

Shoulder Stability and Shoulder Control



SHOULDER STABILITY AND SHOULDER CONTROL

Development

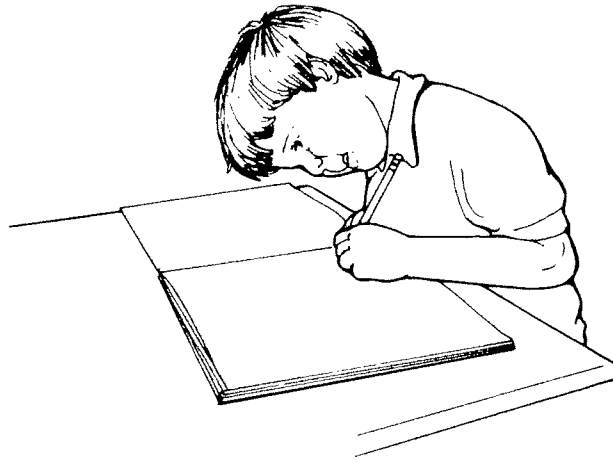
Early in life, children develop the ability to contract (pull together) the muscles on either side of the shoulder joint. This cocontraction enables them to hold the shoulder joint steady so the arm can be held in different positions while the forearm and hand accomplish different activities. The muscles on either side of the shoulder joint also control smooth movement of the arm by relaxing gradually on one side while contracting on the other side, in a perfect balance that allows the arm to move at the desired speed, force, and degree of movement. In the first two years of life, infants and toddlers engage in many movement activities that require them to apply pressure into the shoulder joint, such as rocking back and forth and side to side on hands and knees, leaning on extended arms and hands while standing at a small table, cruising along furniture, pushing large objects, and scribbling with crayons. They also experience a great deal of activity involving pull at the shoulder, such as pulling to stand, pulling objects, standing in crib holding onto the rail, and pushing and pulling to move their bodies. All of these experiences provide internal (kinesthetic and tactile) and external (visual) information about cocontraction and movement of the muscles that control the shoulder. As children grow older, the control of movement at the shoulder increases in smoothness and accuracy as memory of previous movement, body awareness, and ability to make spatial judgments improves.

Shoulder Instability and Poorly Controlled Movement

Difficulty in this area can be the result of abnormal muscle tone, neuromuscular disorders causing weakness of the shoulder or trunk muscles, the sensory-integrative difficulties associated with learning disabilities, developmental delay, experiential variation, or normal individual differences in development. Children's rates of motor development vary widely; some children are just slow to develop shoulder control due to their unique—yet entirely normal—rate of development or differences in childhood motor-learning experiences.

Regardless of the reason, these children are unable to hold their arms steady at the shoulder against pushing and pulling pressures (especially when the direction changes rapidly) or to control their arms in space with smooth, accurate, graded movement. They have trouble with activities that necessitate large movements of the arms when unsupported in space (for example, when writing or drawing using large motions on the chalkboard, and moving the arm across the page during drawing and writing tasks). Often they hold their arms stabilized against the desk or their trunks more than most children when using

their hands and fingers, and sometimes they move their paper during writing and drawing rather than moving the arm out away from the body. Lines drawn on the chalkboard are shaky and poorly controlled.



Beneficial Activities

It is important for these children to receive extra assistance and to practice a large number of activities that improve shoulder stability and control. Activities that apply pressure to the shoulder joint or require stabilization of the shoulder (such as pushing a wheelbarrow, playing freeze tag, and doing wheelbarrow walks) are beneficial. This type of activity gives the child extra sensory input and stimulates cocontraction of the muscles of the shoulder. It is useful immediately before activities that require controlled shoulder movement. Activities that require free (unsupported) movement of the arms in space (such as chalkboard or easel work or ball throwing and catching) will improve shoulder control.

If the child has abnormal muscle tone, use activities based on the recommendation of an occupational or physical therapist. Carry them out only after demonstration and guidance.

Compensatory Strategies

Children with weak shoulder stability or control benefit from adaptations that stabilize the arm in the desired position, increase resistance to arm movement to cut down on uncontrolled movement, and stabilize objects during manipulation. Examples of these kinds of modifications include adjusting the work surface to the proper height to stabilize the arms during fine motor activity; using weighted pens and heavy toys or manipulatives; taping down the paper for drawing or writing; and using nonslip material on the desk top during manipulative activities.

Child's Name _____

Date _____

SHOULDER STABILITY
Classroom and Individual Practice

SEPARATION OF SHOULDER BLADE AND ARM

Purpose

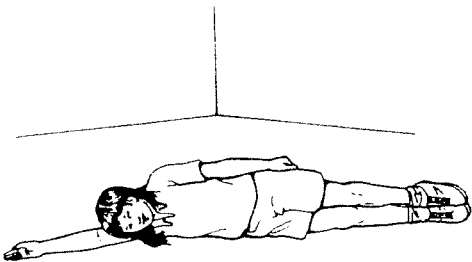
To improve ability to stabilize the shoulder blade (scapula) during movement of the upper arm (humerus)

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Procedure

Work on shoulder stability briefly before activities that require shoulder control.



1. Child lies on side with arm straight and in line with the trunk, and rocks back and forth.

2. Child sits or stands up; adult places one hand firmly on shoulder blade to hold it steady.

3. Adult stabilizes shoulder blade with one hand and uses the other hand to ease child's upper arm forward and overhead.

4. Repeat on the other side, if needed.

5. Child immediately moves on to an activity that requires shoulder control, such as reaching for objects, playing ball, or writing on chalkboard.



Desired Response

Child stabilizes the shoulder blades and moves the arms separately from the shoulders.

Undesired Response

Shoulders move together with upper arms as a single unit.

Variations and Adaptations

Child lies on stomach over adult's lap. Adult stabilizes scapula while using other hand to move the upper arm forward. Do this several times and then follow with shoulder-control activities.

While stabilizing shoulder blade with one hand, hold child's elbow with your other hand and press the upper arm directly into the shoulder joint. Hold the shoulder steady and rotate the elbow in small circles while pressing into the shoulder joint. Follow with shoulder activity. Hold shoulder down, if needed, to encourage arm to move separately.

