Safe Handling of Children with Movement and Muscle Tone Problems

Children's Hospital
Health Sciences Centre Winnipeg
Hôpital pour enfants
Centre des sciences de la santé Winnipeg

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Caring for Health
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À l'écoute de notre santé

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Disclaimer

This information is for health care workers, parents and caregivers of children with muscle tone problems. The advice provided is general and not designed for a specific child. It is not meant to be medical advice or to replace medical care. Please consult your child's doctor or therapist for specific advice. Children's Hospital and the WRHA do not promise any particular result from the implementation or use of these guidelines and no representation or warranty is given by Children's Hospital or the WRHA in that regard.

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Foreword

This manual, and the video it accompanies, is designed to give you basic information about how to safely handle, move and care for children with muscle tone problems.

The general guidelines provided here do not replace a child's individual care and movement plan, and should not be considered or used as a substitute for medical advice.

Every child is an individual, and every family is unique.

The creators of this educational material strongly encourage a family-centred approach. This includes, but is not limited to, asking families what handling, moving, and positioning approaches work best for them.

Specific positioning approaches, lifts, and transfers demonstrated in the video should not be attempted unless specifically approved or recommended by a child's licensed physiotherapist or occupational therapist.

This manual does not replace training in body mechanics or safe lifting and transferring techniques. It provides additional information to help you handle children with muscle tone problems safely.

Within the Winnipeg Regional Health Authority, **Safe Patient Handling & Movement Program** has very specific guidelines which health care workers are required to follow when moving patients of all ages. Some centres, including Health Sciences Centre, have mandatory hands-on training sessions for staff.

If you have questions or concerns about body mechanics or your own ability to complete certain activities, please consult your Occupational & Environmental Safety and Health (OESH) department or your own health care professional.

How to Use This Manual

Children with movement and muscle tone problems are more likely to need help with basic care than other children. They are also at greater risk of being injured during basic care activities.

This manual, and the DVD it accompanies, will give you information and guidelines to help you safely handle, move, and care for children with movement and muscle tone problems.

This manual is to be used **with** the DVD *Safe Handling of Children Who Have Movement and Muscle Tone Problems*. It is strongly recommended that you **watch** the video and refer to this manual for more information.

Many of the care activities on the DVD are separated into high muscle tone and low muscle tone sections to demonstrate specific suggestions for each type of muscle tone in the clearest way possible.

The manual begins in the same way as the video:

- Introduction to Muscle Tone and Movement Problems
- Caring for Children with High Muscle Tone (General Principles)
- Caring for Children with Low Muscle Tone (General Principles)

The remainder of the manual contains suggestions for both high and low muscle tone activities grouped together. This applies to all the practical chapters:

- Positioning
- Stretches
- Range of Motion
- Dressing
- Lifts and Transfers
- Bathing
- Feeding

Throughout the manual, you will see boxes like this:

> **DVD Link up:** Watch the **Foreword** to see and hear about the purpose of the DVD.

These boxes will tell you where to find the corresponding section(s) on the DVD by using the DVD chapter menu.

Introduction to Muscle Tone and Movement Problems

DVD Link up: Watch the **Introduction to Movement and Muscle Tone Problems** to see and hear more detailed information, and for examples of muscle tone and movement problems.

What is muscle tone?

When we are awake, our muscles have just enough tension in them to keep our basic posture and to be ready to move as soon as we want them to. This base level of tension in the muscles is called **muscle tone**.

Definition

Muscle Tone: the amount of tension in muscles when they are at rest.

Types of muscle tone problems

- **Low muscle tone** (Hypotonia): when there is *not enough* tension in a muscle when it is at rest.
- **High muscle tone** (Hypertonia): when there is *too much* tension in a muscle when it is at rest.
- **Mixed muscle tone** is *any combination of high, low and normal* muscle tone. That means there are many different kinds of mixed muscle tone.

Low Muscle Tone

There is a wide range of low muscle tone. Muscle tone that is very, very low is also called **flaccidity**.

High Muscle Tone

There are two different kinds of high muscle tone: **rigidity** and **spasticity**.

Rigidity, or *rigid* high muscle tone:

- Means muscles resist being stretched, no matter how fast or slow you move them.
- Is a less common kind of high muscle tone, especially in children.

Example: People with Parkinson's disease can develop rigid high muscle tone.

Spasticity, or *spastic* high muscle tone:

- Means muscles resist being stretched, especially with quick or sudden movements.
- Is the most common kind of high muscle tone.

Example: Many children with Cerebral Palsy have spastic high muscle tone.

Children with spastic high muscle tone are also often **hyper-reflexic,** which means their reflexes are triggered more easily, and are much stronger than in a typically developing child.

Reflexes

When babies are born, all of their movements are reflexes. As typically developing babies begin to move on purpose, some of their reflexes "disappear", and are replaced with voluntary motor patterns. Some reflexes never disappear completely.

> Definition
>
> **Reflex**: an automatic, instinctive, unlearned reaction to a stimulus.

*Example: Do you ever jump when someone comes up behind you unexpectedly? If you do, that is your **startle reflex** being triggered.*

The startle reflex is very strong in many children with high muscle tone: it takes very little to startle them and they may take a long time to recover.

Other reflex reactions common in children with high muscle tone include:

- Automatically grasping when something is put in the hand (the grasp reflex).
- Straightening out the whole body when the feet or back are touched (extension reaction).

What are movement problems?

Children with muscle tone problems often have problems with **voluntary motor control**, or moving their bodies in the way they want to, when they want to.

> Definition
>
> **Voluntary Motor Control**: being able to move your muscles how you want to, when you want to.

There are many different kinds of voluntary motor control problems. There may be difficulty in getting motor messages between the brain and the muscles. Movement may be slower or more difficult than the child expects.

Some children will exhibit **involuntary movements**.

> Definition
>
> **Involuntary Movements:** movements that are not under the control of the brain.

Involuntary movements can be part of a reflex reaction or part of an underlying movement disorder.

Children with voluntary motor control problems or involuntary movements are not being silly or difficult: they just can't control their bodies the way that most people can.

Caring for Children with High Muscle Tone

DVD Link up: This chapter corresponds with **High Muscle Tone: Principles of Care**

Principles of caring for children with high muscle tone

When caring for children with high muscle tone the goal is to keep them comfortable, and their muscles as relaxed as possible, so that they will be easier to care for safely.

The 3 keys to safety and success when caring for children with high muscle tone are to:

- Control the environment.
- Use good handling techniques.
- Use proper positioning.

Controlling the environment

An environment includes everything that is around a particular child, such as:

- All the things the child can **hear**.
- All the things the child can **see**.
- Everything that is **touching** the child.
- The **temperature** of the air.
- **You**, and any other people the child can see, hear or feel.

You want everything about the child's environment to be as pleasant and relaxing as possible. Many different things about an environment may increase a child's muscle tone.

Problems in environments

Sudden changes in the environment can increase muscle tone by **startling** children.

For example:

- A loud noise.
- Being moved or touched without warning.
- Being touched by something cold.
- A sudden change in lighting.

Some problems in the environment make the child **uncomfortable** which may increase muscle tone over a period of time. For example:

- The room is too cold (or the child is not dressed or covered warmly enough).
- Loud or annoying noises (a TV on nearby, floor cleaning equipment, people talking).
- Lying or sitting in an uncomfortable position.
- Bright lights in the eyes.
- Uncomfortable clothing.
- Wet or dirty diapers, clothing or sheets.
- Sitting or lying on tubing, lines or cords.

