

# General and Specialized Instruction

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## 11.1 General Instruction

In this chapter, instructions and cues for Pilates exercise will be presented, based on the preceding clarifications of motor learning in Chap. 10.

**Instructional strategies** are necessary, since:

- The titles of the exercises are not self-explanatory.
- The Pilates principles, which are designed to reestablish natural motion control, need to be internalized.

**Four instructional options** are available when teaching Pilates, to facilitate correct performance and lasting results (► Overview 11.1).

### ■ Overview 11.1. Instructional Strategies for Pilates

- Demonstration
- Verbal instruction
- Tactile instruction
- Imagery (the use of metaphors)

### ■ General Guidelines for Exercise Instruction

- Instruction is vital to ensure **accurate performance** and optimal **effectiveness**, but it should also encourage and provide motivation, making the learning process enjoyable.
- The success of any instruction is seen in the quality of movement execution. The exerciser should appear **relaxed yet focused**. Pilates exercises can be challenging, if this is appropriate to the goals of training; however, **effort** should never cause a state of stress, exhibited in signs of vegetative tension, e.g., pale lips, shallow breathing, holding the breath, etc.
- Instruction should always reflect the needs and **capabilities of the participant**. Since individuals absorb information in different ways, the success of the instructions given should be assessed immediately.

### 11.1.1 Instructional Strategies

#### ■ Demonstration

If the trainer chooses to demonstrate an exercise, it can have a number of effects.

**Visual perception** provides an overall impression of the exercise, which can facilitate the process of implementing the movement. This process is directed by an internal focus, and accompanied by external stimuli, an initial motor concept is derived. The student is able to compare himself with the external impression (demonstration) he has

observed, e.g., by use of a mirror. If the exercise and demonstration have made an appealing, motivating impression, the student will strive to implement the movement well.

It should be noted that the **student's perception** is selective and limited; the trainer should therefore provide additional advice on specific aspects of performance. It is also possible that the demonstration may not leave the perfect, visual impression that was intended. The teacher inevitably becomes a role model for the students, and must therefore ensure that the external form of the exercise matches the intention of the demonstration.

#### ■ Verbal Instruction

! Exercises should be instructed as briefly and succinctly as possible, and with precision; avoid overloading students with information, which may obstruct their self-awareness!

The style of any verbal instruction depends heavily on the personalities of both trainer and student. The general rule "As little as possible, as much as necessary" can be applied to the motor implementation of an exercise, and also to its verbal instruction.

The effect produced by a specific instruction should be noted, as stubborn repetition will not always lead to success. A variety of different approaches to a particular theme may be called for, as not every student is easily able to comprehend verbal instructions and implement them physically. The differing ways in which students interpret seemingly simple instructions can often be surprising (► Chap. 10, Pilates and Motor Learning).

The following **verbal formulations** have proven effective in the classroom; however, it should be remembered that verbal instruction is highly dependent on the individual nature of communication between student and trainer.

#### ■ Breathing (■ Fig. 11.1)

- Exhale, allowing the abdominal wall to sink/fall
- Exhale fully
- Inhale keeping the abdominal wall flat
- Inhale, widening the back, keeping shoulders relaxed and down

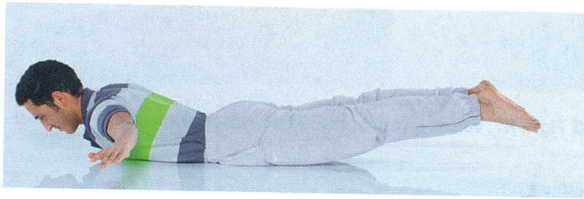
#### ■ Control and Strengthening of the Pelvic Floor (■ Fig. 11.1)

- Draw a sponge upward internally, without squeezing it
- Imagine drawing a bubble upward, but avoid bursting the bubble (do not activate the sphincter)
- Emphasize the anterior pelvic floor, rather than the dorsal (avoid the traditional instruction to "draw the sitting bones together")





■ Fig. 11.1 Verbal instruction: Breathing/supine/pelvic floor



■ Fig. 11.2 Verbal instruction: Prone

- First practice the above with exhalation, afterward with inhalation, then maintain the muscle tone with normal breathing for 10 seconds (Hamilton 2009)

#### ■ Supine (■ Fig. 11.1)

##### Abdominal Training

- Control of the (flat!) abdominal wall
- Draw the navel inward
- Separate the inner muscle corset from the skin
- Tighten a corset around the waist
- Create a wasp-waist
- Draw the navel toward the lumbar spine with a silk thread
- Anchor the center of the body, so that the ends (arms and legs) can work.

