

Emotions, Muscles and the Body

Abstract

People often describe carrying grief in the chest, anger in the jaw or trauma in the hips. These descriptions can express a real bodily experience. They become scientifically misleading when interpreted as a fixed anatomical code or as memories physically lodged in a muscle and removed by stretching it.

The most defensible thesis is that emotional experience involves interacting brain, autonomic, hormonal, sensory and motor processes. Experience can shape habitual bracing, attention, avoidance and learned responses. Muscles participate in the expression of those responses; they have not been shown to contain a readable archive of particular emotions.

This extended narrative review compares historical explanations, body psychotherapy, Indian and Chinese traditions, contemporary neuroscience and practical movement approaches. It includes a regional muscle atlas, an evidence appraisal, illustrative cases and twelve exercise diagrams. Its central distinction is between a meaningful subjective experience of release and a demonstrated biological mechanism of storage.

Three conclusions

Claim	Assessment
Emotions can change bodily sensation, movement and muscle activity.	Supported in general; patterns depend on person and context.
Changing movement, breathing or muscle tension can change how someone feels.	Supported for some practices and outcomes; effects vary.
Each muscle stores a particular emotion that a matching exercise can remove.	No validated clinical map or established tissue-storage mechanism.

The practical goal is greater comfort, flexibility of response and freedom of action. Crying, shaking, a dramatic sensation or a recovered memory is neither required nor a reliable measure of success.

15. Barrett, L. F. The theory of constructed emotion: an active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience* 12 (2017), 1-23.

17. NCCIH. Relaxation Techniques: What You Need To Know. Living public-health resource.

Reading guide and scope

Pages	Subject
3-4	Definitions and historical timeline
5-10	Indian, Chinese and Western theories; muscular armour and later schools
11-16	Neuroscience, memory, embodiment, autonomic theories, fascia and somatic therapy
17-18	Evidence and how to interpret studies
19-23	Illustrated muscle atlas and emotion associations
24-25	Examples, the meaning of release and safe practice
26-29	Twelve illustrated exercises
30-32	Practice routine, observation sheet and conclusions
33 onward	Sources and historical reading

Method and limits

This is a thesis-style narrative reference, not an original experiment, systematic review or university dissertation. It covers the principal influential families of ideas, including competing explanations. No finite review can include every school, local tradition, proprietary method or contemporary social-media claim.

Evidence was sought in research papers, clinical resources, anatomy texts and developers' descriptions. Sources were checked on 10 September 2026 where accessible. Some original books and publisher full texts were unavailable; these are explicitly identified in the bibliography. Historical descriptions are not presented as proof of clinical effectiveness.

Evidence labels are qualitative judgments, not a formal GRADE assessment. A developer's account establishes what a method proposes, not whether it works. A preprint is identified as such. Positive clinical findings are kept separate from claims about how a therapy works.

The atlas groups the principal muscles relevant to commonly discussed tension patterns. It is not a complete dissection atlas of every human muscle. There is no responsible way to supply an exhaustive muscle-to-emotion storage chart: the necessary scientific mapping does not exist.

1. Definitions: what does “stored” mean?

Term	Definition and important distinction
Emotion	A context-sensitive episode involving feeling, appraisal, bodily change and tendencies to act. Different theories give these components different priority.
Feeling	The conscious experience of an emotion or bodily state. A felt location is not necessarily the location of its cause.
Muscle tension	Active contraction or perceived tightness. Perceived tightness does not always imply unusually high resting electrical activity.
Guarding	Protective movement or bracing around pain, threat or anticipated discomfort. It can be useful initially and restrictive when persistent.
Interoception	Sensing and interpreting internal bodily signals. Proprioception concerns position, movement and force; the domains interact.
Somatic / embodied	Relating to the body, or involving the body in experience and action. Neither term establishes tissue-based memory.
Trauma and PTSD	Trauma may refer to an overwhelming event or its consequences. PTSD is a defined clinical syndrome; everyday tension alone does not diagnose it.
Release	An ambiguous word: less contraction, easier movement, reduced distress, emotional expression or a change in interpretation. These are different outcomes.

“Storage” can mean a present sensation, a learned response that returns, long-term biological adaptation, a metaphor for suffering, or a literal tissue archive. The first four meanings do not logically establish the fifth. Ask which meaning is intended before judging the claim.

A useful example is clenching before a difficult conversation. The jaw contraction is physical, its timing may be learned, and the event can feel emotionally charged. None of those observations reveals an anger molecule or a hidden memory inside the masseter.

15. Barrett, L. F. The theory of constructed emotion: an active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience* 12 (2017), 1-23.

24. International Association for the Study of Pain. Terminology: pain, nociception and nociplastic pain. *Living terminology resource*.

2. A historical timeline

Period	Development	Contribution to the modern idea
Classical antiquity	Indian contemplative and medical texts; Chinese medical correspondences; Greek humoral medicine.	Mind, sensation, conduct and bodily health understood together; not modern muscle-specific evidence.
1872-1880s	Darwin on expression; James and Lange on bodily feeling.	Movement and physiology become central to scientific accounts of emotion.
1880s-1890s	Janet's dissociation; Breuer and Freud's early work.	Experience can have effects outside deliberate awareness; catharsis becomes influential.
1910s-1930s	Cannon's physiological work; Jacobson's relaxation; Reich's character analysis.	Different paths: stress physiology, learned relaxation and defensive muscular armour.
1940s-1970s	Lowen and Pierrakos; Feldenkrais; Rolf; Gestalt; humanistic and experiential therapies.	Posture, breathing, movement, touch and expression become therapeutic entry points.
1970s-1990s	Somatic Experiencing, Hakomi, sensorimotor work; trauma research; Damasio and Porges.	Body awareness, defensive responses, interoception and autonomic regulation gain prominence.
2000s onward	Trauma-sensitive yoga, TRE, pain science, body-map studies and online release claims.	Research, clinical metaphors and untested fixed maps are often blended together.

This is a map of intersecting traditions, not a single chain of discoveries. Yoga did not experimentally prove Reich; autonomic neuroscience did not validate organ-emotion correspondences; modern tissue research did not establish that grief resides in fascia. Similar language can conceal very different meanings.

1. Darwin, C. The Expression of the Emotions in Man and Animals (1872). Primary historical text.
2. OpenStax. Psychology 2e, section 10.4: Emotion (2020). Historical theory overview.
5. Reich, W. Character Analysis (1933; expanded English editions 1940s). Historical bibliographic reference; full text not accessed.
9. Sensorimotor Psychotherapy Institute. About: history, principles and method. Undated. Developer account.
32. Jacobson, E. Progressive Relaxation (1929). Historical bibliographic reference; full text not accessed.

3. Indian traditions: impressions and practice

Yoga: samskara, vritti and embodied discipline

In classical yoga, samskaras are latent impressions or dispositions that shape subsequent experience. Vrittis are activities or modifications of mind; practice and non-attachment address their hold on experience. These ideas can illuminate recurring habits without equating an impression with a deposit in a hip muscle. Patanjali's discussion of posture centres on steadiness and ease rather than a catalogue of emotions assigned to muscles.³⁰

Prana belongs to a traditional account of vitality; nadis and chakras belong to subtle-body frameworks whose details differ across texts and lineages. They are not interchangeable with measurable oxygen, peripheral nerves, lymphatic vessels or endocrine glands. A chakra practice may be personally meaningful without its imagery constituting verified anatomical information.

Ayurveda: mind, constitution and tissue

Ayurveda considers body, mind, daily routine, environment and constitution together. Vata, pitta and kapha are traditional organising principles. Sattva, rajas and tamas provide another vocabulary for qualities of mind. Mamsa dhatu refers to muscle tissue, but a traditional tissue category does not establish that individual muscles retain discrete emotional memories. Clinical evidence must be evaluated for each treatment and condition.²⁹

Where modern “hip-opening” claims fit

Statements such as “the hips store sadness” are common in modern wellness settings, but should not be represented as a universal conclusion of ancient yoga. Hips participate in sitting, standing, locomotion, protection and intimate movement. Stretching them may therefore feel vulnerable, effortful, pleasant, frustrating or emotionally evocative depending on context.

A respectful teaching approach offers both levels explicitly: “This tradition associates the pelvic region with particular themes; anatomically, we are exploring a comfortable range of hip movement.” It leaves interpretation with the participant and does not promise that a posture removes grief, sexual trauma or a karmic obstruction.

Example

Someone feels tears during a supported rest after movement. A contemplative interpretation might emphasise allowing experience to arise. A psychological interpretation might emphasise attention, relief or association. Both can be explored as interpretations; neither makes the hip the proven storage site.

29. NCCIH. Ayurvedic Medicine: In Depth. Living public-health resource.

30. Patanjali. Yoga Sutras, especially 1.2, 1.18, 2.10-11 and 2.46-49. Classical text; dating and translations vary. Historical reference, not clinical evidence.