Making environments work for children with high muscle tone

Pay attention to your surroundings and change anything that can increase muscle tone, such as:

- Shut the door if there's a lot of noise in the hallway.
- A bright light in the child's eyes: move it, turn it off, or pull the curtains.
- Turn the TV off.
- Remove anything else that may be distracting, distressing or exciting to the child.
- Make sure the child is warm enough: everyone's muscles get more tense when they are cold.

Tip

Keeping the TV off will also help you and the child **focus**.

Engaging the child's attention in what you are doing makes it less likely that you will startle him or her, triggering high muscle tone.

Special Note:

If you plan to start an IV, draw blood, or make a cast or splint, wrap the part of the body you'll be working with in a warm towel or blanket a few minutes ahead of time.

Safe handling techniques

Children with high muscle tone can be injured easily. It is common for children to have:

- Joint contractures (joints that will not bend or straighten all the way).
- Hyperflexible joints (joints that move further than they should).
- Osteoporosis (fragile bones).

- Children who do not walk, or otherwise move around easily on their own, are much more likely to have fragile bones than other children.
- **It is safest to assume that all the children with muscle tone problems you work with have fragile bones.**

Be careful when handling children with high muscle tone!

How you touch and handle a child can accidentally increase high muscle tone, which increases the chance of injury.

Careful handling or moving of a child can maintain or even *decrease* high muscle tone.

When handling a child with high muscle tone:

- **DO** use a firm, gentle grasp.
- **DO** maximize the surface area you are touching to decrease the risk of injury. This means:
  - Use your whole hand: the palms plus the fingers, keeping your fingers together.
  - If the child is smaller use as much of your hand as you can.
  - Use the pads, not the tips, of your fingers.
- **Always** use smooth, slow movements.

Some ways of handling will increase muscle tone and increase risk of injury:

- **DO NOT** use light, tickly touch. This can make muscles tense up.
- **Never** pull on a limb or try to move it further than it wants to go.
- **DO NOT** grab too hard or dig your fingers in while holding a child.
- **DO NOT** force a movement if it feels like the child is resisting.

Remember that **muscle strength** and **high muscle tone** are ***not*** the same thing.

A child with high muscle tone is not "choosing" to resist you or "fighting" you on purpose.

If you feel a child resisting, **stop** what you are doing**, reassess the environment**, and **readjust** the child's **position**.

Proper positioning

Children with high muscle tone need to be positioned well so they can do the things they want to do, like:

- Eat.
- Play.
- Pay attention.

***Stability* is the cornerstone of good positioning.**

What does this mean?

Definition

Stable: not easily moved or thrown off balance; steady

Good positioning provides the child with **stability,** or a **stable** base.

Think of a time when you have felt off balance or unsteady: perhaps standing on a bus as it starts or stops, or going ice-skating for the first time. What did it feel like? What did your body do?

When we feel unstable or afraid of falling, our muscles tense up and we try to keep our balance. We might grab on to something or put our arms out to the sides. If we're standing up, we might spread our legs more widely apart.

For children with high muscle tone, regular every day activities can make them feel unstable—if they are not well positioned and supported— because their muscles aren't able to give them the stability they need.

Information on what makes a good supported position, and specific positioning suggestions, are in the Positioning section (starting on page 13.)

Remember, children often have mixed muscle tone.

> *Example: Children who have high muscle tone in their arms and legs, may have low muscle tone in their necks, or other parts of their bodies.*

Because mixed muscle tone is common, it is a good idea to read the low muscle tone section even if you *think* the children you work with have high muscle tone. The **Safe Handling Basics** (pages 8 and 10) can be safely used with children with all types of muscle tone.

Caring for Children with Low Muscle Tone

DVD Link up: This chapter corresponds with **Low Muscle Tone: Principles and Risks** including **Safe Handling Basics.**

Children with low muscle tone are at a greater risk of injury than other children because they don't have enough resting tension in their muscles to:

- Protect their joints.
- React quickly when something unexpected happens.

Principles of caring for children with low muscle tone

The keys to safety and success when caring for children with low muscle tone are to:

- Understand the risks.
- Follow Safe Handling Basics:

Safe handling basics:

- ☐ Always provide lots of support.
- ☐ Handle carefully and move slowly.
- ☐ Know where the child's arms and legs are.
- ☐ Never pull a child up by the arms.
- ☐ Never pull a child's legs up by the feet.
- ☐ Have the child help as much as he or she can.
- ☐ Make the child comfortable and aware.
- ☐ Pay attention to what you are doing.

Understanding the risks

Why are children with low muscle tone so vulnerable to injury?

- They can be awkward to pick up and carry.
- They can feel heavier than you'd expect.
- Joints may:
  - Hyperextend (move further than you expect).
  - Dislocate easily (come out of their sockets).
- Children with low muscle tone may not be able to control the position of their heads as easily as other children.
- They may take a long time to develop, or never develop, other gross motor skills like rolling and sitting.
- Children with low muscle tone may not be able to crawl or stand.
- They may not tuck their arms and legs in automatically when you pick them up, so it is easy for an arm or leg get left behind.
- They may have fragile bones.
- You can't always tell just by looking that a child's muscle tone is low.
- Muscle tone can vary in each child depending on mood, illness, energy levels and environmental factors.

It is also important to remember that muscle strength and muscle tone are *not* exactly the same thing.

Some children with low muscle tone **are** able to move around, and do many other things on their own. These children can be at special risk for injury because, when you see all the things they **can** do, it is easy to forget that their muscle tone is low and their bones are fragile. They still need to be handled with extra care.

DVD Link up: Two examples of this are shown starting ~90 seconds into **Low Muscle Tone: Principles and Risks**, and take about 90 seconds to watch.

Safe handling basics

Children with low muscle tone can be easily injured for many different reasons.

To help keep them safe, follow the very simple suggestions we call **Safe Handling Basics:**

☐ Always provide lots of support.

When handling or moving a child you don't know, provide full support to the child's head and the rest of the child's body.

- Think of how you would pick up or move a newborn baby or a sleeping child.
- It is better to be ready with too much support, and be surprised by how much the child can help, than to not offer enough support.

☐ Handle carefully and move slowly.

- Use a firm, gentle grasp.
- Move body parts slowly and carefully to prevent accidental injury.
- Don't assume all joints will move the same amount. Children may have:
  - Joint contractures (joints that won't bend or straighten the whole way).
  - Hyperflexible joints (joints that move further than you expect them to).
- As much as possible use the palms of your hands and your fingers held close together to:
  - Spread out the pressure from your hands.
  - Minimize the risk of bruising.
  - Help protect fragile bones.
- When moving the child's arms and legs, always move slowly and carefully.

☐ Know where the child's arms and legs are.

- Children with low muscle tone may not tuck their arms and legs in automatically the way other children do.
- When lifting a child out of a seat with restraints, make sure you have all straps and buckles undone.
- It takes very little force to dislocate a joint or break a fragile bone.

☐ Never pull a child up by the arms.

- The child's shoulders could dislocate (come out of their sockets).

☐ Never pull a child's legs up by the feet.

- This can pull the hips out of their sockets.

☐ Have the child help as much as he or she can.

- This will minimize the risk of injury.

☐ Make the child comfortable and aware.

