib cage and pelvis. Lengthen through the crown and root through the seat.

Look up, initiating the extension from the head. Invite the thoracic spine to follow the head into extension. Do not forget to lead with your eyes.



Rib Clock/Circles

From a seated posture, align the head, rib cage and pelvis. Lengthen through the crown and root through the seat.

Think of the circumference of your rib cage as a clock. Move the rib cage around to explore each number of the clock.



12 o'clock to the back (T12), 6 o'clock is on the front (Xiphoid Process) and the 3 and 9 to the sides (lateral ribs).

Lateral Flexion

From a seated posture, align the head, rib cage and pelvis. Lengthen through the crown and root through the seat.

Turn the head wheel to the side and allow the torso to follow through in the same direction. Stay rooted in the seat as the head and ribs move.



Rotation

From a seated posture, align the head, rib cage and pelvis. Lengthen through the crown and root through the seat.

Then turn the head wheel to look over your shoulder and allow the torso to follow through in the same direction. Stay rooted in the seat as the head and ribs move.



WHEELS OF MOTION

INTEGRATING THE PELVIC WHEEL

Cat and Cow - A Sagittal Experience

The Cat/Cow exercise, in addition to just feeling great, is an exploration of the head to tail connection in the sagittal (flexion and extension) plane of motion. These movements teach spinal sequencing and the relationships between the head, rib cage and pelvis in movement.

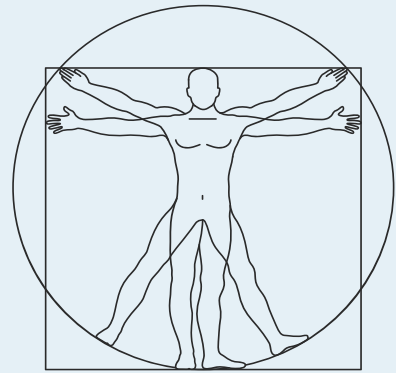
Cat

From the all fours position, flex the spine. Initiate the movements from the wheels of the pelvis. Notice how the rib cage and head respond. This is the Cat phase.



Cow

Release the Cat and lengthen through your all fours neutral position. Allow the pelvis and head wheel to lead the spine into extension. Notice how the rib cage follows through. This is the Cow phase of the exercise.



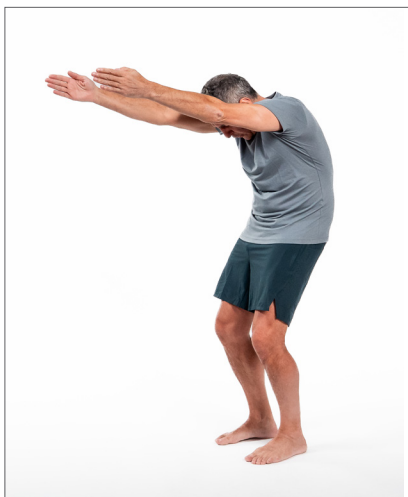
Finding Opposition Length and Width

When cueing opposition, reaching head up and out through the crown and sitting bones down, feet grounded, creates length. This length encourages the intrinsic muscles of the spine to wake up, listen and respond.

The same sensations occur when you cue width. The width across the girdles, shoulder and pelvic.

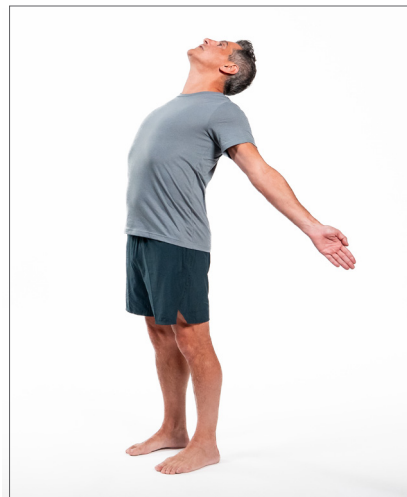
Standing Cat

Explore this round back movement in standing. Notice the relationships between the lumbar spine, the pelvis and the legs as well as the head, rib cage and pelvis. Can you feel how the movement engages the abdominals?



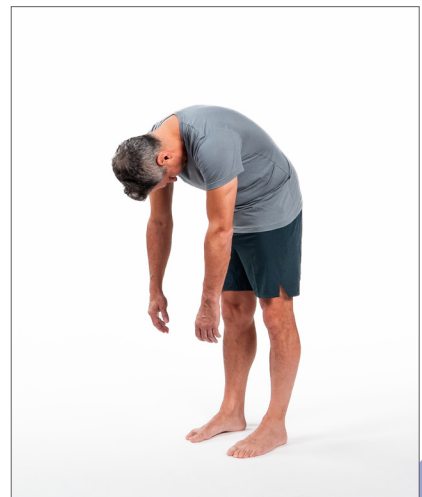
Standing Cow

Explore this standing extension movement. Notice the relationships between the lumbar spine, the pelvis and the legs as well as the head, rib cage and pelvis. Can you feel how the controlled lengthening of the front body and the engagement of the back body?



Standing Roll Down/ Side Bend/Rotation

Take these standing movements into a full roll down (pictured). Also play with standing side bends, and rotational movements.



ANATOMY OF THE SPINE

MOVEMENT ABILITY OF THE SPINE

The three curves of our spine support the three bony masses. They also allow for shock absorption and directly relate to the mobility of the spine into flexion, extension, lateral flexion, and rotation. Excessive presentation of these curves may lead to imbalances, pain, and dysfunction or may simply be an individual structure and organization. In the absence of pain, let's not judge the structure but instead focus on how to create spinal strength and enhanced movement quality utilizing Pilates skills and exercises. After exploring the wheels and experiencing how the wheels generate spinal motion, let's look more deeply at the spine itself.

**Cervical Spine-
Lordotic in nature.**

Notice the orientation of the curves. The thoracic spine is flexion biased. If left to gravity would yield into this bias. In movement, to support and move into extension, this curve will lengthen and straighten.

**Thoracic Spine-
Kyphotic in nature.**

Notice the orientation of the curves. The cervical and lumbar are constructed with a bias toward extension. In movement, to support and move into flexion these curves lengthen and straighten.

**Lumbar Spine-
Lordotic in nature.**



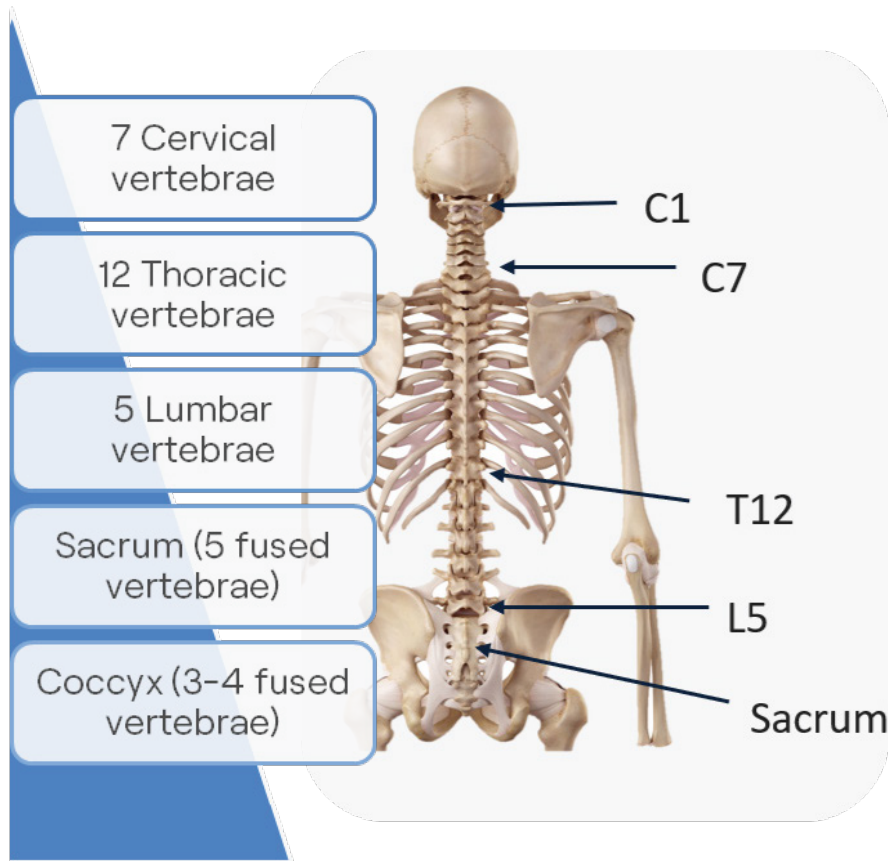
Scoliosis is a lateral curvature of the spine.



If a client has an excessive presentation of kyphosis, rounded shoulders and forward head, how might you approach creating balanced strength and mobility?

ANATOMY OF THE SPINE

SEGMENTS OF THE SPINE



Vertebra

Each vertebra is as individual as a snowflake but as dependent on its superior and inferior attachments as an individual link on a chain.

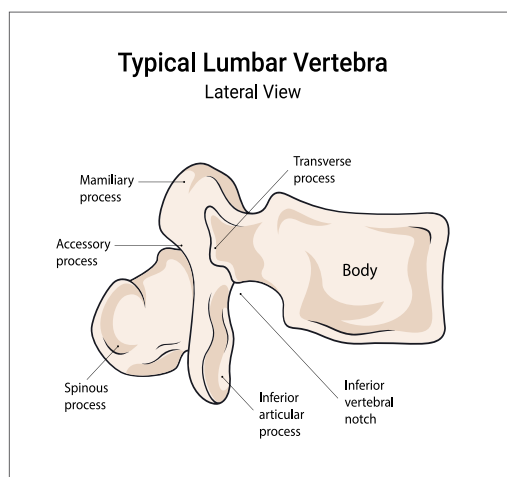
The bodies of each vertebra, separated by the cushioning and nourishment of the intervertebral discs, support weight.

The projections posterior and lateral to the body, spinous processes and (transverse processes, create the protective channels for the spinal cord and nerve roots.

These processes also are where ligaments and muscles make their attachment and are mini levers which facilitate individual segmentation of movement.

The way muscles layer and make their attachments to these projections, along with the individual shape of each bony vertebra, give the spine its movement ability.

***Reference your Movement Principles textbook for much more on the spine**



BREATHING

THE DIAPHRAGM

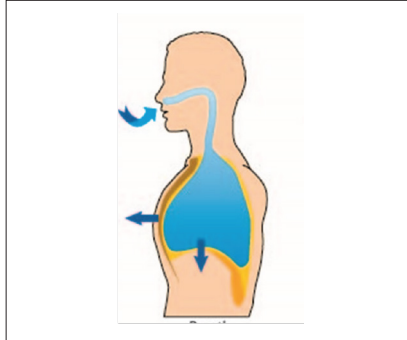
Respiration is the life sustaining function of breathing where we take in oxygen and breath out carbon dioxide. Breathing is automatic, you do not have to think about it for it to happen. Breath can also be utilized consciously and be focused. Purposeful and focused breath is a tool to enhance awareness, the mind body connection, and create rhythm for movement. Breath can also be utilized specifically as a way to sooth and calm our nervous system.



Diaphragm

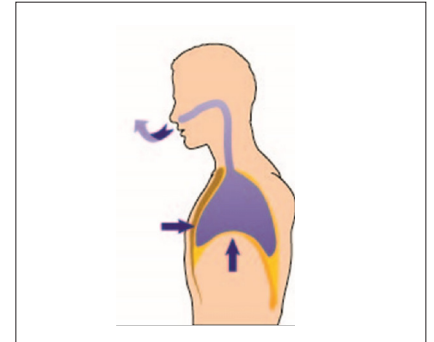
The diaphragm is the top of what is often called the inner cylinder or inner unit of the abdominal cavity.

THE DIAPHRAGM AND BREATHING



On the Inhale

- The diaphragm contracts.
- The dome moves down.
- The volume of the lungs increases and draws air in.
- Abdominal pressure increases.
- Pelvic floor responds.



On the Exhale

- The diaphragm relaxes.
- The dome moves up.
- The volume of the lungs decreases, and air flows out.
- Abdominal pressure decreases.
- Transversus abdominis contracts.
- Pelvic floor responds.

Understanding the Core

The Intrinsic Core - 'The Inner Unit'

The inner unit, of the abdominal cavity or core, responds to our movement and postural changes in relationship to gravity. The subtle modulations of the intrabdominal pressure influence our response by providing support and movement ability for the lumbar spine, pelvis and rib cage.



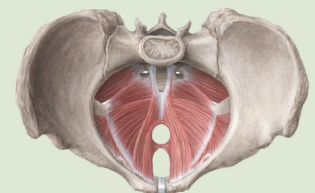
The 'roof' of the abdominal cylinder



The 'structural wall' of the abdominal cylinder



The 'vertical support' of the abdominal cylinder



The 'dynamic floor' of the abdominal cylinder

EXPLORING BREATH CONTROL

THE DIAPHRAGM



Belly Breathing

Breathe in slowly through your nose. Allow the abdomen to rise and fall naturally and easily and notice the expansion (inhale) and narrowing (exhale) of the rib cage. Allow this breath to be passive and put your awareness on the rhythm, cadence, depth.



Lateral Rib Breathing

Place the hands around the lower ribs. Inhale, sending the breath into the back and sides of the ribs without expanding the abdomen. Feel the hands moving as the ribs expand on the inhale and relax on the exhale. This is also known as Posterior Lateral Breathing.



