

Sensory Integration: How Physical Educators can be Agents of Change for Unfit Youth

James Madison University, July 16, 2019

Speakers:

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Children Obesity:

According to CDC, 1 in every 5 children and adolescents are obese. Obesity prevalence was 13.9% among 2- to 5-year-olds, 18.4% among 6- to 11-year-olds, and 20.6% among 12- to 19-year-olds. Childhood obesity is also more common among certain populations.

<https://www.cdc.gov/obesity/childhood/>

Fitness Testing: Todays' children are at risk for being "unfit" compared to fitness standards set 20 years ago. (<https://www.npr.org/sections/health-shots/2013/11/20/246316731/kids-are-less-fit-today-than-you-were-back-then>)

More and more of our young students come to school less prepared for our class.

How many of you have the kid who:

- Spins constantly-while sitting or standing as you give directions?
- Runs and slams into any mat or soft surface (mats covering climbing walls or under basketball goals)
- Takes any opportunity to lie down, tires easily, has poor stamina or endurance
- Constantly runs into or hits other students, seemingly unaware as to why
- Holds onto a wall, runs their hand along everything, anchoring themselves as they travel

These kids are lacking some general skills. Much of it is attributed to the lack of exposure when very young or not allowed to play outside due to our "unsafe" society or "helicopter" parents. Young children, sadly, are entertained by electronics, carried, put in a stationary spot, instead of being allowed to explore, crawl, climb, etc., as naturally as they should. Young babies are often denied tummy time, which helps develop preliminary reflex strength in the upper body and neck. Due to safety/liability concerns, playgrounds no longer have swings, merry go rounds and other playground pieces that encouraged core strength, balance and upper body mobility in a natural environment. The result is a group of children who are weak, uncoordinated, don't know how to play, or keep up with others and become easily frustrated. That makes our job as physical educators and therapists more challenging, as students are coming to us with global developmental delays, motor incoordination, generalized weakness and poor mental/physical stamina/endurance. The students use compensatory strategies resulting in poor form affecting foundational skills that are needed for higher level skills.

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Sensory Integration Theory/Terminology:

Proprioception or kinesthesia is body awareness, body position and the amount of muscle gradation (pressure) applied.

Areas of concern affecting performance:

- Hypermobility, low tone, poor stamina
- Muscle weakness
- Poor gradation of muscle co-contraction (too much or little force)

Tactile: Central nervous system processes vibration, temperature, textures and pain through the tactile system.

Areas of concern affecting performance:

- Sensitive to light touch or unexpected touch of his/her peers
- High tolerance or low tolerance to pain
- Overheats easily

Vestibular: The brain's ability to process movement (fast, slow, intermittent, variable)

Areas of concern affecting performance:

- Dizziness, oversensitive to head aversion
- Motion sickness
- Gravitational Insecurity (could be inner ear or postural)

Motor Planning: The brain's ability to organize, execute and perform a motor act.

Muscle Strength: The muscle's ability to contract and apply force.

Bilateral Motor Integration: The brain/body connection needed to perform a coordinated motor action on both sides of our body (same or different action, uppers, lowers, or combination)

Whole Body/Brain Activities: Brain Gym, Focus Fitness, Ready Body-Learning Minds

www.sensationalbrain.com

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PE/Therapy departments can work well together to meet the needs of students with physical/sensory/behavioral challenges.

Let's Move!!! Center activity: (See laminated sheets)

- 1) Cocoon Crawl- Tunnel: Tactile, motor planning,
- 2) Spinning board: Vestibular, core and postural control
- 3) Ball Buddy Body Roll: Tactile, proprioceptive awareness when pressure, can be calming or alerting depending on speed and pressure
- 4) Rolling, Rolling, Rolling: Vestibular- body awareness, body in space, coordination
- 5) Finger Ball Roll: Tactile processing, motor planning, body scheme – can increase challenge by adding a blindfold
- 6) Tummy Roll: Vestibular- prone extension, body in space, core
- 7) Mini Trampoline: Proprioception and vestibular, balance
- 8) Jump Rope: Proprioception, bilateral motor coordination, timing, rhythm, hand strength
- 9) Scooter Drills: Vestibular, Body Awareness and strength, timing, motor planning foot-eye-hand coordination
- 10) Balance Beam: Vestibular, balance, body awareness for foot placement
- 11) Launching Board: Eye-Hand coordination, timing, proprioception for pressure applied to board
- 12) Half-Angel Balance: Balance, Vestibular, and motor planning