- Make sure the child knows who you are.
- Make sure the child knows what you are doing.
- Children cooperate more easily when they are not afraid or surprised.
- Take the time to find out from the child's family how the child is used to being moved or handled.

☐ Pay attention to what you are doing.

- Many accidents happen because we are not paying attention to what we are doing.
- It is extra important to pay attention when working with children with low muscle tone, because they are so easy to injure.
- Turn off the television and get rid of other distractions.
- Don't rush.

Following these eight common sense suggestions is often all you need to do to keep children with low muscle tone safe.

Specific Care Tasks

The next chapters provide information on the following tasks:

- Positioning
- Stretches
- Range of motion
- Dressing
- Lifts and transfers
- Bathing
- Feeding

For all of these sections, please remember to **continue to follow the principles for caring for children with high or low muscle tone** already provided on pages 3-11**.**

Positioning

DVD Link up: This chapter corresponds with both **Caring for a Child with High Muscle Tone: Positioning** and **Caring for a Child with Low Muscle Tone: Positioning**.

This section contains:

- Introduction to positioning.
- Practical positioning techniques for children with both high and low muscle tone:
  - Lying on their backs (supine) and on their sides (sidelying).
  - Sitting.

Introduction to positioning

In general, the principles of good positioning are the same for children with high, low or mixed muscle tone. For all children with muscle tone or movement problems, good positioning:

- Provides support and stability.
- Decreases the risk of injury.
- Makes it easier for the child to move and play.

When positioning infants and children who can't move on their own, therapists often recommend **a flexed, midline position**.

What is a flexed, midline position?

This means you position the child with:

- Head facing forward.
- Neck straight and chin tucked slightly down (not extended back).
- Shoulders forward (so the hands can come together).
- Hands together, or close together, in the centre of the body.

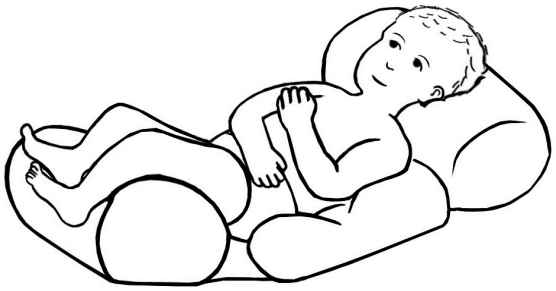


Figure 1: Flexed Midline Position

- Hips and knees bent.
  - This is especially important for children with high muscle tone.

Each type of muscle tone has its own positioning challenges.

"Good" positions are the same for children with high muscle tone and low muscle tone, but the **challenges** in getting them into these positions is different, and the **support** they'll need might be different too.

Principles and challenges for positioning children with high muscle tone

When positioning children with **high muscle tone** in bed on their sides or their backs:

- Keep their hips and knees bent or flexed.
- Keep the head in a "neutral" position:
  - Head facing forward, not extended up and back.
  - Chin tucked slightly towards the chest.

Why is this positioning important for children with high muscle tone?

Children and teens with spastic high muscle tone tend to have higher tone in the muscles that arch the back and neck and straighten the legs.

When these muscles get very tense at the same time, it causes an *extensor pattern* or *extensor posturing*. It is helpful to watch the video to understand the challenges of positioning children with high tone muscles.

DVD Link up: The footage of extensor posturing, and positioning to avoid it, starts ~45 seconds into **Caring for a Child with High Muscle Tone: Positioning** and lasts about a minute**.**

Spending too much time in an extensor pattern is hard on the child's joints and muscles and is uncomfortable for many children.

Supporting the hips and knees in a bent position and keeping the neck and head straight or slightly tilted forward helps prevent extensor posturing.

Children with high muscle tone need a lot of help to get their bodies into flexed (forward bending) positions. They also need strong external supports to keep them well positioned.

Principles and challenges for positioning children with low muscle tone

Positioning children with **low muscle tone** has its own special challenges.

Without supported positioning children and infants with low muscle tone will tend to rest on their backs with their arms and legs spread out flat on the bed or other surface.

They need outside support to stay in positions that children with typical muscle tone may be able to maintain on their own.

They are at extra risk for injury, including joint dislocations and broken bones.

When positioning any child with movement or muscle tone problems, remember that:

All children will have their own positioning likes and dislikes.

- Families know their children best.
    - If you have questions about positioning a specific child, speak to the child's parents or other primary caregivers.
- If the positioning plan or equipment needs to be changed or reassessed, speak to the child's occupational therapist or physiotherapist.
- Children who cannot move on their own need to have their positions changed frequently.

Positioning: Lying down

There are two ways that children are most often positioned in bed:

- On their backs (supine).
- On their sides (sidelying).

Lying on the back (supine)

Figure 2: Child lying on back

To support a child on his or her back:

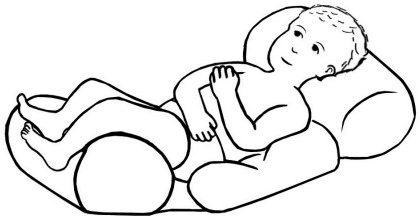
- Place a support under the legs to keep the hips and knees bent (flexed). To do this:
  - Bend the child's hips, moving the legs one at a time.
  - Move each leg slowly and steadily.
  - You may get a lot of resistance at first, and then, suddenly, the hip will move much more easily. Always move slowly and give your full attention to what you are doing.
  - Once the hips are bent, place a pillow or other support under the child's knees.
- A pillow (or folded cloth) under the head helps keep the neck from over extending, and tucks the chin slightly.
  - The size of the pillow will depend on the size of the child, and what the child likes.
  - For infants **no pillow** is recommended, unless they are going to be supervised.
  - Some children prefer no pillow at all.
  - To keep the child's head facing straight, place a small roll on either side of the head.
- Once the knees and hips are bent, and the head is well supported, place supports along the side of the body.

- One roll on each side of the child may be enough to support small infants.
- Larger children will require separate supports at the shoulders / upper arms and the thighs.
- Rolls along the sides of the arms to help the shoulders come forward slightly. This will make arm movement easier.
- Rolls or other supports are needed to keep the legs together, if they tend to flop out to the sides.

• If you are going to be drawing blood, making a cast or splint, or doing range of motion exercise, it is extra important that the shoulders and arms are well supported.

- Rest the full arm on a pillow, stuffed animal, or rolled or folded blanket

Together, all of these supports place a child in a **flexed, midline position**: a position that is safe for joints, good for development, and discourages extensor posturing.



Lying on the side (sidelying)

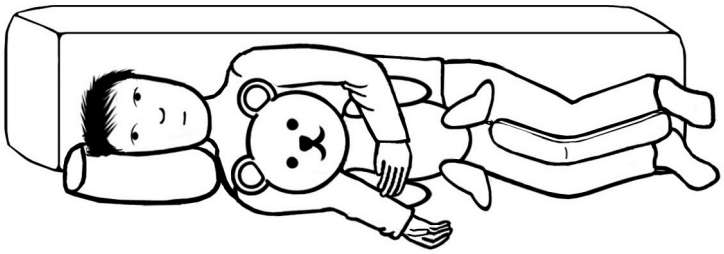


Figure 3: Lying on side

To position a child in sidelying:

- Be sure to get the child to help as much as he or she can.
- Move slowly and evenly as you roll the child to the side.
- If the child has high muscle tone, start by bending the hips and knees.
- Bend the child's hips and knees as you roll them into position
    - This is especially important for children with high muscle tone to keep their bodies from going into an extensor (straightening) pattern.
- Place a bolster or other support behind the child's back.
    - This keeps the child on his or her side.
    - Place the bolster carefully, as pressure on the child's back can create extensor posturing (arching the back and neck).
- Place a support, such as a roll or large stuffed animal, in front of the child and lean the child's body against that front roll.
    - This can be especially helpful for children with high muscle tone.
        - By leaning the child against the front roll some of the pressure is taken off the extensor (straightening) muscles in the child's back.
        - This support helps the child stay on his or her side.
        - It can also be used to support the top arm.
- Place a folded blanket, small pillow or stuffed animal between the child's knees.
    - This keeps the top hip joint in a good, safe position.
- Once the child is on his or her side, gently pull the bottom shoulder blade forward so the child is not lying on the bony point of the shoulder.