One Sided Breathing

Laterally flex the torso, place the bottom hand on the mat and the top hand on the lower ribs. Inhale, aiming the breath into the top lung.

Pump Handle Breathing

The pump handle is an image which helps gather the fullness of the belly breathing. Place one hand on the sternum and repeat the belly breathing.

On the inhale, the sternum, like an old fashioned water pump handle being pulled, moves forward in your hand. On the exhale, the sternum drops away from the fingertips, like a pump handle closing.

Bucket Handle

Bucket handle breathing is an image that pairs with lateral rib breathing. As you breathe into your lateral ribs, imagine the ribs open outward, like a bucket handle being lifted. When you exhale the bottom ribs close and lower.

Bucket Handle Side

This one sided breathing is also the Bucket handle breath. On the side that you are laterally flexing toward, the lowest ribs lower, or close, and the upper ribs, the side that is up the lowest ribs open to assist the drawing in of the air.

Sniffing Breath

The Sniffing Breath is an excellent way to train the diaphragm and improve breath control. It is also a very good way to synchronize breath with movement.

- ▶ Inhale 2 to 5 short, staccato, inhalations through your nose.
- ▶ Exhale through the mouth with a similar staccato nature, notice the diaphragm rib cage movement as the breath is driven up and out.

The Sniffing Breath can be incorporated into all the breath patterns reviewed here.

BREATH

Shh Breath

Take another deep inhale, and this time, as you exhale, imagine you are shushing someone to be quiet. Feel the sound and sensation of the "shh" as it passes through your lips, focusing on the gentle and controlled release of your breath.

Candle Breath

Inhale deeply, and as you exhale, imagine you are using your breath to audibly blow out a candle in front of you. Feel the controlled release of air from your mouth, ensuring a steady flow as if you are gently extinguishing the flame.

Fog on a Mirror Breath

Inhale deeply once more, and as you exhale, visualize breathing onto a mirror to create fog. Feel your body relax with each exhale, releasing tension and allowing your breath to flow smoothly and effortlessly.

Repeat each of these exhale techniques several times, alternating between them. Notice how each method engages different aspects of your breath and body. Pay attention to the sensations in your abdomen, chest, and throat as you exhale. These exercises not only enhance your breathing technique but also promote relaxation, mindfulness, and a deeper connection to your body during your Pilates practice.



DIAPHRAGM IMAGERY

The Stingray

Imagine your diaphragm mirroring a stingray's movement in water: as you inhale, envision the body of the stingray dropping and its wings lifting, just like your diaphragm descends, creating space for your breath and expanding your lungs and rib cage. Then, on the exhale, see the wings of the stingray drop down while its body floats up, much like your ribs dropping as the diaphragm rises, gently expelling air. This rhythmic dance of the stingray is a metaphor for how your diaphragm works, guiding your breath with fluid, synchronized motion.

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“ Notes Page

SUPINE ALIGNMENT

FINDING YOUR NEUTRAL, EXPLORING THE CENTER

A neutral spine refers to a position of the spine that preserves the natural curves and minimizes stress during activities. It's not a rigid posture but rather one where the spine maintains its natural curvature with slight adjustments based on individual anatomy. This position aims to distribute forces evenly across the spine, reducing injury risk and enhancing biomechanical efficiency. When the spine is in this position, the pelvis is also considered 'neutral' or 'home'. The bony landmarks of the ASIS (anterior superior iliac spine) and the pubic bone are awareness points on the pelvis which can help determine optimal pelvic positioning. When in this balanced position, there is very little effort and tension around the spine and pelvis. It is important to keep in mind that each individual may present with slight differences from these reference points.



EXPERIENCING THE DEEP CORE WHILE MAINTAINING A STILL NEUTRAL PELVIS

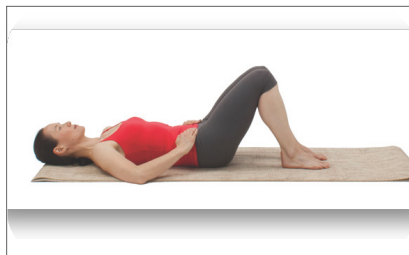
Supported Neutral

Supported neutral in Pilates involves using props to help maintain the spine's natural curves. This promotes alignment without excessive flexion, extension, or rotation. Props such as rolled towels or small pillows aid in stabilizing the spine during exercises, reducing strain, enhancing core stability, and encouraging effective muscle engagement.



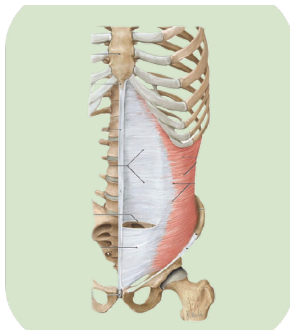
Fingertip Abdominals

Lie supine, place the fingertips just inside the ASIS on the front of the pelvis. Exhale deeply and notice how the abdominals draw in and away from the fingertips. The deep internal feeling of the abdominals contracting should feel like an internal 'hug' and gentle internal lift. One of the muscles you are feeling under your fingertips is the transversus abdominis.



All Fours Abdominals

Starting in an all fours position with knees under the hips and hands under the shoulders, find a relative neutral. Maintaining alignment of the head, rib cage, and pelvis. Inhale and allow the belly to drop towards the floor. Continue to maintain alignment as you lift or "hug" the abdominals up toward the spine.



Transversus Abdominis

The transversus abdominis (TA) compresses the abdominal contents, providing support and maintaining tension in the abdominal wall. It plays a role in core stability, particularly when balance, posture, and protection of the spine are required.

SUPINE ALIGNMENT

PELVIC CLOCK AND IMPRINTING

Sacral Clock - Sacral

Lie supine with the feet on the floor and the knees bent. Imagine a clock face on the sacrum, with 12 o'clock at the top of the sacrum, and 6 o'clock at the tail bone, and 3 and 9 to the sides. Gently tilt the pelvis in the direction of the different hours on the clock face.



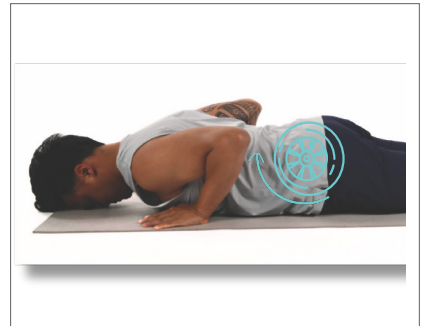
Pelvic Clock

Repeat, this time the clock face is larger. 12 o'clock is where the belly button is, 6 o'clock is the coccyx and 3 and 9 o'clock are the hip bones. Gently tilt the pelvis in the direction of the different hours on the clock face.



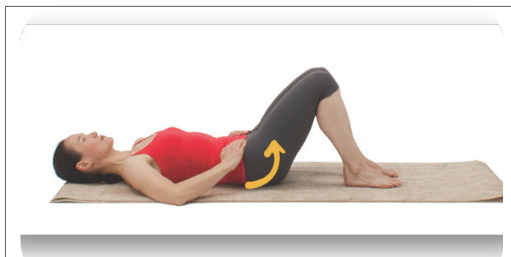
Prone Pelvic Clock

While lying prone, imagine the clock again, but this time it is resting on your low back. Notice how driving into 6 o'clock helps set the pelvis, activates the abdominals in support of the spine in extension and provides a base of support.



IMPRINT AND THE PELVIC CLOCK IMAGERY

Imprinting refers to a position of the pelvis and lumbar spine where the pelvis is posteriorly oriented and the lumbar spine is lengthened and may be slightly flexed. There are two types of imprinting: the sacral 12 o'clock position, which feels subtle and internal, and the deeper 12 o'clock pelvic imprint, which involves a deeper posterior pelvic tilt with more noticeable lumbar flexion. The amount of imprint needed varies depending on the client's body awareness, strength, flexibility, and the demands of a specific exercise.



Sacral Imprint

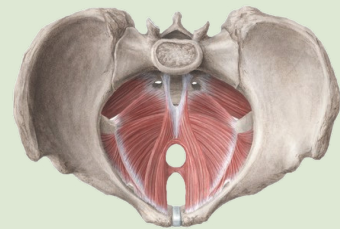
Like the Sacral version of the pelvic clock, the Sacral Imprint is a small, internally experienced core activation. This initiation is like a deep internal hug which is encouraging the movement of the bones. (Sacrum feels heavy, like weighted with sand.) This is small and you may or may not observe the pelvis moving.

Pelvic Imprint

To imprint the spine, turn the wheel of the pelvis posteriorly and notice how the lumbar spine responds by flexing and moving closer to the mat. This is the 12 o'clock version of the pelvic clock. This works well for deep abdominal exercises supine where pelvic stability against moving legs is necessary.

Pelvic Floor

The pelvic floor (PF) muscles provide stabilizing support for the lower back and share fascial connections with the legs and deep trunk muscles. As the base of the abdominal cylinder, the PF responds dynamically to changes in intra abdominal pressure, movement, and breath.



SUPINE HEAD AND RIB WHEEL

MOVING THE HEAD AND UPPER SPINE SUPINE IN FLEXION

Head Float Supine

Simply un-weight the head, lifting it off the floor. The head should be in alignment with the ribcage. Be mindful not to thrust the chin forward. The head will naturally feel heavy, due to gravity.



Head Wheel Supine

From the Head Float, turn the head to look toward your knees and between your thighs. The eye gaze is as close to parallel to the floor as flexibility will allow.



Rib Wheel Supine

From supine as the lift the head, spine the head wheel so that the eyes look straight through the legs. Continue to move into thoracic flexion. The tops of your shoulder blades will lift off the mat.



PUTTING THE ESSENTIALS INTO PRACTICE

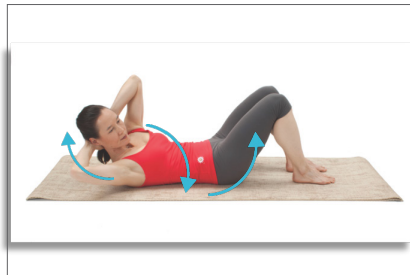
Abdominal Curl

Lie supine with knees bent, feet flat and hands behind the head for support. Float the head, spin and turn the head wheel. Deepen into your ab curl by adding a slight turn of the rib wheel, lifting shoulders off the mat. Counter with the pelvic wheel to deepen the abdominal work.



Oblique Curl

From the Ab Curl position, rotate the upper body toward the opposite side. Counter with the pelvic wheel to deepen the abdominal work.



Ab Curl with Leg Slide and Float (100s Prep)

Lie supine with knees bent, feet flat and hands behind the head for support. Float the head, spin and turn the head and rib wheels to find an abdominal curl. While holding the ab curl slide one leg out along the floor. As the leg fully lengthens, float it off the floor, lifting it slightly off the floor.

An imprint will help support the weight of the leg and help to maintain stillness of the lumbar spine and the pelvis. This is a prep for the traditional version of the hundred with the legs lowered. (no photo)

SUPINE PELVIC WHEEL

MOVING THE PELVIS, LUMBAR SPINE AND FEMURS AND PREPARING FOR EXTENSION

BRIDGE IN THE SAGITTAL PLANE

Articulated Bridge

Tip your pelvis toward "12-o'clock" and continue to turn the pelvic wheel posterior. The pelvis lifts as it turns, and the lumbar spine will follow through by articulating in flexion. Legs and glutes will be active as the pelvis moves.

Find the height of your bridge. To return, articulate through the rib wheel, the lumbar spine, and then unroll the pelvis to return to the starting, 'neutral' position.

Neutral Bridge

With the pelvis in a neutral (home) position, where there is balanced support front and back, lift the pelvis off the mat just a enough to un-weight from the floor.

Lift as high as you can maintaining the neutral pelvis. Lower the pelvis to return to the starting position.

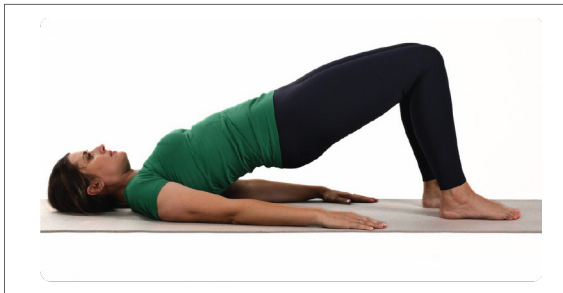
BRIDGE AND FRONTAL/CORONAL PLANE AND TRANSVERSE/ROTATIONAL PLANE

Frontal/Coronal (Typewriter)

At the height of your bridge glide your hips right to left (3-9 o'clock). Keep the pelvis parallel with the floor.

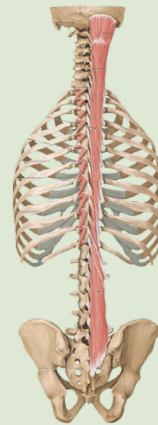
Transverse/ Rotation (Figure 8's)

At the height of your bridge tip your pelvis from the 3 o'clock then to the 9 o'clock position, creating rotation through the pelvis and lower spine.



So far, we have focused on the spine. As the pelvis moves around the clock, how do the femurs move within the acetabulum (hip joint), and how does the lumbar spine respond?

Multifidi



Along with the rotatores, they can be felt as the relatively thin and taut band of muscle just on either side of midline of the spine.

They function to create support and space between each vertebrae.



Finding Your Multifidi

Place the thumbs or fingertips on either side of the spine at the level of the waist. Shift your weight forward and what do you feel in your fingertips?