During any upper-extremity activity, repeat one of these procedures, or hold the shoulder to stabilize it whenever it moves together with the arm as one unit.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER STABILITY Classroom and Individual Practice WEIGHT-BEARING ACTIVITIES

Purpose

To improve shoulder stability

Materials

Desk, wall, or other stable surface

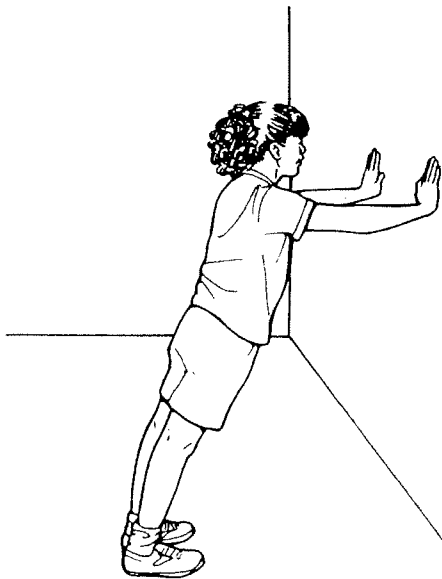
Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Procedure

Work on shoulder stability briefly. Follow with activities that develop shoulder control.

1. Child places body at a 45-degree angle to the wall, with shoulders directly in front of elbows and wrists, and elbows straight. If tone in the arms is high, this exercise is done with hands rotated slightly so that fingers point toward the sides (external rotation).
2. Child holds this position for 15 to 30 seconds.
3. Child immediately moves on to an activity that requires shoulder control, such as swinging on a swing, twirling a jump rope, playing ball, writing on chalkboard.



Desired Response

Child stabilizes shoulders so they support the body in correct alignment against gravity.

Undesired Responses

Shoulders are lifted up toward the base of child's skull, or shoulders are pulled back so that the upper back is not straight but curves in between the shoulder blades. Child bears weight primarily on one side.

Variations and Adaptations

Child leans down over a desk or table and rests weight on palms of hands. Again, shoulders are aligned directly above the hands and elbows.

Child shifts weight from one arm to the other.

Any activities carried out on hands and knees will encourage muscles on both sides of the joints to contract for stability (cocontraction).

Use of these activities should be directed by a qualified therapist.



Child's Name _____

Date _____

SHOULDER STABILITY Classroom and Individual Practice JOINT COMPRESSION

Purpose

To improve shoulder stability

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Procedure

Work on shoulder stability briefly. Follow with activities that develop shoulder control.



1. Child assumes all-fours position (on hands and knees) with elbows and wrists aligned directly below the shoulders. Neck is straight so the face is parallel to the floor.
2. Adult applies compression at child's shoulders, placing hands on them and pressing straight down for about 10 to 15 seconds, then releasing. Initially the force of the compression is low. Force is increased as child's shoulder stability increases. Force should not be great enough to fatigue child's muscles.
3. Child immediately moves on to shoulder control activity, such as writing on the chalkboard, playing ball, twirling a jump rope, cursive writing.

Desired Response

Child stabilizes shoulders so they support the body in correct alignment against gravity and the applied force.

Undesired Responses

Shoulders are lifted up toward the base of child's skull, or shoulders are pulled back so the upper back is not straight but curves in between the shoulder blades. Child bends elbows and lowers body to the floor.

Variations and Adaptations

If child cannot maintain all-fours position, this exercise can be done over a bolster.

Apply compression the same way in prone-on-elbows position. This can be done while child is looking at the instructions (placed on the floor) for the shoulder control activity that will be done immediately after the joint compression activity.

If tone is high, place hands so they rotate outward slightly (external rotation) and fingers point to the sides.

Use of these activities should be directed by a qualified therapist.



Child's Name _____

Date _____

SHOULDER STABILITY Classroom and Individual Practice **RECIPROCAL PUSH-PULL**

Purpose

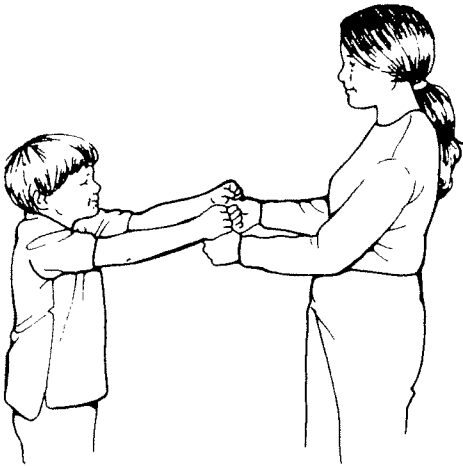
To improve shoulder stability

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Procedure

Work on shoulder stability briefly. Follow with activities that develop shoulder control.



1. Child sits on a stool or chair without back support, or stands in front of adult. Arms are extended in front of the body, with hands grasping adult's thumbs.
2. Adult instructs child to "freeze like a statue" so the arms are held still while adult pushes and pulls on child's hands. If necessary, demonstrate holding your own arm stiff while child tries to push and pull the arm to make it move.
3. Alternately push, then pull child's hands, with changes in direction made quickly so child cannot anticipate them. Repeat the activity several times to let child achieve greater success.
4. Child immediately moves on to shoulder control activity, such as playing ball, writing or drawing on the chalkboard, or twirling a jump rope.

Desired Response

Child stabilizes shoulders to prevent arm movement during reciprocal pushing and pulling forces. Most children can stabilize quickly against considerable resistance by seven to eight years of age. Decrease expectations of speed and force for younger children.

Undesired Response

Child's shoulder moves back and forth with adult's pushing and pulling, or the trunk moves in response to the force.

Variations and Adaptations

This can be done with one arm or with two arms at the same time.

Child holds a dowel or hoop while adult pushes and pulls it.

Use of these activities should be directed by a qualified therapist.



Child's Name _____

Date _____

SHOULDER STABILITY
Gym, Playground, and Extracurricular Practice
SCOOTERBOARD ACTIVITIES

Purpose

To improve shoulder stability

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

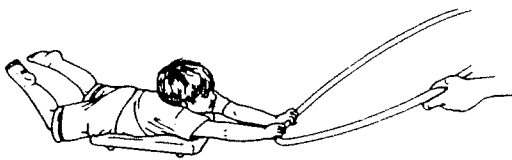
Procedure

Encourage scooterboard activities as often as possible. Incorporate them into games and after-school play.

