

# PREFACE

*Facilitate*, according to *The American Heritage Dictionary* (1978), means “to free from difficulties or obstacles; make easier; aid; assist.” More specifically, in NDT, facilitation is a process in which the therapist’s hands and body give direction to the client in how to move. The therapist’s hands provide alignment and direction of movement to the client, and the movement of the therapist’s own body also contributes to the client’s movements.

In many ways, facilitation is a dance between two people. One person leads but does not overpower the other person. The therapist is the client’s dance partner and is initially responsible for leading the client with guided movements, not pushing or pulling the client. The client is the therapist’s dance partner and will follow the therapist if feeling safe and respected. **The client’s goals are imperative and of vital importance.**

When the dance is done well, it looks effortless to those who are observing. That is the goal for each of these techniques: that the therapist and client will move together in an effortless fashion, producing a beautiful dance. The ultimate goal is for the client to perform a solo dance, to move through space with fluidity and effortless movement.

It is our intent to share with other clinicians the thoughts and techniques we use to help our clients move more easily. We also hope to assist clinicians in problem solving the obstacles that prevent their clients from moving without difficulty. The facilitation techniques are described to guide clinicians in evaluating their clients’ needs in regards to such things as alignment, point of weight shift, direction of weight shift, and precautions. Our goal is to help both our clients and yours to be freed from the obstacles that inhibit and prevent their movements.

This book is the result of many years of treating children with cerebral palsy and developmental delays and many years of teaching the philosophical, theoretical, empirical, and practical aspects of Neuro-Developmental Treatment (NDT). The facilitation techniques described in this book have their origin in the works of Berta Bobath and Mary Quinton. These master clinicians developed the techniques for patients with neurological problems such as cerebral palsy, CVA, and developmental delays. They developed the techniques through clinical observations, experimentation, more observations, modifications, and more observations.

Although the material has roots in the works of both Berta Bobath and Mary Quinton, we have added our own understanding of the analysis of movement from our own experiences of teaching and treating. We have also moved from the tradition of oral transmission of the material in designated NDT courses to written transmission of the material. In this way we can use words, written explanations, and photographs to give more specific instructions regarding therapist hand placement and movement, client position and alignment, directions of movement, and precautions.

The content of this book has been and continues to be taught by the authors in NDT courses of various lengths, from one day to eight weeks. Many of the techniques presented in this book were first presented by Mary Quinton in the numerous Bobath courses that she taught. Mary taught experientially, desiring that therapists get the movement into their own body

image. She believed that once the therapist's body could understand the movement, the therapist could share the movement with the client. If the therapist's body has difficulty understanding the movement, it is difficult to share the movement with the client. This continues to be a valuable concept for all therapists, but especially for those who are just learning the techniques. We recommend that therapists practice the techniques with other therapists before and while treating their clients. In this way, each therapist has the opportunity to actually experience what it feels like to be facilitated through the various movements.

This is not a book of *treatment techniques* for children with cerebral palsy, but a book of *facilitation techniques* to be used with any client who demonstrates a problem with coordinated movement. We believe that *treatment* is much more encompassing and includes the facilitation techniques in conjunction with the specific needs—and most importantly, the specific functional goals—of each client. For this reason, we decided not to use clients for the photographs because of the potential for vast variability in the problems that we would encounter and would have to address for each individual. In the same vein, we encourage therapists to practice with “typical” adults and children before progressing to client treatment.

The persons used in the photographs include one adult and six children, ranging in age from six to ten years who were selected from the Tucson, Arizona area. Children were selected from this locale because it is the home of one of the authors and the location of the photographer, Ron Medvescek.

The book is comprised of 10 chapters that describe facilitation techniques from the following positions: Bench and Floor Sitting, Bolster Sitting, Sitting on Ball, Prone on Floor, Prone on Bolster, Prone on Ball, Quadruped, Kneeling and Half Kneeling, Standing, and Gait: Forward Walking.

The facilitation techniques in each chapter are introduced with a stated goal, followed by a description of the client's position, therapist's position, therapist's hands, movement, precautions, component goals, and functional goals. In addition to the detailed directions, many sequential photographs accompany and demonstrate each facilitation technique.

Therapists are expected to use professional judgment and careful administration in the selection and use of any of the techniques with any client. All of the techniques are not appropriate for all clients. A therapist must never try to force a client through a facilitation with which the client has difficulty. The facilitation should be modified or temporarily abandoned. The therapist must not attempt to use a facilitation technique that would compromise the client's safety. The client's safety and comfort must always be the primary consideration.