##### Core Integration

- Active starting position (= dynamic tension): head away from the pelvis, pelvis away from the head
- Sacrum (SIJ) and thorax (especially the lower ribs) resting on the mat

#### ■ Prone (■ Fig. 11.2)

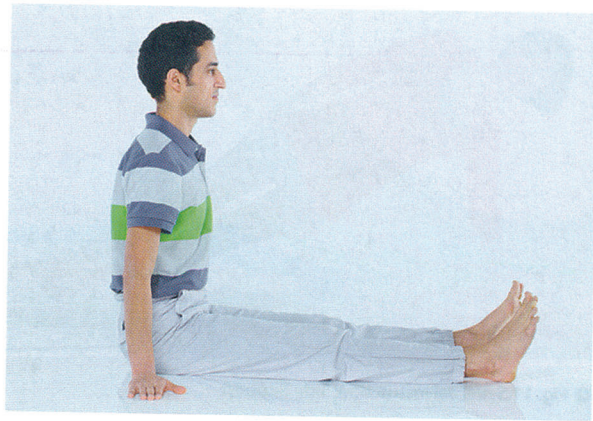
##### Strengthening of the Trunk

- Active starting position (= dynamic tension): head away from the pelvis, pelvis away from the head
- Draw sitting bones toward the heels / curl tailbone slightly – so that the pelvis is stabilized (counter nutation)
- Narrow the waist

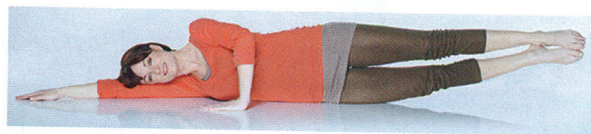
#### ■ Seated (■ Fig. 11.3)

##### Upright Posture

- The sitting bones are the foundation
- Fight against gravity
- Push and pull: push down (into the mat), pull up
- Root down, grow taller



■ Fig. 11.3 Verbal instruction: Seated



■ Fig. 11.4 Verbal instruction: Side-lying

- Elongate the spine out of the pelvis
- Reach the head toward the ceiling

##### Organization of Head and Shoulders

- Shoulders wide and low
- Pull the head out of the neck, and the neck out of the shoulders
- Large space between shoulders and ears
- Relax arms, relax shoulders: arms like cooked spaghetti

##### Arm Work

- Pull arms out of the shoulders
- Support gently from the arm pits
- Middle fingers point on the walls right / left

#### ■ Side-Lying (■ Fig. 11.4)

##### Stabilization

- Lift the waist off the ground
- Dynamic tension: head away from the pelvis, pelvis away from the head
- Narrow the waist

##### Legwork

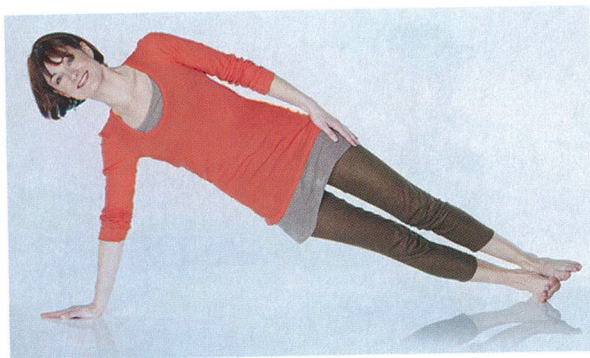
- Lengthen the legs out of the pelvis toward the opposite mirror/wall

#### ■ Side Support (■ Fig. 11.5)

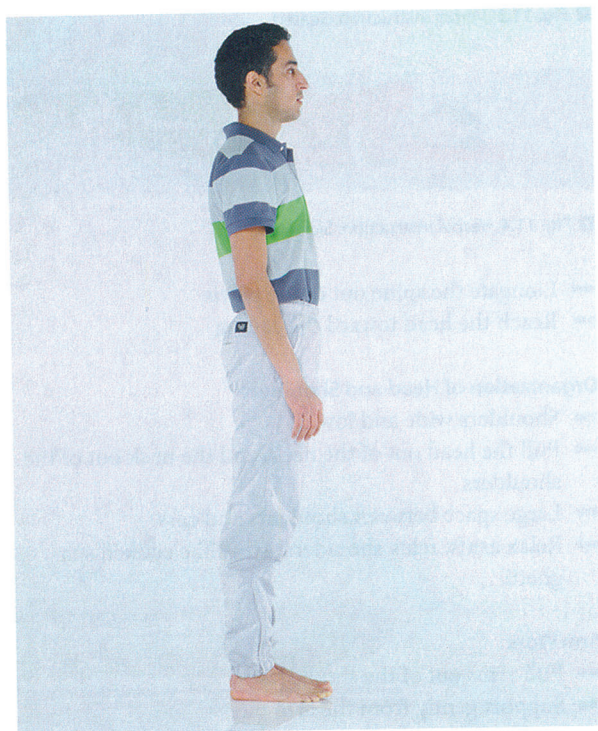
##### Weight-Bearing Through the Upper Extremities