Use scooterboard movement in relays and other gym games.

Follow scooterboard activities with shoulder-control activities, such as ball play (throwing, catching, basketball, baseball, tennis), jumping rope, and so on.

Activities



1. Child sits or lies on stomach (prone position) on a scooterboard and grasps a firm hoop. Adult or another child grasps the other side of the hoop and pushes and pulls it to move child on the scooterboard. Child is instructed, "Keep your arms stiff so you'll move." Child's arms are straight at the elbows so that cocontraction occurs mainly at the shoulders, and child maintains stiff arms while being pushed and pulled around the room.
2. Child sits or lies on stomach (prone position) on scooterboard and holds knotted rope or hoop with straight arms. Adult or another child pulls child around the room. The "puller" alters the force on the rope occasionally by moving closer to child on the scooterboard and allowing the rope to become lax.
3. Child sits or lies on stomach on scooterboard and propels self in a circle, straight forward or backward, using arm movement.

Desired Response

Child stabilizes shoulders to maintain sitting or prone position and to control scooterboard movement.

Undesired Responses

Child's shoulders move back and forth or trunk moves in response to force of rope or hoop. Child uses feet to propel scooterboard.

Variations and Adaptations

Any activity involving arm use for propelling scooterboard will help to develop shoulder stability.

Child propels self through obstacle courses or on a path made of two ropes to increase directional control of movement.



Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER STABILITY Gym, Playground, and Extracurricular Practice GAMES

Purpose

To improve shoulder stability

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

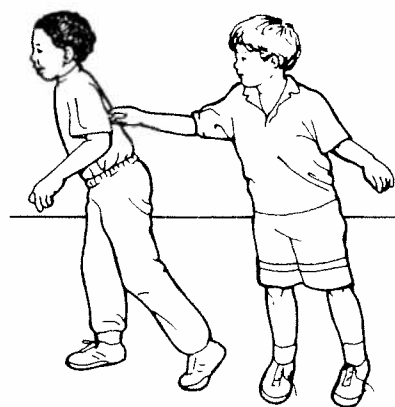
Procedure

Encourage these kinds of activities as often as possible. Incorporate them into gym class, recess, and after-school play.

Activities

1. Freeze Tag. This is played like regular Tag except that when tagged the child quickly freezes (holds body still) and maintains this position until "freed" by other players.
2. Red Light, Green Light. The leader stands many yards in front of the players, who are lined up an equal distance from the leader. The leader shuts eyes and calls out "green light" and the players run toward the leader. When the leader calls out "red light," the players stop and freeze their positions as quickly as they can. After calling "red light," the leader opens eyes and calls the names of any runners whose movement is seen. Those players return to the starting line. This is repeated until a player reaches and touches the leader. The winner is the child who can freeze the most quickly to reach and touch the leader without having movement spotted.
3. Statue. The leader holds one hand of a player and swings the child in circles. When the leader lets go of the player's hand, the player must become a "statue" by maintaining the position in which the body lands. If unable to do so, the child is "out." The last child "in" wins the game. One person can play by attempting to maintain positions for increasing lengths of time.

Caution: This game should be played only with older children and only with a mature and gentle leader. Overenthusiastic swinging with too much force or with very young children can result in dislocated shoulders (especially in children with low muscle tone).



Desired Response

Child quickly cocontracts the muscles around the joints to stabilize them, preventing movement.

Variations and Adaptations

Children dance or move to music and freeze when music is stopped.

Children run when leader calls, "Go," and freeze when leader says, "Stop." The last one to freeze is "out." The last player remaining wins the game.

Any activity that involves quick stopping and starting and freezing into various arm positions will encourage shoulder stability. Invent other games with these features.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER STABILITY Gym, Playground, and Extracurricular Practice **GYM AND PLAYGROUND EQUIPMENT**

Purpose

To improve shoulder stability

Preparation

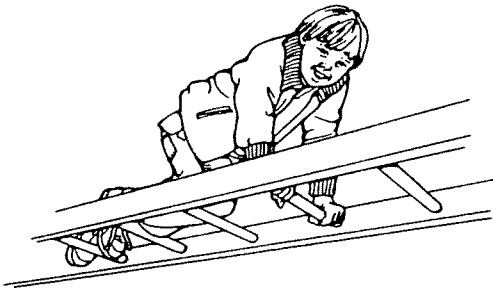
If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Procedure

Encourage these kinds of activities as often as possible. Incorporate them into games and after-school play.

Activities

1. Seesaws and swings. Playing on this equipment encourages shoulder stability, as child is supported by holding onto the handle or ropes. If child has difficulty maintaining the stability needed for holding on adequately, do some joint compression activities first. Then place child on the seesaw or swing, and assist with holding as needed. Decrease assistance as stability improves.
2. Monkey bars, gym bars, climbers. Crawling across the top of gym bars is an excellent exercise for increasing shoulder stability. Hanging from the bars will be more difficult for the child with poor cocontraction at the shoulders and should be attempted for only short distances or short periods of time, with time and distance increased as ability improves. Encourage climbing activities.
3. Trampolines provide sensory experiences of resistance and pressure to movement, which assist in developing stability and control at the joints. Encourage child to drop from a kneeling or standing position to hands and knees, and to bounce back up. Bouncing on hands and knees, from knees to hands and back, or any bouncing activity that involves the arms and shoulders will be helpful.



Desired Response

Child stabilizes shoulders in good alignment during these activities. Whenever possible, follow these kinds of activities with shoulder-control activities, such as ball play, jumping rope, and so on.

Use of these activities should be directed by a qualified therapist.



Child's Name _____

Date _____

SHOULDER STABILITY
Gym, Playground, and Extracurricular Practice

BOLSTER AND PHYSIOBALL ACTIVITIES



Purpose

To improve shoulder stability

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder stability.

Position

Child lies on chest and stomach over physioball or bolster, with arms outstretched and elbows straight. Stand or kneel behind child. Hold onto ankles, knees, or hips (depending on the degree of support the child needs). Encourage child to keep the neck straight and to look directly down at the floor.