The therapist's safety is also a primary concern. Therapists need to know their own strengths and abilities to handle clients with various degrees of disabilities. The therapist must always use good body mechanics to prevent and avoid personal injury.

It is our goal that our clients and your clients become more functional in all of their activities of daily living and the skills they elect to pursue. We cannot possibly cover all of those goals on an individual basis. Therefore, we have described the component goals in much detail, but leave the application of those components to the specific functional goals that each client may select. **We strongly believe that all therapy must be functionally oriented and directed.**

# FOUNDATIONS FOR FACILITATION

The human body is capable of many sophisticated and intricate movements, some of which are very subtle and some of which are quite overt. These movements are controlled by the nervous system and are based on **kinesiological rules**. When we observe, and evaluate our clients' movements, we realize that their movements are often very stereotyped, limited, and labored. Their movements do not always follow the normal kinesiological rules.

The goals in this book are to offer clinicians some ways to observe and evaluate their clients' movements and to help clinicians problem solve kinesiological reasons why their clients move as they do. That kinesiological reasoning can then be used to modify clients' movements while helping them to move in a more "normal," efficient manner.

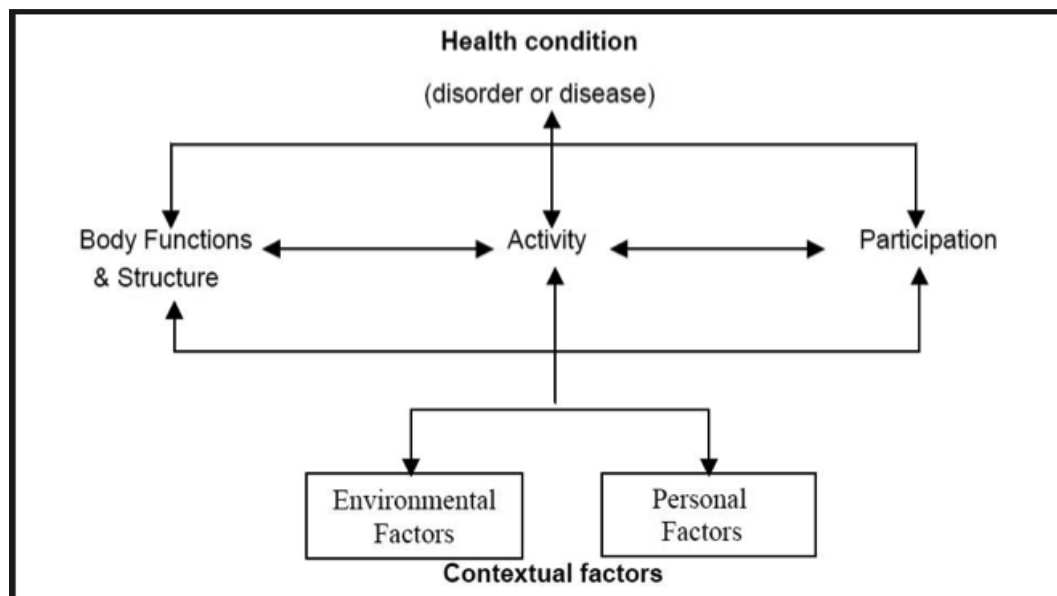
The facilitation techniques in this book are based on principles of kinesiology and can be evaluated and modified through increased understanding of the biomechanical and musculoskeletal aspects of kinesiology.

To facilitate means to **assist/guide** the client. The client must be an active participant in each movement for motor learning to occur. At no time should the client be passive, with the therapist doing all of the client's movements.

## International Classification of Functioning, Disability and Health (ICF)

NDT is an empirical, problem-solving approach that uses the International Classification of Functioning, Disability and Health (ICF) for assessment and treatment planning, (Bierman et al, 2016). The ultimate goal in NDT is for the client to **Participate** in appropriate life activities and goals. This is achieved by assessing and evaluating the impairments of **Body Structures and Body Functions** that interfere with the client's **Activities or Functions**.