- Hands and elbows are the foundation





■ Fig. 11.5 Verbal instruction: Side Support

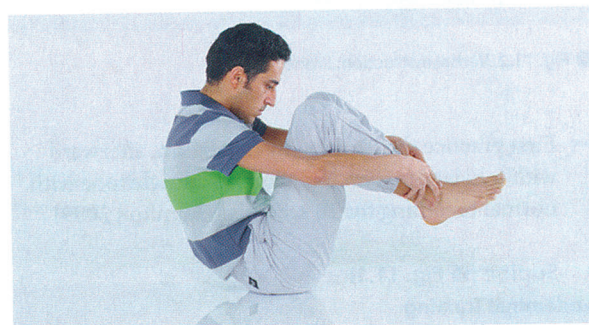


■ Fig. 11.6 Verbal instruction: Standing

- Push away from the ground
- Lift the thorax toward the ceiling, the rest follows
- **Quadruped**
  - Muscle system arms/thorax: slide sternum between the shoulder blades
  - Push and pull: push down, pull upward (think horizontally and vertically)
  - Grow roots downward, grow upward
- **Standing (■ Fig. 11.6)**
  - Feet are the foundation
  - Fight against gravity



■ Fig. 11.7 Verbal instruction: Full body integration during Roll Over



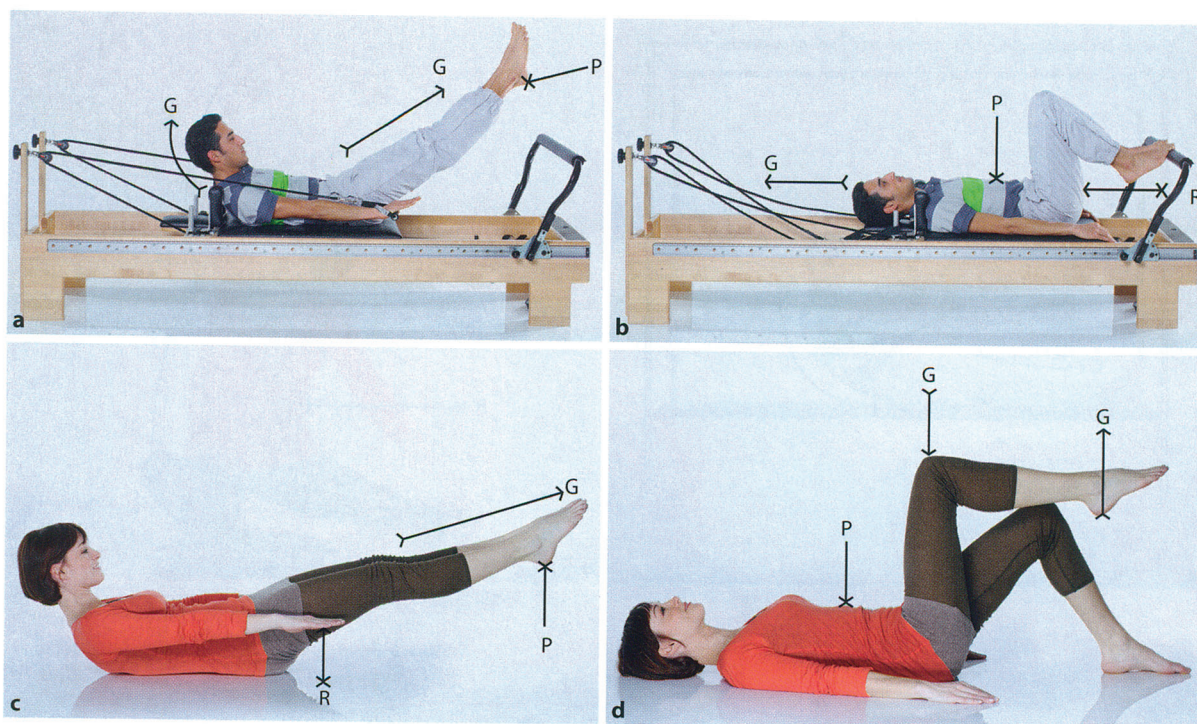
■ Fig. 11.8 Verbal instruction: Rolling movements

- Push and pull: push downward (feet), pull upward (crown of the head)
- Grow roots downward, grow upward
- **Full Body Integration and Overhead Organization (Inverted Position) (■ Fig. 11.7)**
  - Oppositional movement: “work in opposition”
  - Push and pull: push down, pull up
  - Grow roots downward, grow upward
  - Anchor the center of the body so that the ends (arms and legs) can work
  - Large space between pelvis and ribs
- **Rolling Movement (■ Fig. 11.8)**
  - Dynamic tension
  - Roll through the biggest possible arc
  - Big “C-curve” of the spine
  - Large space between pelvis and ribs
  - Roll vertebra by vertebra
  - Maintain control of the abdominal wall

#### ■ ■ Tactile Instruction

**Hands-on, tactile support** can be meaningful in conveying the nature of a Pilates exercise and the quality of its execution; the use of touch has multiple, diverse effects. Here, we focus primarily on the mechanical aspects of physical instruction, and the effects on execution and understanding of the exercises.





■ Fig. 11.9a–d Positioning instruction (X): a Hundred, b starting position: bent legs, c Hundred, d Femur Arcs: supine position, legs bent

It should be noted that a targeted, skilled touch can have a fundamental effect on the student, which extends beyond the mechanical level.

