

HOLISTICE MOVEMENTS

PART 1

Connecting Vision and Spinal Coordination through Breathing



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Table of Contents

Introduction: Primitive Reflexes and their Role in Coordinating Vision, Breathing, and Spinal Movement.....	3
Part 1: Reconnecting Primitive Reflexes through Breath, Vision, and Spinal Coordination.....	5
Movement 1: Fundamental Breathing Exercise with Primitive Reflexes Awareness.....	5
Sensory Observation.....	5
Neurological and Physiological Explanation.....	6
Connection to Feldenkrais Method.....	6
Movement 2: Knee Drop Exercise (Linked to Primitive Reflexes).....	6
Sensory Observation:.....	6
Neurological and Physiological Explanation:.....	6
Connection to Feldenkrais Method:.....	7
Movement 3: Knee Drop with Opposite Head and Eye Turn.....	7
Sensory Observation:.....	7
Anatomical and Neurological Description:.....	7
Neurological and Physiological Benefits:.....	8
Evolutionary and Developmental Context:.....	8
Connection to Feldenkrais Method:.....	8
Movement 3: Knee Drop with Opposite Head and Eye Rotation (Body as a Bellows).....	8
Sensory Observation:.....	9
Anatomical and Neurological Explanation:.....	9
Evolutionary and Developmental Context:.....	9
Benefits for Vision and Balance:.....	10
Connection to the Feldenkrais Method:.....	10
Part 2: Awareness of Gravity through Feldenkrais Principles.....	10
Movement 1: Linking the Weight of the Arm to Spinal Torsion.....	10
Anatomical Description (Deltoid muscle):.....	11
Sensory Observation:.....	11
Neurological and Anatomical Insights:.....	11
Feldenkrais Context and Benefits:.....	11
Movement 2: Leg Lift and Awareness of Spinal Curvature.....	12
Anatomical and Neurological Explanation:.....	12
Sensory Observation:.....	12
Feldenkrais Context and Benefits:.....	12
Part 3: Eye Movement Tracking and Primitive Reflexes Integration.....	14
Conclusion.....	15

Introduction: Primitive Reflexes and their Role in Coordinating Vision, Breathing, and Spinal Movement

Primitive reflexes form the foundational patterns of movement that support healthy motor coordination, sensory processing, visual acuity, and cognitive function from infancy onwards. Among these, reflexes like the Asymmetrical Tonic Neck Reflex (ATNR) and the Spinal Galant Reflex significantly influence the development and integration of vision, breathing, and spinal coordination. Modern sedentary lifestyles often disrupt these primitive reflexes, causing chronic tension, visual strain, imbalance, and diminished overall well-being.

My journey to discovering the importance of these reflexes and their connection to vision and coordinated spinal movement began unexpectedly during a mathematics conference in Atlanta, where I had a chance encounter with Dr Moshe Feldenkrais in the midst of a rather dull sport judo demonstration. Unbeknownst to me at the time, Dr Feldenkrais was an acclaimed figure, whose innovative approach to movement and bodily awareness would profoundly influence my understanding of human development and wellness.

Dr Feldenkrais' approach was unique, grounded in the belief that movement and sensory awareness are inseparable from overall human health. Accepting his invitation, I travelled to Tel Aviv, Israel, where I had the privilege of attending his lectures in "Junomichi"—what he described as “real judo.” Under his expert guidance, I began to explore the concept of "Hara," the body's centre of gravity, understanding its vital role in balance, efficient movement, and overall physical health.

Reflecting on my own early life, I recall a childhood spent in a nearly self-sufficient rural community. My family derived their livelihood from the land and sea until their final days. Remarkably, none required reading glasses, and all remained physically active throughout their lives. At the age of twelve, I regularly split wood for two to five hours each day, an activity sustained not by sheer muscular force but by effectively harnessing my body's centre of gravity. Without consciously knowing, I was using primitive reflexes, particularly spinal and core-related ones, that naturally developed my endurance, strength, and overall health. These experiences contrast sharply with modern sedentary lifestyles, which limit the natural integration of these reflexes and lead to chronic issues in movement and vision, such as presbyopia.