4. Chinese and other correspondence systems

Traditional Chinese medicine

Classical Chinese medicine describes reciprocal relationships between emotional life and functional organ systems. In a familiar five-phase presentation, anger relates to the Liver system, joy to Heart, pensiveness to Spleen, grief to Lung and fear to Kidney. These are traditional correspondences; translations and elaborations vary. Capitalised organ names indicate a broader traditional functional concept, not simply the anatomical organ.³¹

Traditional association	What it does not establish
Liver / wood / anger	Anger is not proven to be stored in the liver, tendons or an individual muscle.
Heart / fire / joy	Joy is not a pathological deposit in cardiac muscle.
Spleen / earth / pensiveness	Thinking or worry cannot be diagnosed from a muscle assigned to a meridian.
Lung / metal / grief	Breathing-related grief sensations do not locate grief in lung tissue.
Kidney / water / fear	Fear does not establish kidney disease or psoas storage.

Meridian-based muscle charts used in some modern applied-kinesiology systems add another interpretive layer. Testing a muscle's resistance does not provide a validated test of an unseen emotion, truthfulness, an organ disorder or a traumatic event. Ordinary clinical strength testing has a different purpose: assessing force and neurological or musculoskeletal function.

Greek humours and later body symbolism

Humoral medicine associated temperament with bodily fluids, including the historical connection between melancholy and black bile. Modern “body language” dictionaries sometimes assign fixed meanings to left versus right sides, knees, feet or particular pains. These historical and symbolic systems should be understood on their own terms, not relabelled as findings from neuroscience.

TCM includes multiple practices, and evidence for one intervention cannot validate the entire explanatory system. A clinical benefit from acupuncture, tai chi or another practice would still require a separate investigation to establish an emotion-storage mechanism.²⁸

28. NCCIH. Traditional Chinese Medicine: What You Need To Know. Living public-health resource.

31. Huangdi Neijing, Suwen, especially chapter 5. Composite classical Chinese medical text. Historical reference; translations vary; not clinical evidence.

5. Expression, bodily feeling and appraisal

Darwin and emotional expression

Darwin's 1872 work examined expressions in humans and other animals. Habits, antagonistic movements and nervous activity helped explain visible behaviour. The lasting insight is that muscles participate in communication and action. A facial expression is an event or pattern, not a container in which its meaning is permanently kept. ¹

James-Lange and Cannon-Bard

James's 1884 proposal placed the perception of bodily changes at the centre of emotional experience; Lange independently emphasised bodily physiology. On this view, trembling and other changes contribute to the experience of fear. Cannon challenged the sufficiency and specificity of peripheral feedback, helping establish a central-brain account associated with Cannon and Bard. Neither account demonstrates long-term emotion storage in muscle fibres. ^{2,3}

Two-factor and appraisal accounts

Schachter and Singer's two-factor approach emphasised arousal plus its interpretation. Appraisal theories, associated especially with researchers such as Richard Lazarus and Klaus Scherer, examine evaluations of relevance, threat, responsibility and coping. They help explain why a racing heart can feel exciting in one setting and frightening in another. Their predictions concern appraisal and response, not a fixed muscular address. ²

Facial feedback and posture

The facial-feedback hypothesis asks whether making an expression can influence emotion. Postural-feedback theories ask related questions about uprightness, openness and movement. Even if a bodily manipulation changes a feeling, that would demonstrate influence rather than storage. Effects can depend on task, expectations, social setting and how the manipulation is performed.

The distinction matters practically: choosing a more comfortable posture may help someone engage with a conversation. It does not mean a slumped posture reveals depression, a smile guarantees happiness, or a stretch reveals a suppressed memory. The same person can use a facial or postural pattern for several different purposes.

A unifying question

Does the body express emotion, help generate it, shape its interpretation, or all three? Contemporary research addresses these interacting possibilities. None requires a one-muscle, one-emotion inventory.

1. Darwin, C. The Expression of the Emotions in Man and Animals (1872). Primary historical text.

2. OpenStax. Psychology 2e, section 10.4: Emotion (2020). Historical theory overview.

3. James, W. What Is an Emotion? Mind 9 (1884), 188-205. Historical bibliographic reference; full text not accessed.

6. Dissociation, catharsis and muscular armour

Janet, Breuer and Freud

Late nineteenth-century work on dissociation and hysteria helped make persistent, involuntary consequences of overwhelming experience a subject of psychological inquiry. Pierre Janet emphasised failures of psychological integration. Breuer and Freud's early cathartic approach connected symptoms with emotionally charged experiences and their expression. These were historically important clinical interpretations, not controlled demonstrations of memory in tissue.⁴

Catharsis is the idea that expressing an inhibited emotion can bring relief. Relief may occur, but intense expression is not a universal treatment mechanism. Feeling worse during an exercise is not proof that it is working, and increasing emotional intensity is not inherently therapeutic.

Wilhelm Reich

Reich's character analysis connected enduring psychological defences with characteristic bodily restraint. His "muscular armour" described habitual tension that he interpreted as limiting expression and protecting against painful feeling. Breath, posture and bodily interventions became part of his work. Character Analysis began in 1933 and changed substantially in later editions; the mature segment model should not be projected wholesale onto the earliest edition.⁵

The clinically interesting observation is that protection can become habitual. The additional claim that a bodily pattern reliably identifies a specific buried conflict requires separate evidence. Reich's later orgone-energy claims are not an accepted mechanism in contemporary physiology.

What remains useful, and what does not follow

"Armour" can be an optional metaphor for a person who notices bracing when exposed or criticised. It should not become a diagnosis imposed on a stranger's posture. Pain, disability, occupation, training, injury and anatomy can all shape movement. No body shape establishes someone's character, morality, sexuality or trauma history.

A collaborative question is "What do you notice when your shoulders settle?" A leading claim is "Your shoulders prove that you are carrying childhood rejection." The first invites observation; the second manufactures certainty that the examination cannot support.

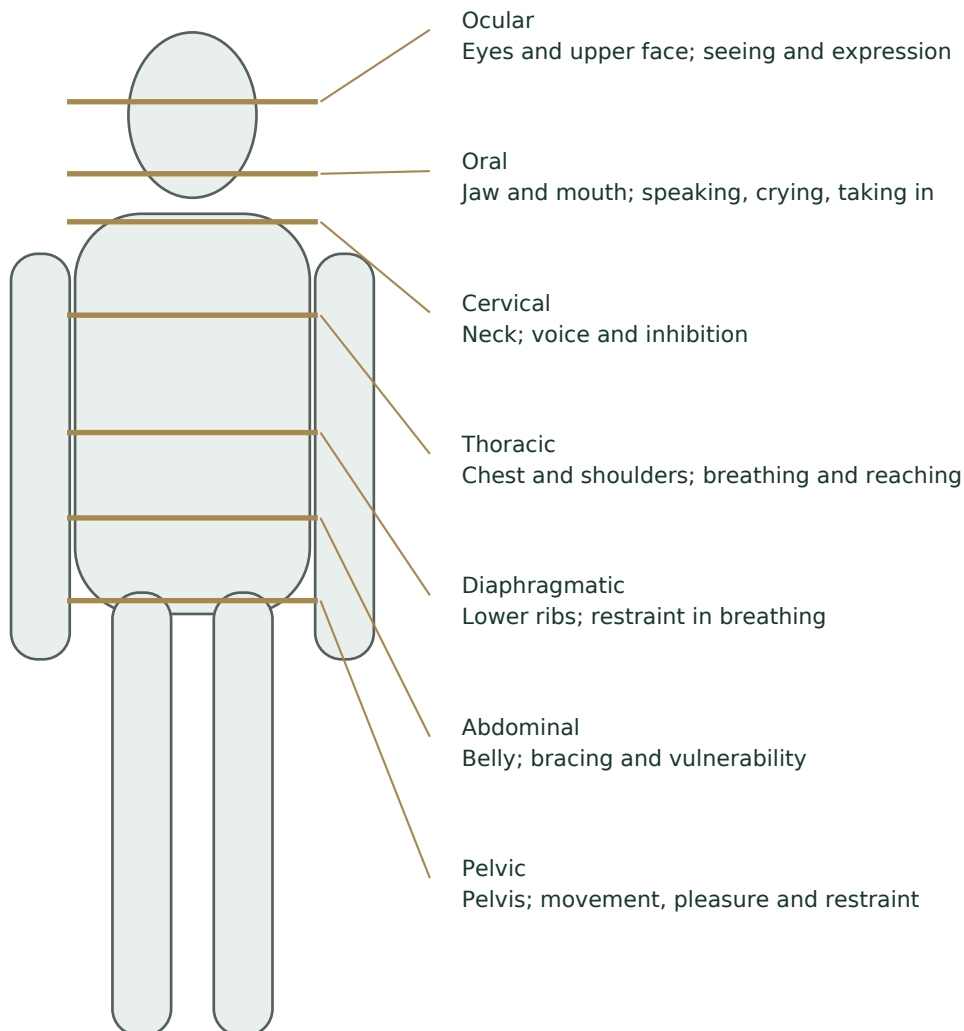
4. Breuer, J., and Freud, S. *Studies on Hysteria* (1895). Historical bibliographic reference; full text not accessed.