PRONE HEAD AND RIB WHEEL

MOVING THE HEAD AND UPPER SPINE PRONE IN EXTENSION

Head Float Prone

Simply un-weight the head, lifting off the floor. Be mindful of the chin placement. The head will naturally feel heavy, due to gravity.



Head Wheel Prone

From the Head Float, turn the head to look toward forward and up. The eye gaze as close to parallel to the floor as flexibility will allow. This is also referred to as capital (head) extension.



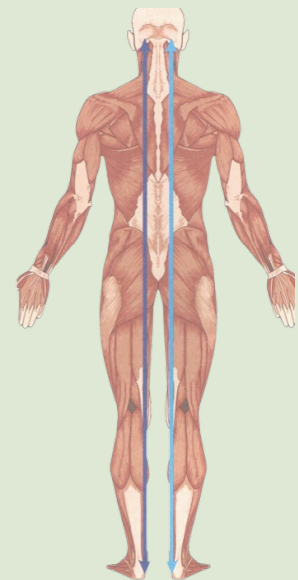
Rib Wheel Prone

As the head wheel rolls notice at what point the rib cage follows as the sternum wants to swing forward or another way to image this, the sternum follows the eyes.

The Outer Unit

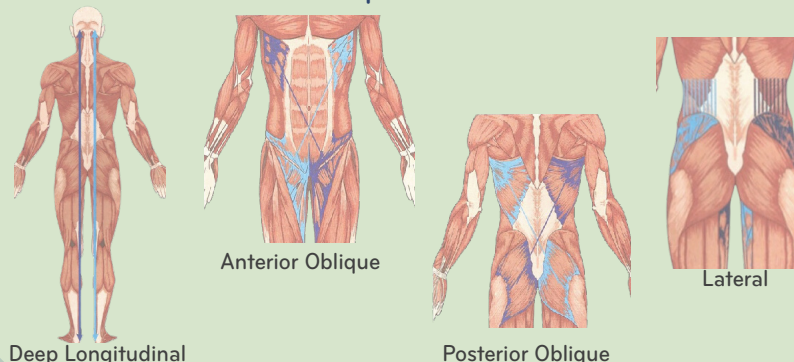
MP Longitudinal System - Extensor Group

- Erector Spinae
- Sacrotuberus Ligament (force transference)
- Hamstring - Biceps femoris
- Gastrocnemius
- Plantar Fascia
- Quadratus Lumborum
- Thoracolumbar Fascia



When upright - The back line resists the pull of gravity. In movement it creates extension. (think Swan)

The Myofascial Slings - Integration of Movement Movement Principles - The Outer Unit



The outer unit slings are a conceptual way of seeing how our muscles, fascia, connective tissue and bones work together to create movement and transfer force between trunk to limbs.

PRONE HEAD AND RIB WHEEL

INTEGRATING WHOLE BODY EXTENSION

PUTTING THE ESSENTIALS INTO PRACTICE

Rockets

Lie prone with palms facing toward the floor (picture shows palms up) and at the sides of the body. First float the head off the floor, then turn the head and the Rib Wheels to extend the spine. The legs reach in opposition and the arms extend behind the line of the body, if flexibility allows. Think pelvic 12 o'clock to provide abdominal support of the lumbar spine. The pelvis rotation is in the same direction as the head and ribs.



Mini Swan and Swimming

Lie prone and reach the arms overhead and on a diagonal, thumbs point to the ceiling. Float the head off the floor and extend through the thoracic spine. The hands provide support and may slide toward the body. Legs are very active and reaching in opposition. Think pelvic 12 o'clock to provide abdominal support of the lumbar spine. Can you reach the arms overhead while maintaining a mini swan and flutter the arms and legs as if swimming? This is a great demonstration of the posterior oblique sling system.



Swan

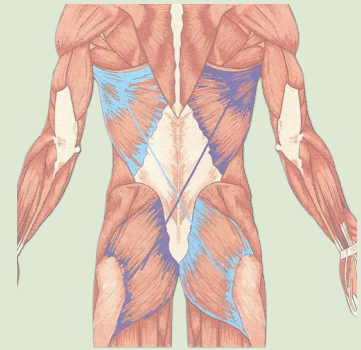
Lie prone with the hands in line with the shoulders or slightly in front. Float the head off the floor, extend the spine, and straighten the arms. Let the crown lead the extension and think pelvic 12 o'clock to provide abdominal support of the lumbar spine. Only rise up as high as flexibility will allow. Legs lengthen in opposition.



Posterior Oblique Sling

MP Posterior Oblique Sling Posterior Cross Body Relationship

- Latissimus Dorsi
- Opposite side Gluteus Maximus
- (Both the Latissimus and the Gluteals transfer



When the slings work together they contribute to lumbopelvic control.

When they work individually they contribute to rotation driven from the back body.

When they shorten they contribute to spinal extension.

ALIGNING PRACTICE

FASCIA AND THE SLINGS - FORCE MANAGEMENT FOR DYNAMIC MOVEMENT

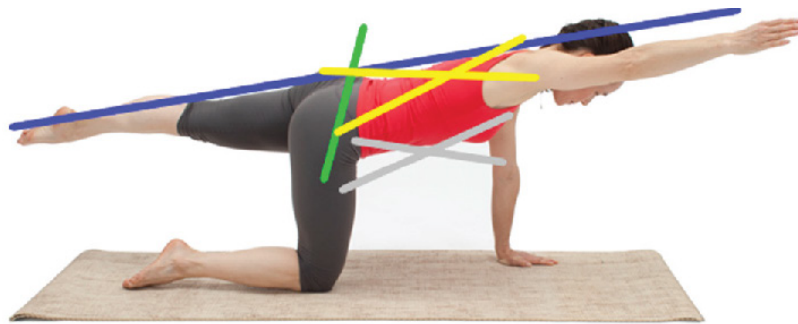
What happens when you slip? How do you catch yourself or brace for impact? What about when you run, how do you manage the forces that translate up your legs, through your pelvis toward your spine? Or what about when you walk and the force of gravity descends down through your spine into your pelvis to your legs? When you push a sofa across the room, how do you support your lower back? When you push your bag into the overhead compartment on a plane, how do you manage without creating unnecessary strain?

Why Fascia, Why Slings?

Fascia science is still evolving. Because it is a growing science, for our purpose as movement practitioners, we are presenting the slings as a way to see the concepts of fascia in motion. These concepts are a compilation of multiple research studies. What is presented here is the beginning of a conversation about movement as a collaboration of joint action, muscle, bone, tension and gravity. No individual muscle or structure holds the key, but the interrelationships are what bind us, lift us, support us, and propel us. Strengthening these relationships are what Pilates does particularly well. Let's take a moment to explore more deeply what fascia is and how we can integrate, experience and strengthen fascia in our Pilates practices.

Fascia defined

The fascial system as "interpenetrates and surrounds all organs, muscles, bones and nerve fibers, endowing the body with a functional structure, and providing an environment that enables all body systems to operate in an integrated manner."* In other words, fascia is specialized connective tissue which integrates and coordinates our entire structure, from cells, to bones, and more. The tensional elements, and the inter-connectivity of the fascia, 'float' our joints, organs, and cellular structures. This is what animates the human form, literally suspending us and engaging us with the push and pull of forces, primarily that of gravity.



“ What does neuro-myo-fascia mean anyway? How does understanding the slings help you understand and see movement?

'The Outer Unit is composed of specific muscles that are linked together via fascial connections for load transfer through the pelvis' - Diane Lee

FASCIA FACTS

Basic Fascial Facts

Fascia, and all specialized connective tissue, makes up about 40% of our body weight.

It connects muscles to one another throughout the skeleton. Fascia makes up the ligaments, tendons, and bone.

It provides wrappings for the organs and the nervous system.

Myofascial tissue carries 80% of our sensory fibers to and from the nervous system.

Why it Matters

Fascia is abundant in the human body. It helps us understand where we are in space, (proprioception) and how we experience the world around us, (interception).

Our musculoskeletal system is suspended, joints float and our bones do not collapse and yield to gravity because of fascia. The fascia that surrounds and invests muscles stimulate muscular contraction, help build strength and endurance

Fascia suspends our organs and creates a connectedness between them. It also protects and insulates our nerves. Even our circulatory system, arteries, veins and blood components are connective tissue

Our relationship to pain and sensation resides often in fascial tissue.

Four Types of Fascia

Superficial Fascia
Located just beneath the skin

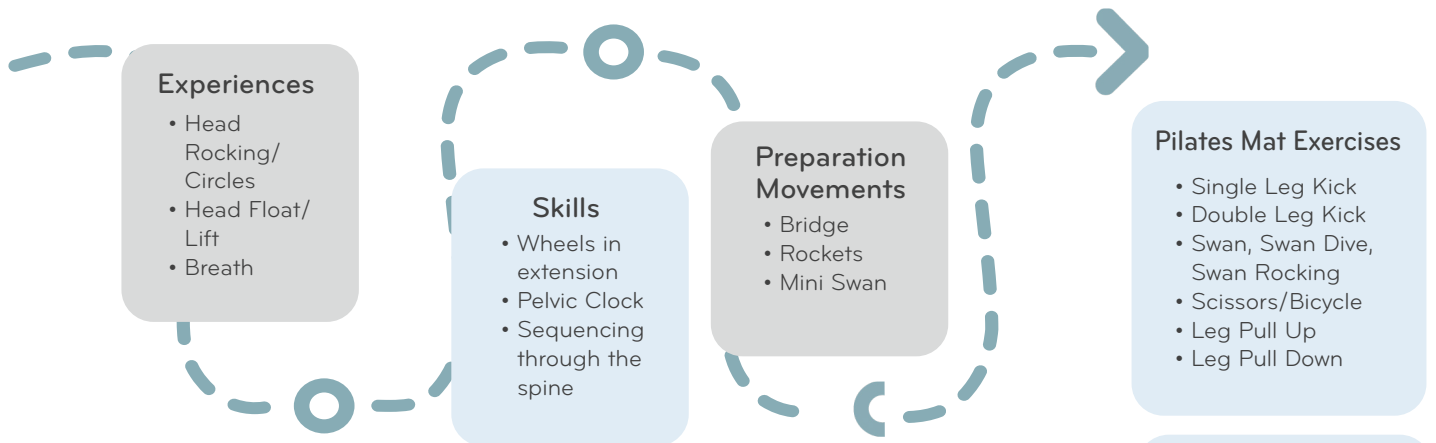
Deep Fascia
The fascia of the myofascial chains/slings

Visceral Fascia
Fascia that wraps the organs, "visceral"

Meningeal Fascia
Fascia of the brain and spinal cord

The Pilates System

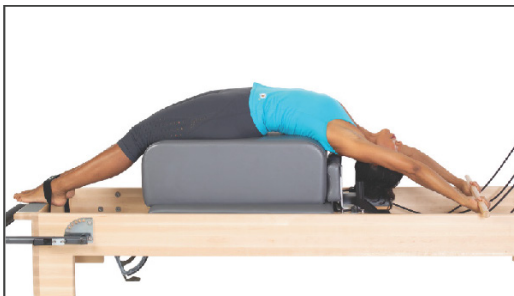
Spinal Mobility



Thigh Stretch



Double Leg Kick



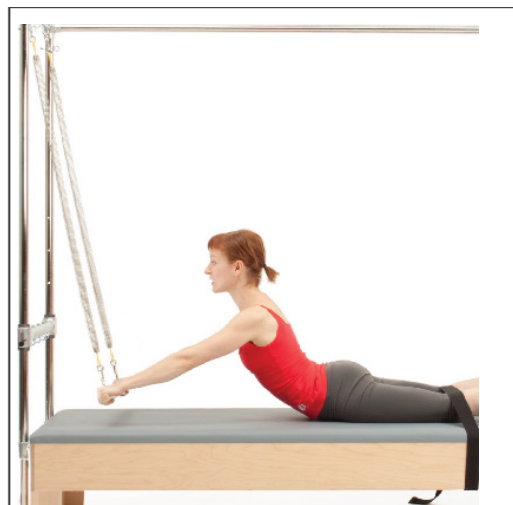
Advanced Abdominals



Swan on the Mat



Advanced Bridging



Swan on the Cadillac/ Trap Table



Notes Page

SEQUENCING THE SPINE

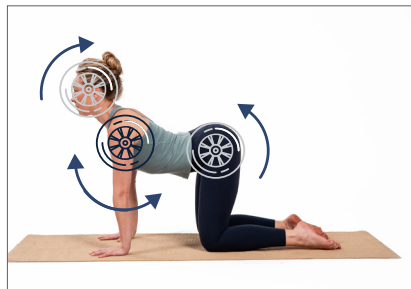
ALL FOURS - ALL THE CATS, ALL THE PLANES OF MOTION

Cat/Cow Revisited

Having explored the Cat and the Cow from the perspective of the wheels, now explore them as a full body experience.

From the all fours position, flex the spine. Initiate from both the crown, the head, and from the tail, the pelvis, and notice the connection created through the spine, the response of the rib cage, and the engagement of the abdominals as they lift in and up.

Release the Cat and lengthen through your all fours 'neutral' or 'home' position. Allow the pelvis and head wheel to lead the spine into extension.