Dr Feldenkrais emphasised direct physical engagement and awareness, underscoring that only by experiencing movement through mindful practice could one truly embody the principles he taught. He believed deeply in the transformative power of physical interaction, urging a shift away from mechanical and disconnected exercises toward movements integrated with awareness, sensation, and gravity. Following his recommendation, I continued my studies of genuine Judo under Igor Correa, further embedding these foundational principles into my daily life.

Reflecting on these transformative experiences, the following exercises have been developed according to Feldenkrais principles and primitive reflex integration. They reconnect breathing, vision, and spinal coordination, inviting you to reawaken your body's innate capacity for natural movement. Through these movements, you are encouraged to rediscover and embrace the ease and efficiency inherent in your body, facilitating enhanced balance, improved visual clarity, reduced muscular tension, and a deeper overall sense of well-being.

Part 1: Reconnecting Primitive Reflexes through Breath, Vision, and Spinal Coordination

The Feldenkrais Method encourages movement awareness by reconnecting us with primitive reflexes, foundational patterns of movement developed from infancy that profoundly shape how we breathe, see, and move through life. At birth, breathing serves as our primary and most essential primitive reflex, directly influencing our relationship with gravity, balance, and sensory perception.

Through carefully structured exercises, you will explore how primitive reflexes interact with your visual perception, breath patterns, and spinal movement. By consciously re-engaging these reflexes, you can release habitual muscular tension, improve spinal flexibility, enhance visual coordination, and restore a natural, effortless relationship with gravity and movement.

The following exercises are designed to foster deep sensory awareness and encourage the rediscovery of the subtle, yet powerful interactions between breath, spinal movement, and vision.

Movement 1: Fundamental Breathing Exercise with Primitive Reflexes Awareness

Primitive reflexes, such as those involved in breathing, form the foundational sensory and motor responses of our nervous system. Proper integration of these reflexes supports overall well-being and optimal physical function.

Position: Lie comfortably on your back with your knees raised and your feet flat on the floor.

Movement: Breathe slowly and naturally in and out through your nose, directing your breath into your belly, allowing your abdomen to rise as you inhale and gently flatten as you exhale.

- Maintain your feet stable and comfortably placed on the floor.
- Rest one hand gently on your lower belly without restricting the spine's natural movement.
- When inhaling, notice how your spine slightly arches, causing your shoulders and pelvis to press down gently into the ground. During exhalation, the tension in your shoulders and pelvis decreases, allowing them to relax and lift slightly.

When breathing to your maximum capacity, the pressure of your shoulders and pelvis against the floor becomes more pronounced during inhalation. Conversely, during exhalation, the shoulders and pelvis naturally relax.

Perform this exercise slowly and with controlled breaths, repeating between 5 and 10 times.

Sensory Observation

- Notice any tension or ease in your neck, shoulders, and pelvis.
- Observe the pressing and releasing action of your shoulders and pelvis against the floor during breathing.
- Be aware of the undulating movement of your spine, especially at the extremes of inhalation and exhalation.

Neurological and Physiological Explanation

This breathing exercise engages the diaphragm and abdominal muscles, stimulating the parasympathetic nervous system, which fosters relaxation and stress reduction. Gentle nasal breathing optimizes oxygen exchange, enhancing respiratory health and efficiency.

Connection to Feldenkrais Method

This practice embodies the Feldenkrais Method's principles, encouraging enhanced body awareness and self-regulation through mindful observation and gentle, controlled movements. The method's emphasis on sensory awareness and neuromuscular efficiency is central to improving coordination, balance, and ease in daily activities.

Movement 2: Knee Drop Exercise (Linked to Primitive Reflexes)

Introduction to Primitive Reflexes: Primitive reflexes, such as the asymmetrical tonic neck reflex (ATNR) and spinal Galant reflex, are automatic motor responses essential during early development. Proper integration of these reflexes supports improved motor coordination, balance, and bodily awareness.

Position: Lie comfortably on your back with your knees bent, feet flat on the floor, and arms resting alongside your body.

Movement: Allow both knees to simply drop to one side without actively controlling the descent. Return your knees to the central position, then drop them naturally to the opposite side.

- Observe any tension or resistance that might prevent your knees from dropping freely.
- Attempt to keep your shoulders on the floor; if they lift, do not force them down—simply notice this reaction.
- Pay close attention to the elasticity and flexibility of your spine and how your knees' movements influence your shoulders and pelvis.