5. Reich, W. *Character Analysis* (1933; expanded English editions 1940s). Historical bibliographic reference; full text not accessed.

6. Alexander Lowen Foundation. *What is Bioenergetics?* Undated. Practitioner account, not independent effectiveness evidence.

7. Reich's seven armour segments

Historical schematic only. These are broad rings in a therapeutic theory, not anatomical compartments or a validated emotion map. The short descriptions below summarise themes in Reichian and later body-therapy language; formulations vary by school.



Some practitioners use this model to explore expression, but it has not established that a specific ring contains a specific emotion. There is no evidence-based instruction to “break” armour through painful pressure, forced breathing or emotional confrontation.

Use the drawing to understand the history of a theory. Do not use it to diagnose an emotion, find a memory or determine where another person needs to be touched.

5. Reich, W. Character Analysis (1933; expanded English editions 1940s). Historical bibliographic reference; full text not accessed.

6. Alexander Lowen Foundation. What is Bioenergetics? Undated. Practitioner account, not independent effectiveness evidence.

8. Later schools of body-oriented work

School / influential figures	Central idea	Evidence boundary
Bioenergetic analysis: Alexander Lowen and John Pierrakos	Breathing, grounding, movement and expression are combined with psychotherapy; habitual tensions are interpreted as defences.	Practitioner theory. “Energy” here should not be confused with laboratory cellular bioenergetics.
Gestalt and experiential approaches	Awareness of present experience, gesture and unfinished interpersonal concerns.	A movement experiment may reveal meaning to the participant; it cannot read tissue memory.
Feldenkrais and Alexander Technique	Learned movement, coordination, attention and unnecessary effort.	Movement education does not require a muscle-specific emotion theory.
Structural integration / Rolfing	Manual work and movement education directed at relationships among posture and connective tissues.	Changes in comfort or movement do not show emotions being removed from fascia.
Hakomi: Ron Kurtz; sensorimotor work: Pat Ogden	Mindful attention to habitual experience and body patterns; developmental and relational themes.	These are clinical frameworks. Technique-specific claims need technique-specific trials.
Primal and cathartic approaches	Strong emotional expression is treated as a route to early pain or unmet needs.	Intensity, screaming or exhaustion is not evidence of recovery or factual memory retrieval.
Bodynamic and other muscle-character systems	Specific muscular patterns are interpreted in relation to development and psychological functions.	No universally validated muscle-by-muscle emotional diagnostic map is established.

These approaches are not interchangeable. Some primarily teach movement; some are psychotherapy; some use hands-on work. A certificate in one modality does not necessarily qualify a practitioner to diagnose or treat PTSD. Ask about the person's underlying professional training, scope and referral practice.

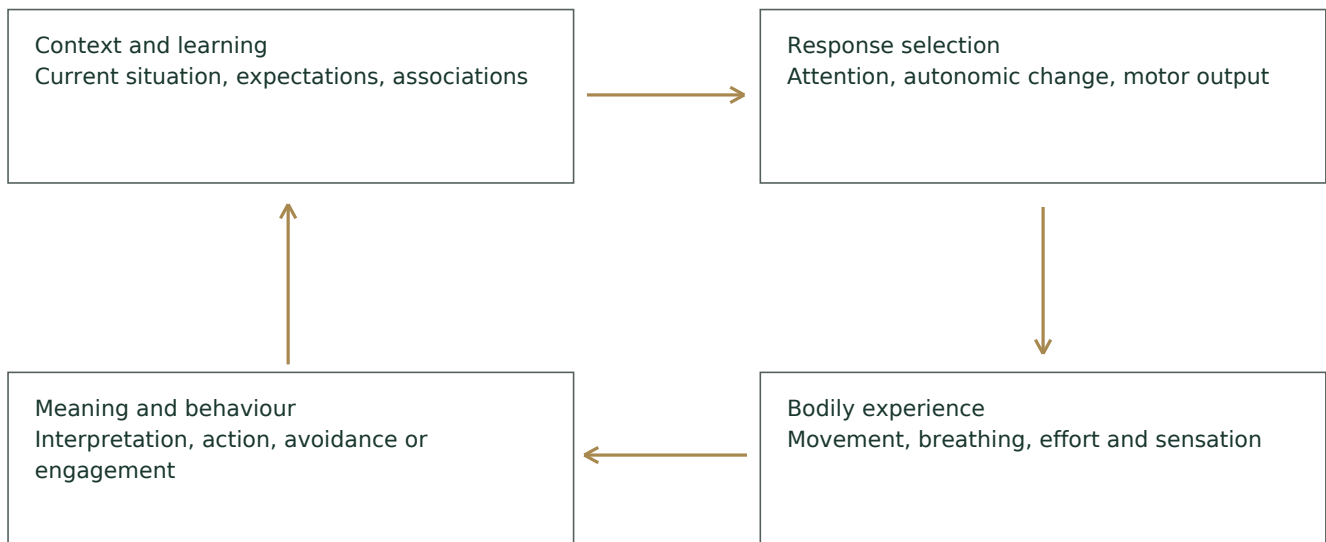
6. Alexander Lowen Foundation. What is Bioenergetics? Undated. Practitioner account, not independent effectiveness evidence.

9. Sensorimotor Psychotherapy Institute. About: history, principles and method. Undated. Developer account.

20. NCCIH. Massage Therapy: What You Need To Know. Living public-health resource.

9. The modern brain-body explanation

A plausible account does not need hidden deposits. An anticipated confrontation, a painful movement or a familiar cue can alter appraisal, attention, breathing and motor preparation. The resulting sensations can feed back into interpretation. A person may then brace more, move less or avoid the situation. This is a systems-level explanation, not a claim that every episode follows a rigid sequence.



Conceptual feedback diagram. It contains no measured quantities and is not a diagnostic model.

Where skeletal muscles enter the system

Motor commands arrive through somatic motor pathways and neuromuscular junctions. A protective contraction may involve neck, trunk or limb muscles depending on the task. Autonomic arousal and skeletal motor activity are coordinated but are not identical systems: most skeletal muscles are not directly relaxed by a vagal command.

Repeated habits can become easy to re-enact. Fatigue, poor sleep, ongoing demands and pain can keep them prominent. An exercise may help by changing the immediate pattern, creating a tolerable experience of movement, or restoring a sense of choice. These are candidate explanations; not every beneficial exercise acts through the same mechanism.

15. Barrett, L. F. The theory of constructed emotion: an active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience* 12 (2017), 1-23.

24. International Association for the Study of Pain. Terminology: pain, nociception and nociplastic pain. Living terminology resource.

10. Memory is not a muscle archive

Several meanings of memory

Autobiographical memory concerns events in one's life. Procedural learning concerns skills and habits. Conditioning concerns learned relationships among cues, responses and consequences. These processes involve neural systems. A learned protective movement can feel automatic without a conscious recollection accompanying it.

“Muscle memory” in sport usually refers to skilled movement becoming well learned. Muscle tissue can also retain training-related biological adaptations. Neither use means that a muscle contains a particular childhood episode, emotion or verbal message. Biological persistence is not the same as psychological content.

Implicit responses and reminders

A person may tense on hearing a door slam because that sound has become associated with danger. The response can include startle, breath-holding or an urge to leave. The cue, interpretation and motor response form an interaction; the frightened experience need not be stored in the specific muscles that contract.

Why a stretch can bring up a memory

A posture, smell, touch, room, song or internal sensation can act as an associative cue. Attention may make a previously unnoticed feeling more salient. A memory arriving during stretching therefore does not locate its storage in the stretched tissue. Nor does it establish that every detail of the memory is accurate.

Vividness, tears and bodily certainty are experiences to treat respectfully, not independent corroboration of historical facts. Practitioners should avoid suggesting an event, naming a perpetrator or interpreting a sensation as proof of abuse. Trauma-informed care can address present distress without requiring a recovered-memory narrative.

Why this distinction is hopeful

If the problem involves learned protection and present conditions, help can include better sleep, safer relationships, pacing, physiotherapy, psychotherapy, comfortable movement and practical changes. There is no need to locate and excavate every supposed pocket of emotion. Some people recover with little dramatic bodily expression.

9. Sensorimotor Psychotherapy Institute. About: history, principles and method. Undated. Developer account.

15. Barrett, L. F. The theory of constructed emotion: an active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience* 12 (2017), 1-23.

22. Norman, S., Hamblen, J., and Schnurr, P. Overview of Psychotherapy for PTSD. US National Center for PTSD; summarises 2023 VA/DoD guideline.