Side Bend and Tail Wag A Frontal/Coronal Plane Experience

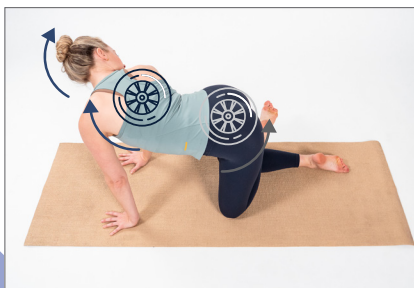
The Side Bend exercise is an all fours exercise which explores head to tail connection in the Frontal plane, (this is also often referred to as the Coronal plane). The Tail Wag is the side bend with additional compound rotational movements of the head and leg.

Lateral Side Bend

From the all fours 'neutral' position, laterally flex the spine. To achieve side bending the head and rib cage laterally flex in one direction and the pelvis counters. Here too, the image of the wheels moving laterally help to find the movement. The head may also rotate in the direction of the side bend.

Tail Wag

The 'tail' in Tail Wag is your leg. Lift one leg and internally rotate the femur in the hip joint. As the femur internally rotates, the foot will move away from the body. Side bend in the direction of your foot. To move in the other direction, externally rotate the femur, the foot moves across the midline and side bend in the direction of your foot.



How are the movements of the head, rib cage and the pelvis responsive to one another?

Poodle Tail - Circular Motion

Poodle Tail is an exploration of the pelvic wheel on all fours. Starting small, move tail in a circular motion, the pelvis follows.

As you make the movements larger, notice the response of the head and the rib cage.



SEQUENCING THE SPINE

SEATED - THE ROLL DOWN AND ROLL UP

Sitting Bones Rocking

Start seated in a tall position on top of the sitting bones with knees bent and feet flat on the floor. Your sitting bones reaching in opposition of your crown. This is axial elongation.

Begin by turning your pelvis back in space. Think 12 o'clock as your pelvis moves posteriorly. Rock back just behind your sitting bones. The lumbar spine flexes.

To return to sitting tall, turn your pelvis toward 6 o'clock.

If accessible to you, when upright, turn the wheel anterior, more 6 o'clock, creating deeper hip flexion. The lumbar spine extends.

Rock back and forth for several repetitions.



Sequential Roll Down

From the rocking, let's deepen the movement to start sequencing the roll down through the different parts of the spine. For each bullet below, roll back only as far as indicated and return,

- Pelvis only, return to sitting tall
- Pelvis to lowest rib, return to sitting tall
- Pelvis, lowest rib, lowest tip of scapulae, return to sitting tall.
- Pelvis to the head, this is the full Roll Down. Legs may extend as your roll all the way to the floor. To return, you may bend knees or keep them straight.
- Roll Up Hint: To roll up, make sure to lead with the head wheel.



How does the relationship between the pelvis to femur and lumbar spine change as you explore the movement of the pelvis?

Movement as Teacher

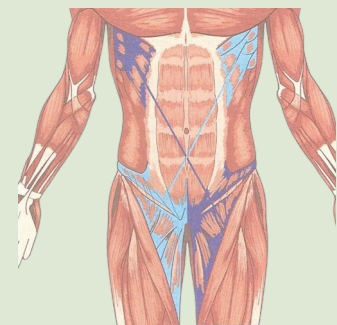
Imagine moving from your sitting bones and they are reaching under toward your heels. When you do this, what is the sensation, or activation, of the hamstrings, knee flexors and maybe even the glutes? The movement activates the muscles.



Anterior Oblique Sling

Cross Body Relationship

- ▶ Serratus Anterior
- ▶ External Oblique
- ▶ Opposite Side Internal oblique
- ▶ Adductor



When the slings work together they contribute to lumbopelvic control.

When they work individually they contribute to rotation driven from the front body.

When they shorten they contribute to spinal flexion.

The Pilates System

Rolling

Experiences

- Breath
- Head lift
- Rocking
- Nose Circles

Skills

- Wheels in Flexion
- Imprinting
- Pelvic Clock
- Sequencing through the spine

Preparation Movements

- Ab Curl
- Bridge Mobility
- Cat / Cow
- Roll Down and Up

Pilates Exercises Mat*

- Roll Up, Roll Over, Rolling Like a Ball, Open Leg Rocker, Seal (Rolling)
- Spine Stretch, Saw
- Jackknife, Boomerang (inversions)

Pilates Exercises Reformer*

- Roll Back
- All Round Back Exercises (Knee Stretch, Elephant, Short Box)
- Short Spine
- Climb a Tree, Advanced Abdominals
- Rowing
- Hundred/Teaser

Trapeze/Chair/Barrel*

- Cats
- Push Through
- Standing Roll Down
- Roll Down, Rolling In and Out
- Advanced Bridging
- Climb a Tree (barrel)
- Hanging Pull Ups



Spinal Flexion and Rolling



Round Back Exercises



Roll Over



Cats everywhere



Inversions such as Jackknife



Hundred and Teaser everywhere



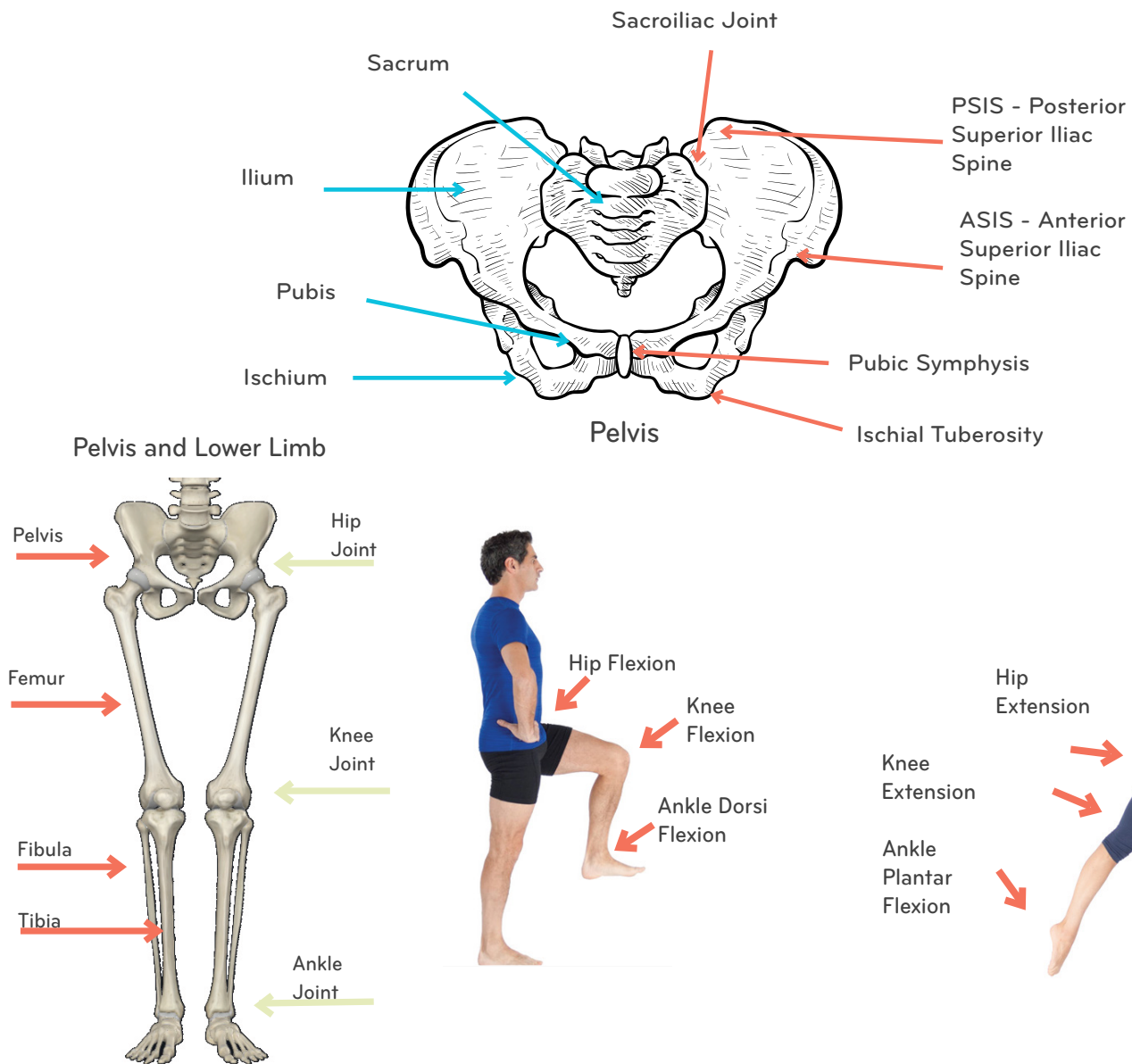
Rowing



“ Notes Page

BONES OF THE LOWER BODY

BONES AND MOVEMENTS OF THE LOWER BODY



Hip

The hip joint is a ball in socket joint and consists of the acetabulum of the pelvis and the rounded head of the femur.

Movements of the Hip Joint

- ▶ Flexion and Extension
- ▶ Abduction and Adduction
- ▶ External (lateral) and Internal (medial) rotation of the femur.
- ▶ Circumduction

Knee

The knee joint is where the distal femur (thigh bone) meets the proximal tibia (shin bone). It is the largest joint in the body.

Movements of the Knee Joint

- ▶ The Flexion and Extension
- ▶ Primary motion: Opening and closing like a modified hinge.
- ▶ Secondary motion: Internal and external rotation, through the tibia

Ankle and Foot

The ankle connects your lower leg and foot. It is where the tibia, fibula and talus bone come together to form the tibio-talar joint.

The foot is where we bear weight and allows for locomotion. Contains 26 bones and 33 joints.

Movements of the Ankle Joint

- ▶ Ankle: Plantar Flexion and Dorsi Flexion
- ▶ Foot: Inversion and Eversion/Pronation and Supination

PELVIS, LUMBAR SPINE, AND HIP

ANTERIOR AND POSTERIOR PELVIC PRESENTATION

Standing Open Chain

All the movements of the lower leg as presented on the previous page are done standing with one leg stationary. The gesture leg is open chain, and able to move through all ranges of motion. Here the pelvis is stable, or still, while the leg swings and moves from the hip joint.

Pelvis and Spine moving over Stable Legs

When both legs are in contact with the ground, or closed chain, the hip movements occur from the pelvis and the spine moving while the legs are stationary. These movements include...

Hip Hinge

From standing neutral, hinge from the hips. As the trunk tilts forward, the spine maintains its neutral curves. The hip is in flexion.

Anterior Pelvic Tilt

When the ASIS is in front of the pubic bone and the pelvis is tilted forward.

Lumbar Response

When the pelvis tilts anteriorly, the lumbar spine extends, increasing its curve. This is lordosis.

Hip Position

As the pelvis rides anterior over the head of the femur the hip joint moves into flexion. The femur may also internally (medially) rotate.

Posterior Pelvic Tilt

When the ASIS is posterior to the pubic bone and the pelvis is tilted back.

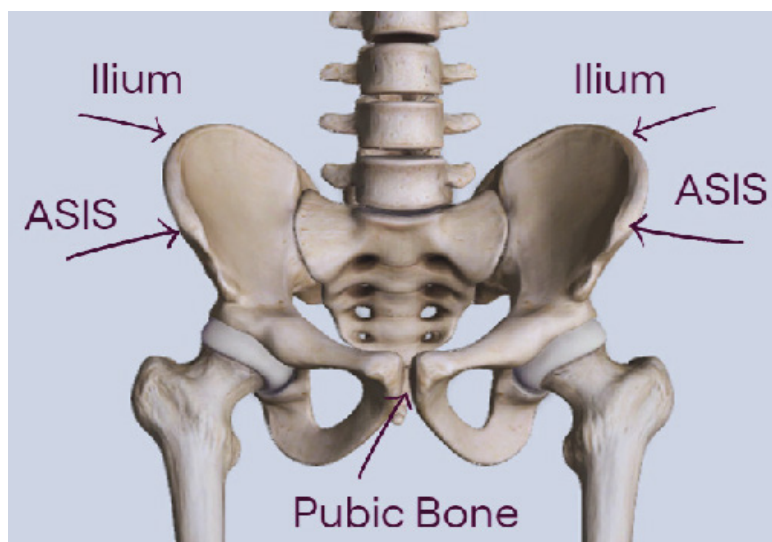
Lumbar Response

When the pelvis tilts posteriorly, the lumbar curve lengthens toward flexion.

Hip Position

As the pelvis rides posteriorly over the head of the femur the hip joint moves toward extension. The femur may also externally (laterally) rotate..

“ How do you know when the follow through of the lumbar spine is appropriate or excessive?



LEG DIFFERENTIATION

SKILL BUILDING - FEMUR MOVING, PELVIS STILL

Femur/Knee Stirs

Flex one knee to 90-degrees, and place a hand on top of the knee. Slowly move the femur in small circles in one direction. Think mortar and pestle. Not pictured

Femur/Knee Fold Passive

Lie supine, knees bent, feet flat on floor. Bring the femur toward the chest, the knee is flexed and the lower leg is completely passive.



Femur/Knee Fold Active

Same as femur folds passive, only the lower leg is more active with the knee flexion at our around 90-degrees. You will notice more core and lower leg activation. This is also known as Marching.



Femur/Knee Fold Side-Lying

Side Lying Femur Folds explore bony joint rhythms of the femur and pelvis while positioned on your side.

In side lying the pelvis is stacked and remains still throughout. 3 o'clock and 9 o'clock are important here to maintain this pelvic stillness.