Repeat this dropping movement 5 to 10 times on each side, allowing gravity to guide your knees naturally rather than leaning or controlling the descent.

Sensory Observation:

- Notice tension preventing the knees from freely dropping to the sides.
- Observe how your knees' movements relate to your shoulders and spine.
- Acknowledge areas of resistance and allow your body to naturally adjust without force.

Neurological and Physiological Explanation:

This exercise gently engages the spinal column and helps re-establish connections related to primitive reflexes, enhancing spinal flexibility, balance, and overall coordination.

Connection to Feldenkrais Method:

This mindful exercise aligns with Feldenkrais principles, encouraging sensory awareness, ease of movement, and reduction of unnecessary muscular tension through attentive observation and self-awareness.

Movement 3: Knee Drop with Opposite Head and Eye Turn

Introduction (Primitive Reflex):

This movement links directly to the Asymmetrical Tonic Neck Reflex (ATNR), a primitive reflex activated when turning the head to one side causes the limbs on that side to extend, while the limbs on the opposite side flex. This reflex is crucial during infancy, aiding in the development of coordination between visual input and body movement. In adults, reactivating this reflex supports improved muscular coordination, balance, and spinal flexibility.

Position: Lie comfortably on your back, arms resting naturally alongside your body, knees bent, and feet flat on the floor.

Movement: Allow your knees to naturally drop to one side, and simultaneously turn your head and eyes slowly and deliberately to the opposite side. Let this action occur naturally without forcing the knees or the head; they simply drop in opposite directions, creating a smooth spiral through your spine.

Alternate sides and repeat this dropping motion 5 to 10 times for each side.

Sensory Observation:

- Feel the twisting movement throughout your spine.
- Notice tension or ease in your neck, shoulders, ribcage, and hips.
- Pay close attention to the connection between your head and knee movements.
- Observe how the relaxation on one side influences muscle responsiveness and ease of movement.

Anatomical and Neurological Description:

Turning the head in the opposite direction of your knees relaxes specific muscle groups on the side towards which your head is turned, particularly:

- **Neck muscles:** Sternocleidomastoid, Levator Scapulae, and Splenius muscles.
- **Shoulder muscles:** Upper Trapezius and Deltoid.
- **Intercostal muscles:** muscles located between your ribs, crucial for breathing flexibility.

These muscles are primarily innervated by:

- **Accessory nerve (Cranial Nerve XI)** – Sternocleidomastoid and Trapezius.
- **Cervical spinal nerves (C1-C4)** – Levator Scapulae and Splenius muscles.
- **Intercostal nerves (from Thoracic spinal nerves T1-T11)** – Intercostal muscles.

Central Nervous System Connections:

The relaxation response arises from feedback loops involving proprioceptors (such as muscle spindles and Golgi tendon organs) in these muscles, sending sensory information to your spinal cord and brainstem. This sensory information modulates motor outputs, promoting relaxation and decreasing tension.

Neurological and Physiological Benefits:

- **Relaxation Mechanism:** Relaxed muscles possess enhanced neuromuscular responsiveness compared to tense muscles. Relaxed muscles have improved blood flow and reduced neural resistance, enabling faster muscle recruitment when necessary.
- **Visual and Balance Coordination:** By coordinating head turning with eye movement, this action reinforces connections between the **vestibulocerebellum** (a cerebellum region critical for balance, coordination, and eye movements) and internal ocular muscles responsible for vision adjustments, specifically the **ciliary muscles**, innervated by parasympathetic fibers from the **Edinger-Westphal nucleus** in the midbrain. This enhances visual acuity, eye focusing abilities, and spatial orientation.

Evolutionary and Developmental Context:

This coordinated action reflects evolutionary demands faced by early humans, who needed precise peripheral visual awareness and rapid muscle responsiveness to detect, evaluate, and escape from danger swiftly. Turning the head to one side and observing the environment closely promoted enhanced spatial judgment, vital for survival in hostile conditions.

Connection to Feldenkrais Method:

Consistent with Feldenkrais Method principles, this exercise promotes heightened sensory-motor awareness through careful observation and mindful exploration of movement. It encourages the reduction of habitual tension patterns, facilitating ease and efficiency in movement, improved postural organisation, and enhanced overall wellbeing.