Procedure

1. Rock child forward so child's palms touch the floor.
2. Playfully say, "Get back here," as you pull child back toward you so child rocks back up onto the ball.
3. Encourage child to kick (straighten the legs) so the body is propelled forward toward the floor, where child supports weight on straight arms.
4. Pull child back toward you ("Where are you going?"), and a game has begun.
5. Let child propel further forward and bear more weight on straight arms each time.
6. Finish by encouraging child to continue forward in wheelbarrow position and to walk as many steps as possible on extended arms while you support child's legs.
7. Follow this activity with one that requires shoulder control, such as swinging on a swing, twirling a jump rope, playing ball, writing on chalkboard.

Desired Response

Child stabilizes shoulders in good alignment during these activities and supports body weight on straight (extended) arms and open hands during wheelbarrow walk.

Undesired Responses

Child hyperextends neck (bends it back) to assist with arm extension, bends (flexes) neck or elbows, curves trunk around ball so that body hangs, or bears weight on fisted hands.

Variations and Adaptations

Instead of finishing with wheelbarrow walk, child can drag-crawl off the ball or bolster on straight arms.

Any activities involving wheelbarrow-walk position will help with shoulder stability. Have children compete with themselves in taking an increasing number of wheelbarrow steps.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Classroom and Individual Practice
VERTICAL MOVEMENT

Purpose

To improve coordination of large vertical movements of the arm

Materials

Large vertical (upright) writing surface, such as chalkboard, large mural paper, easel

Wet polybrush, chalk, grease pencil, crayon, paintbrush, pencil, or other writing implement

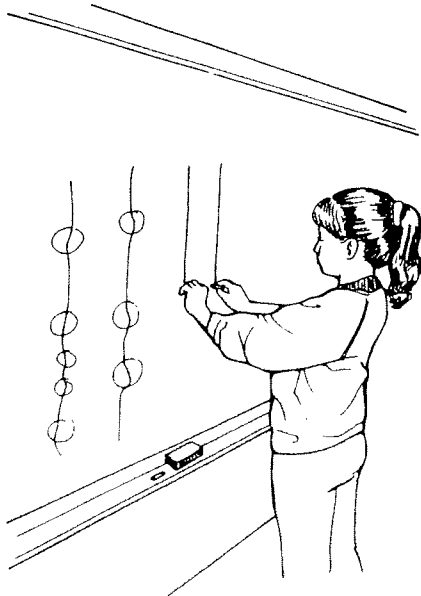
Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement; repeat if child's arm becomes tense during these activities.

If shoulder stability is a problem, finish the preparation period with a few minutes of activity that enhances cocontraction.

Positioning

Child stands in front of upright writing surface, with feet on either side of taped line. Elbow is fairly straight so movement starts mostly at the shoulder.



Procedure

1. Child makes vertical lines from top to bottom, using both arms. Encourage child to try to achieve straight lines with smooth movement.
2. If line is jerky, have child circle areas where line is not smooth.
3. Child repeats, attempting to decrease the number of circled areas, until vertical lines are accomplished in a smooth, controlled manner.
4. Child repeats, using one arm only. Child alternates arms after several repetitions with each.
5. Activity is followed with a functional activity that utilizes vertical shoulder movement, such as cleaning or "painting" the chalkboard with wet paper towel or paintbrush loaded with water; writing large letters on the board or with paint on an easel, focusing on smoothness of the vertical strokes; or drawing or painting murals that use lots of top-to-bottom strokes (for example, child paints an animal in a cage, then paints cage bars).

Desired Response

Child produces vertical lines, from top to bottom, using smooth movement of the whole arm. Movement at the trunk and elbow is inhibited.

Undesired Responses

Movement occurs primarily at the elbow; the upper arm is held against the trunk; or trunk movement assists in formation of lines. Shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and remove weight as performance improves.

At first, child bends knees so body moves downward; and moves outstretched arms with body to form the lines. With each repetition, child decreases body movement and increases arm movement until the body is held still and the arms move in isolation.

Provide manual assistance at child's shoulder to help with control of movement. Decrease the amount of support as control increases.

Children who have difficulty planning or executing spatial aspects of movement often perform better when they say, "Top to bottom" as they produce these lines.

Activity can be followed by writing or drawing activities involving vertical lines on a table or desk, to assist with the transition of "top to bottom" from the upright plane to the flat plane. (A different shoulder movement is required to produce lines that look the same, and this can be confusing to some children.)

Have child perform shoulder-control activities to music to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

If balance or trunk stability is a problem, child can perform this activity while sitting, using a desk-top easel or chalkboard.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Classroom and Individual Practice
FRONT-TO-BACK MOVEMENT

Purpose

To improve coordination of large front-to-back movements of the arm

Materials

Paper, finger-paint paper, textured board, or other flat (horizontal) writing surface

Grease pencil, crayon, paintbrush, pencil, marker, or other writing implement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement; repeat if the child's arm becomes tense during these activities.

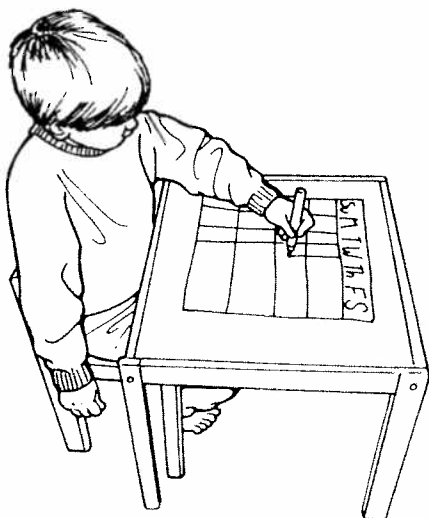
If shoulder stability is a problem, finish the preparation period with a few minutes of activity that enhances cocontraction.

Positioning

Child stands in front of a desk or table, with writing surface on it (taped, if necessary). Arms hang straight at sides.

Procedure

1. Child lets arms hang loosely at sides, and swings them smoothly from front to back and back to front.
2. When movement is smooth, child grasps writing implement in dominant hand and repeats movement.
3. Child continues the same movement but produces a line from top to bottom on the writing surface.
4. Child repeats until lines are fairly smooth.
5. Child is seated; repeats movement to form smooth lines in a rhythmic manner. Line size is decreased as skill improves.
6. Activity is followed with a functional desk-top activity that utilizes front-to-back movement of the upper arm (for example, writing large letters or numbers on paper, focusing on control of vertical strokes; or making a calendar with vertical lines to form the boxes for dates).