Partial sidelying, also known as **banked positioning**, means the child is lying on his or her back with one side slightly raised:

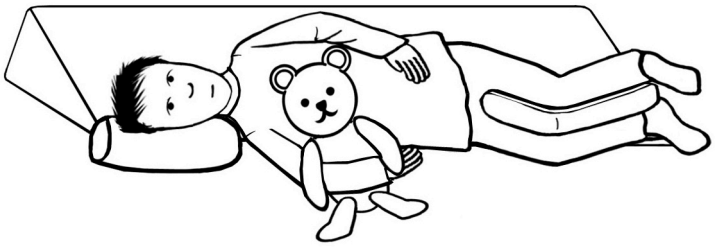


Figure 4: Partial sidelying

To position a child in partial sidelying:

- Roll the child partially to his or her side and place a wedge or pillows behind his or her back.
- Allow the child to roll back onto the support.
- Follow the rest of the instructions for sidelying:
    - Re-adjust the child's head position, so that the neck is straight, or the chin is slightly tucked towards the chest—not extended back.
    - Check that hips and knees are bent.
    - Place a support between the knees.
    - A front support is usually not necessary in this position.

You may choose to place a small pillow under the child's head in either full or partial sidelying depending on what the child likes.

Positioning: Seating

The principles of good seated positioning are the same for all children, but there can be very different challenges to *keep* each child in a "good" seated position.

Typical challenges for seating children with low muscle tone:

- They may not have the strength to hold themselves up.
- They tend to slouch sideways, or slide forward, in sitting.
- They need extra support at the sides or front of their bodies to sit with good posture.

Typical challenges for seating children with high muscle tone:

- They may not have the strength to hold themselves up.
- They may not have the strength to resist their own high tone muscles.
- They need firm support to keep them in good positions.
    - Without enough support, their high tone muscles will pull them out of position.

Remember:

- Each child is an individual.
- Many children have **mixed muscle tone** and may have some challenges from both the high and low muscle tone lists.

Seating checklist for proper positioning

This section of the manual will address the principles of good seated positioning for all children, including practical suggestions for different types of muscle tone challenges.

These are general and basic positioning guidelines. Every child is unique. If you have concerns with a child's position in his or her seating devices please consult the child's OT or PT.

Figure 5: Good, supported positioning

Figure 6: Unsupported positioning

☐ Is the child sitting on a stable surface?

Stability is the cornerstone of good positioning. All children need a stable, even, safe surface to sit on.

- Check out the seat before you move a child into it:
  - Make sure that the chair is in good condition and not broken.
  - Make sure the brakes are on before moving a child to a wheelchair.
  - Move straps, toys, extra linen, and anything else out of the way.
  - Check the seat and back for lumps or uneven spots.

☐ Is a well-positioned, snug seat-belt being used?

A well-positioned, snug lap belt or groin strap must be used for safety and to keep the child's hips in the right position.

- Do up the seat or lap belt as soon as the child is in the chair.
- A properly adjusted seatbelt should feel snug.
- If the chair has been fitted to the child and the seatbelt seems *too* tight, the child's hips are probably not in the right position.

☐ Are the child's hips all the way back in the chair?

The back of the hips (buttocks) should be placed all the way back in the chair.

- To keep their hips in a good position, all children need a snug fitting seat or lap belt.
- Some children with high *or* low muscle tone will also need support between their legs. This support might be:
  - A groin strap (also called a crotch strap).
  - A pommel (plus a lap belt or seat belt).

For children with high muscle tone in their legs and back, placing the hips all the way back and doing the seatbelt up snugly is important to keep the child bent enough at the hips that he or she doesn't go into an extensor pattern.

For children with low or typical muscle tone, the hips must be placed all the way back and secured snugly or else the child will slide forward until he or she is sitting on her tailbone.

If a child's hips are not all the way back in the chair:

- It can lead to a slouched posture.
- The child is more likely to get a pressure sore.
- It will be harder for the child to use his or her arms, to hold his or her head up, and to see what's going on.

☐ Is the child sitting evenly (symmetrically)?

- Is there the same amount of space on both sides of the child's hips and legs?
- The knees should be pointing straight forward, not angled to one side or the other, and not spread wide open.
  - If the legs are angled to one side:
    - First, double check that both hips are all the way back in the chair.
    - Then, place a soft support next to the child's leg on the side they angle towards.
  - If both the child's legs tend to spread open, place a support beside both legs.
    - Don't use something with hard edges that could cause bruises or pressure sores. Instead, use soft supports next to the child's legs, such as:
      - Rolled towels or blankets.
      - Foam wedges or blocks.
      - Stuffed animals.

☐ Does the child have enough trunk support?

- The child should not be leaning to one side, slouching or falling forward.
- Children who do not have the trunk strength to sit up straight against a backrest need to have supports at the sides and/or across their chests.

☐ Are there lateral (side) trunk supports, or a chest strap, if needed?

- Do up any chest straps and make sure the lateral or trunk supports are in place.
- If there are no side or chest supports on the chair, you may need to provide support with rolled up blankets or stuffed animals to keep the child from leaning to one side.
- If the child continues to lean or slouch:
    - Ask the child's family what they do to help the child sit upright.
    - If the problem is new, or the family does not have a solution:
        - At Children's Hospital in Winnipeg, contact the ward occupational therapist.
        - In other centres, or in the community, contact the occupational therapist or physiotherapist in charge of the child's seating.
        - If the child is not safe, or it is impossible to position him or her comfortably, **do not use the chair until it can be assessed and adjusted by a therapist**.

☐ Are the feet well supported?

- Both feet should easily reach the footrests.
    - The whole foot should reach the footrests, not just the toes.
- Firm support under the feet makes the body feel more secure.
- If possible, put the child's shoes on.
    - Shoes help keep the feet and ankles in a good position.
    - Wheelchairs are usually adjusted to fit with the child's shoes on.
- If the child's feet do not reach the footrests, place a folded towel or other support under the feet until the chair can be adjusted.

☐ Are hips, knees, and feet at right angles (in 90 degree flexion)?

- This is a good general rule to follow, but it may not apply to all children. Some children may have joint contractures (joints that don't bend or straighten all the way) or other individual differences.
- Never force a joint to bend or straighten.

☐ Is there enough head support?

- Many children need a rest behind their heads to keep them in a chin tuck position.
- Some need a head rest that also provides support at the sides.
- Some children will be able to hold their heads up on their own. However, if the chair is going to be reclined or tilted back the child **must** have support behind his or her head.

☐ Has a solid table surface, or arm rests, been provided?

- Having a solid place to rest the arms adds to a child's overall stability, decreases high muscle tone, and protects shoulder, elbow and hand joints.
- This is especially important if children are going to be in the chair for more than a few minutes.