❗ There are three types of tactile instruction:

- Positioning instruction (P)
- Guiding instruction and (G)
- Instruction with resistance (R)

■ Positioning Instruction (■ Fig. 11.9)

The student is placed in position more or less **passively**, in order to perform the exercise successfully.

**Example**

**Positioning Instruction (P)**

- In the supine position, the shoulders can be placed in the center of the shoulder girdle muscle system.
- By stroking along the length of the neck muscles, the head can be positioned avoiding hyperextension of the cervical spine.
- Positioning aids (pillows, towels, sand bags, balls) can be placed at the start of an exercise, to improve alignment of the body.

It may also be appropriate to intervene **during a movement**, with manual positioning instructions:

- Firstly to prevent potentially dangerous misalignment

- Secondly, to clarify the correct alignment during a particular phase of an exercise

■ Guiding Instruction (■ Fig. 11.10) (G)

The **lightest touch** possible is used, to guide the direction and intensity of a movement. This type of instruction is appropriate for movements which are not powerful or dynamic enough. Guiding instruction usually assists axial elongation, width or direction of movement.

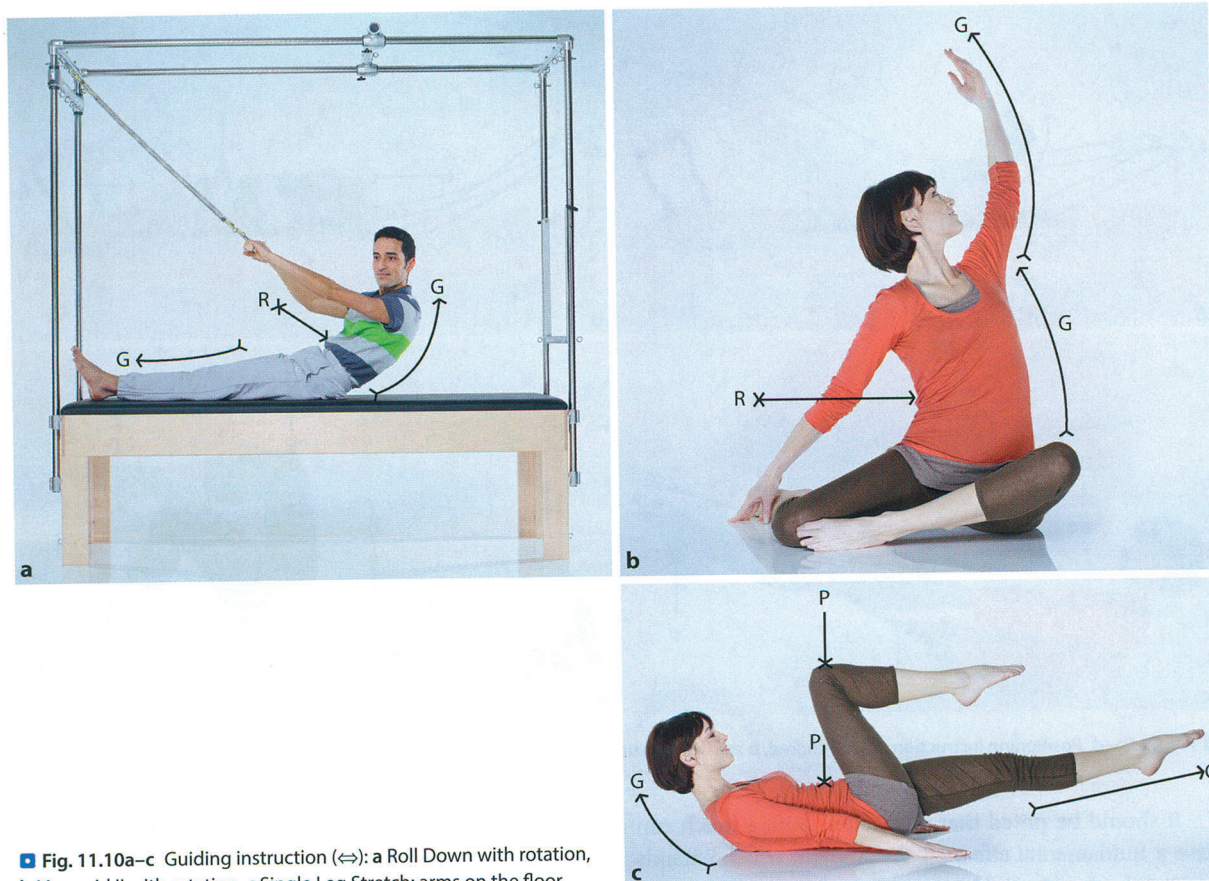
■ Instruction with Resistance (R) (■ Fig. 11.11)

This forceful, stabilizing instruction provides a clear, external stimulus. Instruction with resistance may be used **statically** (to clarify a position) or **dynamically** (to guide a movement with dynamic stability).