Desired Response

Child produces smooth lines, from front to back, using movement of the upper arm. The elbow moves, but in response to shoulder movement.

Undesired Responses

Movement occurs primarily at the wrist; the upper arm is held against the trunk; or trunk movement assists in formation of lines. Shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and eventually remove weight as performance improves.

If balance or standing is a problem, let child begin this activity on all fours (hands-and-knees position) or in sitting.

Provide manual assistance at the shoulder to help with control of movement. Decrease the amount of support as control increases.

Children who have difficulty planning or executing spatial aspects of movement often perform better when they say, "Top to bottom" as they produce these lines. If this is confused with top-to-bottom movement on an upright surface, it helps some children to see the relationship by placing a desk up against a chalkboard or attaching a piece of paper so that it spans the wall in front of the child and the desk. Child can then say, "Top to bottom" while drawing a line that starts at the top of the paper on the wall (or the chalkboard), and continues down onto the desk. Have the child repeat this several times.

Have child perform shoulder control activities to music to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

Have child draw in sand or dirt with a stick.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Classroom and Individual Practice
HORIZONTAL MOVEMENT

Purpose

To improve coordination of large horizontal movements of the arm

Materials

Large upright writing or drawing surface, such as mural paper taped to wall, chalkboard, easel, textured board, vinyl-covered board

Grease pencil, crayon, paintbrush, pencil, wet polybrush, marker, or other writing implement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement; repeat them if child's arm becomes tense during these activities.

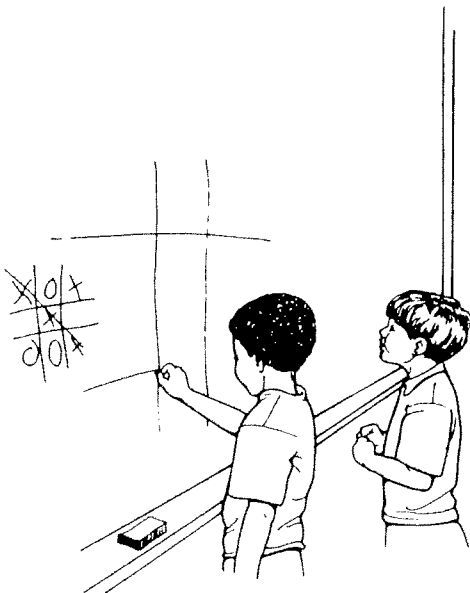
If shoulder stability is a problem, finish the preparation period with a few minutes of activity that enhances cocontraction.

Positioning

Child stands in front of chalkboard or other upright surface, with feet on either side of taped line. Elbows are fairly straight so movement is initiated at the shoulder.

Procedure

1. Child grasps writing implements in both hands and draws lines from left to right and back. Instruct child to make movements smooth and rhythmic.
2. Child repeats, using each arm individually.
3. Child circles any waves or bumps in the lines.
4. Child repeats activity, attempting to decrease the number of circled areas.
5. Activity is followed by one that incorporates horizontal movement into a functional task (for example, writing large letters or numbers, focusing on control of horizontal strokes; making a calendar with horizontal lines to form the boxes for dates; or playing tic-tac-toe).



Desired Response

Child produces smooth lines from left to right and right to left, using movement of the upper arm.

Undesired Responses

Child moves sideways as the horizontal line is produced, so taped line is crossed; the trunk rotates (waist twists) as the arm moves; or the elbow and wrist create the movement that produces the line. Shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and eventually remove weight as performance improves.

Provide manual assistance at child's shoulder, to help with control of movement. Decrease the amount of support as control increases.

Children with difficulty planning or executing spatial aspects of movement often perform better when they say, "Left to right" or "Right to left" as they produce these lines.

Have child perform shoulder-control activities to music to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

Have child draw horizontal lines (or snakes) in sand or dirt with a stick.

If balance or standing is a problem, have child practice at a desk-top easel.

This kind of activity can be carried out on a flat (horizontal) surface, such as paper on a desk or table.

Vary speed of line formation to determine the easiest speed for the child. Start with that speed, and encourage more difficult speed as skill improves.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL Classroom and Individual Practice DIAGONAL MOVEMENT

Purpose

To improve coordination of large diagonal movements of the arm

Materials

Large upright writing or drawing surface, such as mural paper taped to wall, chalkboard, easel, textured board, vinyl-covered board

Grease pencil, crayon, paintbrush, pencil, wet polybrush, marker, or other writing implement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement; repeat if child's arm becomes tense during these activities.

If shoulder stability is a problem, finish the preparation period with a few minutes of activity that enhances cocontraction.

Positioning

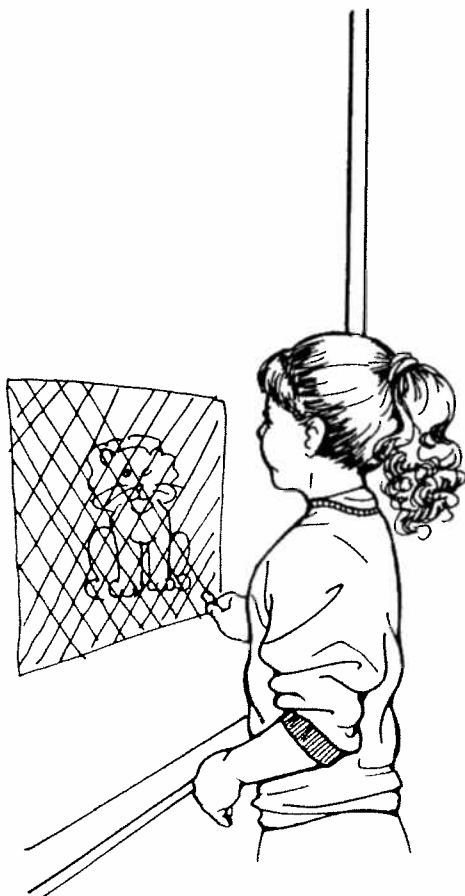
Child stands in front of chalkboard or other upright surface, with feet on either side of taped line. Elbows are fairly straight so movement is initiated at the shoulder.