If the child is going to be eating by mouth, also check:

☐ Is the child as upright as possible?

- Is the child as upright as she or he can be and still have good head control?
- Being upright is particularly important if the child is going to be eating or drinking.

☐ Is the head in a chin tuck position?

- This is important to keep swallowing as safe as possible. Please read the feeding section for more information.

General precautions

If you are unable to position the child properly and safely in the equipment you are using, please talk to the child's therapist.

Do not leave a child unsupervised if you have any concerns about the safety of the seating arrangement.

Never leave any child unsupervised in a wheelchair without a seatbelt securely fastened.

Seating checklist for proper positioning:

- ☐ Is the child sitting on a stable surface?
- ☐ Is a well-positioned, snug seat-belt being used?
- ☐ Are the child's hips all the way back in the chair?
- ☐ Is the child sitting evenly (symmetrically)?
- ☐ Does the child have enough trunk support?
- ☐ Are there lateral or trunk supports, or a chest strap, if needed?
- ☐ Are the feet well supported?
- ☐ Are hips, knees, and ankles at right angles? (at 90 degrees of flexion)?
- ☐ Is there enough head support?
- ☐ Has a solid table surface or arm rests been provided

If you are feeding the child (in addition to the above):

- ☐ Is the child as upright as possible?
- ☐ Is the head in a chin tuck position?

Stretching and Range of Motion Exercises

DVD Link up: Stretching instructions can be found in **Caring for a Child with High Muscle Tone: Stretches**. Range of Motion instructions are found in **Caring for a Child with Low Muscle Tone: Range of Motion**.

Children with all types of muscle tone may have a stretching program for certain muscles or a range of motion exercise program to keep their joints from getting stiff.

Though stretches and range of motion exercises are similar, they are not the same.

What are stretching exercises?

- Stretches prevent **muscles** from becoming shortened or tight.
- Stretches involve moving a joint or limb to the straightest (or most bent, depending on the stretch) position that it can comfortably reach and then holding that position for approximately 10-30 seconds (or as directed by a therapist.)
    - Holding the stretch allows the muscle time to relax and lengthen.
- Stretches are particularly common for children with high tone muscles, but children with typical and low muscle tone may also need stretches.
- Stretches should not cause pain when done correctly.

What are range of motion exercises?

- Range of motion (ROM) exercises help keep children's **joints** from becoming stiff.
- Range of motion exercises involve passively moving a child's joints, one joint at a time, through the typical movements (called the "range of motion") for each joint.
- Range of motion (ROM) exercises may be prescribed for children with all types of muscle tone, and are especially common for children who cannot move independently for any reason.

Doing range of motion exercises with children with muscle tone problems

When doing range of motion exercises with a child with muscle tone problems, follow the instructions provided by the therapist. Take special care to:

- Place one hand on either side of the joint being moved, close to the joint.
- Only move one joint at a time.

Some children may have **joint contractures** or joints that don't move as far as you expect.

- Never force a joint to move further than it wants to.
- Always pay attention to what you are doing and what the movement feels like.

Some children with muscle tone problems may have extra-flexible joints or joints that move further than you'd expect them to. When doing range of motion exercise, **only move a joint as far as is "typical" for that joint.** The "extra" movement is not necessary, and in fact can lead to joint instability and increased risk of injury.

*Example: Some children's elbows will **hyperextend**—extend past the "straight" position.*

If doing range of motion exercises on an elbow that hyperextends, you would move the elbow only as far as the 'straight" position.

That being said, **you are not likely be asked to do range of motion on extra-flexible joints**.

General guidelines for stretching and range of motion exercises

Stretches and range of motion exercises should always follow the directions of the child's physiotherapist or occupational therapist.

- In hospital, these are usually posted at the bedside.
- It is important that these exercises be done. More importantly they should be done **safely**.

Before you start:

- Check the **environment.**
- Make sure the child is:
  - **Comfortable**.
  - In a well **supported position**.
  - **Warm** enough**.**

Please review the sections on environment and positioning as needed and follow the general good handling instructions included earlier in the manual, and on the DVD.

Be sure you know the specific exercises to be done and follow the directions of the child's physiotherapist or occupational therapist.

If you do not feel confident that you can do the exercises safely or correctly, please contact the child's therapist <u>before</u> doing them.

Dressing

DVD Link up: This chapter corresponds with both **Caring for a Child with High Muscle Tone: Dressing** and **Caring for a Child with Low Muscle Tone: Dressing**.

When dressing, regardless of the type of muscle tone problems:

- Always get the child to help as much as possible. There is less risk of injury when the child is actively participating.
- Move the child's arms and legs in the same way that the child would move them if he or she was able to dress herself.
- Never pull on a limb and don't force a limb into a position that it is resisting.

If you are not able to put a child's clothes on without forcing or pulling, choose a different piece of clothing.

- For children with limited movement, choose clothes that are easy to get on and off:
  - Over-sized tops.
  - Clothes made of stretchy material.
  - Clothes that do up the front or back (rather than t-shirts).
  - Pants with elastic waists.
- Often families will have figured out what clothing works best for their children.
- Occupational therapists can also offer help and ideas about how to modify clothing to make it easy and safe to put on and take off.

Getting pants and diapers on and off safely

- Never lift any child or baby up by the heels.
    - It is very easy to dislocate a child's hips, especially if the child has low muscle tone, extra-flexible joints, or weak hip muscles.

When dressing any child in pants, shorts, or applying a diaper:

- Roll the child from side to side to get the pants or diaper under the child without stressing his/her joints.
    - Start by bending the child's hips and knees, especially for children with high muscle tone.
    - When putting pants on a child with high muscle tone, try to keep one of the child's legs bent at all times to avoid triggering an extension pattern.

Tips for dressing children with low muscle tone or extra-flexible joints:

- Remember the Safe Handling Basics (pages 8 and 10).
- Open up the sleeve or pant leg with your hand and carefully place the garment over the limb.
    - Grasp the child's hand or foot with your hand and carefully guide limbs though the clothing – **never pull.**
    - Put your own hand through the end of the sleeve and grasp the child's hand or foot as you guide it through. This way no delicate fingers or toes get accidentally caught and injured.
- Clothes with wide sleeves and legs, and shirts that do up the front, are safer and easier to put on than t-shirts and other pull-over-the-head clothes.

Tips for dressing children with high muscle tone

- If the child has higher muscle tone on one side of his or her body:
    - Dress the higher tone side first.
    - When undressing, undress the higher tone side last.
- If the child is small enough, dress him or her in a sitting position, either in your lap or on a small bench or chair.
    - Because the hips and knees are bent in a sitting position, extensor tone may be decreased, which can help the child's arms and legs move more easily.
- When dressing a child in bed, especially if the child has very high muscle tone, you may find it easiest to start by positioning the child in side lying, in a flexed position (with hips and knees bent).

Remember, for all children:

If the child is able to dress him or herself, please allow him or her to do so.

- It is generally the safest way.
- It also allows the child to gain independence and feel proud of his or her accomplishments.

Lifts and Transfers

DVD Link up: This chapter corresponds with both **Caring for a Child with High Muscle Tone: Lifts and Transfers** and **Caring for a Child with Low Muscle Tone: Lifts and Transfers**.