Circumduction

With the knee bent and the pelvis still, circle the femur in the hip. This allows for exploration of the full range of motion within the hip joint. (no photo)

Leg Slide

Stable Pelvis

Slide one leg out along the floor. As you extend, lengthen out through the front of the hip while maintaining the pelvis position. Notice as you slide your leg away from the pelvis that there is a sensation of 12 o'clock to keep the pelvis from moving. Slide the leg back to the start position.



Exercise Application

Side Leg Kick

Side Leg Circles

Side Leg Bicycles



Lumbopelvic Control

Negotiating the movements of the lumbar spine and pelvis during any given movement is often referred to as lumbopelvic stability. But, as you are learning, its more than just stability, its a coordinated dance that requires control of the moving levers in space and the efficient transfer of forces within the trunk.

In the course we will discuss coordinating control of the pelvis and lumbar spine in different ways, depending on the exercise.

- **Pelvis still** - when a light, or moderate amount of core control is necessary for efficient movement.
- **Pelvis stable** - when more core control is needed for movement to be coordinated.
- **Pelvis moving** - when the range of motion for an exercise requires follow through of the pelvis and lumbar spine.

LOWER LIMB INTEGRATION

STANDING



Heel Raises

Notice the core support and balanced activation of the upper leg muscles needed to produce stability of the lumbar spine and pelvis as you work the ankles and feet.



Tilt Lunge

Notice the more you deepen into the front hip and lengthening into the back leg you will need 3 and 9 o'clock activation to maintain alignment of the pelvis against the oppositional pulls.



Squat

When legs are parallel, notice how limited the depth of the squat. When legs are widened and externally rotated, notice how deep you can lower. At what point does the pelvis need to follow through?



Split Squat - 90 /90 Lunge

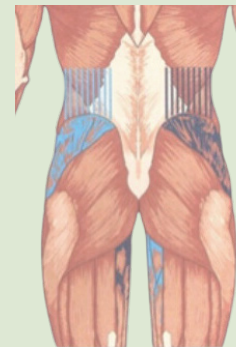
From a split stance, lower into a lunge. The pelvis descends and the hip, knee and ankle flex. The glutes and hamstrings support the lowering on the front leg.

The back leg is directly under the pelvis, and the quad is eccentrically supporting the lowering of the body. The stretch on the quadriceps and the hip flexors create dynamic strength and flexibility.

The Lateral Sling

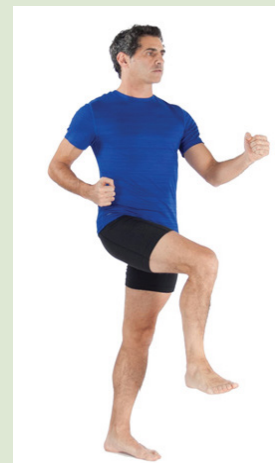
MP Lateral Sling
Lumbar Spine, Pelvis to Legs
Relationship

- Quadratus Lumborum
- Deep Glutes: Gluteus Medius and Minimus
- Opposite Side Adductors



The lateral slings balance the pelvis over the legs.

In dynamic human movement, such as gait, lunging, and squatting, these myofascial relationships help us to effectively transfer force to maximize our strength and movement ability by coordinating the movement demands of the lower body with dynamic stability of the lumbar spine.



LUMBAR SPINE, PELVIS, FEMUR

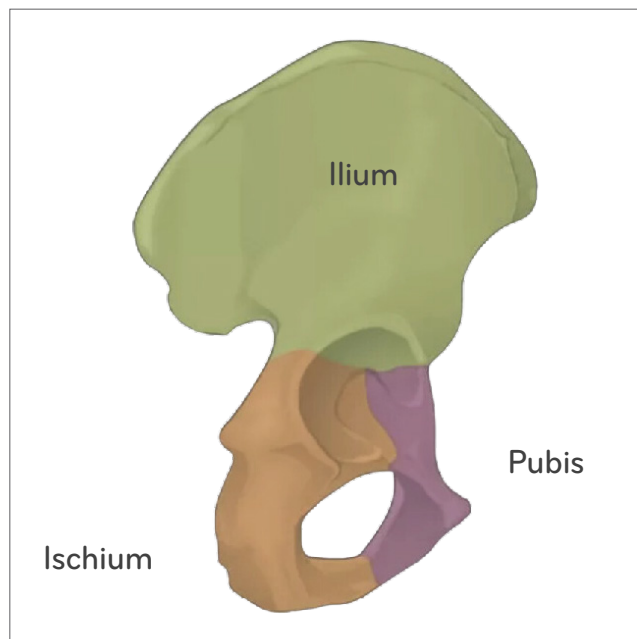
COMBINED MOVEMENTS OF THE LOWER BODY

Pelvic Girdle/Innominate

The pelvic girdle is the pelvic bone or pelvic half known also as the innominate. It is made up of three fused bones, the ilium, the ischium, and pubis.

Acetabulum

The ilium, ischium and pubis fuse inside the large socket called the Acetabulum. The acetabulum meets with the femur creating the hip joint.



Pelvic Girdle Movement Rhythms

Pelvifemoral Rhythm and Lumbopelvic Rhythm

Bones move in a joint within a range of motion. With both the shoulder joint and the hip joint, the movement ability and force management is complex and the movement of the bones is not limited to one joint but share in a kind of rhythm, or combined motion, with other joints. We see this clearly with the scapula, humerus and thoracic spine.

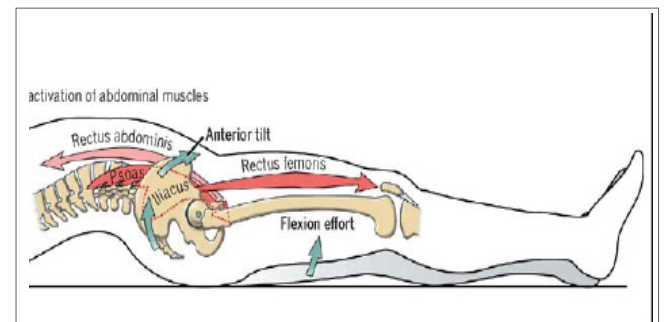
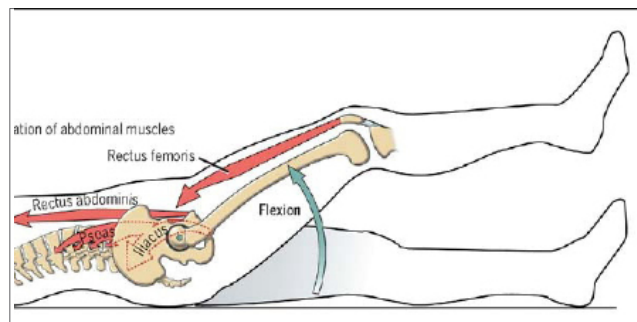
The same is true for the lumbar spine, the pelvis and the femur heads. We have already discovered that when the legs are in closed chain, or fixed position, as the pelvis moves anterior and posterior, the lumbar spine and femur heads respond. When the legs are swinging as in walking and running, both the pelvis and lumbar spine will respond. This combined motion is what ambulates us through space.

Combined Actions of the Femur, Pelvis and Lumbar Spine

When the hip flexes at or above 90° the pelvis posteriorly rotates and lumbar spine follows through and flexes. When the hip extends beyond around 15° (there is large variation here) the lumbar spine drives toward graded extension and pelvis rotates anteriorly.

Follow Through

The relationship of these bones and the movement is variable person to person. In exploration of movement we are looking for this bony follow through to be a natural extension of the exercise, not forced, not held back, and not excessive.



Neumann, D. A. (2010). Kinesiology of the hip: a focus on muscular actions. *Journal of Orthopaedic & Sports Physical Therapy*, 40(2), 82-94.

Understanding the combined motions of, and the relationships between, the lumbar spine, pelvis and femur is key to optimizing the lower body movement potential, strength, and power.

LEG DIFFERENTIATION

SKILL BUILDING - FEMUR MOVING, PELVIC FOLLOW THROUGH

Femur/Knee Sways

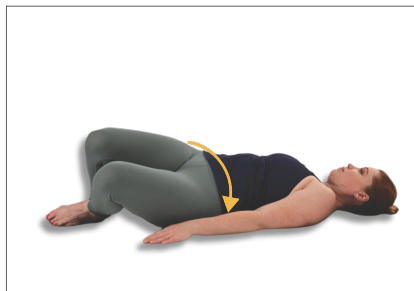
Still pelvis

With the knees bent and feet on the floor, allow both legs to sway to the side. Only go as far as you can keep the pelvis still. Notice, as one leg abducts the other adducts. To counter balance the weight of the moving legs, there is gentle core support in opposition. Think 3 o'clock and 9 o'clock.



Moving pelvis

With the knees bent, sway both legs to the side. Allow the pelvis to follow the movement of the legs. This will encourage a gentle rotation of the pelvis and lumbar spine. Notice, to control the movement of the pelvis and lumbar spine, there needs to be coordinated control in the direction of the rotation. (3 o'clock and 9 o'clock)



Femur/Knee Fall Out

Still Pelvis

With the knees bent, allow one leg to 'fall out' to the side. Only go as far as you can maintain that the pelvis remains still. Notice the counter balance of the core to stabilize the lumbar spine and pelvis. Think 3 o'clock and 9 o'clock.



Mobile Pelvis

With the knees bent, allow one leg to 'fall out' to the side. Only go as far as you can remain stable. Now allow the pelvis follow through with a controlled rotation toward the fall out leg. Notice, to control the movement of the pelvis and lumbar spine, the coordination of the 3 o'clock and 9 o'clock.



Exercise Application

Leg Circles - Small

► Still pelvis - Leg circles, pelvis is does not move.

Leg Circles - Large

► Mobile Pelvis - Coordinated control of the pelvis and lumbar spine which follow the leg motion.



With the Leg Circles, the more you reach as you move the legs the deeper the abdominal sensation you will feel. This oppositional experience is present in many Pilates exercises.

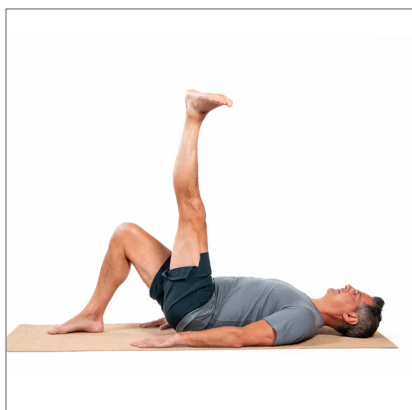
LEG DIFFERENTIATION

HIP ROTATION - INTERNAL AND EXTERNAL

Femur Rotation Supine Femur Stirs, Straight Leg

Straight Leg/90 Degrees

Straighten one leg up toward the ceiling. The hip joint is at a 90 degree angle, or as close to this as flexibility will allow. Gently rotate your leg internally and externally from the hip joint. You can also circle the femur in the joint for Straight Leg Femur Stirs



45 Degrees

Straighten one leg at a 45 degree angle at the hip joint. Gently rotate your leg internally and externally. You can also stir the femur here as well by making small circles.



Muscle Activation and Body Position
Having explored with the 90 degree and 45 degree hip angles, which version requires more muscle activation and why?

Femur Motion, All Fours

Femur Fold

In an all-fours position swing the femur into flexion and follow by gently extending the leg into extension.

Femur Rotations

With hip extended behind the body, add internal and external rotation of the femur.



“How far can you reach and lift your leg into extension before the pelvis and lumbar spine follow through? What about in Side Lying and Hip Flexion?”

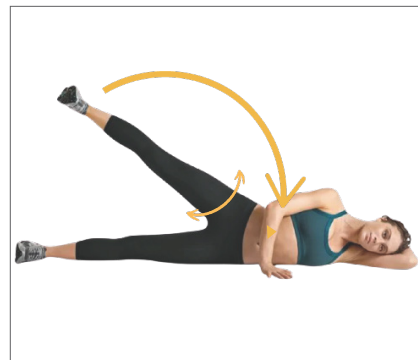
In all these positions, when is the follow through desired and what does compensation look like when joint movement potential is exceeded?

Side Lying Abduction

The leg, when abducting, will only differentiate to about 40 to 45 degrees before other hip muscles, the femur, the pelvis, and lumbar spine follow through in order to coordinate smooth movement and allow for greater range of motion.

Follow through in side lying

In order to lift the leg into a high side leg kick, the femur must externally rotate. Depending on how high you kick you may also see the pelvis move or 'hike' slightly and the lumbar spine laterally flex on the side of the kicking leg.



Exercise Application

Side Lying Leg Series

Small - Leg Lift, Leg Circles, Leg Kick

- Stable pelvis - Pelvis is still, femur differentiates.

Leg Circles - Large

- Mobile Pelvis - Coordinated control of the pelvis and lumbar spine follows the femur movement.



“ Notes Page

LUMBOPELVIC CONTROL OF THE LEG LEVER

CENTERING AGAINST THE DESCENDING LEG

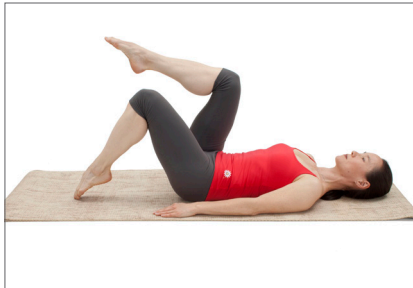
Controlling the leg lever as it moves away from a stable body is an important skill and it shows up again and again in Pilates exercises. The ability to maintain a coordinated center while the limbs move is also essential in daily movements.

