Sensory Strategies for Elementary Students

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Sensory Strategies For All Students

- Neurotypical
- Sensory Processing Disorder
- LD
- ADD
- Autism
- ED
- DD
All Students Benefit

Consider: self regulation “I know what I need”

- Seating options
- Lighting/visual stimuli
- Noises
- Movement (wake up vs calm down)
- Calming Strategies
- Writing Tools
Classroom Sensory Strategies

Universal Design

- Aerobic
- Big Muscle
- Calming
- Alerting
- Organizing
Consider How You Are Feeling When…. 

- You are having difficulty paying attention or staying awake during a meeting or workshop.
- You need to calm down or need to reduce your stress.
What Do You Do?

- Find a quiet safe spot
- Exercise/Take a walk
- Deep breathe
- Get away from the stress
- Aromatherapy
- Massage
- Need a hug
- Talk to a friend
- Go outside/Fresh air
- Snack/Drink
Sensory Lifestyle

- Specific activities that provide sensory input to meet the needs of the individual’s sensory system
- A sensory lifestyle (diet) assists with emotional/behavioral problems
- Assists with focus/adaptive behaviors/organizing
Sensory Regulation

- Each of us need a certain amount of sensation to be at our optimal level for a calm, alert, and focused state.

- A normal state of arousal is necessary to support impulse control, frustration tolerance, attention to task and to assist with the balance of emotional reactions.
Self Regulation

- Difficulty with self regulation may contribute to many behaviors- inability to attend, focus, poor impulse control, emotional reactions/ups and downs

- We routinely provide ourselves throughout the day with sensory motor activities to assist us with self regulation

- Self Control
Interpretation of Sensory Information

- Language, memory and emotional centers are involved with the interpretation process - bread baking - smells good, good memory, safe to explore
- Fright/flight/fight response. - Home alone
- Atypical language, memory and emotional development may interfere with the interpretation of sensory information.
- Sensory experiences may not be remembered or retrieved appropriately
Sensory Processing Lays The Foundation for How We Respond To The Environment

- Touch
- Vestibular
- Proprioception
- Visual
- Auditory
- Olfactory/Gustatory
- Interoceptors
Sensory Processing

- Central Nervous System
  - Taste
  - Vision
  - Hearing
  - Smell
  - Touch (Tactile)
  - Movement (Vestibular)
  - Body Awareness (Proprioception)

- Motor Planning
  - Balance
  - Awareness of two sides of body

- Reflex Maturity
  - Body Scheme

- Precise control of eye movements
  - Eye-Hand Coordination

- Postural Adjustment

- Attention
  - Language

- Behavior
  - Daily Living Skills

- Academic Learning
Sensory Processing Disorder

● Difficulty organizing sensory information
● The senses are not delivering accurate information or once the info gets into the system the interconnections within the brain are not efficient and the info is not accurately processed
● Inconsistencies in performance

● Difficulty with attention, arousal, motor planning, fluctuations in behavior and emotions.
● Dr. Jean Ayres (1979) “When the flow of sensation is disorganized, life can be a rush hour traffic jam.”
Sensory Processing Disorder

– Identified by A. Jean Ayers, Occupational Therapist
– Influences behavior
– Impedes learning
– Impacts movement and coordination
– Interferes with relationships and social skills
– Affects children in all settings (healthcare, school, home)
– Estimated: 5-15% of general population affected
– Approx. 8 in 10 in the autistic population affected
– Considered for acceptance in DSM-5
When There are Sensory Processing Challenges:

* Coordination and movement are impacted
* Self help skills are difficult
* Learning to “be a student”
* Influences behavior
* Impedes learning
* Social skills/friendships
* Impacts the child’s daily life across settings
* Estimated: 5-15% of general population
* Approx. 8 in 10 with autism have sensory processing challenges
Sensory Processing Disorder

SENSORY PROCESSING DISORDER (SPD)

- Sensory Modulation Disorder (SMD)
  - SOR
  - SUR
  - SS
- Sensory Discrimination Disorder (SDD)
- Sensory-Based Motor Disorder (SBMD)
  - Postural Disorders
  - Dyspraxia

SOR = Sensory Over-Responsivity
SUR = Sensory Under-Responsivity
SS = Sensory Seeking/Craving
Sensory Modulation Disorder

Difficulty with sensory regulation and maintaining a balance

* over-responsive
* under-responsive
* seeking
Sensory Motor Disorder

- Motor challenges: sensory based
- Postural Disorder: poor postural control
- Dyspraxia: motor planning problems
Sensory Discrimination Disorder