When moving children with any type of muscle tone problems:

- It is important to know how you are going to do the lift or transfer before you start.
- Tell the child what you are going to do in a calm, friendly voice.
- Introduce yourself unless you know the child very well. No one wants to be picked up or moved around by a stranger!
- Move calmly and slowly.
- Remember that the child's bones may be extra fragile. Before you begin the move, be sure that:
    - You know where the child's arms and legs are.
    - All straps are undone.
    - The child's head, arms and legs are well supported.
    - There is a clear path to where you are moving the child.
    - Any potential obstacles are moved out of the way:
        - Seat belts and foot straps.
        - Extra equipment.
        - Toys.
- If possible, get the child to help with the move.
    - When children are actively involved and using their muscles, their joints are more protected and the move will be safer for them.

If you have any questions about lifting or moving a child you are working with, please ask the child's family, consult the child's movement plan, or speak with the child's therapist.

If you have questions about how to move a child in a way that is safe for *you*, please consult with your occupational and environmental safety and health department, or a physiotherapist or occupational therapist.

Moving children with high muscle tone

Being lifted, moved, or carried can be stressful for anyone, including children with high muscle tone. It is especially stressful if you are being moved:

- By people you don't know well.
- In an unfamiliar way.
- With equipment you are not used to.

There are many things about lifts and transfers that can lead to increased muscle tone and an increase in involuntary movements, which can increase the risk of injury, such as:

- Being in an unstable position.
- Sudden movements and noises.
- Feeling scared, worried or stressed.

When moving any child with high muscle tone, remember that the child's muscle tone will be affected by:

- How you touch and handle the child.
- Factors in the environment. (See Controlling the environment on page 3)

Example: Quickly tucking a sling or slider directly under a child's back can be enough to trigger extensor posturing.

Tips for moving children with high muscle tone

Some children with high muscle tone will be small and light enough for you to lift and carry on your own, without the use of equipment.

- When carrying a small child with high muscle tone, choose a position in which the child's hips and knees are bent to around 90 degrees (a right angle).
- Both of these positions naturally encourage bent hips and knees, which helps keep muscle tone from getting too high, and can prevent extensor posturing.

Figure 7: Side carry position

Figure 8: Front carry position

- If the child you are lifting or carrying needs head support, place one arm or hand at the base of the skull
- Always assume a child needs full head support, unless you know the child very well.
- When lifting and moving a child a short distance, support the child's head and shoulders with one arm, and support the hips/upper thighs with the other arm.
- If possible, support the child with the hips and knees slightly bent to minimize extensor posturing.

Tip:

Regardless of how straight or flexed the child's body is, be sure to keep the child's head in midline (facing straight) and the arms and legs close to the body.

To safely move or transfer older children and teens, you will require a mechanical lift, more than one caregiver, another transfer device such as a slider, or a combination of these.

- Whether using a mechanical lift or simply moving a child in bed, remember that surprises, sudden movements, and loud noises can cause extensor posturing.
    - Try to minimize loud noises as you prepare the equipment.
    - Move in a steady, calm way.
    - Make sure you let the child know what you are going to be doing.

When using a mechanical lift, have everything planned out in advance so the child is up in the air for as short a time as possible and so you are able to stay calm and relaxed.

Place the sling by rolling the child side to side (see video for demonstration). You can use the same technique for placing a slider to move a child in bed.

Caution:

Tucking a sling or slider directly under a child's back can be enough to trigger extensor posturing.

Once the transfer is completed, you must remove the sling and slider from under the child to prevent pressure sores and to prevent the child from sliding out of the new position.

Moving children with low muscle tone

Children with low muscle tone who need to be lifted and carried, or need help with transfers, cannot protect themselves and their joints the way other children can. They are at special risk for:

- Joints getting dislocated accidentally.
- Broken bones due to fragile bones (osteoporosis).

When you are moving children with low muscle tone, be sure to follow the "safe handling basics" to help keep the children you are working with safe:

Safe handling basics:

- ☐ Always provide lots of support.
- ☐ Handle carefully and move slowly.
- ☐ Know where the child's arms and legs are.
- ☐ Never pull a child up by the arms.
- ☐ Never pull a child's legs up by the feet.
- ☐ Have the child help as much as he or she can.
- ☐ Make the child comfortable and aware.
- ☐ Pay attention to what you are doing.

For infants, bundling or swaddling is a very effective way to ensure that they will be well positioned and their arms and legs will be protected before you lift or carry them:

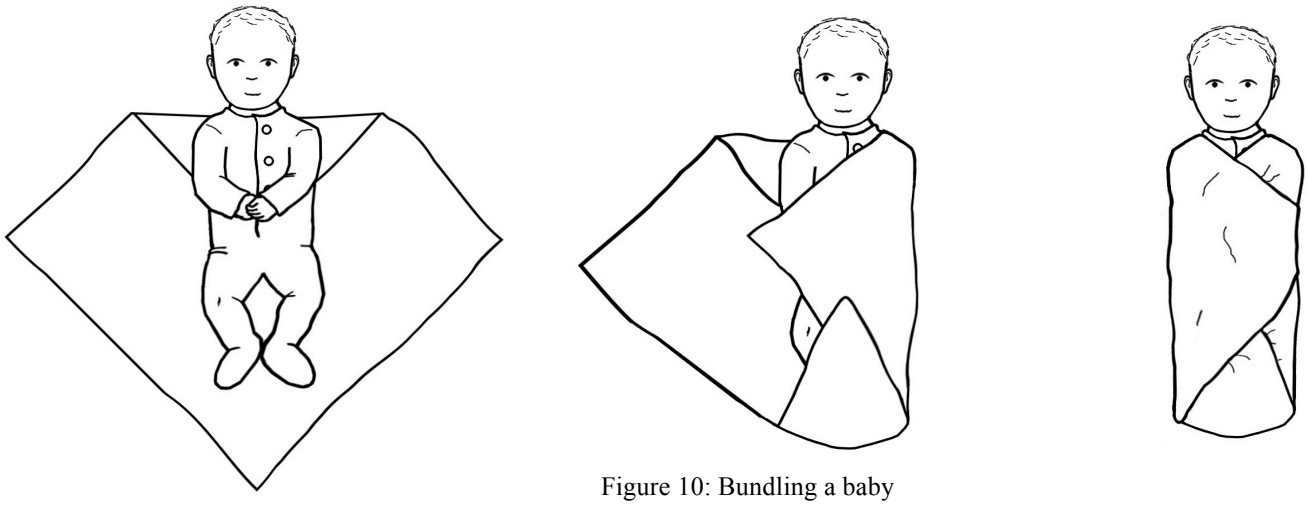


Figure 10: Bundling a baby

Bathing

DVD Link up: This chapter corresponds with **Other Care Activities: Bathing**.

Bathing can be stressful for a child with muscle tone problems. Many things about having a bath can cause children to startle or increase already high muscle tone.

Stressors include:

- Getting cold.
- Postural insecurity: Feeling unstable or not well supported.
- Excitement (for children who like baths).
- Fear or distress (for children who don't).

The fact that the child will be wet and slippery adds to the risk of accidents.

Tub bathing children with any type of muscle tone problems

It is important to remember and follow safe handling techniques when getting the child in and out of the tub.

It is also extremely important to make sure that the child is securely positioned while in the bathtub.

- A **bath seat** will be needed if there is any risk that the child can't sit safely in the bath.
  - There are many different styles of bath seats available.
  - Speak to the child's occupational therapist for more information about bath seat options.

Some provide full body and head support.