Others ideas:

- 1) Stability Ball: lay prone (tummy) and partner holds ankles to perform a wheel barrel walk,
Hold ball with legs straddled and pass the ball backwards/overhead to partner
- 2) Balance Beam while stepping over obstacles, step over, in or through hula hoop
- 3) Bose Ball (stable or turned upside down like a rocker) and perform crazy eights with wand

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4) Whole body letter formation with peers

Accommodations:

- Hold the end of the tunnel open so students can see the end as they crawl through
- Spin scooter or spin board slowly, not more than 5-7x
- Increase/decrease pressure applied on body with ball
- Used weighted balls or bean bags (1-5 pound), no more than 10% of body weight
- Lower balance beam
- Provide hula hoop or stick for students to hold onto
- Hold higher up on legs during wheel-barreling
- Hold student's hand during balance tasks
- Vary the length of jump rope
- Provide larger or use 2 scooters if core is weak
- Use ½-1 pound ankle weights for proprioceptive awareness

Physical Education SOL Correlation: Motor Skill Development

K.1 The student will demonstrate progress toward the mature form of selected locomotor, non-locomotor, and manipulative skills to understand the various ways the body can move.

- b) Demonstrate bending, pushing, pulling, turning, and balancing on one foot.
- f) Demonstrate moving forward, sideways, and in side-to-side directions.
- g) Demonstrate moving at low, medium, and high levels.
- h) Demonstrate traveling in straight, curving, and zigzagging pathways.
- i) Demonstrate fast, slow, and moderate speeds.
- j) Demonstrate jumping over a stationary rope and a self-turn single jump.
- k) Demonstrate one roll (narrow or curled).

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1.1 The student will demonstrate approaching mature form and the correct critical elements (small, isolated parts of the whole skill or movement) of locomotor, non-locomotor, and manipulative skills.

- e) Demonstrate simple educational gymnastics skills, to include balancing at different levels, two different rolls (narrow or curled), moving in two different directions, and transfer of weight.
- h) Demonstrate forward, sideways, backwards (slow), and side-to-side directions.
- i) Demonstrate low, medium, and high levels.
- j) Demonstrate straight, curving, and zigzagging pathways.
- k) Demonstrate fast, slow, and moderate speed movements.
- l) Demonstrate consecutive jumps (more than one) with a self-turn rope.
- m) Demonstrate consecutive jumps with a long rope (student-turn).

2.1 The student will demonstrate approaching (at least two critical elements) and mature form (all correct critical elements) of locomotor, non-locomotor, and manipulative skills.

- b) Demonstrate a simple educational gymnastic sequence, including balance, roll, transfer of weight from feet to hands, and flight.
- d) Demonstrate mature form for hop, jump, leap, skip, run, jog, gallop, and slide.
- f) Demonstrate manipulative skills using increased force (hard) and decreased force (soft) with control.
- g) Demonstrate mature form for jumping forward with self-turn rope and jumping with long rope (student turn).

3.1 The student will demonstrate mature form (all critical elements) for a variety of skills and apply skills in increasingly complex movement activities.

- d) Perform an educational gymnastic sequence with balance, transfer of weight, travel, and change of direction.

4.1 The student will refine movement skills and demonstrate the ability to combine them in increasingly complex movement environments/activities.

- c) Create and perform a continuous educational gymnastic sequence that combines four or more of the following movements: traveling, balancing, rolling, and other types of weight transfer.
- d) Demonstrate the use of pacing, speed, and endurance in a variety of activities.
- e) Demonstrate the ability to self-pace in a cardiovascular endurance activity.
- f) Provide appropriate feedback to a peer to improve performance.

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5.1 The student will demonstrate mature movement forms, create movement patterns, and begin to describe movement principles.

- d) Demonstrate use of space in a variety of activities.
- e) Demonstrate accuracy in a variety of activities.
- f) Demonstrate use of force in a variety of activities.
- g) Apply concepts of direction and force to strike an object with purpose and accuracy.

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Recommended Resources

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