Movement 3: Knee Drop with Opposite Head and Eye Rotation (Body as a Bellows)

This movement directly relates to the **Asymmetrical Tonic Neck Reflex (ATNR)**. The ATNR is a primitive reflex activated in infancy when the head turns to one side, resulting in an automatic extension of limbs on that side and flexion of limbs on the opposite side. Reactivating this reflex in adulthood can improve coordination, muscle relaxation, and visual-motor synchronisation, enhancing overall movement fluidity and spatial awareness.

Position: Lie on your back comfortably with your knees bent, feet flat on the ground, and arms placed naturally alongside your body.

Movement:

- As you **breathe out**, **drop** your knees freely to one side, simultaneously turning your head and eyes slowly towards the opposite side. Avoid deliberately controlling the descent of your knees—allow gravity to lead the dropping motion.
- As you **breathe in**, return your knees, head, and eyes slowly to the central neutral position.

Repeat the exercise between 5 and 10 times on each side, maintaining slow and deliberate breathing throughout.

Precision of the Movement:

- Allow your knees to naturally drop rather than consciously leaning or lowering them.
- If possible, keep your shoulders on the floor; however, if your shoulder lifts slightly, simply notice this without correction. Awareness is key rather than achieving a specific form.

Sensory Observation:

- Notice and acknowledge any muscular tension limiting the spontaneous dropping of your knees.
- Feel the elasticity of your body, specifically observing how the dropping of your knees influences your shoulder alignment and overall spinal movement.

Anatomical and Neurological Explanation:

When the knees drop to one side, and your head turns in the opposite direction, muscles along the neck, shoulders, rib cage, and spine engage and subsequently relax:

- **Neck muscles:** Sternocleidomastoid, scalene muscles, splenius cervicis, splenius capitis.
Innervation: Accessory nerve (CN XI), cervical spinal nerves (C1–C4).
- **Shoulder and Upper back:** Trapezius, levator scapulae, rhomboids.
Innervation: Accessory nerve (CN XI), dorsal scapular nerve (C4–C5).
- **Intercostal muscles:** External and internal intercostal muscles, crucial for ribcage mobility during breathing.
Innervation: Intercostal nerves (originating from thoracic spinal nerves T1–T11).

When the head turns toward one side, it naturally induces relaxation on that side's neck and intercostal muscles. This occurs because the turning of the head stimulates proprioceptive feedback mechanisms (including muscle spindles and Golgi tendon organs), modulating the central nervous system to reduce muscular tension.

Evolutionary and Developmental Context:

This coordinated reflexive action originates from early human evolutionary development. Early humans, who were physically vulnerable, relied heavily on keen peripheral visual awareness for survival. Quick, precise eye-head coordination was vital for assessing environmental threats rapidly and accurately from peripheral vision, allowing immediate reactions for survival.

Relaxed muscles contract and react significantly faster and more efficiently than tensed muscles, enabling rapid responses to danger. Reactivating this innate reflexive pattern in adulthood reinforces efficient neural pathways, improving overall coordination and reaction speed.

Benefits for Vision and Balance:

The simultaneous dropping of the knees and the rotation of the head and eyes in opposite directions create an effective stimulus for synchronisation between:

- **Visual system:** Engaging intrinsic eye muscles (such as the **ciliary muscles** controlled by the parasympathetic fibres from the **Edinger-Westphal nucleus** in the midbrain). These muscles adjust the lens for sharp and precise vision.
- **Cerebellar coordination:** Particularly the **flocculonodular lobe** (part of the vestibulocerebellum), which integrates sensory inputs from eyes, vestibular system, and muscles to coordinate precise and balanced movements.

Regularly practising this movement enhances the coordination between visual tracking, head movement, and spatial orientation, consequently promoting improved balance, proprioceptive awareness, and visual acuity.

Connection to the Feldenkrais Method:

Consistent with Feldenkrais principles, this exercise encourages slow, mindful observation and exploration of movement, facilitating refined neuromuscular connections. This attentive approach assists in identifying habitual muscular tension patterns, reducing unnecessary strain, and leading to enhanced movement efficiency and improved overall well-being.