[www.who.int/classifications/icf](http://www.who.int/classifications/icf)



Although the primary focus of this book is to address the kinesiological and sensory impairments that interfere with the client's functional activities and thus interfere with the client's participation in societal roles, **the facilitation techniques are only a part of the whole treatment program, which must include the practice of functional skills in a contextual environment.** The facilitation techniques must be incorporated into functional patterns and functional activities that are meaningful to the client and enable the client to participate with peers. It is the therapist's responsibility to be creative in merging the facilitation techniques with meaningful and functional movements for the client.

Therefore, it is critical that the client is an active participant in the selection of the goals and an active participant in performing the techniques. Every facilitation technique must be a part of a functional goal.

## Safety

Safety is always a major consideration! The therapist and the client must be safe during all facilitation techniques. If the therapist does not feel safe with a specific technique, that technique may be one that the therapist cannot perform as described. The therapist must always use good body mechanics!

When using any equipment, the therapist must first check the safety of the equipment. The therapist is advised to practice using the equipment with a peer, family member, and/or typically developing child before using the equipment with a client. This is especially important when using the ball.

## Two-Way Communication

Therapeutic handling and facilitation is a two-way communication. The therapist's hands must be careful to communicate to the client softness and security, care and trust, encouragement and confidence. At the same time the therapist's hands should gather information about the client's emotional response of cooperation, enjoyment, fear and/or resistance, as well as the client's physical responses of tightness, stiffness or floppiness.

The therapist must be aware of the client's abilities and impairments. **A thorough assessment is needed.** The therapist must be aware of the client's kinesiological issues such as range of motion and strength. The therapist must also be aware of the client's sensory systems strengths, impairments and challenges. The client will be moving during the facilitation and all sensory systems will be affected.

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## ■ HOW THE THERAPIST INFLUENCES THE CLIENT

The therapist serves as a guide for teaching normal/typical movement patterns to clients with neurological disorders. The therapist has and uses many channels through which to influence the client. Some of these channels are explicit, such as very specific hand placements and movements. Other channels are implicit, such as the therapist-client relationship and communication, the activity, the just-right challenge. The therapist also uses many of the client's sensory systems to influence the movements.

# 1. BENCH AND FLOOR SITTING

## 1.1 NEUTRAL ALIGNMENT OF TRUNK, PELVIS, AND HIPS

The goals of these techniques are to facilitate neutral alignment of the client's trunk, pelvis, and hips while sitting. Malalignment in one section generates compensatory malalignment in other sections. Tightness in one section leads to hypermobility in another section.

### **Client's Position**

The client sits on a mat table or stable bench with the hips and knees flexed to 90°. The feet may or may not touch the floor. If the client tends to use the feet to push into extension, the feet should not touch the floor.

The client's upper extremities are flexed at the shoulders and rest on the therapist's shoulders. Shoulder flexion helps to facilitate trunk extension.

If the client displays thoracic and lumbar flexion and a posterior pelvic tilt (figure 1.1.1) or an anterior pelvic tilt (figure 1.1.2), align the trunk, pelvis, and hips to neutral.

### **Therapist's Position**

Kneel in front of the client at or below eye level.

### **Therapist's Hands and Movement**

The hands work together symmetrically.

### **Client Sitting with a Kyphosis and/or a Posterior Pelvic Tilt**

If the client is sitting with thoracic flexion and lumbar flexion and a posterior pelvic tilt (figure 1.1.1), facilitate the client's trunk extension to neutral. You may work in the presented order or reverse the order.

Place both hands on the client's rib cage with fingers near the client's thoracic spine, and lightly press finger pads in along the spine with sufficient pressure to extend the client's spine. Your palms are in contact with the client's trunk (figure 1.1.3). You may need to move your hands up or down on the client's back to find the optimal point for thoracic spine extension.

Move your fingers to the client's lumbar spine. Place both hands on the client's lower trunk with the fingers near the client's lumbar spine, and lightly press the finger pads in along the client's spine with sufficient pressure to extend the client's spine. Your palms are in contact with the client's trunk.

