Improving Gross Motor Skills

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in-service will focus on providing an overview of
nal movement and motor skill acquisition as well as
viding strategies for modifying PE curriculum and the
ool environment for children with gross motor
culties.

Milestones of Motor Development

- 5-8 Months: Sitting
- 8-11 Months: Crawling
- 12-15 Months: Walking
- 2 years: kicks ball, runs, up/down steps
- 2-3 years: stands on one foot, jumps
- 3-5 years: catches and throws ball, climbs, skips and hops
- 5-7 yrs.: Catches & throws small ball, stands on one foot 10 seconds.

How do these kids move differently from other kids?

- Uncoordinated or clumsy in their movements
- Appear lumbering or unstable when running
- Trip and fall frequently
- May refuse to participate, claiming illness or fatigue

How do these kids move differently from other kids?

- Difficulty catching, throwing and kicking a ball
- Use lots of compensatory movements during warm up exercises
- May clown around during class to cover up for their poor skills
- Teased by other kids- creating poor self-esteem

How do these kids move differently from other kids?

- Bump into other kids
- Fatigue quickly and give up
- May perform task one day and not another.
- May not be focused or maybe distracted during motor play.

Forms of Gross Motor Dysfunction

Poor sense of body position –

Trouble perceiving the location of the body in a static position, can impact balance

Poor Visual Spatial Processing–

Difficulty perceiving timing and predicting movement of objects in space (eg. judging trajetories for catching/throwing)

Weak kinesthetic sense –

Difficultly tracking movement of their body during a motor activity (such as jumping or hopping)

Abnormal Muscle Tone

Low muscle tone creating instability and lack of distal control, makes it more difficult to maintain postures.

High muscle tone: *ex. Kids with cerebral palsy.* Limits patterns of movement. Tend to be toe walkers, may have scissored gait. Requires a lot of energy to move.

Poor Motor Planning

Motor Programs: hard-wired “how to move” patterns in our brains.

Environment: Motor programs are modified depending on the demands of the environment and the task at hand.

Difficulty previewing outcomes and selecting an appropriate motor strategy for a task/environment

Ineffective Verbal-Motor Integration

Trouble translating verbal instructions/input into desired motor responses.

(eg. Not able to respond to verbal coaching)

Poor Coordination of Muscle Groups

Which muscles to use?

How to synchronize them?

Motor Memory Weakness

Can’t recall accurately and quickly the sequence of motor movements needed to complete a task. Increased reaction time.

Long Reaction Time

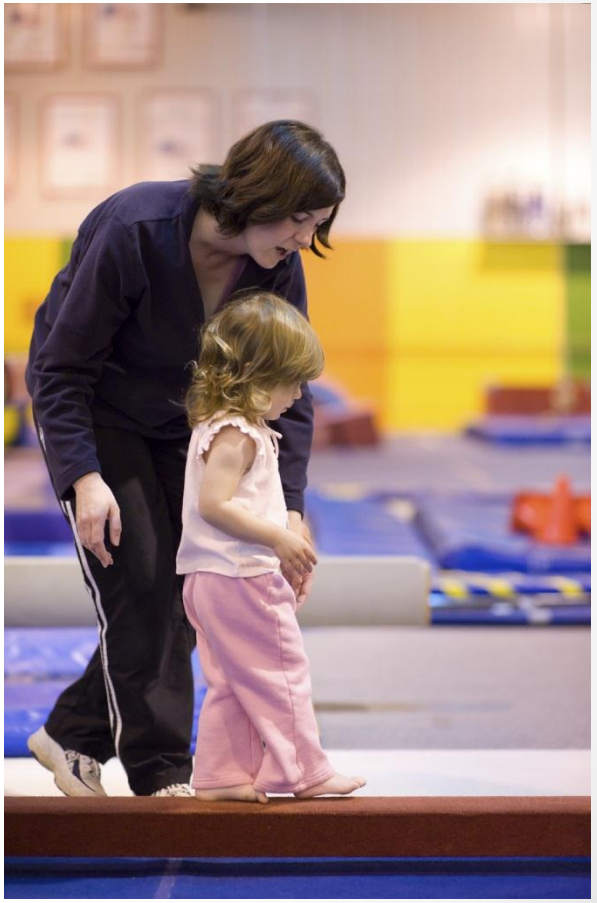
- Increases with complexity (more time to program the movement).
- Can be MUCH longer for students with disabilities
- Impacted by students “working memory” – may need a lot more practice to retain a newly-learned pattern.

Poor Monitoring

Difficulty evaluating how effectively muscle performance is proceeding during activities. **Can't self-correct in the moment.**

Why else are GM skills delayed?