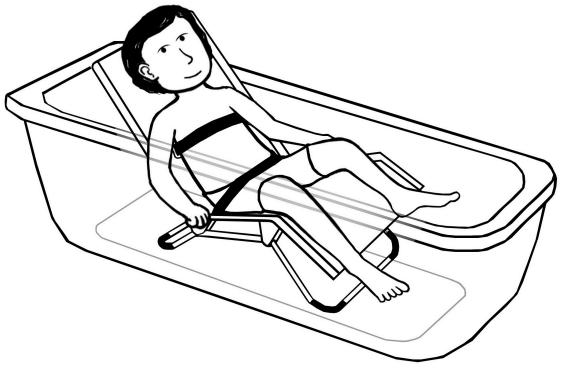


Figure 11: Bath seat, full support

Some provide trunk support only.

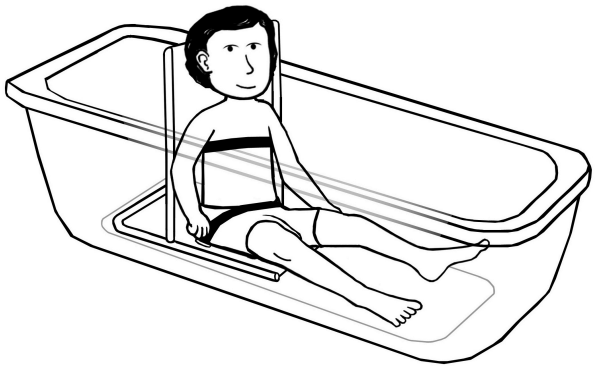


Figure 12: Bath seat, trunk support

Planning will help everything go smoothly.

- Be sure that there is enough time for the bath and you feel confident in what you are going to do.
- Ensure that you have the proper equipment for lifting, transferring and positioning the child.

Tip:

When you are relaxed, the child will be able to relax as well.

Keep the child warm before, during and after the bath.

This is especially important for children with high muscle tone, as cold increases muscle tone. If you are using a bath seat, remember that most of the child's body will not be under the water.

To help keep the child from getting too cold:

- Have the bath water ready before you undress the child.
- If there is a delay after the child is undressed, be sure he or she is covered with warm, dry towels or blankets.
- Keep the room warm.
- Keep the bath as short as you can without rushing.

When it is time to get the child into the bath, gently ease the child into the bath seat or water.

To safely place a toddler or small child in the tub, wrap the child in a large towel first; the way that you would bundle a baby:

> Tip:
>
> Make sure you are well positioned, as the child may startle upon entry.

- Wrapping the child like this help will protect the child's arms during the move.
- This is especially helpful for children with low or mixed muscle tone, but is a safe and warm option for all children!
- Unwrap the child once he or she is in the bathseat, and fasten all straps securely.
- Position the child in the bathseat so that he or she is sitting evenly with head facing forward.

Figure 13: Wrapping towel to protect child's arms

When it is time to get the child out of the tub:

- Drain the water and wrap the child in a towel before lifting him or her out of the tub.
    - By getting rid of the water, and having the child partly dry and well wrapped before the lift, you minimize the risk of slipping.

If you don't have the right equipment, enough helpers, or a good safe plan to get the child in and out of the tub, give the child a bed or sponge bath instead.

Giving a bed or sponge bath

Before giving a bed bath, it is common to remove supports such as pillows, wedges and stuffed animals (to keep them from getting wet). This, however, leaves the child lying on his or her back with no supports.

We recommend that you keep the child well positioned, using rolls, pillows or other supports, just as you do for positioning a child in bed.

- In hospital, you can protect the pillows or other supports with soaker pads.
- At home you could use:
    - A mattress pad with waterproof backing (you can find these in terry cloth).
    - Towels or sheets over top of a plastic or rubber sheet.

Remember: warmth is still important.

- Keep as much of the child as possible covered with a towel or blanket.
- Dry each body part as soon as it is washed.

Cleaning inside a fisted hand

For children and teens with high muscle tone, cleaning inside the hand can sometimes be a special challenge.

To safely open and clean a fisted hand:

- Ensure the child is comfortable and well supported.
- Have everything ready for washing and drying the hand before you begin to open it.
- Briskly brush the top of the child's forearm with your fingers.
    - This helps activate the muscles that straighten the fingers.
- Then rotate the forearm hand to a 'palm up' position.
    - Sometimes this is enough to allow the hand to open on its own.

For a hand that doesn't open as easily:

- Slip your index finger into the child's palm and **gently** ease the thumb out.
    - Move slowly.
    - Allow the thumb to come out at its own pace, don't force it.

DVD Link up: Please watch the demonstration of how to open a fisted hand in **Opening a fisted hand** at the very end of the **Bathing** section.

- Once the thumb is out, hold it away from the palm of hand and **gently** uncurl the fingers.
    - Keep your hand in contact with the **back** of the child's fingers as you uncurl them.
- Rotate the palm up, if you haven't already, to help keep the hand open.
- Keep your hand in contact with the back of the child's hand and fingers as you open, wash, and dry the child's hand.

Never forcefully pull on the child's fingers to open the hand. Do not try to pull the hand open by the fingertips. This will only make the muscles tighter and increase risk of injury.

Use these same hand opening techniques when you need to put a hand splint on a child.

Splints and Braces

DVD Link up: This chapter corresponds with **Other Care Activities: Splint Wear** on the DVD. Watch **Opening a fisted hand** (immediately before **Splint Wear**) for the demonstration of how to open a fisted hand for putting a hand splint or brace on.

Splints and braces may be worn by children with muscle tone problems for many reasons:

- To help keep joints in a good position.
- To keep muscles from shortening.
- To help slowly stretch, or lengthen, muscles.

It is important to follow the instructions provided with the splint, including:

- The wearing schedule—how often, and for how long the child should wear the splint or brace.
- How to correctly put the splint or brace on.

These are usually posted at the bedside in a hospital. If it's a long term splint or brace, ask the child's family for wearing instructions.

When applying a splint or brace, remember children with muscle tone problems:

- May have fragile bones.
- May have some joints that are extra flexible.
- May have some joints that don't move as far as you'd expect.
- Always follow safe handling basics and other handling and moving suggestions provided in earlier chapters, including:
    - Pay attention to what you are doing.
    - Move slowly and carefully.
    - Make sure the child is in a well-supported position.

Tips for children with high muscle tone

High tone muscles often push against the splint, making it difficult to get the splint properly positioned on the child.

To get the splint on correctly, first use the positioning and handling techniques described in earlier chapters.

Example: Bending a child's knee will relax the ankle as well and make it easier to put on an ankle splint.

Then, follow the positioning instructions for the specific splint you are applying.

Make sure the body part is all the way into the splint, and then do up the straps in the order described in the splinting instructions.

- For an ankle splint, do up the ankle straps first.
- For a resting hand splint, do up the wrist straps followed by the forearm straps and then the finger straps.

When putting a resting hand splint on a child with high muscle tone, use the techniques described on page 40 (Cleaning inside a fisted hand) to get the hand open.

Every child is different. Please speak to the child's occupational therapist or physiotherapist if:

- You are having difficulty opening a child's hand.
- You can't get a splint or brace on.
- You have any concerns about a child's splints or braces.

Feeding and Eating

DVD Link up: This chapter corresponds with **Other Care Activities: Feeding**.