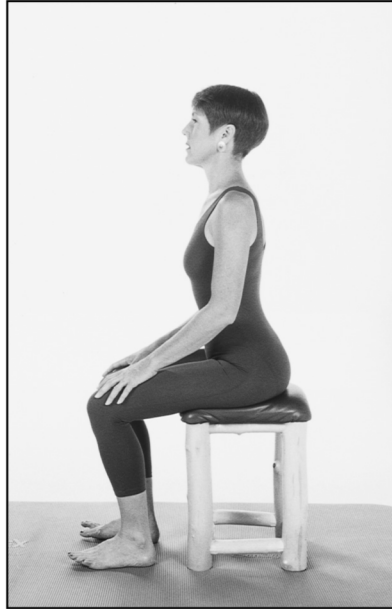
Move both hands to the client's pelvis. Place your palms laterally on the client's pelvis, with your fingers posterior on the client's pelvis (figure 1.1.4). While stabilizing the client's pelvis with the

palms of your hands, use your fingers to facilitate the client's pelvis forward to neutral if the pelvis is in a posterior pelvic tilt. Be careful to not pull the pelvis into an anterior pelvic tilt.

Once the client's trunk and pelvis are in neutral alignment, you can facilitate and practice movements in different directions.



**Figure 1.1.1.** The client displays thoracic and lumbar flexion and a posterior pelvic tilt.



**Figure 1.1.2.** In bench sitting, the client displays an anterior pelvic tilt.



**Figure 1.1.3.** Client sitting with a **kyphosis and/or a posterior pelvic tilt**. The therapist's hands are placed on the client's rib cage, with fingers near the client's thoracic spine, applying sufficient pressure to extend the client's spine.



**Figure 1.1.4.** Client sitting with a **posterior pelvic tilt**. The therapist's palms are placed laterally on and stabilize the client's pelvis. If the client has a posterior pelvic tilt, the therapist's fingers facilitate the client's pelvis forward to neutral. If the client has an anterior pelvic tilt, the therapist's thumbs tilt the client's pelvis backward to neutral.

## 2. BOLSTER SITTING

### 2.1 SITTING ON A BOLSTER: ANTERIOR WEIGHT SHIFTS

Many clients do not move from the hip joint when reaching forward and when rising to stand. They often compensate and move from the thoracic spine (kyphosis) and/or lumbar spine (anterior/posterior pelvic tilting).

The goals of these facilitation techniques are to increase the client's active spinal extension and pelvic-femoral mobility on the sagittal plane, and to increase the synchronous movement of the client's trunk and pelvis forward over the femurs when reaching forward and when coming to stand from sitting.

#### **Client's Position**

The client straddle sits on a bolster with the hips flexed to 90° and the knees flexed to 90° or less (figure 2.1.1). If the client flexes the knees more than 90°, an anterior pelvic tilt will occur.

The spine is neutral (or as close to neutral as possible) on the sagittal plane. If the spine is flexed or extended in one section, hyper-mobility will occur at another point. This is usually a problem in children with cerebral palsy.

The bolster may be flat, inclined with a cube chair, or suspended between two cube chairs.

#### **Therapist's Position**

Sit on the bolster or on a bench behind the client (figure 2.1.1). You may use your feet to guide the client's feet forward in order to extend and maintain the client's knees in extension.

#### **Therapist's Hands and Movement**

Depending on the client's needs, you can facilitate forward weight shifts from various control points. The forward movement of the client's trunk is enhanced when the client reaches forward with shoulder flexion for an object or activity at or above shoulder level. Therefore, it is often advantageous to sit on a bolster with the front end up.

In each of these techniques, both of your hands work symmetrically. Therefore, both are *guiding hands*.

#### **Facilitation from the Arms**

Hold the client's arms at or near the elbows and externally rotate them to neutral. Guide the client's arms, trunk, and pelvis forward and back at the hip joint by sliding the client's hands up and down the bolster (figure 2.1.2).

## 3. SITTING ON BALL

### 3.1 TRUNK-PELVIC-HIP NEUTRAL ALIGNMENT WITH ANTERIOR-POSTERIOR WEIGHT SHIFTS

The goals of these techniques are to achieve trunk-pelvic-hip alignment in sitting and to facilitate various righting reactions in the head, trunk, and lower extremity muscles which will be used in other techniques on the ball.

These techniques can be used to evaluate the client's ability to respond to anterior and posterior weight shifts. The response depends on control of the appropriate muscles, as well as the ability to receive and interpret the changes in the sensory feedback. If the client does not respond, further evaluation is needed to determine if the client has a motor control impairment or a sensory registration or sensory feedback impairment.

It is important to consider which size of ball will work best for the facilitation. If the client is to remain on the ball, a very large ball usually works best. If the client will be transitioning off the ball, carefully consider the size according to the goal.

#### **Client's Position**

The client sits on the ball with the hips in the center of the ball. The feet may or may not touch the floor, depending on the goal of the facilitation. The client may place both arms on your shoulders for security or to gain thoracic extension.