11. Embodiment and interoception

Somatic markers

Antonio Damasio's somatic-marker account proposes that bodily signals or their neural representations help guide decisions, especially when outcomes are uncertain. A “gut feeling” can be understood as information influencing choice. A marker is not a parcel of emotion inside abdominal muscle.³³

Predictive processing and constructed emotion

Predictive accounts propose that prior experience and current context shape the interpretation of sensory signals. Barrett's theory of constructed emotion gives interoception and learned concepts a central role. This is an influential theoretical account, not the sole settled model of emotion. It helps explain why similar sensations can receive different meanings.¹⁵

Bodily maps

Nummenmaa and colleagues' 2014 study is widely cited for maps of reported bodily activation and deactivation during emotions. Its maps concern where people report feeling changes. They are not a muscle dissection, a tissue assay or a map of long-term storage. Full-text access was restricted for this review, so detailed numerical claims are not reproduced.¹⁶

A 2025 theoretical preprint proposes that such maps can combine physiological signals, behavioural engagement and concepts or metaphors. That is a useful caution: a body drawing is a structured account of experience, not necessarily a direct measurement of muscle activity.³⁷

Practical example: the same chest sensation

Imagine three situations: anticipating a first date, waiting for a difficult meeting and climbing a hill. A strong heartbeat can occur in all three. Naming the feeling requires information about context and the person's interpretation. A chest location alone cannot distinguish excitement, fear or exertion.

Body awareness is therefore best paired with curiosity: “What is the sensation? What is happening around me? What do I need?” Constantly searching for hidden emotion in every sensation may increase preoccupation rather than understanding. External attention is a valid alternative when inward attention becomes overwhelming.

15. Barrett, L. F. The theory of constructed emotion: an active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience* 12 (2017), 1-23.

16. Nummenmaa, L., Glerean, E., Hari, R., and Hietanen, J. K. Bodily maps of emotions. *PNAS* 111 (2014), 646-651. Publisher record located; full-text access restricted.

33. Damasio, A. R. *Descartes' Error* (1994). Historical theoretical reference; full text not accessed.

37. Daikoku, T., Minatoya, M., and Tanaka, M. Mapping Emotional Feeling in the Body: A Tripartite Framework for Understanding the Embodied Mind (2025). Preprint; theoretical synthesis.

12. Stress physiology and polyvagal theory

Established ground

The autonomic nervous system helps regulate internal organs. Sympathetic and parasympathetic activity interact; neither is simply “bad” or “good.” Healthy functioning involves appropriate mobilisation and recovery. Skeletal muscle bracing, breathing and cardiovascular changes can occur together, but their presence does not identify one specific emotion.

The polyvagal proposal

Stephen Porges introduced polyvagal theory in the 1990s. It connects autonomic organisation with defensive behaviour and social engagement, using concepts including neuroception and co-regulation. Its clinical language commonly describes mobilisation, immobilisation and connection. Porges' 2025 article defends and develops this account.¹²

The scientific dispute

Critics challenge important evolutionary and physiological premises. Doody and colleagues' 2023 author manuscript objects to an overly simple contrast between asocial reptiles and social mammals. Grossman's 2023 critique is an important further-reading source, although its full text was not accessible here. Porges disputes the critiques. The model should therefore be labelled contested rather than presented as established autonomic anatomy.^{12,13,14}

Feeling calm after a supportive conversation does not distinguish polyvagal theory from alternative explanations involving attention, learning, attachment, expectations and ordinary autonomic regulation. A beneficial practice can remain useful even if its proposed explanatory theory is disputed.

Avoid three shortcuts

Shortcut	More accurate interpretation
“Freeze means dorsal vagal shutdown.”	Freezing, fainting, dissociation and fatigue are different phenomena and require context.
“A higher HRV proves trauma has released.”	Heart-rate variability is affected by breathing, posture, measurement and other factors; it is not a trauma meter.
“This pose resets the vagus and releases the psoas.”	A comfortable posture may change experience; a specific reset or release mechanism has not been established.

12. Porges, S. W. Polyvagal Theory: Current Status, Clinical Applications, and Future Directions. *Clinical Neuropsychiatry* 22 (2025), 169-184.

13. Grossman, P. Fundamental challenges and likely refutations of the five basic premises of the polyvagal theory. *Biological Psychology* 180 (2023), 108589. Bibliographic lead; full text not accessed.

14. Doody, J. S., Burghardt, G., and Dinets, V. The Evolution of Sociality and the Polyvagal Theory (2023). Author manuscript/preprint.

13. Fascia, cells and pain theories

Fascia and myofascial release

Fascia is connective tissue associated with muscles and other structures. It has mechanical and sensory roles. Manual treatment can change perceived stiffness or pain, but a felt softening does not show that emotional material left the fascia. Some bodywork schools describe “somatoemotional release” or tissue memory; these are proposed explanations, not established records that can be read from touch.

Neuropeptides and cellular memory

Candace Pert's popular work helped spread the idea of extensive body-mind chemical communication. Chemical signalling outside the brain is real. The further claim that a particular feeling is permanently held in a particular muscle does not follow from receptors or peptides being present. Receptor distribution is not a map of the semantic content of memories.³⁵

Immune memory, epigenetic changes and exercise adaptation are distinct biological phenomena. Calling them “memory” does not establish that they encode shame, anger or a relationship event in a muscle. Transgenerational and cellular-trauma claims require particular caution about mechanism, population and what was actually measured.

Sarno, pain reprocessing and modern pain science

John Sarno proposed that some pain was linked to unconscious emotional conflict; his historical tension-myositis explanation included a physiological account that should not be assumed established. Contemporary pain reprocessing therapy investigates different, more testable ideas about threat beliefs and pain. Evidence for one cannot retrospectively prove every aspect of Sarno's account.³⁶

Pain can involve nociceptive input, nerve disease or injury, altered nociceptive processing, and combinations of these. Psychological and social influences do not make pain imaginary. Equally, attributing all pain to emotion can miss physical disease. A positive response to psychological treatment does not mean the original symptoms were fabricated.²⁴

The question “What maintains this person's symptoms?” is clinically more productive than “Which emotion is hiding in this knot?” It leaves room for physical findings, nervous-system processes, meaningful stressors and rehabilitation together.

20. NCCIH. Massage Therapy: What You Need To Know. Living public-health resource.

24. International Association for the Study of Pain. Terminology: pain, nociception and nociplastic pain. Living terminology resource.

35. Pert, C. B. Molecules of Emotion (1997). Historical popular-science reference; full book not accessed.

36. Sarno, J. E. Healing Back Pain (1991). Historical clinical theory reference; full book not accessed.

14. Somatic therapy and “discharge”

Somatic Experiencing

Peter Levine's approach attends to sensation, resources and defensive responses, often using gradual contact with difficult experience. Titration means proceeding in small tolerable amounts; pendulation describes moving attention between more and less activating experience. These are clinical concepts. The proposed completion or discharge of a defensive response should not be equated with a measured substance leaving a muscle.^{7,8}

Sensorimotor psychotherapy and Hakomi

Pat Ogden's work integrates bodily patterns with emotional and cognitive processing. Her institute describes roots in the 1970s and establishment of her school in 1981 following involvement with Hakomi. The therapeutic focus may include posture, impulses and boundaries. This provides a way to explore present patterns, not a test that determines what happened in the past.⁹

TRE and shaking-based methods

Tension and Trauma Releasing Exercises, associated with David Berceli, aim to elicit tremoring after muscular activity. Proponents interpret this as a route to reducing stress or discharging defensive activation. The evidence assessed here does not establish a muscle-specific trauma-release mechanism. This review does not provide a forced-tremor protocol or treat tremoring as necessary for recovery.

Tremor can have multiple explanations: effort, fatigue, cold, anxiety, medication effects or neurological causes. An involuntary movement is not automatically therapeutic. New, unexplained or persistent tremor deserves assessment rather than an assumption that “trauma is coming out.”

Popular syntheses

The Body Keeps the Score helped popularise the lasting bodily consequences of trauma. Its influence is not evidence for a literal muscle archive. “The body remembers” can serve as shorthand for enduring responses; it becomes misleading when used as proof that a therapist can locate or extract a specific event.³⁴

A trauma treatment may incorporate body awareness while still depending on careful assessment, a therapeutic relationship and individual pacing. The exact mechanisms remain open to investigation.

7. Levine, P. A., and Frederick, A. *Waking the Tiger: Healing Trauma* (1997). Historical bibliographic reference; full text not accessed.

8. Somatic Experiencing International. SE 101. Undated. Developer account of the approach.

9. Sensorimotor Psychotherapy Institute. About: history, principles and method. Undated. Developer account.

34. van der Kolk, B. *The Body Keeps the Score* (2014). Influential clinical synthesis; full book not accessed.