Toe Tap Progressions

One leg at a time

Lie on your back with your hands positioned beside your hips. Raise both legs into tabletop position, the pelvis is still.

- ▶ Tap the toes of one foot to the floor and repeat 3 times.
- ▶ Switch legs and lower and lift the leg 3 times.



Alternating Legs

Begin with both legs in the tabletop or active femur fold position.

- ▶ Lower one leg to the floor, then bring it back to the tabletop before lowering the opposite leg.

Reciprocal Legs

Start with both legs in the tabletop position.

- ▶ One leg lowers and as it lifts to return the other leg lowers. They pass each other in space.

Diagonal Press

Lift the right leg to table top and press the left hand into the right inner thigh.

At the same time press the right hand and left foot into the floor.



“ Cross Body Feedback Oblique Sling Awareness

Alternate sides and notice the connection felt across the front of the body from the hand to the inner thigh. Also notice, as you press into the floor with the hand and the opposite foot. Do you feel a diagonal connection and feedback across the back? This is a lovely example of how these cross body connections, think oblique slings,, center the body against resistance, creating stability.

Supine Opposite Arm and Leg

Start with both legs in table top and both arms reaching towards the ceiling.

Reach the one arm and the opposite leg away from each other while maintaining torso stability.



Exercise Application



Criss Cross

- ▶ Pelvis is stable, torso rotates - Pelvis is still, femur differentiates, spine rotates. You can almost see the slings in motion with this exercise, and you certain can feel them!

LUMBOPELVIC CONTROL

In supine, grounding the legs and using them to leverage the movement and support of the pelvis in the Neutral Bridge exercise creates a powerful lift and support of the back body. It also strengthens the back line of the body and is an excellent preparatory exercise for prone extension exercises such as the Swan.

Neutral Bridge/Stability Bridge

Begin supine with your knees bent and feet flat on the floor.

- Press into the floor and lift the pelvis. Try to maintain the neutral relationship between the lumbar



spine and the pelvis.

With Marching Legs

Holding your hips up in the Stability Bridge, lift one leg to table top

- ▶ Toe Taps, single leg
- ▶ Alternating Legs



Maintain level pelvis throughout.

“ Notes

The Pilates System

Lumbopelvic Control in Pilates Practice

Experiences

- Breath
- Wheels of Motion

Skills

- Imprinting
- Pelvic Clock
- Differentiation of Legs from Pelvis; Arms from Ribs

Preparatory Movements

- Ab Curl
- Marching/Toe Taps/Diagonal Press/Dead Bug
- Bridging

Pilates Exercises Reformer 1

- Footwork
- Bridge/Pelvic Lift
- Supine Arm Work
- Feet in Straps
- The Hundred



Pilates Exercises Mat 1

- The Hundred
- Series of Five
- Single Leg Circles

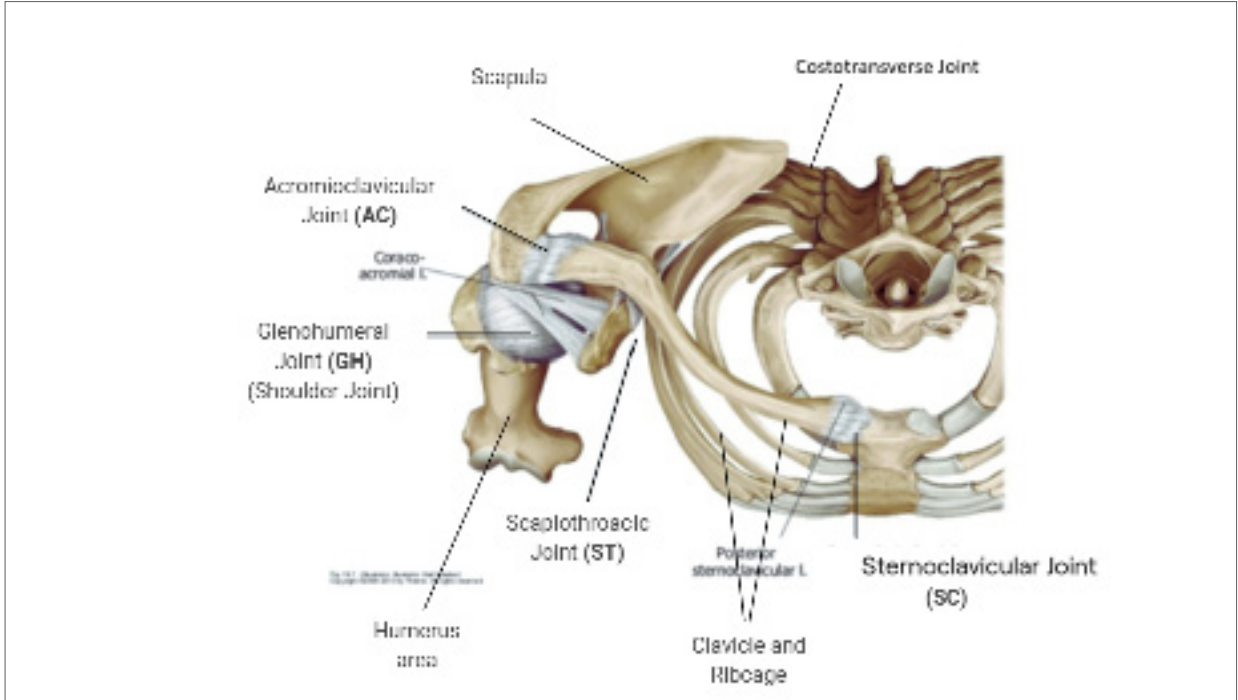




“ Notes Page

SHOULDER GIRDLE BONES AND RHYTHMS

JOINT MOVEMENTS AND MOTION OF THE UPPER BODY



Shoulder Girdle

Consists of two bones, the clavicle and the scapula and four joints, SC, ST, GH, AC.

Movements of the Glenohumeral joint

- ▶ Flexion and Extension
- ▶ Abduction and Adduction
- ▶ External and Internal Rotation
- ▶ Horizontal Abduction and Adduction

Movements of the Scapula

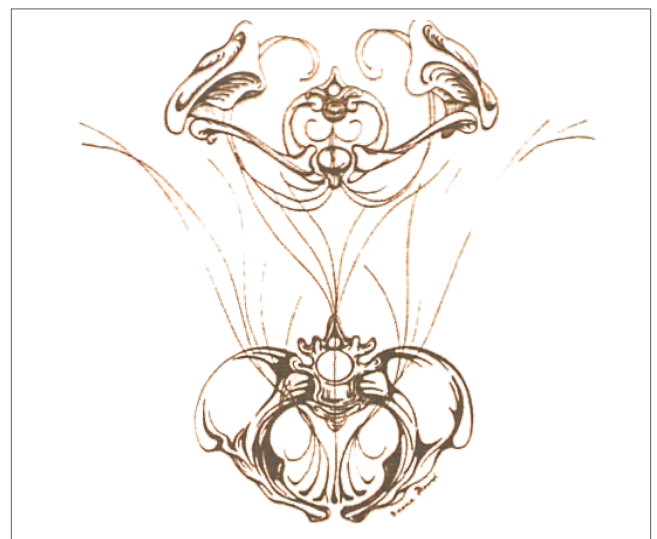
- ▶ Elevation and Depression
- ▶ Protraction and Retraction
- ▶ Upward Rotation
- ▶ Downward Rotation

Movements of the Clavicle

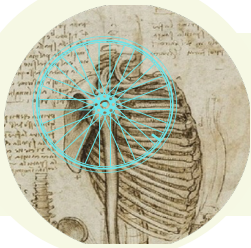
- ▶ Axial rotation
- ▶ Elevation and Depression
- ▶ Protraction and Retraction
- ▶ Saddle joint - allows for gliding motion

Scapulohumeral/Glenohumeral Rhythm

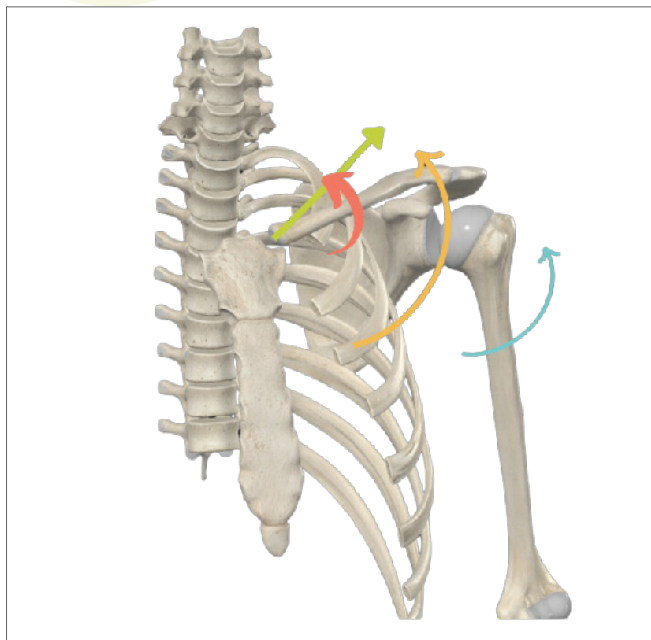
The relationship of the head of the humerus with the glenoid fossa of the scapula is known as Scapulohumeral or Glenohumeral Rhythm. After about 30° of shoulder flexion the scapula will begin to follow through and move. Above 90° the humerus to scapula movement is a roughly a 2:1 ratio with the humerus moving 2x faster than the scapula



Stunning artistic representation of the pelvic and shoulder girdles by Irene Dowd from her collection of essays, Taking Root to Fly.

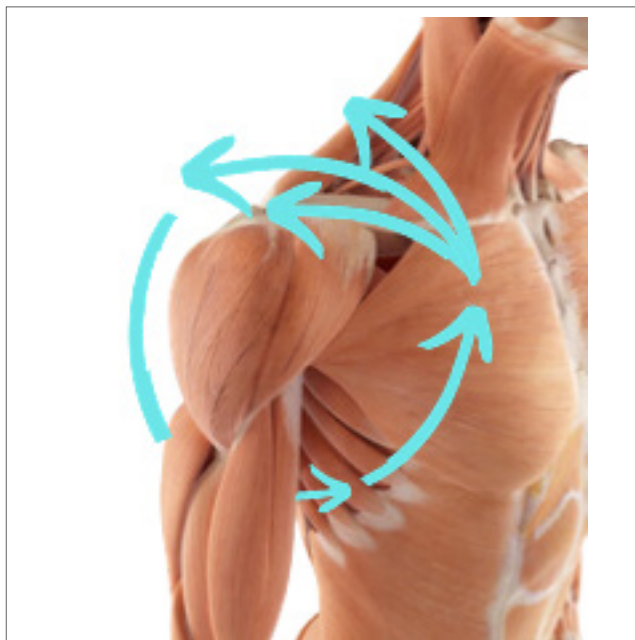


SHOULDER GIRDLE MOVEMENTS



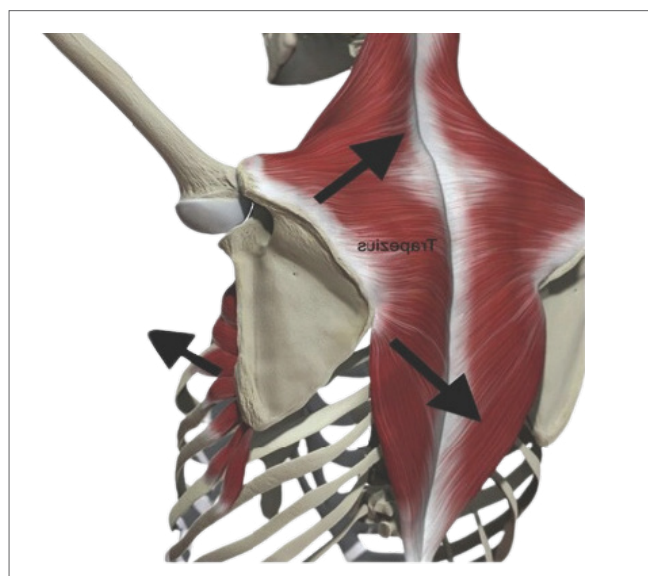
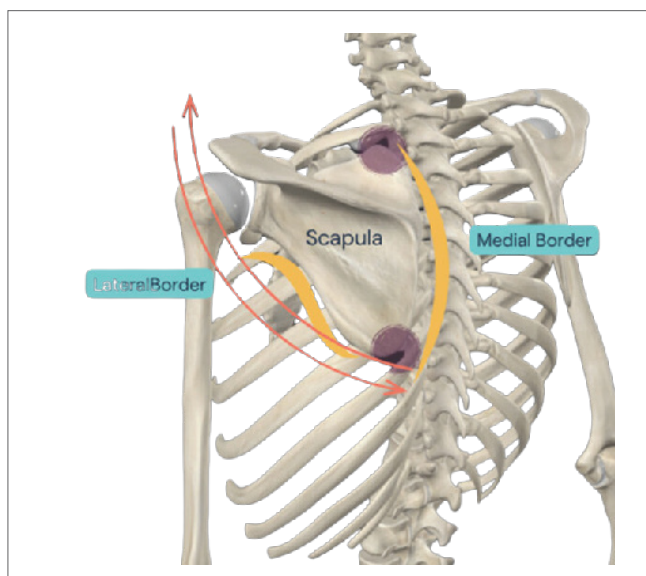
Scapulohumeral Complexities

Coordination between the scapula, the humerus, and the clavicle highlight the complexity of the shoulder complex.