#### **Therapist's Position**

Kneel in front of the client at or below eye level. You must be in an active position that permits you to weight shift with the client.

Place your hands on the client's trunk; rest your arms on the ball and on the lateral aspect of the client's femurs (figure 3.1.1). The contact of your arms on the client's legs and the ball provides security to the client and stability to the ball. You may also contact the ball with your legs for more control of the ball's movements.

#### **Therapist's Hands and Movement**

#### **Neutral Alignment**

Your hands work together to align the client's trunk and pelvis symmetrically and to give downward pressure through the client's pelvis into the ball.

Alignment of the pelvis over the femurs affects the alignment of rest of the spine and trunk, therefore it is important to start with establishing the proper pelvic alignment. The pelvic alignment creates the base of support at the hips and postural control will be organized from this base.



## 4. PRONE ON FLOOR

### 4.1 SHOULDER FACILITATION FOR UPPER EXTREMITY WEIGHT BEARING

The goals for this technique are to facilitate activity and control in the shoulder girdle muscles so that the client can assume and maintain upper extremity weight bearing in prone.

#### **Client's Position**

The client lies prone on the floor with hips fully extended. This is not an appropriate technique for clients who cannot fully extend the hips.

#### **Therapist's Position**

Kneel beside the client.

#### **Therapist's Hands and Movement**

Place both hands over the client's shoulders so that your palms are over the client's shoulders and your fingers are on the client's pectoral muscles (figure 4.1.1).

Apply a slight inward pressure to the client's pectoral muscles with the pads of your fingers while simultaneously elongating the pectoral muscles by sliding your palms toward the heads of the humeri. As your palms reach the head of the client's humeri, use the heels of your hands to guide the humeri forward (figure 4.1.2).

This places your hands such that the heels of your hands are on the client's humeri and your fingers point toward the client's pectorals (figure 4.1.2).

The slight inward pressure on the pectorals activates the pectorals and the serratus anterior and facilitates the client to lift the head and bring the arms forward. The elongation of the pectorals and forward movement of the humeri enable the client to stabilize in the weight-bearing position.

Forearm weight bearing is achieved if the pressure on the pectorals is subtle. Extended-arm weight bearing is achieved if the lift is stronger.

#### **Precautions**

- The client must have full hip extension.
- Do not push into the pectorals with your fingertips.
- Do not lift the client; rather, facilitate the pectoral muscles so that the client does the lifting.
- Lifting the client vigorously will produce lumbar hyperextension in the client.
- Excessive pressure on the pectorals will facilitate a thoracic kyphosis, which is not the goal.
- It is critical that the client's elbows move forward of the shoulder. If the elbows remain behind the shoulders, upper extremity weight bearing cannot be maintained.

## 5. PRONE ON BOLSTER

### 5.1 SYMMETRICAL HIP EXTENSION

The goals of these facilitation techniques are to increase the client's trunk and hip extensor range and control and to increase the client's ability to use the upper extremities in prone activities.

#### Client's Position

The client lies prone over the bolster, with the ribs and pelvis well supported by the bolster. The client's arms are in shoulder flexion over the bolster. The hands may or may not touch the floor. The client's legs are abducted around your trunk. The client's trunk, pelvis, and hips are horizontal and in neutral alignment with each other (figure 5.1.1).

#### Therapist's Position

Kneel or half kneel behind the client, with the client's legs abducted around your trunk.

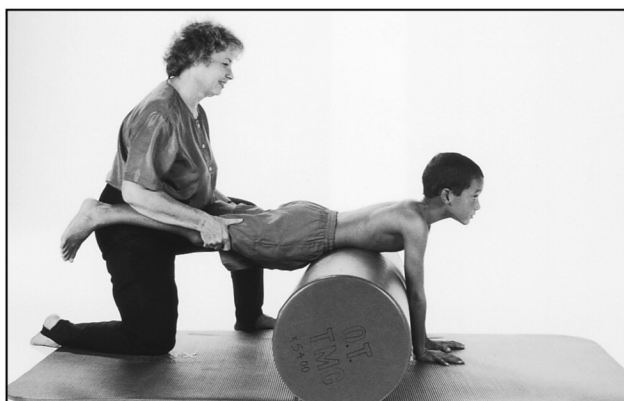
#### Therapist's Hands and Movement

Place both hands on the client's femurs near the knees, with your thumbs parallel to the client's femurs. Externally rotate the client's hips to neutral, and extend them into line with the pelvis and trunk (figure 5.1.1). In symmetrical hip extension, both of your hands are *guiding hands*.