Procedure

1. Child grasps writing implements in both hands and draws large diagonal lines from top to bottom, left to right and then right to left. Instruct child to make movements smooth and rhythmic.
2. Child repeats, using each arm individually.
3. Child circles any waves or bumps in the line.
4. Child repeats activity, attempting to decrease the number of circled areas.
5. Activity is followed by one that incorporates diagonal movement into a functional task (for example, writing large letters or numbers, focusing on control of diagonal strokes; or drawing an animal and drawing diagonal "bars" to cage it).

Desired Response

Child produces smooth diagonal lines from left to right and right to left, using movement of the upper arm.



Undesired Responses

Child moves body sideways as the diagonal line is produced, so the taped line is crossed; the trunk rotates (waist twists) as the arm moves; or the elbow and wrist create the movement that produces the line. The shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and eventually remove weight as performance improves.

Provide manual assistance at child's shoulder to help with control of movement. Decrease the amount of support as control increases.

Children who have difficulty planning or executing spatial aspects of movement often perform better when they say, "Left to right" or "Right to left" as they produce these lines.

Have child perform shoulder-control activities to music to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

Have child draw diagonal lines (or snakes) in sand or dirt with a stick.

If balance or standing is a problem, let child practice at a desk-top easel.

This kind of activity can be carried out on a flat (horizontal) surface, such as paper on a desk or table.

Vary speed of line formation to determine the easiest speed for the child. Start with that speed, and encourage more difficult speed as skill improves.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Classroom and Individual Practice

ROTARY (CIRCULAR) MOVEMENT

Purpose

To improve coordination of large circular movements of the arms

Materials

Large upright writing or drawing surface, such as mural paper taped to wall, chalkboard, easel, textured board, vinyl-covered board

Grease pencil, crayon, paintbrush, pencil, wet polybrush, marker, or other writing implement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement; repeat if child's arm becomes tense during these activities.

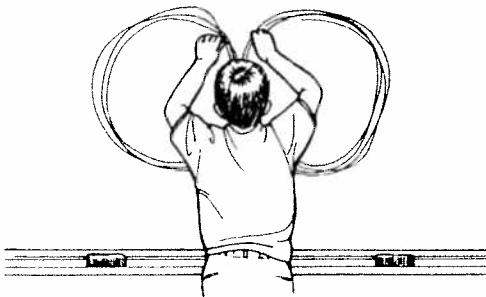
If shoulder stability is a problem, finish the preparation period with a few minutes of activity that enhances cocontraction.

Positioning

Child stands in front of chalkboard or other upright surface, with feet on either side of taped line.

Procedure

1. Child grasps writing implement in dominant hand and draws large circles in a counterclockwise direction, starting at the top. Child is instructed to continue this motion and to focus on making movements smooth and rhythmic. Have child say, "Down, around, and up," if this helps.
2. Child repeats Step 1, using both arms at the same time.
3. Child repeats Steps 1 and 2 in clockwise direction.
4. Child makes large circles with both arms, with the right circle going clockwise and the left circle going counterclockwise. Hands start at the top, go down and away from each other, up and toward each other, and repeat.
5. When Step 4 is accomplished smoothly, child repeats but with directions reversed.



6. Activities are done for a few minutes before incorporating circular movement into a functional task (for example, writing large letters or numbers, focusing on control of circular strokes; drawing or painting a large picture; or erasing the chalkboard, using circular motions).

Desired Response

Child produces smooth circles in all directions, using movement of the upper arms.

Undesired Responses

Child's body moves sideways as the circle is produced, so the taped line is crossed; the trunk rotates (waist twists) as the arm moves; or the elbow and wrist create the movement that produces the line. The shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and eventually remove weight as performance improves.

Provide manual assistance at child's shoulder, to help with control of movement. Decrease the amount of support as control increases.

Have child perform shoulder-control activities to music to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

Have child draw large circles in sand or dirt with a stick.

If balance or standing is a problem, have child practice at a desk-top easel, or using prone stander.

This kind of activity can be carried out on a flat (horizontal) surface, such as paper on a desk or table. Finger paint can be used for this activity.

Vary speed of movement to determine the easiest speed for the child. Start with that speed, and encourage more difficult speeds as skill improves.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Classroom and Individual Practice
MOVEMENT COMBINATIONS

Purpose

To improve coordination of large movements of the arms

Materials

Large upright writing or drawing surface, such as mural paper taped to wall, chalkboard, easel, textured board, vinyl-covered board

Grease pencil, crayon, paintbrush, pencil, wet polybrush, marker, or other writing implement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on coordinated movement. This is particularly important and should be repeated if child's arm becomes tense during these activities.

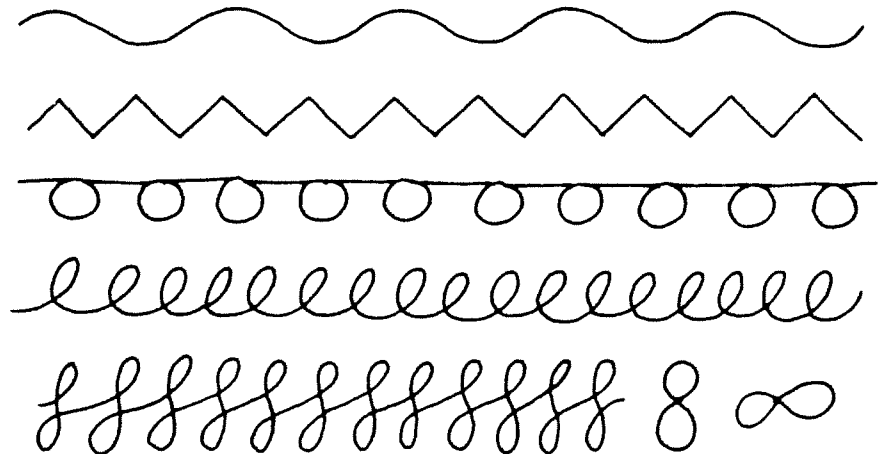
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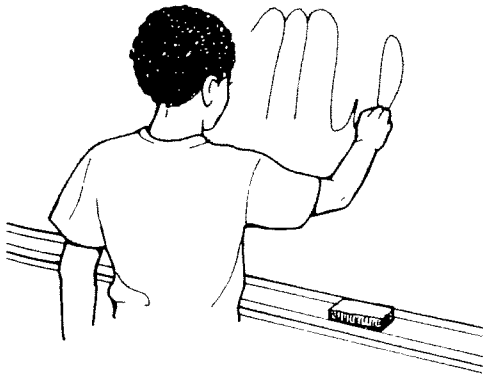
Positioning

Child stands in front of chalkboard or other upright surface, with feet on either side of taped line.