15. Evidence: what studies can establish

Evidence / example	What it supports	What it cannot establish
Body-map questionnaires: Nummenmaa et al., 2014	Reported feelings have bodily locations and patterns.	A map of fibres containing emotional memory.
Somatic Experiencing RCT: Brom et al., 2017	63 adults with PTSD; 15 weekly sessions compared with a waitlist; symptom improvement favoured treatment.	Superiority to established trauma therapies or proof of muscular discharge.
Structured breathing trial: Yilmaz Balban et al., 2023	Daily five-minute practices over a month; exhale-focused cyclic sighing showed promising mood and breathing-rate findings.	That an emotion left the diaphragm; a general cure for PTSD.
Pain reprocessing RCT: Ashar et al., online 2021	A test of a psychological intervention in selected people with chronic back pain.	That all pain is emotional, or that every pain mechanism is the same.
Yoga and massage clinical literature	Possible benefits for some symptoms and populations; certainty varies by condition.	That specific poses or pressure points remove specific emotions.
Laboratory EMG	Electrical activation associated with motor-unit activity under defined conditions.	A detector of a person's hidden history or the meaning of a contraction.

Why a positive trial is not proof of the story

A package of care can combine attention, education, practice, expectation, social support and movement. If people improve, the package may have helped. To show that a specific mechanism caused improvement, investigators need additional measurements and comparisons that isolate it. “People felt better” and “the proposed mechanism is correct” are separate conclusions.

An illustration: a shoulder massage helps after a difficult week. Reduced pain, quiet time, supportive touch, expectations and the passing of time are competing explanations. The experience alone cannot decide among them.

10. Brom, D., et al. Somatic Experiencing for Posttraumatic Stress Disorder: A Randomized Controlled Outcome Study. *Journal of Traumatic Stress* 30 (2017), 304-312.

16. Nummenmaa, L., Glerean, E., Hari, R., and Hietanen, J. K. Bodily maps of emotions. *PNAS* 111 (2014), 646-651. Publisher record located; full-text access restricted.

18. Yilmaz Balban, M., et al. Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell Reports Medicine* 4 (2023), 100895.

23. Ashar, Y. K., et al. Effect of Pain Reprocessing Therapy vs Placebo and Usual Care for Patients With Chronic Back Pain. *JAMA Psychiatry* 79 (2022), 13-23; online 2021.

16. Evidence quality and unanswered questions

Promising findings deserve precise limits

In Brom and colleagues' trial, allocation was 33 participants to treatment and 30 to waiting. The waitlist subsequently received treatment. This design supports preliminary effectiveness but does not control fully for therapist contact or expectancy. It was not a muscle-storage experiment. Replication, active comparison and longer follow-up matter.¹⁰

The 2021 Somatic Experiencing scoping review maps an emerging literature. A scoping review helps identify available work and gaps; it is not equivalent to a large body of independent, high-certainty trials. Training organisations' clinical claims should remain distinct from independent assessment.¹¹

The breathing trial tested particular practices and outcomes in a remote setting. Its findings should not be generalised to all breathwork. In particular, a benefit from one brief breathing technique is not a reason to recommend intense hyperventilation, long breath holds or deliberately induced distress.¹⁸

Counterexamples and variability

A small 2026 experimental preprint involving 19 participants found that trapezius EMG in its protocol was driven mainly by physical exertion, with no reliable effect of its stress task. This does not refute all stress-related muscle activity. It shows why task conditions matter and why a single physiological signal is an unreliable emotional label.³⁹

A 2020 mindfulness trial preprint in veterans examined brain measures related to internal bodily signals. Such work provides hypotheses about regulation and interoception, rather than evidence that memories are held in muscle. A mediator in a statistical model is not automatically a uniquely established causal mechanism.³⁸

For clinically significant trauma symptoms

The US National Center for PTSD summarises guideline support for trauma-focused treatments including prolonged exposure, cognitive processing therapy and EMDR. Body-based self-care can be an adjunct. It should not be sold as an assured substitute for assessed treatment, particularly when symptoms are persistent or disabling.²²

10. Brom, D., et al. Somatic Experiencing for Posttraumatic Stress Disorder: A Randomized Controlled Outcome Study. *Journal of Traumatic Stress* 30 (2017), 304-312.

11. Kuhfuss, M., et al. Somatic experiencing - effectiveness and key factors of a body-oriented trauma therapy: a scoping literature review. *European Journal of Psychotraumatology* 12 (2021), 1929023.

18. Yilmaz Balban, M., et al. Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell Reports Medicine* 4 (2023), 100895.

22. Norman, S., Hamblen, J., and Schnurr, P. Overview of Psychotherapy for PTSD. US National Center for PTSD; summarises 2023 VA/DoD guideline.

38. Kang, S. S., Sponheim, S. R., and Lim, K. O. Interoception Underlies The Therapeutic Effects of Mindfulness Meditation for PTSD (2020). Trial report, preprint.

39. Bosch, E. Separating Acute Psychological Stress from Physical Exertion in Biometric Signals (2026). Small experimental preprint; not confirmatory clinical evidence.

17. Muscle atlas: front view

Possible experiences include clenching, bracing, restricted breathing, heaviness or restlessness. Any of these can accompany more than one emotion, physical exertion or a non-emotional condition.

Face and jaw
Expression; clenching

Neck muscles
Turning; stabilising

Pectorals and deltoids
Arm movement; bracing

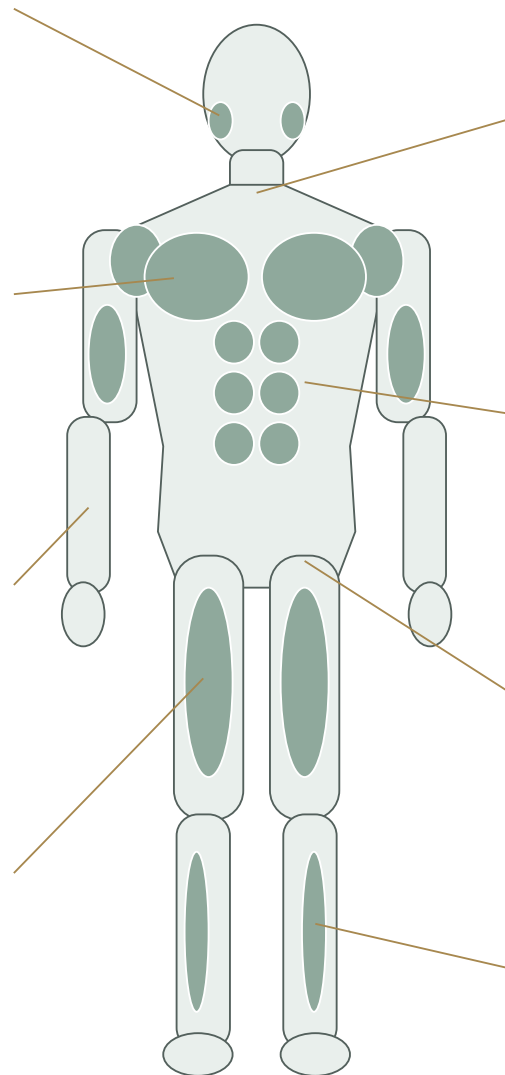
Breathing and belly
Deep diaphragm; abdominal wall

Forearm and hand
Gripping; repetitive use

Hip flexors / adductors
Deep hip region; not surface anatomy

Quadriceps
Standing; knee extension

Shins and feet
Walking; balance



Original regional schematic, not to scale. Colours identify selected muscle regions; they do not indicate emotions, pain intensity or stored trauma.

Deep structures are identified by region rather than drawn as visible superficial muscles. The diaphragm lies beneath the lungs; the psoas lies deep beside the lumbar spine and crosses the hip. Neither has a validated emotional storage assignment.