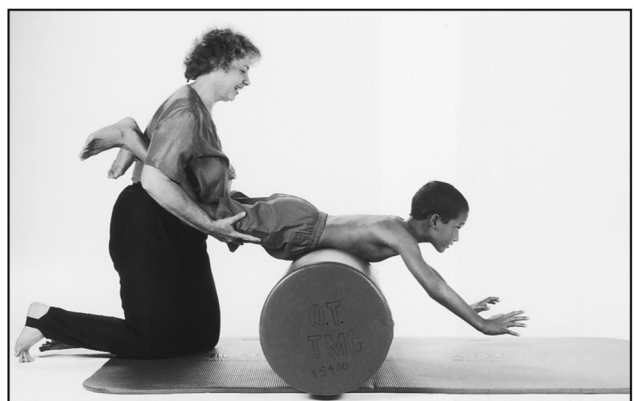
Maintain this hand placement throughout the movements.

#### Forward Protective Extension

While stabilizing the client's hips in extension and neutral rotation, quickly but carefully guide the client's weight forward over the bolster at various speeds to elicit a forward protective extension reaction (figure 5.1.2). Move the client forward far enough so that the client's hands make contact with the surface.



**Figure 5.1.1. Symmetrical hip extension.** The therapist places both hands on the client's femurs near the knees, with thumbs parallel to the client's femurs. The therapist externally rotates the femurs to neutral.



**Figure 5.1.2. Forward protective extension.** The therapist quickly but carefully guides the client's weight forward over the bolster at various speeds to elicit a forward protective extension reaction.

## 6. PRONE ON BALL

### 6.1 PRONE EXTENSION

The goals of these techniques are to increase the client's trunk and hip extensor range and control; to increase the client's ability to use the upper extremities in prone activities, upper extremity weight bearing, and forward protective extension; and to increase the client's ability to extend the hips and knees for standing and walking.

#### **Client's Position**

The client lies prone over the ball, with the ribs and pelvis well supported by the ball. The client's arms are in shoulder flexion over the ball; legs are abducted around your trunk (figure 6.1.1).

#### **Therapist's Position**

Place yourself behind the client, with the client's legs abducted around your trunk.

#### **Therapist's Hands**

Align the client's hips to neutral and maintain the hips in extension with your hands. Place both your hands on the client's femurs near or over the knees, thumbs parallel with the client's femurs. Depending on the client's needs, externally or internally rotate the client's hips to neutral (figure 6.1.1). Maintain this hand placement throughout the movement.

Clients who have tight hip flexors or a tight rectus abdominis may try to pull their hips into flexion. The ball should reduce this pull.

#### **Movement**

#### **Forward Weight Shift for Trunk and Hip Extension and Forward Protective Extension**

Guide the client's weight forward to facilitate upper extremity forward protective extension while stabilizing the hips and knees in extension and the hips in neutral rotation.

The client may reach down to the floor for symmetrical protective extension (figure 6.1.2), or the client may reach straight forward to a wall or mirror to activate the lower trapezius muscles (figure 6.1.3).

If the ball is small, the client may walk forward on open hands (wheelbarrow) (see figure 5.1.5). Arrange the environment so that the client looks down while walking on the hands.

You may bounce the client up and down on the ball to stimulate the client's proprioceptive and vestibular systems and thus increase the client's extension. One means of bouncing the ball is to place one foot under the ball and lift it with that foot while holding the client's legs in extension (figure 6.1.4). Your balance must be stable on the other leg.

## 7.1 WEIGHT SHIFTING IN QUADRUPED

All directions of weight shift—anterior/posterior, lateral, and diagonal—can be practiced in quadruped. The goals of the weight shifts are to increase the client's balance reactions in quadruped, to prepare for transitional movements, to enhance proximal joint stability, and to help to shape the arches of the hands.

It is extremely difficult to control the many degrees of freedom used by the client in quadruped—the shoulder girdles and upper extremities, the entire spine, and the pelvic girdle and lower extremities are all involved.