Procedure

1. Child grasps writing implement in dominant hand and reproduces designs that are demonstrated by adult, using whole-arm movement. Encourage child to let the movement flow smoothly.
2. Examples of combination movement patterns include these:





3. Child circles places where production differs from the model due to shaky movement or poor control. Child repeats the exercise, attempting to decrease number of circles during successive attempts.
4. Activity is followed by one that incorporates large shoulder movement into a functional task (for example, writing large letters or numbers; or drawing or painting a large picture). Large cursive writing is an excellent activity.

Desired Response

Child produces smooth line combinations in all directions, using movement of the upper arms.

Undesired Responses

Child's body moves while drawing so the taped line is crossed; the trunk rotates (waist twists) as the arm moves; or the elbow and wrist create the movement that produces the lines and shapes. The shoulder is raised with upper arm movement.

Variations and Adaptations

Place weights around child's wrists to assist with smooth movement. Decrease and eventually remove weight as performance improves.

Provide manual assistance at the child's shoulder to help with control of movement. Decrease the amount of support as control increases.

Have child perform shoulder control activities to enhance the relaxed, smooth, rhythmic qualities of the desired movement.

Have child draw pictures and designs in sand or dirt with a stick.

If balance or standing is a problem, have child practice at a desk-top easel, or using prone stander.

This kind of activity can be carried out on a flat (horizontal) surface, such as paper on a desk or table. Finger paint can be used for this activity.

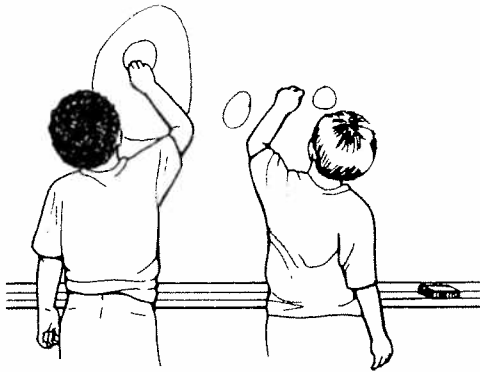
Vary speed of movement to determine the easiest speed for the child. Start with that speed, and encourage more difficult speeds as skill improves.

Use of these activities should be directed by a qualified therapist.

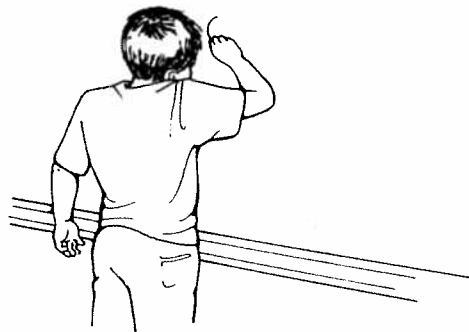
Child's Name _____

Date _____

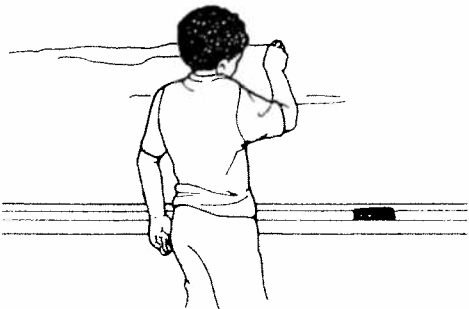
SHOULDER CONTROL Classroom and Individual Practice CLASSROOM ACTIVITIES



*Correct arm use
Large arm movements away from trunk*



*Incorrect arm use
Shoulder raised and moved as a unit with arm*



*Incorrect arm use
Arm held in one position, body moved to draw lines*

Purpose

To improve coordination of large movements of the arms

Materials

Large upright (vertical) writing surfaces for scribbling, drawing, and writing, such as:

- Large chalkboards (or door or wall covered with chalkboard paint)
- Mural (or butcher's paper) attached to wall and replaced regularly
- Large board covered with paper and clear adhesive plastic, for drawing on with grease pencils, then erased with paper towel
- Easels
- Desk-top easels and upright chalkboards
- Painting corner, with walls and floor of corner covered with vinyl or other waterproof material, and paper tacked to wall for painting

Activities

Any scribbling, writing, or drawing on these surfaces is helpful. Encourage child to use arm movement to produce large, fluid lines while holding the trunk still.

Encourage child when writing to move dominant arm in a horizontal direction away from the body, rather than moving the paper with the nondominant hand.

Drawing and writing on large, flat surfaces with large movements will use shoulder movement.

Variations and Adaptations

Scribbling or drawing to music can enhance the relaxed, rhythmic qualities of the desired movements.

Have child write or draw pictures with a stick in sand, dirt, or snow.

If balance or standing is a problem, have child practice at a desk-top easel, or using a prone stander.

Have child practice spelling and writing using large arm movements in the air.

Writing or scribbling on a chalkboard or paper placed on the floor often increases stability because of the added weight of the arm.

Comments

The challenge for the teacher is to encourage this child to engage in activities that will improve arm coordination as much as possible, while helping the child to use compensatory strategies to avoid arm movement when difficulty might result in embarrassment or frustration in the classroom.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL
Gym, Playground, and Extracurricular Practice
MOVEMENT COMBINATIONS

Purpose

To improve control of shoulder movement

Preparation

If stiffness or low tone is a problem, carry out activities to normalize tone before working on shoulder-control activities.

If shoulder stability is weak, prepare for these activities with a few minutes of activity that enhances cocontraction.

Procedure

In general, these activities involve unsupported large movements of the arms in space. Encourage these kinds of activities as often as possible. Incorporate them into gym class, recess, and after-school play.

Activities

1. **Swimming.** This is one of the best activities for improving shoulder stability and control, as well as body awareness, strength, and a number of other components of movement. The resistance provided by the water gives extra sensory information about arm movement during stroke patterns such as the breaststroke, sidestroke, and crawl. Playing Marco Polo and other throwing games in the water gives opportunities for children to use large shoulder movements.
2. **Racket-and-ball games.** Have children play games that involve swinging the arm to hit a ball (for example, badminton, tennis, racquetball).
3. **Other ball games.** Choose games such as baseball, volleyball, basketball, and those which involve throwing and catching large, heavy balls (therapy balls or medicine balls). If ball skills are weak, start with a large ball; stand a short distance from the child for catching and throwing. Decrease the size of the ball and increase the distance as control improves.
4. **Activities that involve large arm movements.** These include ribbon dancing, twirling a jump rope, and painting walls with a roller or brush.