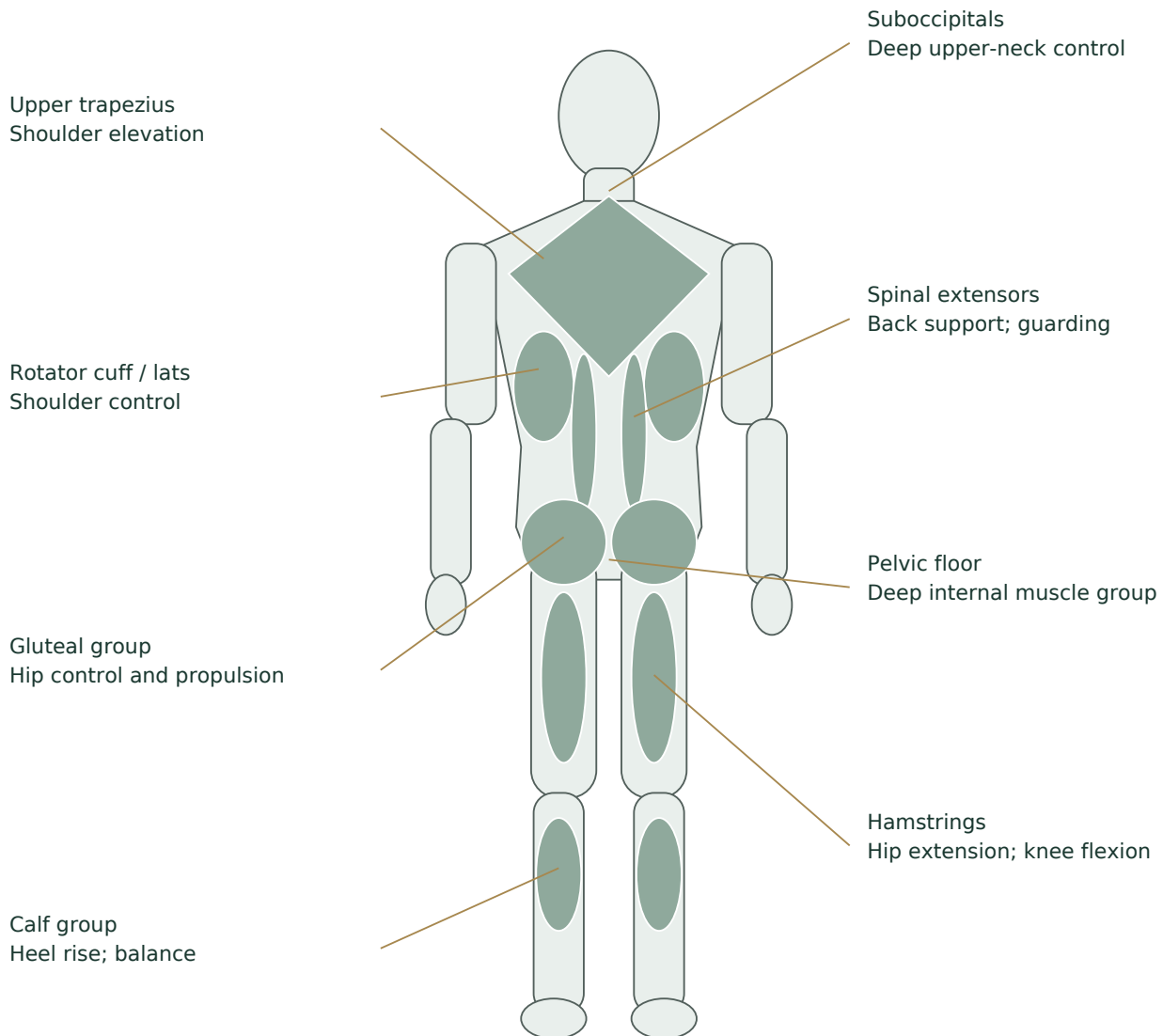
25. OpenStax. Anatomy and Physiology 2e, section 11.3: Axial Muscles of the Head, Neck, and Back (2022).

26. OpenStax. Anatomy and Physiology 2e, section 11.4: Axial Muscles of the Abdominal Wall, and Thorax (2022).

27. OpenStax. Anatomy and Physiology 2e, section 11.6: Appendicular Muscles of the Pelvic Girdle and Lower Limbs (2022).

18. Muscle atlas: back and deep regions

Back and hip tension may be influenced by workload, movement habits, pain and stress. The locations below cannot diagnose an emotion or a past event. Anatomical overlap is not evidence of a shared emotional meaning.



Original regional schematic, not to scale. Colours identify selected muscle regions; they do not indicate emotions, pain intensity or stored trauma.

A tense pelvic floor does not establish sexual trauma. A stiff back does not establish suppressed anger. These symptoms deserve a history and, when appropriate, physical assessment rather than a fixed emotional interpretation.

25. OpenStax. Anatomy and Physiology 2e, section 11.3: Axial Muscles of the Head, Neck, and Back (2022).

26. OpenStax. Anatomy and Physiology 2e, section 11.4: Axial Muscles of the Abdominal Wall, and Thorax (2022).

27. OpenStax. Anatomy and Physiology 2e, section 11.6: Appendicular Muscles of the Pelvic Girdle and Lower Limbs (2022).

19. Muscle catalogue: head, arms and trunk

Region and representative muscles	Possible function or experience	Emotion-storage assignment
Forehead / eyes: frontalis, corrugator supercilii, orbicularis oculi	Brow movement, eye closure, effort and expression.	None validated.
Mouth: zygomaticus major, orbicularis oris, buccinator, mentalis	Smiling, lip movement, chewing assistance and speech.	None validated.
Jaw: masseter, temporalis, medial and lateral pterygoids	Chewing and jaw movement; clenching can be habitual.	None validated; not an anger test.
Neck: sternocleidomastoid, scalenes, suboccipitals, splenius group	Head control; some assist breathing.	None validated.
Shoulder: trapezius, levator scapulae, rhomboids, deltoid	Scapular and arm movement; sustained effort.	None validated; "burden" is metaphor.
Rotator cuff: supraspinatus, infraspinatus, teres minor, subscapularis	Shoulder stability and rotation.	None validated.
Arm / hand: biceps, triceps, wrist and finger flexors/extensors, intrinsic hand muscles	Reaching, pushing, gripping and fine movement.	None validated.
Chest: pectoralis major/minor, serratus anterior; intercostals	Arm/scapular actions and rib movement.	None validated; not a grief container.
Diaphragm; rectus abdominis, obliques, transversus abdominis	Breathing and abdominal pressure; trunk control.	None validated.
Back: erector spinae, multifidus, quadratus lumborum, latissimus dorsi	Spinal control and movement; shoulder actions for lats.	None validated.

Emotion can accompany activity in these muscles. The statement "none validated" concerns a specific storage assignment, not a denial of bodily feelings. Exercise choices follow function and comfort, not inferred emotional content.

21. NIDCR. Temporomandibular Disorders (TMD). Living clinical information resource.

25. OpenStax. Anatomy and Physiology 2e, section 11.3: Axial Muscles of the Head, Neck, and Back (2022).

26. OpenStax. Anatomy and Physiology 2e, section 11.4: Axial Muscles of the Abdominal Wall, and Thorax (2022).

20. Muscle catalogue: pelvis and legs

Region and representative muscles	Possible function or experience	Emotion-storage assignment
Iliopsoas: psoas major and iliacus	Hip flexion and lumbopelvic mechanics; deep, not directly visible.	None validated; “fear muscle” is not a scientific diagnosis.
Gluteus maximus, medius and minimus	Hip extension, abduction and pelvic control.	None validated.
Deep rotators: piriformis, obturators, gemelli, quadratus femoris	Hip rotation and stabilisation.	None validated.
Adductors: longus, brevis, magnus; gracilis and pectineus	Control of thigh position and movement.	None validated.
Pelvic floor: levator ani group and coccygeus	Pelvic support and continence; may become overactive or weak.	None validated; symptoms alone do not establish trauma.
Quadriceps: rectus femoris; vastus lateralis, medialis and intermedius	Knee extension; rectus femoris also flexes the hip.	None validated.
Hamstrings: biceps femoris, semitendinosus, semimembranosus	Knee flexion and hip extension, with anatomical exceptions.	None validated.
Lower leg: gastrocnemius, soleus, tibialis anterior/posterior, fibularis group	Walking, ankle movement and foot support.	None validated.
Foot: long toe flexors/extensors and intrinsic muscles	Toe movement and balance.	None validated; grounding is a practice, not emotion drainage.

The psoas deserves a precise explanation

The psoas participates in movement and posture and can be involved in protective strategies, as can many muscles. Its proximity to other structures and participation in curling or moving do not make it a unique trauma reservoir. Deep abdominal pressure is not needed to explore comfortable hip movement and is not included in this guide.

26. OpenStax. Anatomy and Physiology 2e, section 11.4: Axial Muscles of the Abdominal Wall, and Thorax (2022).

27. OpenStax. Anatomy and Physiology 2e, section 11.6: Appendicular Muscles of the Pelvic Girdle and Lower Limbs (2022).

21. Emotions and bodily experience

This is an illustrative vocabulary, not a diagnostic chart or a reproduction of measured body-map data. The experiences listed are possible examples; any may be absent, reversed or shared by other emotions. No row identifies a muscle in which the emotion is stored.

Emotion or state	Possible bodily experience	Gentle starting option
Fear / anxiety	Bracing, fast breathing, trembling, cold hands or urge to move.	Look around; easy walking; unforced breathing.
Anger / frustration	Jaw or hand clenching, heat, increased effort; sometimes withdrawal.	Unclench; release a light grip; take a walking break.
Sadness / grief	Chest or throat sensations, tears, heaviness; sometimes agitation.	Supported sitting; comfortable breathing; connection.
Shame / embarrassment	Looking down, face warmth, hiding or tightening.	Eyes-open orientation and a freely chosen posture.
Disgust	Facial movement, nausea, withdrawal.	Move away from the trigger; find physical comfort.
Joy / excitement	Smiling, lively movement, butterflies, strong heartbeat.	Allow comfortable movement; no release required.
Love / affection / tenderness	Warmth, softening, reaching; individual variation.	Enjoy chosen contact or quiet attention.
Worry / guilt / rumination	Repeated bracing or restlessness; sometimes no clear sensation.	Movement break followed by a practical next action.
Loneliness / yearning	Heaviness, restlessness or little distinct sensation.	Gentle activity plus meaningful social contact.
Relief / calm / contentment	Easier breathing or reduced effort; not necessarily limp muscles.	Notice comfort without trying to intensify it.
Numbness / disconnection	Feeling distant, flat, unreal or less aware of the body.	External orientation; stop prolonged inward scanning.