**Use weight shifts in quadruped only if the client can maintain neutral alignment in all joints during the transitions.**

Avoid this position if it is too difficult for the client to maintain neutral alignment. As an alternate treatment, practice weight shifts in the hands with the client prone over a bolster or ball to help control the client's many degrees of freedom.

### Client's Position

The client is in quadruped on the floor, with neutral alignment of all joints.

- The shoulder girdles are active, no “TV” shoulders with scapular winging.
- Weight bearing is on flat hands.
- The fingers are pointing forward and the hands are in line with the forearms. The shoulders should not be externally rotated.
- The spine is in a neutral position, not flexed or hyperextended.
- The pelvis is neutral, not anteriorly or posteriorly tilted.
- The hips are in 90° of flexion bilaterally.
- The knees are in 90° of flexion bilaterally.
- The ankles are plantar flexed and neutrally aligned, not dorsiflexed or everted.

### Therapist's Position

Kneel beside the client, in a position that allows you to weight shift with the client.

### Therapist's Hands

Place your *guiding hand* on the client's anterior trunk near the lower ribs. Spread your fingers so that your thumb and index finger are on the client's ribs and your remaining three fingers spread over the abdominals to the pelvis. Align the ribs and the pelvis with your *guiding hand*.

Place your *assisting hand* on the client's gluteus maximus at the pelvic-femoral joint.

If the client has an anterior pelvic tilt (figure 7.1.1), use the thumb and index finger of your *guiding hand* to give a slight inward pressure on the lower ribs to cue the abdominals to contract, to align the pelvis to neutral (figure 7.1.2). Be careful not to facilitate too much flexion, which results in a posterior pelvic tilt and trunk flexion (figure 7.1.3).

## 8. KNEELING AND HALF KNEELING

### 8.1 KNEELING LATERAL WEIGHT SHIFTS TO HALF KNEELING: PROXIMAL CONTROL

Kneeling is primarily a transitional position, and most children and adults do not spend much time in the position. However, various weight shifts can be practiced in kneeling in preparation for transitioning to half kneeling and standing.

The goals of this facilitation are to increase concentric activity of the hip adductors and extensors and eccentric activity of the hip abductors, to increase balance reactions in the trunk and unweighted leg, and to prepare for the transition from kneeling to standing.

#### Client's Position

The client kneels with hands on a stable surface.

#### Therapist's Position

Kneel or half kneel behind the client, placing your hands on the client's lateral and posterior hip joints (figure 8.1.1).

#### Therapist's Hands and Movement

Place both of your hands laterally and posteriorly over the client's hip joints, where the movement occurs.

Stabilize the client's lateral hip joint with your fingers, and press your thumbs into the client's hip extensors (figure 8.1.1). Your fingers must **not** be placed in the client's hip flexors.

Your *guiding hand* is on the soon-to-be weight-bearing hip (figure 8.1.2, right hip). Use the fingers of your *guiding hand* to control the degree of weight shift, and use your thumbs to facilitate the hip extensors. Give a slight downward pressure with your hand.

Use your *assisting hand* to guide the client's pelvis laterally so that the center of mass is placed over one knee and the other leg is unweighted (figure 8.1.2). The pelvis remains parallel with the surface and is not hiked, depressed, or rotated. **The movement is on the frontal plane.**

Your *guiding hand* controls the amount of weight shift but does not prevent the weight shift. **You must not relax your guiding hand, or the client will collapse.** If the client assumes excessive hip flexion during the weight shift, press your thumbs more firmly into the client's hip extensors. Keep your fingers on the lateral hip joint.

If the client's legs are widely abducted, a greater weight shift is needed than if the client's legs are close together. The goal is to get the center of mass over the new base of support (one knee) and not to take the center of mass beyond the base of support.

Once the weight is shifted laterally, the client responds with lateral righting of the head, trunk, and pelvis (figure 8.1.2). This facilitates a balance reaction in the unweighted lower



**Figure 8.1.1. Kneeling lateral weight shifts to half kneeling: proximal control.** The therapist's hands are placed laterally and posteriorly over the client's hip joints, where the movement occurs. The therapist's thumbs press into the client's hip extensors.



**Figure 8.1.2.** The therapist's *guiding hand* is on the weight-bearing right hip. The therapist's *assisting hand* guides the client's pelvis laterally so that the center of mass is shifted over the right knee and the left leg is unweighted.