In addition, hold-relax techniques (= neurophysiological technique in physiotherapy, proprioceptive neuromuscular facilitation or PNF) can be used to increase range of motion by short-term inhibition of overactive muscle groups.

It should be noted that every individual experiences tactile instruction (contact) differently. By means of touch receptors in the skin and pressure receptors in subcutaneous tissue, signals from the periphery are conveyed to the brain via the spinal cord. The processing of stimuli is always subject to momentary, **subjective interpretation**, which should always be comfortable and clear.





■ Fig. 11.10a–c Guiding instruction (↔): a Roll Down with rotation, b Mermaid II with rotation, c Single Leg Stretch: arms on the floor

### ! Warning

Tactile instruction that is unclear, not appropriate to the exercise, performed too quickly or in too many places simultaneously will generate more confusion than guidance.

### ■ Imagery (Use of Metaphors)

Amongst other things, Joseph Pilates studied the movement of animals, and from his observations derived principles applicable to people, as well as ideas for exercises. Many of his exercises are **named after animals**, symbolizing the characteristics of the movement. The names of exercises such as “Kneeling Cat”, “Elephant”, “Swan”, and “Mermaid” are evocative of movement characteristics that can be utilized during practice.

The use of imagery in Pilates teaching has increased over the last 20 years, with inspiration taken from the work of Mabel Todd (1937/2001), André Bernard (1997), and later Erik Franklin (1998). The **advantage** of instruction using imagery reflects the complex nature of movement execution, which sees the quality of performance alter significantly as a result of accessing one’s internal resources,

### ! Visual instruction may utilize

- Direct imagery and/or
- Indirect imagery

Some examples of instructions using imagery are provided below. Due to its allusive nature, an image can only be used or interpreted based on personal experience. For students who have never seen an elephant in their lives, instructions using this metaphor are of limited use. Images that are specific to certain people or experiences, for example, “make the legs slim as if you are putting on a pair of tights”, are not helpful for someone who has never put on a pair of tights. The words of a student can provide clues to his inner experience (e.g., “my back is as stiff as a board”, or “I feel like a tired horse”), which can then be used as a starting point for instruction using imagery.

### ■ Direct Imagery

#### ! Direct images refer directly to the body.

The student receives instructions for the performance of an exercise, which help him perceive the body in a different context or relationship to space.





■ Fig. 11.11a–d Instruction with resistance (⇒): a Swan Chair, b Superman, c Hamstring Stretch, d Goal Post

» Be proud of your chest, young man. (Lolita San Miguel, quoting Eve Gentry, 2011)

#### Breathing

- While inhaling, expand the lower posterior ribs
- While exhaling, grow toward the ceiling

#### Axial Elongation

- Reach the head toward the ceiling
- Draw the abdomen back and upward, toward the spine

#### Trunk Control

- The stomach and back support the spine, and create space between the vertebrae

- The shoulders are wide, the back long and the waist narrow

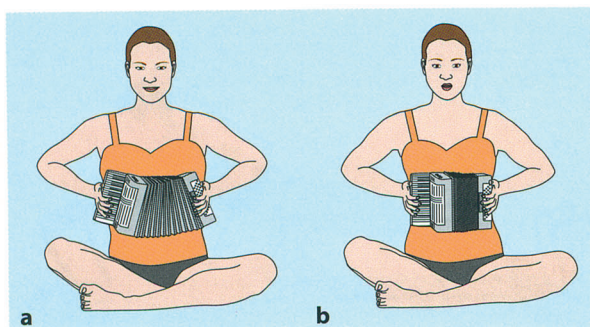
#### Mobility

- One vertebra slides down, the other slides up
- The hip joint glides in the pelvis

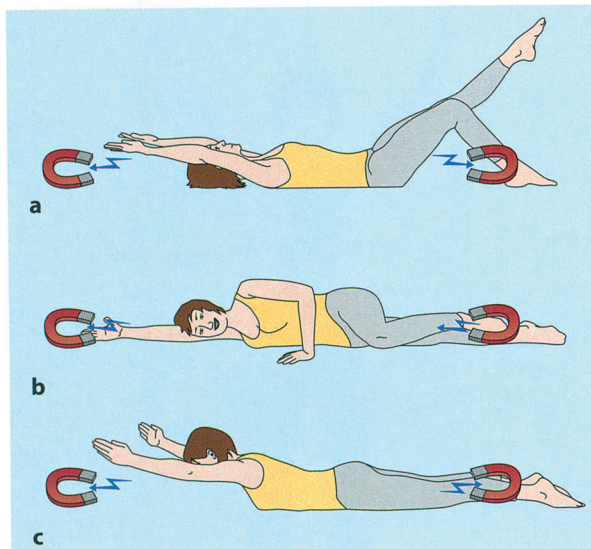
#### Tip

- Figures 11.12–11.22 illustrate further suggestions for instruction using direct imagery.