Emotions are not contaminants. Often the helpful response is understanding, action, support or time. A movement practice can support that process without needing to eliminate the emotion itself.

16. Nummenmaa, L., Glerean, E., Hari, R., and Hietanen, J. K. Bodily maps of emotions. PNAS 111 (2014), 646-651. Publisher record located; full-text access restricted.

37. Daikoku, T., Minatoya, M., and Tanaka, M. Mapping Emotional Feeling in the Body: A Tripartite Framework for Understanding the Embodied Mind (2025). Preprint; theoretical synthesis.

22. What “emotional release” can feel like

Tears during a hip stretch

Illustrative scenario: a person cries during a long-held posture while reflective music plays. Possible contributors include emotional association, discomfort, relief, expectation and the permission to pause. The observation is real; the claim that sadness left the psoas is an interpretation. Leave the pose if needed and allow the person to decide whether to talk.

A jaw unclenches after a meeting

Illustrative scenario: someone notices their teeth pressed together before receiving feedback. Afterwards the jaw relaxes and they feel calmer. The change fits reduced effort and changed circumstances. A useful next step may be noticing the habit earlier, taking breaks or seeking dental advice for persistent symptoms. Naming it “anger stored in the jaw” is unnecessary.

Shaking after exertion

Illustrative scenario: the legs tremble after a demanding hold. Fatigue is a plausible explanation. Rest, reduce the demand and see whether it settles. Do not extend the hold to force a “breakthrough.” A practitioner should not declare that shaking proves a past trauma has been discharged.

A painful back during a stressful month

Illustrative scenario: a person is sleeping poorly, sitting longer and worrying about work. Several influences may interact. The response can address movement, workload, sleep, pain and emotional concerns together. Improvement after relaxation does not exclude a physical contributor or establish repressed emotion as the cause.

Nothing dramatic happens

Illustrative scenario: the person simply feels more comfortable and returns to their day. That can be a good outcome. Another person feels no change; that does not imply resistance, failure, “deeper blockage” or unwillingness to heal. The practice can be changed or stopped.

These scenarios are explanatory examples, not patient reports or evidence from clinical trials. An immediate emotional event and durable clinical recovery are different outcomes. Good evaluation asks what changes over days and weeks: function, sleep, distress, participation and agency.

23. Exercise principles and stop signs

The following twelve practices aim to reduce unnecessary effort, explore comfortable movement and support regulation. They are not treatments that remove specific emotions from specific muscles. The exact sequence and doses are conservative suggestions, not a clinically validated release protocol.

Start small and preserve choice

Choose one or two exercises. Start with about 30-60 seconds and use less range or effort than you think you need. Breathe normally; avoid straining or breath holds. Keep your eyes open if preferred. Stopping, sitting out and noticing little are all acceptable. There is no requirement to cry, shake or remember anything.

Physical adaptations

Use a stable chair or wall if balance is uncertain. With pregnancy, recent surgery, significant injury, osteoporosis or a heart, lung or neurological condition, adapt movements with a qualified clinician. Skip painful areas rather than pushing through. For joint hypermobility, prioritise support and control over larger stretches.

Do not use deep pressure on the front of the neck, the abdomen or an acutely painful area. Avoid forceful hip opening, bouncing, assisted end-range stretching and deliberately fatiguing tremor induction. Persistent jaw locking, pelvic pain or movement limitation merits relevant clinical assessment.

Stop and orient

Stop for sharp or spreading pain, numbness, dizziness, air hunger, escalating panic, flashbacks or feeling unreal or disconnected. Return to an easy position, breathe normally and look at the room. If symptoms persist, seek appropriate help. More distress is not proof of productive release.¹⁷

New chest pain, fainting, severe breathlessness, sudden weakness or other acute concerning symptoms require urgent medical attention rather than an exercise-based explanation.

Evidence boundary

Relaxation, yoga and massage have condition-specific evidence and limitations. That evidence does not validate each movement below as an isolated treatment. The exercises are practical adaptations informed by anatomy and general self-care; the intended benefits are modest and observable.^{17,19,20}

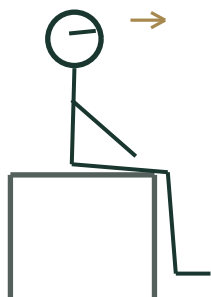
17. NCCIH. Relaxation Techniques: What You Need To Know. Living public-health resource.

19. NCCIH. Yoga: Effectiveness and Safety. Living public-health resource.

20. NCCIH. Massage Therapy: What You Need To Know. Living public-health resource.

24. Exercises: orient, breathe, unclench

01. Eyes-open orientation



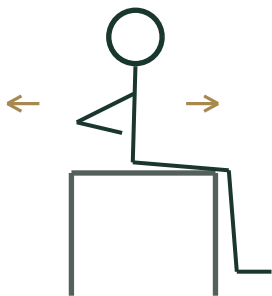
Area: Whole-person attention; no target muscle.

How: Sit supported. Slowly look around and name three neutral objects. Notice contact with the chair and floor. Let the head turn only comfortably.

Start: 30-60 seconds.

Purpose: Reconnect with the present environment. Adapt / stop: Use only eye movement if neck turning hurts; choose familiar objects if scanning feels activating.

02. Easy lower-rib breathing



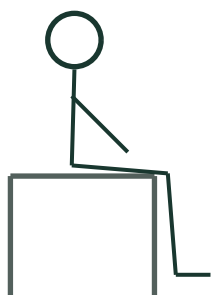
Area: Diaphragm and rib movement.

How: Sit comfortably. Let an ordinary breath arrive, then let it leave without pushing. If easy, allow the exhale to be slightly longer. Avoid deliberately large breaths.

Start: 4-6 comfortable breaths.

Purpose: Explore a less effortful breathing pattern. Adapt / stop: No holds or forced pace. Stop for dizziness, tingling, air hunger or rising anxiety; resume normal breathing.

03. Resting the jaw



Area: Masseter and temporalis region.

How: Sit with the head supported if helpful. Allow the teeth to separate slightly and the tongue to rest comfortably. Do not force the mouth open or press the jaw.

Start: 20-30 seconds, twice.

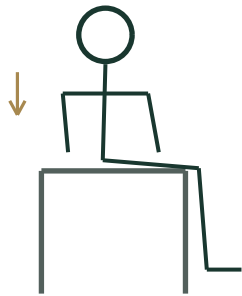
Purpose: Notice and interrupt unnecessary clenching. Adapt / stop: Stop if painful. Seek dental advice for persistent pain, locking or difficulty opening.

17. NCCIH. Relaxation Techniques: What You Need To Know. Living public-health resource.

21. NIDCR. Temporomandibular Disorders (TMD). Living clinical information resource.

25. Exercises: shoulders, hands, pushing

04. Gentle shoulder lift and settle



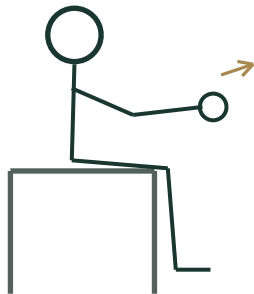
Area: Upper trapezius and shoulder region.

How: Lift the shoulders a small amount with light effort while breathing. Let them settle without pulling them down. Rest and notice the contrast.

Start: 3-5 slow repetitions.

Purpose: Explore the difference between contraction and less effort. Adapt / stop: Skip the lift if painful; support the forearms and simply rest instead.

05. Light hand squeeze and open



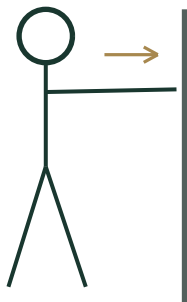
Area: Finger and wrist muscles.

How: Rest forearms on thighs or a table. Make a very light loose fist, then open the fingers gently. Keep the wrists comfortable and continue breathing.

Start: Squeeze 3 seconds; rest 10 seconds; repeat 3 times.

Purpose: A small progressive-relaxation experiment. Adapt / stop: Use release-only practice with arthritis, injury or pain. Do not squeeze hard.

06. Light wall press and release



Area: Pectorals, triceps and shoulder control.

How: Stand near a wall, palms below shoulder height. Apply gentle pressure without leaning heavily, then release. Notice the choice to begin and end the action.

Start: 3 seconds light effort; 10 seconds rest; 3 rounds.

Purpose: Explore controlled action and a sense of agency. Adapt / stop: Use a seated palm press into a table if balance is uncertain. Skip with painful wrists or shoulders; no breath-holding.

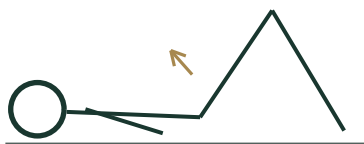
26. Exercises: spine, hips and rest

07. Small pelvic rocking

Area: Abdominal and spinal control.

How: Lie on a comfortable surface with knees bent and feet down. Gently tip the pelvis so the low back changes pressure against the surface, then return to neutral.

Start: 4-6 small repetitions.