Part 2: Awareness of Gravity through Feldenkrais Principles

The Feldenkrais Method emphasises the deep understanding of one's relationship with gravity, recognising it not as an opposing force to resist but as a guiding factor that informs and supports efficient and natural movements. Becoming aware of gravity's influence allows us to interact with our environment in a safer, more coordinated, and purposeful manner. Feldenkrais highlights that the clarity in our perception of gravity directly enhances our sense of balance, stability, and ease of motion.

In this second part, you will deepen your sensory awareness by exploring how gravity interacts with your body's weight, particularly observing how subtle movements can naturally emerge from within your own body's intelligence.

Movement 1: Linking the Weight of the Arm to Spinal Torsion

Position: Lie on your back comfortably with knees bent and feet flat on the floor. Arms are positioned naturally, relaxed alongside your body.

Movement:

- Slowly lift one arm upwards, feeling clearly the sensation created by the arm's own weight.
- Notice how even the mere thought or action of lifting the arm creates a subtle reaction throughout the spine, gently initiating a torsion (rotation).
- Observe whether this movement naturally encourages your knees to drift or drop toward the raised arm's side, guided by gravity.

Anatomical Description (Deltoid muscle):

The **deltoid muscle** is a large, triangular-shaped muscle covering the shoulder joint. It has three parts:

- **Anterior deltoid:** Responsible for shoulder flexion (raising the arm forward).
- **Middle deltoid:** Primarily responsible for shoulder abduction (raising the arm to the side).
- **Posterior deltoid:** Assists in shoulder extension (moving the arm backward).

In this movement, the deltoid primarily contributes by abducting the arm slowly and deliberately. Neurologically, the deltoid is controlled by the **axillary nerve**, arising from cervical spinal nerve roots **C5–C6**.

Sensory Observation:

- Clearly feel the heaviness of your arm and observe how this sensation influences your spinal alignment and muscular response.
- If your body has minimal tension, your knees may naturally drop or move towards the lifted arm due to the spinal rotation triggered by gravity's effect on the lifted limb.
- If the knees do not drop, gently observe and identify areas where you feel tension or restriction.

Neurological and Anatomical Insights:

- The simple act of raising your arm shifts your body's weight distribution, stimulating proprioceptors (sensory receptors detecting changes in body positioning).
- This subtle torsion enhances proprioceptive awareness (the body's ability to sense position and motion in space) and engages neuromuscular coordination through connections between the motor cortex, cerebellum, and spinal cord.
- Gravity naturally guides your spine into gentle rotation; recognising these natural responses helps diminish excess muscular tension.

Feldenkrais Context and Benefits:

Feldenkrais teaches that consciously experiencing gravity's effect on body segments allows us to identify habitual patterns of tension or imbalance. Through awareness and observation, unnecessary muscular tension can be released, leading to more efficient, purposeful movements. This exercise enhances sensory-motor integration and reinforces a balanced, adaptive response to gravity, promoting increased flexibility, reduced muscular tension, and improved overall functional mobility.

Movement 2: Leg Lift and Awareness of Spinal Curvature

Position: Lie comfortably on your back with knees bent, feet flat on the ground, arms relaxed alongside your body.

Movement: Slowly lift one leg by allowing your knee to rise slightly while keeping your foot lightly in contact with the ground. The foot remains in contact, creating minimal effort; your intention is simply to allow your knee to move upwards, guided naturally by the sensation and awareness of gravity.

- Notice how this slight leg lift creates subtle changes in the curvature of your spine. Feel carefully the shifts and adjustments your spine makes in response to the raised leg.
- Observe closely the sensation created in your pelvis and lower back. Recognise the natural curvature adjustments as you lift and lower the leg.

Anatomical and Neurological Explanation:

Lifting the leg while keeping the foot grounded lightly activates and engages muscles including:

- **Iliopsoas muscle:** Primary muscle involved in hip flexion, connecting lumbar spine and pelvis to the femur.
Innervation: Lumbar spinal nerves (L1–L3).
- **Rectus femoris muscle (part of quadriceps):** Assists in hip flexion and stabilises the knee joint.
Innervation: Femoral nerve (L2–L4).
- **Gluteus muscles and lower back extensors:** Provide subtle support and stabilisation during the movement.
Innervation: Inferior and superior gluteal nerves (L4–S1), dorsal rami of lumbar spinal nerves.