Scapulothoracic Joint

The ST joint is not a true joint. It is comprised of the muscles which attach to the thorax and to the scapula. As the humerus and scapula move the **length tension relationship** of these muscles stabilize, organize and coordinate the scapula with the ribs and movements of the arms.



Shoulder girdle congruency - A complex dance

As the arms move over head (shoulder flexion), the humeral movement is accompanied by **clavicle elevation** and **rotation** along its axis, **scapula elevation**, and **upward rotation**. As the arms move downward from overhead, alongside the body, and behind the shoulder joint, (shoulder extension) the **clavicle unwinds** along with the **downward rotation** and **depression of the scapula**. Is complex and more easily understood in movement.

ARM DIFFERENTIATION

MOVEMENTS OF THE SHOULDER GIRDLE AND THE HUMERUS

Rib Cage Arms

Double Arm Raises

Lying supine with feet flat on the floor. Arms are either directly over the shoulders or alongside the body on the mat.

- ▶ On the inhale, raise both arms to the ceiling and then over head.
- ▶ On the exhale, return them back to the starting position.

Explore maintaining rib cage and torso stillness as the arms reach overhead.

Additional arm movements

- ▶ Abduction, adduction
- ▶ Circles
- ▶ Overhead reaching



Alternating Arms

Explore alternating one arm reaching overhead at a time. .



Scapular Rhythm

Explore how the scapula moves around the rib cage in various planes. Explore seated, on all fours, supine.

- ▶ Arms overhead - Elevation and depression.
- ▶ Scaption - Raise and lower arms, shoulder width, in the scapular plane; wide but within peripheral vision .
- ▶ Horizontal abduction and adduction
- ▶ Protraction and retraction (pictured)



Sternum Drops

In all fours position, protract and retract the scapula. Notice the clavicle and the rib cage response to the movement with fixed arms.





As the arms rise up overhead, the scapula, along the back wall of the rib cage will respond by up-wardly rotating and even with a little elevation. These movements are subtle. Can you tell when its too much movement? What happens if too little?

ARM DIFFERENTIATION

ROTATIONAL ARM RHYTHMS

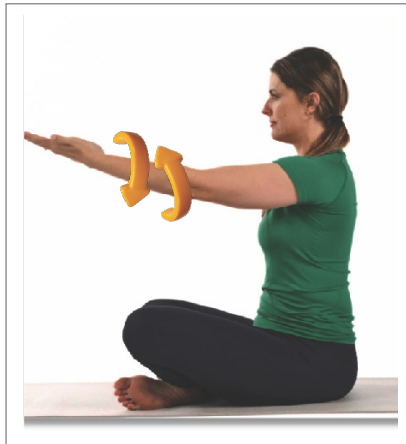
Glenohumeral Rhythm

Explore the medial (internal) and lateral (external) rotating head of the humerus within the shoulder joint.



Forearm Rhythm

The bones of the forearm, the radius (thumb side of the forearm) and the ulna (pinky side of the forearm) can rotate independently of the shoulder. The ulna is your stable bone. When seated with arms in front of you, as the radius rotates around the ulna, the palm faces up to the ceiling, (supination) or can rotate toward the floor (pronation).



Exercise Application

Inversions

This is Jackknife, one of the traditional Pilates inversion exercises. Notice the arm position and the utilization of the arms, like a tripod, as a base of support for the body. The stable base of the arms allows for grace and coordination when moving into and out of this position. The active straight arm line, with humerus externally (laterally) rotated and the forearm internally rotated or pronated, is what gives this base strength.



SCAPULOTHORACIC RHYTHMS

SKILL BUILDING SCAPULAR MOBILITY AND THORACIC FOLLOW THROUGH

Angels in the Snow



Lying supine with knees bent and feet on the floor, circle the arm around and up towards the head as the other arm circles down toward the hips. The head looks toward the arm that is moving up.

Add dropping the knees in the opposite direction of the arm that is moving up. There is lovely opposition in the rotation between the head and the tail.



Telescope Arms



1. Lie on your side with both arms extended in front of the chest. Hips and pelvis are stacked one on top of the other.



2. Glide the top arm forward over the bottom arm allowing the torso to rotate forward. When you slide forward, notice the scapula and pelvis follow through.



3. Rotate from the torso back and slide the top arm across the arm that is on the floor. Hips and pelvis remain stacked.

“What if the head leads the rotation? What if the movements of the scapula led the trunk?”



4. Continue to rotate until the torso finds that mat and open the arm out to the side. At what point does the pelvis need to move to allow the upper body to open fully?

“How do these different initiations change the experience?”

SCAPULOTHORACIC RHYTHMS

SCAPULAR MOBILITY AND THORACIC FOLLOW THROUGH

Pinwheel



1. Lie on your side with both arms extended in front of the chest. Hips and pelvis are stacked one on top of the other.



2. Glide the top arm forward then circle the arm up and overhead and around, like a pinwheel.



3. Continue to rotate until the torso finds that mat and open the arm out to the side. At what point does the pelvis need to move to allow the upper body to open fully?



Telescope Arms Kneeling



Try the Telescope arms again, this time in kneeling? What are some of the differences between supine and the all fours position?

STANDING IN YOUR ARMS

FRONT PLANK PROGRESSION



Plank Prep - Setting up for success

Aligning Practice

In high kneeling take a moment, where is the head in relationship to the rib cage and pelvis.

Differentiation

Reach your arms forward. Externally rotate the humerus, pronating the forearm

High Kneeling to All Fours

Maintain the arm position, bring the arms to the ground. You are now in the all fours position.



Shoulder Girdle - strength is in your hands

With wide set fingers, create a small arch under the palm of the hand. Make sure you are strong in this, weight distributed evenly through the hand, including the pinky side. Arms are straight as an arrow as they support the foundation of the scapulae and translate ground forces. Do not forget to re-center your head, rib cage and pelvis in this orientation to gravity.



All Fours Push Up - A small move, a lot to offer

Move your hands slightly forward of your shoulders and try a push up by bending and straightening (fully) the elbows. Keep the elbows pointing toward the knees. This is not only a great prep for the push up, it is an excellent way to train eccentric control of the triceps without overloading the upper body. It is also an excellent way to train deepening into the hip hinge.



Wall or Incline Push Up - Now we are talking...

Wall or Incline Push Ups are an excellent place to integrate all the prep work and start to add the challenge of coordinating load through the upper body, control through the trunk and grounding in the legs. Place your hands on a wall or any stable surface that is higher than the floor. Bend and straighten elbows. The lower the surface, the more challenging the push up will become.

QUADRUPED TO PLANK PREP

EXPLORING FORCE TRANSFERENCE ON ALL FOURS

This simple progression integrates the limbs and the trunk. In the all fours position, when alternating arms and legs, the organization of the spine and core muscles support and stabilize as ground forces transfer through the body.

Single Arm Lift

From your quadruped position, bend the elbow and lift the hand off the ground. You can either lift your hand straight up or tap it across your body to touch the opposite shoulder.

Maintain stability of the trunk as you transfer the weight.



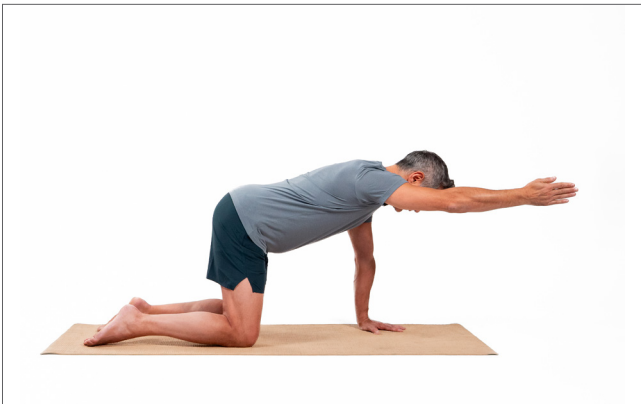
Single Leg Extension

Next, focus on maintaining dynamic stability throughout the three centers of weight while extending one leg back to differentiate the hip from the pelvis.



Single Arm Reach

Once you feel at ease lifting one arm, begin to extend it forward to explore the differentiation of the shoulder from the rib cage. Notice how the arm can glide without changing the spine.



Opposite Arm and Leg Reach

To complete the exercise progression, extend one arm and the opposite leg while keeping dynamic stability through the trunk.



STANDING IN YOUR ARMS

SKILL BUILDING FULL PLANK



Front Plank

Everything you just learned applies here!

From the all fours position with the hands directly underneath the shoulders, step one foot back at a time to come into a plank position.

- ▶ Where are your wheels are they organized in this orientation to gravity?
- ▶ Are your legs reaching long away from your center. Do you need to counter lumbar extension with a posterior turn of the pelvis? This is your pelvic clock/Imprinting.
- ▶ Are you strong in your arms and across the shoulder girdle?

.....



Exercise Application - Leg Pull Front Support

From the plank position, lift one leg off the floor. With a long straight leg pulse the leg toward the ceiling (hip extension) three times. The ankle of the opposite leg pulses as well from dorsi flexion to plantar flexion. Maintain the long coordinated plank position throughout. Return the limb to the floor and try on the other side.

STANDING IN YOUR ARMS

BACK PLANK PROGRESSION



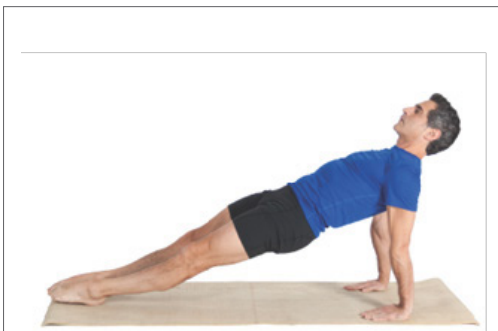
Prep - Shoulder shrug / Scapular elevation and depression

In a seated position, align and stack the head, rib cage and pelvis. Reach behind you, internally rotate the humerus and externally rotate the forearm. Shrug, allowing the scapulae to rise up your the back wall of the rib cage (elevation). What happens to the alignment? Create the suction cup with your hands, press into the ground and notice the way the shoulder blades (scapulae) settle in strength as they lower on the rib cage (depression).



Back Plank Bridge and Bridge Marching

In a seated position, align and stack the head, rib cage, and pelvis. Reach behind you, internally rotate the humerus, and externally rotate the forearm. Bridge the pelvis off the ground and activate the knee flexors by imagining your heels pulling toward your sitting bones. Finding your strength, both upper body, center and lower body, lift one leg off the floor. Hint: the grounding in your hands and the strength of your arms, the opposition, head to tail and finding your back body here is the work, the gesture leg is the challenge.



Exercise Application - Back Plank/Leg Pull Up

Boom...here you are...straighten your legs. Stack your weight centers, keep you primary contacts with the ground strong and on your exhale, kick the top leg toward the ceiling.

Side Plank - Forearm

Sit side facing. Place the forearm on the mat with the elbow under the shoulder, legs stacked. Press into the mat with the forearm and the legs to lift the pelvis. Align the head, rib cage and pelvis in a long line.

From the seated side facing position, with the forearm on the mat, lengthen the legs and stagger the stance, one foot in front of the other. Press into the mat with the forearm and the legs to lift the pelvis. Align the head, rib cage and pelvis in a long line.

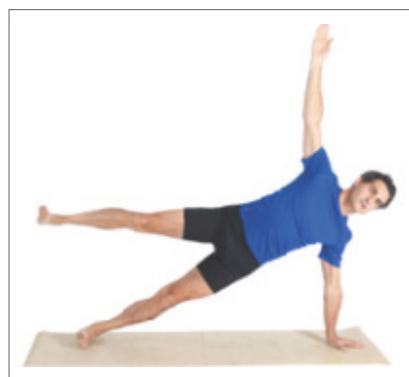


From the seated side facing position, with the hand placed under the shoulder, lengthen the legs and stagger the stance, one foot in front of the other. Press into the mat with the hand and the legs to straighten the arm and lift the pelvis. Align the head, rib cage and pelvis in a long line.

From the seated side facing position, with the hand placed under the shoulder, lengthen the legs and stack the feet, one foot on top of the other. Press into the mat with the hand and the legs to straighten the arm and lift the pelvis. Align the head, rib cage and pelvis in a long line.



Star is an advanced exercise. Stack your weight centers, keep your primary contacts with the ground strong and on your exhale, lift the top leg toward the ceiling. Push the ground away and feel strong in the side body support and strength.

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“ Notes Page

TRACKING YOUR TRAINING REQUIREMENTS

To ensure a smooth progression through your Pilates instructor training, it's essential to track your hours and stay on top of your requirements. Each module or weekend training has recommended hours to complete before moving on to the next.

To help you stay organized and accountable, we ask that you bring your progress tracking log to each course session. A Balanced Body Educator will review your log and initial off on your progress during your attendance. For those attending courses virtually, please have an open conversation with your online educator about your progress. This process helps keep both students and educators aligned and ensures accountability throughout your training.



HOW DO I COMPLETE MY PRACTICAL HOURS?

Personal Practice Hours

- ▶ Take a Pilates class (online or in person).
- ▶ Participate in private one-on-one training sessions.
- ▶ Engage in self-led practice.

Observation Hours

- ▶ Watch a live Pilates class or private training session
- ▶ View recorded training sessions online (though in-person observation is preferred)

Teaching Hours

- ▶ Teach friends, family, classmates, or clients in a group or private session.