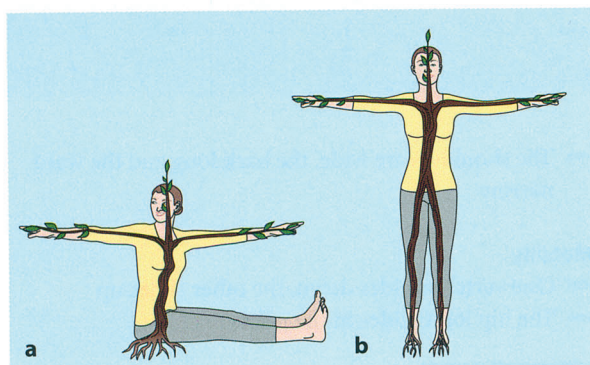




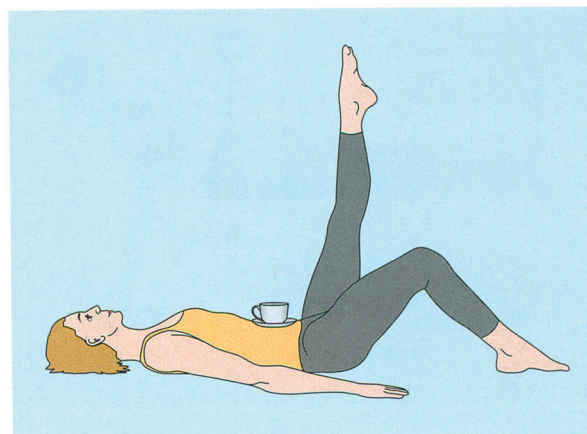
■ Fig. 11.12a,b Breathing: "The ribs open and close like an accordion." a "Breathe through the nose into the lower ribs," b "Exhale through the mouth"



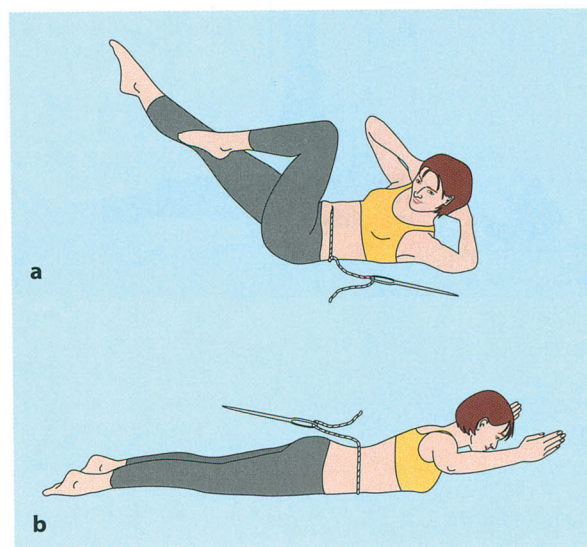
■ Fig. 11.13a-c Axial elongation: "Two magnets draw the spine apart in two directions." a Supine, b side-lying, c prone



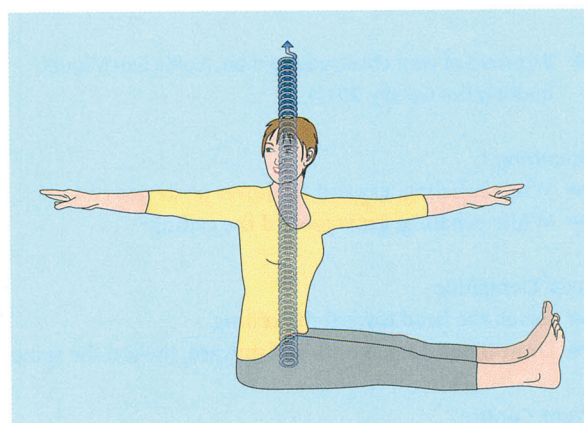
■ Fig. 11.14a,b Axial elongation: "Root downward, grow upward." a Seated, b standing



■ Fig. 11.15 Core control in supine: "The center is stable and still, so that a tea cup (resting on the stomach) does not spill"

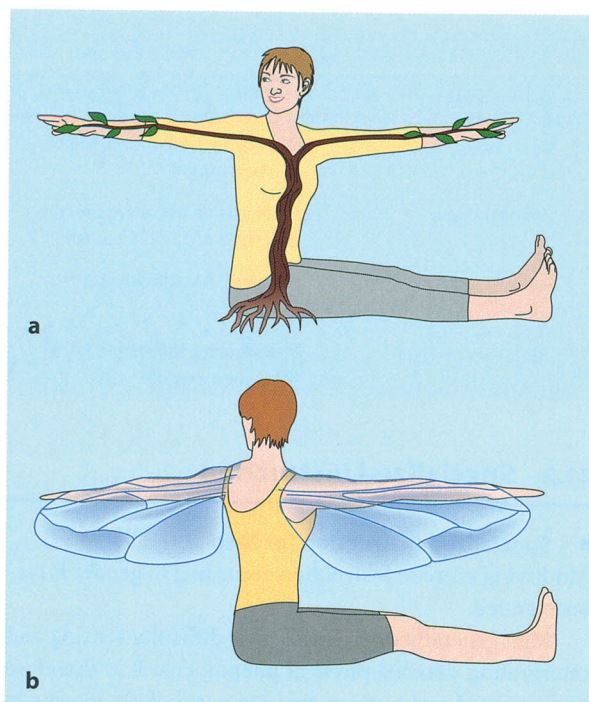


■ Fig. 11.16a,b Core control: "The distance between the navel and the spine remains the same, the navel is pulled to the spine with a fine thread." a Supine, b prone