Neurologically, this gentle activation enhances proprioceptive feedback loops. Muscular adjustments signal the **sensory-motor cortex**, the **cerebellum**, and the **vestibulospinal pathways**, creating adaptive responses that enhance postural alignment and spinal coordination.

Sensory Observation:

- Notice any subtle tensions in your lower back, pelvis, hips, or legs that restrict or assist this gentle movement.
- Scan your body to detect the extent of spinal curvature adjustments as the leg moves.
- Identify clearly the relationship between your lifted leg, pelvis, and spinal alignment.

Feldenkrais Context and Benefits:

This exercise exemplifies the Feldenkrais Method's core principle of exploring functional movement patterns through sensory awareness rather than effort or force. By slowly lifting your leg and observing spinal responses, you enhance neuromuscular awareness, supporting spinal health and functional mobility. The slowly leg lift promotes reduced muscular tension, increased pelvic

flexibility, and heightened sensory awareness, leading to improved spinal function and reduced pain or discomfort.

Part 3: Eye Movement Tracking and Primitive Reflexes Integration

Eye movement tracking exercises are fundamental to improving visual coordination, spatial orientation, and the integration of sensory-motor skills. Such tracking movements naturally stimulate and reawaken essential primitive reflexes that underpin efficient neuromuscular functioning.

Two fundamental movements involved in tracking exercises are **pronation** (rotation of the forearm so that the palm faces downward) and **supination** (rotation of the forearm so that the palm faces upward). These movements are directly associated with primitive reflexes like the **Asymmetrical Tonic Neck Reflex (ATNR)**, which during early human development facilitates coordinated movements of the head, eyes, and limbs, promoting the initial integration of hand-eye coordination, motor skills, and overall spatial orientation.

In these exercises, participants track a ball as it bounces upwards, maintaining continuous visual contact. This activity stimulates the visual and motor systems, enhancing coordination between eye movements, head position, and body alignment. Additionally, the deliberate inclusion of pronation and supination during these tasks stimulates neurological pathways established during infancy, enhancing reflex integration, visual-motor coordination, and overall body awareness.

Participants are instructed to maintain continuous awareness of their breathing and the subtle movements of their body associated with inhalation and exhalation throughout the tracking exercises. Breathing awareness encourages relaxation and facilitates smoother ocular tracking by reducing unnecessary muscle tension. Individuals performing these exercises remain mindful of the natural adjustments occurring in their bodies, promoting heightened proprioceptive sensitivity and functional integration.

These eye-tracking exercises, such as visually tracking bouncing balls from different distances and heights, naturally challenge and improve the flexibility and responsiveness of the internal eye muscles, specifically the **ciliary muscles** controlled by the parasympathetic fibres from the **Edinger-Westphal nucleus** in the midbrain. This stimulation aids in maintaining visual acuity and contributes to enhanced balance and spatial orientation.

Due to the precision required in these exercises and their subtle complexities, detailed guidance is essential for accurate practice, making it necessary to perform them under proper supervision.

This series of exercises, inspired by Feldenkrais principles, emphasises mindful observation of visual and body sensations, refining neuromuscular patterns through gentle yet precise explorations. Regular practice supports improved visual coordination, sensory integration, and overall neuromuscular efficiency, significantly benefiting daily activities and personal safety.

Conclusion

The exercises presented throughout this guide reconnect primitive reflexes to support the coordination of vision, breathing, and spinal movement. Primitive reflexes are foundational to effective sensory and motor function, and modern sedentary lifestyles frequently interrupt their natural integration, leading to tension, imbalance, and visual strain.

These movement exercises, inspired by the insights of Dr Moshe Feldenkrais, encourage sensory awareness and conscious movement exploration. Practising these exercises regularly helps re-establish effective neuromuscular connections, improving balance, vision, breathing efficiency, and overall sensory-motor integration.

The Feldenkrais Method promotes learning through awareness rather than effort. By exploring movement patterns carefully and mindfully, you can identify habitual tension, enhance coordination, and cultivate a more functional relationship with gravity. Regular practice supports better proprioceptive awareness and facilitates ease of movement in daily activities.

Continued exploration of these movements, ideally under guided supervision, is beneficial in reinforcing reflex integration and enhancing functional mobility and visual acuity. You are encouraged to further explore these practices to deepen their beneficial impacts on your daily life.