Desired Responses

Arm movements are smooth and controlled. Unnecessary trunk, shoulder, and elbow movement is inhibited.

Undesired Responses

Upper arms are held against trunk for stability; shoulders are raised with arm movement; trunk movement is substituted for arm movement.

Variations and Adaptations

If standing or balance is a problem, have child do these activities in a sitting or kneeling position.

Arms can be moved away from the trunk gradually as coordination improves.

Provide physical support at child's shoulder. Decrease support as child's abilities improve.

If eye-hand coordination is weak and you want to focus on shoulder control, choose activities that minimize eye-hand requirements (for example, swimming or twirling a jump rope); or use only simple eye-hand tasks (for example, throwing a large ball).

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

SHOULDER CONTROL Compensatory Strategies

CLASSROOM POSITIONING AND EQUIPMENT

Purpose

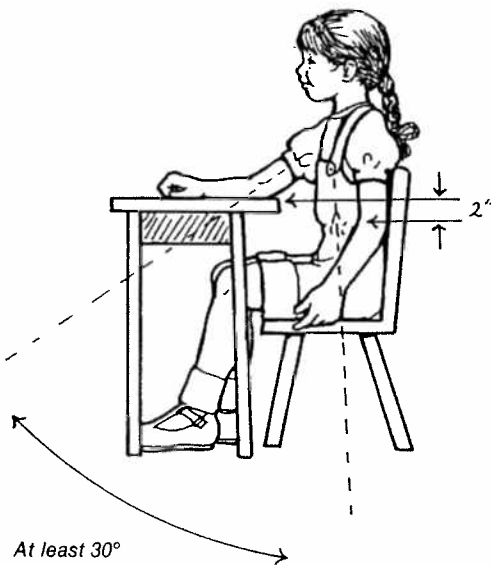
To aid the child's control of arm and hand movement

Strategies

Consider methods of improving arm and hand movements through:

- External support for the upper arm
- Increased weight or friction to decrease uncontrolled movement
- Equipment to stabilize objects during manipulation.

Support for Upper Arm



1. Stable body posture. A well-supported trunk and symmetrically aligned body are essential for good shoulder control. Child should be able to rest feet firmly on the floor; the chair back should support the trunk upright or reclined to no more than 5 degrees (unless a more reclined position is necessary due to balance or trunk control difficulty); and the hips and knees should be supported at a 90-degree angle.

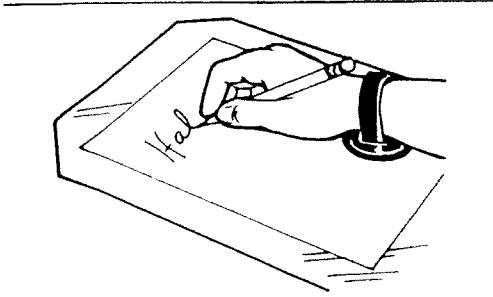
2. Proper height of working surface. Most people use their arms and hands best when the upper arms are held forward slightly from the trunk (at least 30 degrees). The working surface should be two inches above the bent elbow when the child is seated upright in a chair with feet on the floor. If the surface is too low, child will use the arms without optimal support or will bend over to stabilize the arms, resulting in poor posture.

3. Slanted desk top. For many children, slanted desk tops not only provide added stability for the arms during writing and reading but also improve posture. Adjustable slanted work surfaces can be purchased commercially and attached to a regular desk or table.



4. Stabilization habits. Encourage child to rest forearms on the table or desk top during all manipulative activities, such as drawing, writing, and cutting with scissors. If necessary, child can rest hands or wrists on the table or desk during cutting. Provide physical cues, such as tapping child's elbow when it is up in the air during classroom writing.

5. Thera-Band® or other soft material. Tie this material around child's upper arms in a ring; or provide physical support at child's shoulders to keep arms together in front during manipulative activities.



Increased Weight or Friction to Decrease Uncontrolled Movement

1. Weighted pens. These are helpful for improving writing performance of some children who have slight arm incoordination. They can be purchased commercially or can be made by filling a thick pen housing with small, heavy materials, such as BB shot.
2. Pencils, grease pencils, and other resistive writing materials. These provide more friction on contact with the writing surface. They may be easier to stabilize and control than pens and markers. Provide a variety of writing implements, and encourage the child to use the ones that result in the best performance.
3. Wrist Hold-Down. This commercially available wristband is magnetically attached to a metal writing surface. It stabilizes the wrist and hand during writing and can be adjusted to permit various degrees of movement.
4. Weighted vest or wrist weights. Commercially available adaptive vests and weights sometimes improve control by stabilizing the shoulders (vests) and decreasing uncontrolled movements.
5. Heavier toys and objects are sometimes easier for children to manipulate.
6. Floor chalkboard. Kneeling over a chalkboard on the floor during writing and drawing often decreases tremors and increases control because of the added resistance of the weight of the arm and the matte surface of the chalkboard.

Equipment to Stabilize Objects

1. Place Dycem®, a nonslip material, on desk or table top during manipulative activities to stabilize objects.
2. Make a desk fence by nailing strips of wood along the outside edges of a desk to keep items from falling off.
3. Suction devices and clamps are useful for stabilizing toys and manipulatives on desk or table tops.
4. Tape the paper to the desk top if child has trouble stabilizing it during writing or drawing activities.
5. Use shields to cover the typewriter or computer keyboard so children's fingers won't get caught between the keys.
6. Mount flexible-loop scissors on a block of wood so children who have poor arm control are able to cut by simply pressing down.

Comments

These suggestions may improve classroom performance of fine motor tasks. However, the child's arm coordination will not improve, and abnormal movement patterns may be strengthened unless the child also is encouraged to engage in activities that improve coordination. Do not use compensation strategies exclusively unless it has been determined that the child's arm coordination will not improve to a functional level with practice, thus making compensation the top priority.

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Use of these suggestions should be directed by a qualified therapist.

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