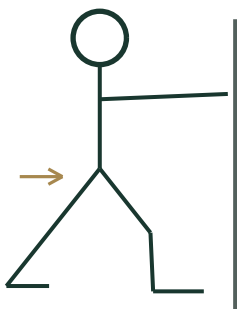
Purpose: Explore easy movement without seeking a strong stretch. Adapt / stop: Use seated rocking if floor access is difficult. Stop if pain spreads, tingling appears or symptoms increase.

08. Supported short split stance

Area: Hip-flexor region and balance.

How: Hold a stable support. Place one foot a short distance behind the other. Keep the trunk upright and shift weight slightly forward until the front of the rear hip feels a mild stretch.

Start: 10-15 seconds each side, once or twice.



Purpose: Explore comfortable hip extension. Adapt / stop: Do not arch the low back or force a long stance. Skip for hip pinching, unsteadiness or pain.

09. Supported rest

Area: General postural effort.

How: Rest on your back with lower legs on a stable chair if comfortable.

Alternatively lie on your side with pillows or sit supported. Let breathing find its own pace.

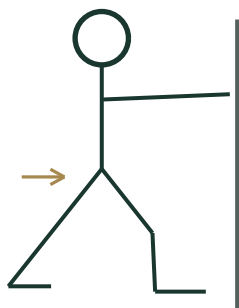
Start: 1-3 minutes.



Purpose: Reduce the demand to hold the body up. Adapt / stop: Choose side-lying or sitting when lying flat is unsuitable. Keep eyes open if closing them feels unsafe.

27. Exercises: legs, movement and integration

10. Gentle supported calf stretch



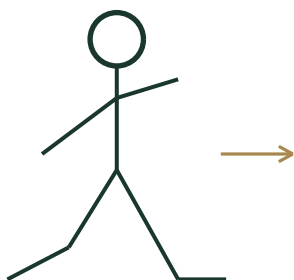
Area: Gastrocnemius and ankle movement.

How: Face a wall with hands supported. Step one foot slightly back, heel down and toes forward. Bend the front knee a little until the rear calf has a mild stretch.

Start: 10-15 seconds each side.

Purpose: Explore ankle comfort without strain. Adapt / stop: Shorten the stance if balance is uncertain. Stop for sharp pain; do not stretch a newly swollen, hot or painful calf.

11. Comfortable walking



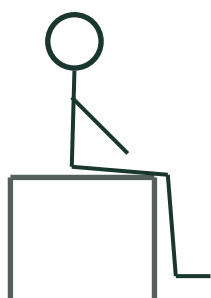
Area: Leg and trunk muscles in coordinated activity.

How: Walk at an easy pace where you can speak comfortably. Notice the environment and allow natural arm movement. Use an aid if you normally need one.

Start: 2-5 minutes; shorter if needed.

Purpose: Shift from prolonged bracing or stillness into ordinary activity. Adapt / stop: A seated march or heel lift is an alternative. Stop for dizziness, chest pain or unusual breathlessness.

12. Release-only body check



Area: Any comfortable region; whole-person attention.

How: Sit supported. Briefly notice hands, shoulders and jaw in turn. Invite a little less effort without forcing relaxation. Finish by naming one ordinary activity you will do next.

Start: 30-60 seconds.

Purpose: Carry a small change into daily life. Adapt / stop: If internal attention increases distress, look around instead. Do not search the body for hidden memories.

17. NCCIH. Relaxation Techniques: What You Need To Know. Living public-health resource.

19. NCCIH. Yoga: Effectiveness and Safety. Living public-health resource.

28. A ten-minute practice menu

Use this as a flexible sequence, not an obligation. Skip any step that is uncomfortable and finish earlier if you wish. The timings are suggested practice intervals, not evidence that ten minutes is an optimal therapeutic dose.

Time	Practice	What to notice
0:00-1:00	Orient to the room; sit or stand with support.	Am I present enough to continue?
1:00-2:00	Easy breathing or ordinary breathing with external attention.	Is breathing comfortable rather than controlled?
2:00-4:00	Choose jaw rest, shoulder settling or light hand release.	Is there less unnecessary effort?
4:00-6:00	Choose a small movement: pelvic rocking or comfortable walking.	Can I move without strain?
6:00-8:00	Supported rest, seated rest or continued easy movement.	Which position feels most workable?
8:00-9:00	Look around and return to normal movement.	Do I feel more connected to the room?
9:00-10:00	Write one observation and choose a practical next step.	What helps me participate in my day?

When the need is emotional

For grief, movement may create room to feel, but connection and mourning may be more relevant than a stretch. For anger, changing a situation or setting a boundary may matter. For loneliness, contact with another person may meet a need that relaxation cannot. The body is part of emotional life, not a replacement for its social meaning.

When the need is physical

A repetitive work task may call for breaks, ergonomic adjustment, conditioning or rehabilitation. A painful jaw may call for dental assessment. Pelvic symptoms may call for a pelvic-health physiotherapist. Choosing the relevant form of help is more useful than assigning each problem a hidden emotion.

When the need is clinical

Frequent flashbacks, substantial avoidance, persistent panic or disrupted functioning warrant professional assessment. A short self-care practice can accompany care, but it does not establish or rule out a diagnosis.

21. NIDCR. Temporomandibular Disorders (TMD). Living clinical information resource.

22. Norman, S., Hamblen, J., and Schnurr, P. Overview of Psychotherapy for PTSD. US National Center for PTSD; summarises 2023 VA/DoD guideline.

29. Observation sheet

Use a few short notes to learn what helps. This is a reflection sheet, not a validated symptom scale or a test of trauma release. There is no need to search for an explanation while practising.

Before practice	Your observation
Situation / recent activity	
Sensation and location, in ordinary words	
Comfort or tension, 0-10 if useful	
Emotion, if clear; "uncertain" is valid	
One practice selected; planned short duration	

After practice	Your observation
What changed physically?	
What changed emotionally, if anything?	
Any pain, dizziness or distress?	
What can I do a little more easily?	
Next practical action or support needed	

How to interpret a pattern

"My shoulders feel easier after a short walk" is an observation. "Walking removed responsibility from my trapezius" is an unsupported causal conclusion. Keep the useful observation without needing the second claim.

Over a week, look for changes in function and comfort rather than chasing a dramatic session. If practices repeatedly increase symptoms, stop that approach and review it with an appropriate professional. Restoring choice includes choosing not to continue.

30. Conclusions and a research agenda

The claim that emotions are “stored in muscles” brings together several different ideas: bodily expression, learned protective patterns, psychological defences, autonomic responses, subtle-body symbolism and speculative tissue memory. Their historical relationship does not make them a single proven theory.

The strongest practical conclusion is that bodily habits and emotional experience can influence one another. A person can work with movement and sensation without accepting a fixed map of emotions or an unverified discharge mechanism. Their experience remains meaningful even when its explanation is uncertain.

What would demonstrate literal storage?

A convincing study would first define the proposed stored entity. It would need to identify a reproducible tissue-specific signal, distinguish it from ordinary contraction, inflammation and neural activity, and show that it carries particular emotional information. It would then need to demonstrate selective alteration of that signal with predictable psychological effects, while controlling for expectation, suggestion, attention and general relaxation.

For a diagnostic muscle-emotion chart, independent blinded examiners would need to identify emotions accurately beyond chance, distinguish similar emotions and physical causes, reproduce the result across populations, and demonstrate clinical usefulness without harm. Subjective agreement after a suggestive explanation is insufficient.

A more useful clinical research programme

Trials can compare carefully specified movement and body-awareness interventions with credible active controls. Outcomes should include functioning, symptom change, durability, adverse effects and who benefits. Mechanistic research can measure breathing, EMG, attention, expectations and learning without presuming where an emotion is located.

Responsible language for education

Prefer	Avoid presenting as fact
“You may notice tension here when stressed.”	“This muscle stores fear.”
“Try a comfortable movement and notice the result.”	“This pose releases childhood trauma.”
“Tears can arise; you do not need to interpret them.”	“Crying proves the blockage has cleared.”
“Your response is individual.”	“No release means you are resisting healing.”

Sources and historical reading

Numbered citations link the text to this inventory. Developer pages are used to describe theories, not to establish effectiveness. Entries marked historical or inaccessible identify their access limits; no quotation or detailed result is attributed to an unread full text.

1. Darwin, C. The Expression of the Emotions in Man and Animals (1872). Primary historical text. [Open source](#).
2. OpenStax. Psychology 2e, section 10.4: Emotion (2020). Historical theory overview. [Open source](#).
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Interpretive and illustration notes

Ancient concepts and historical books are discussed as intellectual traditions, not clinical confirmation. Exact dating and terminology vary across editions and translations. This review does not assert completeness for all traditions or all publications through the access date.

All anatomy and exercise diagrams are original simplified schematics. They are educational aids, not diagnostic scans, measured emotional maps or anatomical dissection plates. Suggested practice doses and illustrative scenarios are editorial applications, not reported trial protocols.