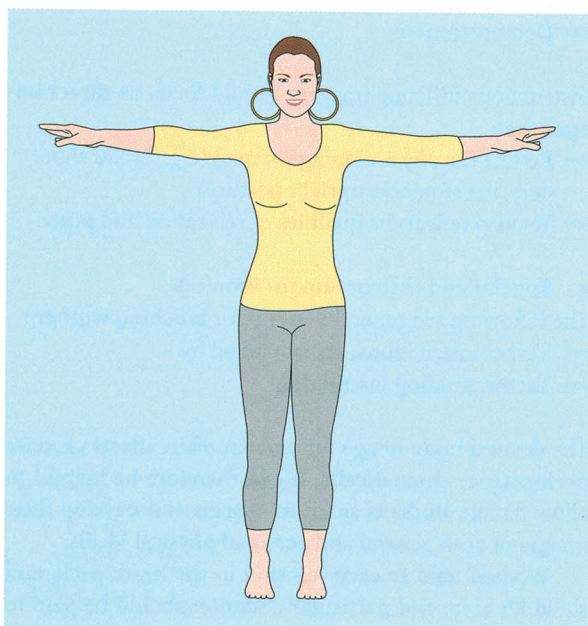


■ Fig. 11.17 Seated rotation: "Turn as if twisting a screw into the ceiling"

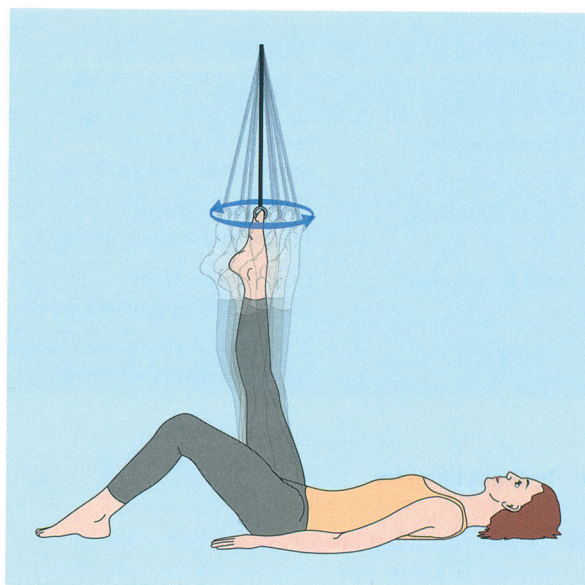




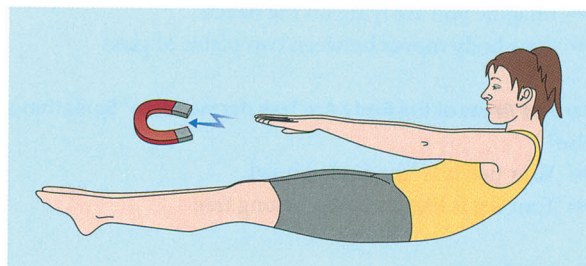
■ Fig. 11.18a,b Arm movement. a "Arms grow longer to the left and right." b "Arms float lightly and with ease, like wings"



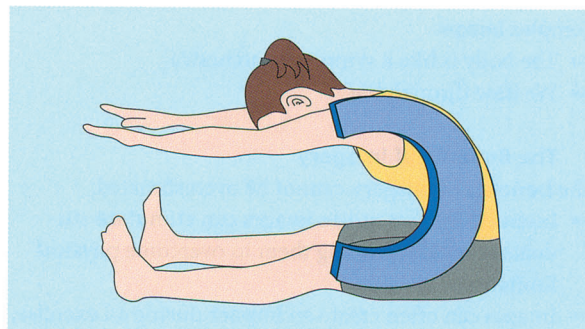
■ Fig. 11.19 Movement of the arms and shoulder girdle: "The shoulders stay down – as if wearing large earrings that do not touch the shoulders"



■ Fig. 11.20 Leg movement: "The leg hangs as if the big toe is connected to the ceiling, and circles freely in the hip joint"



■ Fig. 11.21 Rolling movements: "Follow the hands – a magnet draws the hands toward the opposite wall" (when rolling up)



■ Fig. 11.22 Spinal mobility (Spine Stretch): "The spine forms a big C"



Table 11.1. Instructional strategies

Instruction	Suitable for	Learning type	Problem
Demonstration	Positions, movements Group and individual training	Visual type	Own correct execution, selective perception
Verbal instruction	External connections Group and individual training	Cognitive type	Emphasis on cognitive execution, little physical feedback
Tactile instruction	Strong sensory input Individual training, smaller groups	Sensory type	Accuracy, broader impact
Imagery	Activation individuals own strategies Group and individual training	Metaphorical type	Individuality, difficult to transfer to everyday life

### ■ Indirect Imagery

❗ We refer to indirect imagery when the body is transformed into “something else” in the mind of the practitioner.