We recommend that you begin logging your instructor training hours as soon as you start the program. While some students may have prior experience, we ask that you start fresh upon entry to focus on what you're learning in the Balanced Body training program. This approach reinforces the knowledge and skills being taught and ensures consistency across all trainees.

By staying diligent with tracking and actively engaging in the various ways to earn hours, you'll be well-prepared for each step of your journey to becoming a certified Pilates instructor.

WHAT TO NOTICE

PERSONAL PRACTICE

What is my intention?

What are you wanting to achieve for yourself, your own body.

What are my goals?

Do you have practice goals, short term. Do you have long term fitness and wellness goals? What are they and why are they important? How can Pilates help you achieve?

Can I visualize the exercise? Can I mentally cue myself through the exercise?

Visualizing is a powerful learning tool. It helps you mentally prepare and execute. Once you can visualize the exercise, can you then cue yourself through it?

Use the resources

Whatever your learning style, there is a resource to guide you through your Pilates training program. Use them to as you begin teaching yourself, your family, your clients.

Put the book down

As soon as you can practice autonomously, do so.

OBSERVATION HOURS

Sequences/Movement Arcs

Observe and note any sequences or progressions that flowed smoothly. What made them feel cohesive or effective?

Verbal Cuing Reflection

Reflect on the instructor's verbal cues. What worked well? What could have been clearer? Record any cues you found especially useful or inspiring.

Manual Cuing and Touch Techniques

Take note of any manual cuing or spotting. How was touch used to enhance understanding, support alignment, or ensure safety?

Class Flow

Pay attention to how the class flowed from one section or exercise to the next. Were the transitions smooth and intentional? What supported the flow, and what disrupted it?

Instructor Tone and Presence

Notice the instructor's voice, tone, and overall presence. What kind of environment did they create? How did the students respond to their energy and communication style?

Creative Movement Ideas

Record any exercise variations you found useful, interesting, or worth trying in your own teaching.

Educational Content and Intent

What was the instructor aiming to teach—whether a movement concept, skill, or body awareness? Did the approach seem effective? How did the students respond or apply the information?

TEACHING HOURS

Don't Wait

Teaching is essential to your learning. Do not wait to get started. We recommend choose friends and family members. If you are working with a studio, start as an apprentice or with beginning level clients an classes. Most importantly, teach.

Even Experts Were Beginners Once

Even the most skilled teachers were beginners. Do not expect perfection and cut yourself some slack.

GETTING STARTED

Total Number of Hours Is What Counts!

In the following pages we have dosed out the hours and recommend hours between courses. We believe it is best to complete your hours along the journey, instead of waiting until the end. However, if you find you fall behind the recommendations set out here, do not worry, it is the total number of hours that count, not when you did them. Complete this log, it will serve as your proof of completion and necessary to provide when you apply for your final test out.

Movement Principles Personal Practice

After completing the Movement Principles with the Pilates Essentials course, we recommend dedicating 10 hours to personal practice. These hours may include any Pilates or movement sessions that incorporate the Pilates Essentials exercises. These hours will be logged and applied toward your personal practice requirements for Mat, Reformer, or apparatus modules.

Personal Practice: 10 Hours

10 Personal Sessions

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Notes...

TRACK YOUR HOURS

Track your Mat Training Hours

Personal: 20 Hours Observation: 15 Hours Teaching: 35 Hours

Mat 1 - 7 Personal Sessions

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Mat 1 - 5 Observation Hours

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Mat 1 - 12 Student Teaching Hours

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BB Educator
Initials

Mat 2 - 7 Personal Sessions

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Mat 2 - 5 Observation Hours

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Mat 2 - 12 Student Teaching Hours

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BB Educator
Initials

Mat 3 - 6 Personal Sessions

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Mat 3 - 5 Observation Hours

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Mat 3 - 11 Student Teaching Hours

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BB Educator
Initials

TRACK YOUR HOURS

Track your Reformer Training Hours

Personal: 30 Hours Observation: 30 Hours Teaching: 90 Hours

Reformer 1 - 10 Personal Sessions

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Reformer 1 - 10 Observation Hours

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Reformer 1 - 30 Student Teaching Hours

BB Educator
Initials

Reformer 2 - 10 Personal Sessions

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Reformer 2 - 10 Observation Hours

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Reformer 2 - 30 Student Teaching Hours

BB Educator
Initials

TRACK YOUR HOURS

Track your Reformer Training Hours

Reformer 3 - 10 Personal Sessions

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Reformer 3 - 10 Observation Hours

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Reformer 3 - 30 Student Teaching Hours

BB Educator
Initials

Track your Apparatus Training Hours

Personal: 45 Hours Observation: 14 Hours Teaching: 85 Hours

Apparatus 1 / Trapeze Table - 15 Personal Sessions

Apparatus 1 / Trapeze Table - 5 Observation Hours

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Apparatus 1 / Trapeze Table - 29 Student Teaching Hours

BB Educator
Initials

TRACK YOUR HOURS

Track your Apparatus Training Hours

Apparatus 2 / Chair - 15 Personal Sessions

Apparatus 2 / Chair - 5 Observation Hours

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Apparatus 2 / Chair - 28 Student Teaching Hours

BB Educator
Initials

Apparatus 3 / Barrels - 15 Personal Sessions

Apparatus 3 - 4 Observation Hours

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Apparatus 3 - 28 Student Teaching Hours

BB Educator
Initials

YOUR PROFESSIONAL GROWTH

Your professional growth is important to us. Below are some practical considerations as you begin to embark on your professional Pilates Instructor path.

Find a Mentor

If there's an instructor you connect with, ask if they'd be willing to mentor you. They can observe your teaching or take your classes and give feedback. Everyone benefits from guidance, so find someone you trust. If you don't have a mentor nearby, consider finding one who can support you virtually through Zoom or another platform. You can also reach out to your Balanced Body Educator or the Balanced Body office—we may be able to help. A fresh perspective can be invaluable when learning a new skill.

Personal Liability Insurance

As a student teacher of Pilates, obtaining personal liability insurance is highly recommended, though requirements may vary based on location and the facility where you are teaching. Many insurance providers offer student policies at a reduced rate, covering you while you practice teaching under supervision. Some studios may also require you to have your own insurance, even as a student teacher. It's best to check with your training program, the studio where you are teaching, and potential insurance providers to ensure you have the appropriate coverage.

Continuing Education

Continuing education is essential for Pilates instructors to refine their skills, stay current with industry advancements, and continue growing as teachers. Balanced Body's requirement of 16 hours every two years ensures that instructors stay engaged in lifelong learning, deepen their understanding of movement, and enhance their ability to support clients effectively. Ongoing education also fosters connection within the Pilates community, introduces fresh perspectives, and helps instructors maintain high-quality teaching standards.

Social Media

Your Pilates manuals are a wealth of knowledge, offering endless inspiration for class design and deeper connections to the work. While social media can be great for fresh ideas, care should be taken before incorporating the latest trends - especially as a new teacher. Take the time to explore the exercises as they are presented, understand their purpose, and let that guide your teaching. The real magic comes from mastering the foundations and building from there!

AT THE END OF YOUR TRAINING

PREPARATION FOR YOUR FINAL TEST

After you have completed all your required course work and practical hours you will be able to schedule your final test out. Below are some general guidelines and procedures for preparing to take the final Test Out for your Pilates Certification Program of choice.

1. Discuss Your Progress

Before submitting your test-out application, it is essential to have a discussion with your primary Balanced Body Educator. They will provide valuable feedback on your progress and readiness for the certification exam.

2. Submit Your Online Test-Out Application and Register for your test out.

Once your Educator confirms your readiness, fill out your online Test-Out application. You can find this on the Balanced Body Website and on your Clara Platform. Upon approval, you can begin your preparation.

3. Prepare for the Exam

Use the following resources to study and review:

- ▶ Course Manuals: Revisit all related coursework.
- ▶ Module Quizzes: Review
- ▶ Clara Platform: Access videos and tutorials to deepen your understanding.

4. Schedule Your Test-Out Day

Reach out to your Balanced Body Educator to coordinate the Test-Out day with you. You will receive a registration link to finalize your Test-Out appointment.

5. Exam Format

The certification exam consists of two parts:

Written Exam:

- ▶ The written exam is one hour to one and a half hours in length and includes
- ▶ Online for 2026 and In-person administration for students prior to 2026.
- ▶ Exam includes: multiple choice and fill in the blank questions.

Practical Exam:

Conducted in person with your Balanced Body Educator serving as the examiner.

The practical exam is one hour long and includes:

- ▶ An assigned collection of exercises from the Balanced Body repertoire. These will be provided one week prior to your exam.
- ▶ You will arrange the exercises into a flow that is suitable for exercise progressions and equipment setup.
- ▶ Upon completion, you will hand your workout organization and plan to your educator to be evaluated and provide you feedback.

On the exam day, your Educator will assign 2-3 additional exercises to incorporate into your program.

6. Practical Exam Guidelines

You may pick the person who will be your client during the exam. Or your Educator may pick the student for you. If they are unable to perform any of the exercises, use your knowledge of modifications to make the exercise work for them and their ability.

You may bring the list of exercises you are teaching to your test out, but please do not add any additional notes.

Focus on demonstrating your ability to teach a cohesive and well-structured session.

Both tests are pass/fail, if you pass one and fail the other you will only have to re-take the one that you failed.

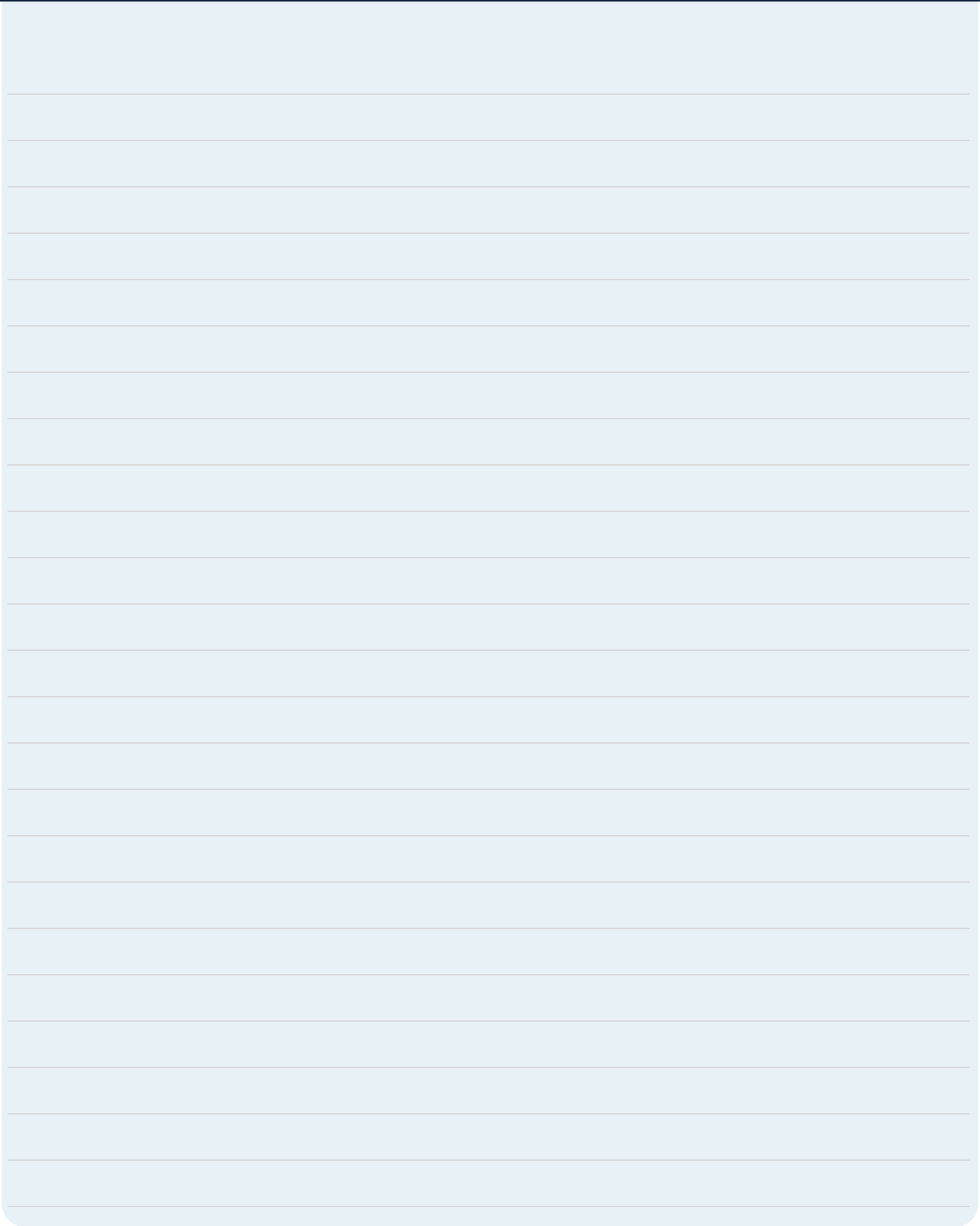
You will be evaluated on the following:

- ▶ Equipment set up and safety
- ▶ Body position, movement sequence clarity, cueing and hands on if appropriate.
- ▶ Modifications as necessary
- ▶ Precautions and any contraindication

7. Final Steps

Good luck on your exam! This is a significant milestone in your journey as a Pilates professional. Congratulations on your hard work and dedication to achieving this certification.

NOTES



Movement Principles and Pilates Essentials

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