**Figure 8.1.3.** The client's unweighted leg automatically comes forward to half kneel with the leg in line with the trunk and pelvis, not abducted.

extremity: hip abduction, flexion, and external rotation. Forward movement of the unweighted leg is initiated. During the client's response, continue to provide pressure in and down on the weight-bearing hip with your *guiding hand*.

In many cases, the client's unweighted leg automatically comes forward to half kneel with the leg in line with the trunk and pelvis, not abducted (figure 8.1.3).

If the leg unweights but does not come forward in line with the pelvis, slowly slide your *assisting hand* from the unweighted hip down the lateral side of the unweighted leg to the client's knee, and carefully bring the client's leg forward to half kneel.

It is very important that your *guiding hand* continue to provide pressure in and down on the weight-bearing hip as the unweighted leg moves. If the pressure on the weight-bearing hip is released, the client will become unstable and will not be able to bring the unweighted leg forward.

Once the client's leg is forward in a half kneel position, return your *assisting hand* to the client's pelvis (figure 8.1.3).

## 9. STANDING

These facilitation techniques can be practiced with clients who can assume some, but not full, control in standing. Orthotics may or may not be worn during the facilitation, depending on the mobility and control that the client has in the feet. If the client's feet can be controlled by your actions proximally at the hips, the client does not need to wear the orthotics during the facilitation. If the client's feet cannot be controlled by what you do at the hips, the client must wear the orthotics during the facilitation.

### 9.1 SYMMETRICAL STANCE

The goals of these techniques are to activate the gluteus maximus in standing in order to extend the hips and transfer the weight to the lateral borders of the feet.

#### Weight Shift to the Lateral Borders of the Feet

This technique is helpful for clients who stand with their weight on the medial side of their feet (figure 9.1.1). When the weight is distributed this way, the feet are pronated and the femurs are internally rotated.

##### Client's Position

The client stands in front of you. The client is usually more stable with the hands resting on a firm object. (A surface was not used in the photos so that the client's and the therapist's movement could be observed.)

##### Therapist's Position

Kneel behind the client, with both hands on the client's femurs.

##### Therapist's Hands and Movement

Place your hands on the client's femurs above the knees, fingers perpendicular around the femur, thumbs parallel to the femur and pointing up toward the hips (figure 9.1.1). This hand placement helps to control the client's knees and hips.

Give a slight upward pressure with your thumbs on the client's femurs while your fingers externally rotate the client's femurs. The external rotation must be sufficient to transfer the client's weight to the lateral borders of the feet (figure 9.1.2).

#### Distal Control for Lower Extremity Extension

Large clients require distal control of the femurs. Place your hands on the client's femurs above the patellae. Your fingers are perpendicular, wrapping around the femurs; thumbs are placed on the femurs, pointing up, parallel with the femurs (figure 9.1.3). Parallel alignment of the thumbs is important for the facilitation of hip extension. (Perpendicular placement of the thumb across the femur facilitates hip and knee flexion.)

# PREPARATION TECHNIQUES

These gait facilitation techniques can be practiced with clients who can assume some, but not necessarily full, control in standing. The client may or may not wear orthotics during the facilitation, depending on the mobility and control that the client has in the feet. If the client's feet can be controlled by what you do proximally at the hips, the client does not need to wear the orthotics during the facilitation. If the client's feet cannot be controlled by what you do proximally, orthotic use during the facilitation is recommended.

For these facilitation techniques to be effective, the client must actively participate in the process. The client must know, share, and be interested in achieving the goal. **You cannot make the client walk; you can only facilitate how the client walks.**

Neutral alignment of all body segments is important in the facilitation of gait. Malalignment problems should be addressed as much as possible before gait is facilitated. Placement of your hands is determined by the client's control and alignment abilities and problems. Some possible problems in the different planes are listed below:

## Sagittal Plane

- Excessive anterior or posterior pelvic tilt
- Marked trunk flexion or marked extension
- Limited hip range in flexion and/or extension

## Frontal Plane

- Limited or excessive lateral movement of the pelvis
- Excessive lateral flexion of the trunk over the pelvis
- Rib cage shift over the pelvis
- Poor control of the hip abductors and adductors for lateral weight shifts
- Poor eccentric hip abductor control
- Limited mobility in hip adductors

## Transverse Plane

- Limited or excessive counter-rotation of the upper trunk over the lower trunk
- Limited or excessive rotation of the pelvis over the weight-bearing leg
- Limited or excessive rotation of the pelvis with the moving femur