#### Spatial Images Transfer the Body to a Different Environment

- Imagine you are lying on the beach
- Your body moves between two plates of glass

#### Parts or Areas of the Body Are Transformed Into “Something Else”

- Your pelvis is like a salad bowl
- Your leg is like a narrow, strong tree

#### Sensory Input

- Imagine that you are smelling a flower
- The wind is stroking your back

#### Complex Images

- The body is like a symphony orchestra
- We flow through life

### ■ The Benefits of Imagery

The **benefits** of imagery cannot be overestimated:

- Instructions that utilize images can **stimulate** students **mentally**, helping them to overcome physical limitations.
- Images can often create an **impact** during an exercise, which can then be **spontaneously triggered** in other situations. A small tip is often all that is then required, to trigger complex physical reactions.
- Images are well suited to **instruction for groups**, as the characteristics of an exercise can be described quickly and effectively.

### ■ Summary

- Table 11.1 summarizes the four instructional strategies.

## 11.2 Specialized Instruction

### ■ Specialized Instruction for Men

Modifying exercise instruction according to gender is recommended.

Men generally experience more difficulty sensing and interpreting detailed physical phenomena. It is therefore best to avoid instructions that are particularly internally directed and subtle. Male clients respond well to:

- Tactile, positioning instructions
- Instructions with resistance
- Demonstration

Instructions utilizing imagery should focus on **direct images** that:

- Reflect the physical image of men (e.g., broad shoulders, flat stomach, upright posture)
- Yet also reflect the qualities of relaxation and peace

### ■ Specialized Instruction for Women

The following are generally useful for **teaching women**:

- Verbal instructions, accompanied by
- Tactile, guiding instruction

The desired body image for women often affects exercise performance dramatically. It can therefore be helpful to allow female students space to express and develop their images of both general and personal physical ideals.

Women tend to carry tension in the head, neck, and shoulder area, and particular attention should be paid to these regions.

### ■ Specialized Instruction for Patients

The options for processing external stimuli alter fundamentally, if there are physical issues present. The paths for stimulus are dominated by **pain signals, and limitations of function and mobility**. The underlying sensory and proprioceptive systems may be severely impaired. This knowledge has consequences for the instruction of Pilates



exercises in therapy and rehabilitation, as the optimal flow of information must be ensured.

The systems of local stabilization and control are also affected, via the mechanisms of central and peripheral inhibition. This makes it difficult for patients to perceive and control muscle tension consciously. During the instruction of Pilates exercises, techniques can be employed to help normalize these physical processes.

- » The goal of a Pilates exercise in therapy and rehabilitation must be to initiate a pain-free, successful movement that serves the goal and exceeds the expectations of the patient. (Anderson 2005)

#### ■ Facilitation

Facilitation techniques employ knowledge of connections in the musculoskeletal system, in order to have the greatest possible influence on the healing process. For example, sensory stimulation of skin areas through contact also affects the local muscles and associated circulation: in this way, gentle slapping or brushing of the inner side of the thigh may stimulate activation of the stabilizing muscle chains of the leg.

#### ■ Overflow

If a stimulus is functionally correct and of sufficient intensity or length to be “recognized”, the effects can be felt on the **opposing side of the body** or in **areas of the body distant** from the location of the stimuli:

- Arm movements from flexion to extension in the supine position can also stimulate the ventral trunk muscles.
- Leg movements on one side of the body have a training effect on the opposite side of the body.

#### ■ Positive Body Image

In recent years, the field of rehabilitation has increasingly focused on the influence of the mind on the physical state. Even as the brain conceives a movement, the physical processes required for the actual performance of that movement are initiated. This **feed-forward phenomenon** can be exploited by first visualizing a movement with the patient, before moving on to complete the task.

**Feed-forward thinking** can be utilized by asking a patient to visualize positive images, which modify basic inhibitions (e.g., “Imagine you were smiling with your whole body”).

## References

- Anderson B (2005) Randomized clinical trial comparing active versus passive approaches to the treatment of recurrent and chronic low back pain. University of Miami, Miami
- Bernard A (1997) An introduction to Ideokinesis. Contact Quarterly (Reprint No. 3). Ideokinesis and Creative Body Alignment. Summer/Fall, pp 24–25
- Franklin E (1998) Locker sein macht stark. Kösel, München
- Hamilton C (2009) Lokale Stabilität der Gelenke. Handout Hamilton, Regensburg
- San Miguel L (2011) Oral communication. Conference, Mönchengladbach
- Todd M (2001) Der Körper denkt mit: Anatomie als Ausdruck dynamischer Kräfte. Huber, Bern (Nach der Originalausgabe “The Thinking Body” 1937)