The work of eating

Eating is the ultimate multi-tasking. For every bite of food you have to:

- Get the food to your mouth.
- Use your lips and your tongue to get it into your mouth.
- Chew the food up.
- Use your tongue to gather and move the food to the back of your mouth.
- Swallow.

While you are doing all that, you also have to keep your body upright and breathe at the right times.

Because so many muscular activities need to be coordinated and timed just right, children with many different kinds of muscle tone problems need to pay more attention, and use more muscle effort, than children with typical muscle tone do when they are eating.

Having muscle tone problems can also lead to safety problems. Aspiration, or the food going into the airway instead of into the stomach, is one of the safety risks for children with muscle tone problems.

The risk of aspiration increases when a child is:

- Tired.
- Not positioned well.
- Sick.
- Not paying attention or not focused on eating.

Example: the risk of food going down the wrong way is higher at the end of a meal, because the child is tired out from the work of eating.

Positioning for feeding

When a child with muscle tone problems is eating, proper positioning is very important.

Children with normal muscle tone have enough strength in their trunks to hold themselves in an upright, stable position, and still do the work of eating. Children with muscle tone problems will need more supportive seats to give them the stability they need.

For feeding, an upright posture and the position of the child's head and neck are very important.

Seating checklist for proper positioning:

- ☐ Is the child sitting on a stable surface?
- ☐ Is a well-positioned, snug seat-belt being used?
- ☐ Are the child's hips all the way back in the chair?
- ☐ Is the child sitting evenly (symmetrically)?
- ☐ Does the child have enough trunk support?
- ☐ Are there lateral or trunk supports, or a chest strap, if needed?
- ☐ Are the feet well supported?
- ☐ Are hips, knees, and ankles at right angles? (at 90 degrees of flexion)?
- ☐ Is there enough head support?
- ☐ Has a solid table surface or arm rests been provided

If you are feeding the child (in addition to the above):

- ☐ Is the child as upright as possible?
- ☐ Is the head in a chin tuck position?

Upright positioning makes it easier for the child to control the food or drink in his or her mouth.

- When a child is lying down, it is easier for him or her to choke or make swallowing mistakes.

The child's chin should be in a neutral position *or* slightly tucked down.

- The child's neck should not be extended, as this makes swallowing difficult.

Throughout the meal, recheck **frequently** that the child is well positioned. Pay special attention to the position of the head and neck.

It is important to get to know each child you will be feeding, as there is no "perfect positioning recipe" that fits every child.

Please ask the child's family or consult the child's feeding plan if you have questions.

Tips for safe feeding for all children with muscle tone problems

If the child is able to feed him or herself, allow the child to do so.

- Most of the time, eating is safest when the child is in charge of how fast each mouthful comes.
- Being fed by someone else increases the risks of eating. This can be because:
  - Food comes too fast, before the child is ready for it.
  - The child does not have enough time to swallow.
  - Feeding continues after the child wants to stop eating.

Have you ever been fed by someone else?

If you are going to be feeding children or teens with muscle tone problems, it's a good exercise to get a friend or family member to feed you, and for you to try to feed them and get their feedback on what it was like.

Mealtimes should not last too long.

- The longer the child has to work at eating, the more tired or fatigued he or she gets, and the more likely some of the food will go down the wrong way and end up in his or her airway.
- A half an hour or less is a good general guideline for older children and teens.
  - This is very individual!
  - Mealtimes may need to be *much* shorter for some children.

Respect the child's "stop" signals.

- Many children will let you know when they are done eating.
- If the child does not speak, make sure you know his or her signs for needing a break.
- Stop signals vary from child to child.

Some signals are clear:	Some signals are more subtle:
▪ Crying. ▪ Pulling or turning away. ▪ Pushing or throwing food away.	▪ Turning head away. ▪ Turning eyes away. ▪ Keeping mouth firmly clamped shut. ▪ Falling asleep.

Continuing to feed a child who is giving you signals to stop is disrespectful and can be dangerous. Often children are giving you stop signals because they are unable to swallow safely.

If you don't know a child's signals, find out before you feed him or her.

Tips for safe feeding for children with high muscle tone

Feeding children with high muscle tone can have special challenges.

Example: A child may have trouble pulling food off a spoon with his or her lips.

- Talk to the child's family or other primary caregivers about what feeding approach works best.
- Follow the child's feeding plan.

When spoon feeding children with high muscle tone:

- Avoid placing pressure on the tongue as you feed the child.
  - This can make the child thrust or stick out the tongue and push the food out.
  - It can also trigger the bite reflex.
- If the child you are feeding has a strong bite reflex:
  - Use a rubber coated metal spoon.
  - Do NOT use a plastic spoon (which could crack or break).
  - Do not use an uncoated metal spoon (which could hurt the child's teeth).
- Some children do best if you 'warm up their face' before feeding with gentle facial massage.
  - This is very individual. Please ask the child's family or consult the feeding plan.

Remember:

- Every child is different. No two children eat exactly the same, whatever their muscle tone.
- Find out from the child's family or other primary caregiver what the feeding plan is.
- Make sure the child is in a stable, supported seat, and the neck and head are well positioned.
- Always pay attention to, and respect, a child's "stop signals."
- If you have any concerns about a child's feeding or swallowing, please ask for the child to be referred to a pediatric feeding specialist. Feeding specialists vary from community to community, but most often are either occupational therapists (OTs), or speech and language pathologists (SLPs).

Final Thoughts

We hope that this manual and the DVD it accompanies have given you more of an understanding of how to safely handle, move, and generally care for children with movement and muscle tone problems.

A few final reminders:

- Every child and every family is unique, and parents and other primary caregivers know their children best.
- Don't hesitate to ask families what their child is used to, or how they manage certain activities.
- There are many "right" ways to do most things. When you have the opportunity, find out which way the child prefers, or is used to.

Please talk to an occupational therapist or physiotherapist if you have any questions about the information in this manual or on the DVD, or about a particular child with movement or muscle tone problems.

DVD Menu

The DVD that accompanies this manual is 64 minutes long. We suggest you **watch it in order** but please feel free to break your viewing up over more than one session. It is designed to be watched in shorter sections.

Please use the chapter menu on the DVD to navigate and find the sections you want.

To help you plan, below is the DVD menu plus approximate times for each section and subsection.

DVD Chapter Menu
(with approximate running times of each section and subsection)

Foreword (2 minutes)

Introduction to Movement and Muscle Tone Problems (7 minutes)

High Muscle Tone (play all): entire section runs 24 ½ minutes.

- **Principles of Care (5 minutes)**
- **Positioning (9 ½ minutes)**
  - **Lying Down (4 ½ minutes)**
- **Stretches (2 ½ minutes)**
- **Dressing (2 ½ minutes)**
- **Lifts and Transfers (5 minutes)**

Low Muscle Tone (play all): entire section runs 12 ½ minutes.

- **Principles and Risks (5 ¾ minutes)**
  - **Safe Handling Basics (2 ½ minutes)**
- **Positioning (3 minutes)**
- **Range of Motion (1 ½ minutes)**
- **Dressing (1 ½ minutes)**
- **Lifts and Transfers (1 ¼ minutes)**

Other Care Activities (play all): entire section runs 18 minutes.

- **Bathing (5 minutes)**
  - **Opening a Fisted Hand (1 ½ minutes)**
- **Splint Wear (2 minutes)**
- **Feeding (7 minutes)**
- **Final Thoughts (2 minutes)**
- **Credits (45 seconds)**

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