- Sensory Issues:
  - Proprioceptive
  - Vestibular
- Muscle Weakness
- Orthopedic problems
- Cognitive Delay



Creating an environment for motor success

It is critical to evaluate the *task* and the *environment* when assessing motor behavior.

Creating an environment for motor success

Child must attempt (self-initiate) to learn motor patterns. Passive movement doesn't cause learning.

Focus on achievement of a goal (ex. Hitting a ball) NOT cueing of performance. Automatic processing will fill in the gaps.

Creating an environment for motor success

The most effective type of motor learning is *trial and error.* We have to let kids fail and try again, as many times as they need to, to learn.

What does this look like?????

Creating an environment for motor success

- SAFE
- “SENSORY SENSITIVE”
- SUPPORTIVE
- SOCIAL

Creating an environment for motor success

VERBAL FEEDBACK: More is not necessarily better. Only say “good!” if they have shown improvement.

TRANSFER OF LEARNING: Very limited from one task to another, unless they are almost identical.

Improving GM Skills

Strengthening :

Especially core muscles

- Heavy Work Activities
- Weight bearing Activities
- Jumping
- Prone activities (like scooter boards)

Improving GM Skills

Coordination :

- Provide additional sensory input to help them compensate such as bright colored balls, balls with bells for auditory cue

- Practice kicking straight along a line on the floor, to work on directionality, when pitching a kick ball, create a lane for them to throw down.

- Weightbearing activities also help with body awareness by providing joint feedback i.e. log roll, obstacle course, climbing and resistive activities. Use a variety of size and weight balls(balloons and beach balls are good size as you have a longer reaction time)

Improving GM Skills

Body Awareness :

- Weightbearing is the key: Jumping onto a target for from one target to another (ex. Hopscotch) gives joint feedback and requires planning of how to move.

- Marching, jumping jacks and stomping feet.

- Practice simple “dance steps” or grapevine,hokey pokey, Simon says, Music games.
- Imitation Games: Simon Says

Improving GM Skills

Motor Planning: (Sequencing)

Ex. Catching a ball and then throwing it to someone on base

•Activities need to be broken into steps initially and then practiced multiple times in sequence. Have them repeat the sequence verbally to you can help.

•Create obstacle courses.

•Repeat simple movements prior to adding a new movement.

•Use a variety of instructions, verbal, demonstration, written.

•Use a variety of cues to change activity i.e. whistle, bell, music etc.

Adaptation

Finding a way around the obstacle that is preventing a student from participating or performing.

Adaptation Examples

Adaptation Examples

Volleyball

- Use larger, lighter, softer, bright colored balls
- Allow players to catch ball instead of volleying
- Allow student to self toss and set ball
- Lower the net
- Let kids sit on floor vs. stand
- Reduce the playing court
- Stand closer to net on serve
- Allow ball to bounce first
- Hold ball and have student hit it

Adaptation Examples

Adaptation Examples

Basketball

- Use various size balls (size, weight, texture, color, firmness)
- Allow travelling
- Allow two hand dribble
- Use larger/lower basket
- Slow the pace, especially when first learning
- If student uses wheelchair, allow him to hold ball on his lap while pushing wheelchair
- Use beeper ball, radio under basket for individual with visual impairment

Adaptation Examples

Adaptation Examples

Softball

- Use velcro balls and mitts
- Use larger or smaller bats
- Use a batting tee
- Reduce the base distances
- Use Incrediballs
- Shorten the pitching distance
- If individual is in wheelchair, allow them to push ball off ramp, off lap, or from tee
- Use beeper balls
- Provide a peer to assist
- Students without disabilities count to ten before tagging out person with disability

Working with a PT

- Let the therapist know about things that are challenging for your student, such as gym class activities, mobility issues at school. These can become new goals!

- Share information when you see an improvement or decline

- Carry over activities and concepts through the day- (ex. Heavy work activities)

- Ask for suggestions for how to adapt curriculum

PT and Adapted PE

Complementary services that should collaborate and support one another in advancing student function and participation in the curriculum

PT and Adapted PE

School-based Physical Therapy

- Diagnose and treat movement and postural disorders
- Evaluate students for eligibility
- Provide hands on treatment individually or in small groups
- Consult with classroom teachers, including PE on strategies to improve performance and increase participation
- Order adaptive equipment for mobility and positioning
- Write goals and objectives related to students' mobility, gross motor skills and postural control in the educational environment

Adapted Physical Education

- Provide physical education which may be adapted or modified to address the individualized needs of children and youth who have gross motor developmental delays
- Collect assessment data, including diagnostic and curriculum-based data needed to individualize instruction
- Enable the child to participate in physical education in the least restrictive environment
- Write and monitor goals and objectives that are reflective of the physical education instructional content

The Goal

Enabling our kids to participate in the general curriculum with their peers.