• Difficulty filtering and interpreting sensory information
• Difficulty determining the source, frequency or pitch of a sensation.
  • Examples:
    • Difficulty seeing the big picture
    • Identifying a sound
    • Difficulty identifying a color or shape
      • Taste/smells
      • Intoreceptors
Sensory Modulation

- Modulation occurs when there is a balance between inhibition and facilitation (phone conversation, tune out others tune in to phone)
Touch

- Our first sensory system to function
- We are first nourished, calmed and become attached to others through our sense of touch
People with touch sensitivity may be either hyposensitive or hypersensitive to touch. Their brains don’t have the same ‘filtering system’ that the rest of us have. A slight touch may actually feel more painful than a major injury.
Touch Sensitivity – why is that important?

Touch sensitivity has been linked to many of the behavior challenges we see in the classroom, including:

1. Meltdowns at season change
2. Meltdowns during Community Circle
3. Meltdowns during group activities
4. Meltdowns during writing tasks
5. Meltdowns when walking in line.
Touch Sensitivity also plays a role in *academic* challenges:

- **Learning difficulties** – a ‘hovering’ teacher can shut down learning
- **Social challenges** - a friendly classmate leaning in for a chat can shut down learning
- **Imagination challenges** - may be limited due to less tactile exploratory experiences
- **Difficulty trying new things** - Fear of being touched often results in inflexible behavior
- **Difficulty getting started** - Poor self help skills
What does **touch sensitivity** look like in the classroom?

1. **Sensitive to human touch** - student may complain loudly when lightly ‘bumped’ in Circle Time or when lining up.

2. **Sensitive skin** - Student may have increased behavior outbursts at season change, when clothing changes.
3. **Sensitive feet** - Student may walk on toes. Student may constantly take off shoes.

4. **Sensitive body** - Student may have trouble sitting in one place for long periods of time.

5. **Sensitivity to temperature changes** - Student may frequently complain that the room is too hot or too cold. (May actually shut down learning)

6. **Sensitive hands** - Student may avoid ball activities in PE
8. **Sensitive mouth** – Student may have problems with textures, taste and temperature of foods, refusing to use certain utensils or glasses.

9. **Sensitive fingertips** - Student may have trouble buttoning, zipping, and holding a pencil!
1. Let the child determine the level of touch - light or firm/deep pressure. Rather than grabbing the child’s hand, offer yours and let the child determine the amount of pressure.

2. Do not insist on touching. Don’t hover over them, give them space. Let them control proximity.

3. Allow flexibility in movement- do not have the student sit in one place for long periods of time.
5. Do not insist on proper grip for pencil, marker, crayon, fork, zipping, buttoning, etc.

6. Ask the OT for sensory break activities that can be done in the classroom.

7. Do not force the student to wear certain clothes / shoes if it upsets the student and interferes with learning.

8. Do not force the student to eat or drink.

9. Allow exercise breaks. Take a walk!
Tactile Strategies

* Exposure to tactile activities/tactile play
* Respect the need for personal space
* Loose fitting /soft clothing
* Do not touch from behind
* Fidget object
Sensory Supports

* Deep pressure touch
* Slow Rolling
* Weighted blanket
* Weighted lap pad
* Weighted Vest/Pressure Vest
* Beanbag chair
* Universal design: offer a variety of seating options in the class room: beanbag, rocking chair, ball seat, yoga mat, pillow, standing, floor
Vestibular Processing

- Receptors within the inner ear
- Affects our gravitational security
- Coordinates the movement of eyes/visual, spatial, head and body position
- Maintains muscle tone
Vestibular

- Enables a child to hold his head up against gravity
- Has an effect on being able to print and write
- Strong relationship with auditory system and language
Vestibular Processing difficulties can cause:

- Excessive movement
- Restlessness and distractibility
- Risk taking activities
- Speech/language problems
- Poor posture or muscle tone
- Excessive swinging and jumping
- Or: Fearful of physical activity
- Appear tired unmotivated/prop head
- Impact reading/writing
Vestibular

*Calming: Slow rocking, swinging, linear movement is calming
*Structured Movement
*Alerting: Fast swinging, spinning, rocking is alerting
Vestibular Activities

Structured movement

- Walking
- Running
- Swinging
- Rocking
- Jumping/Bouncing/
- Spinning/ Dancing/ Vestibular Wake Up
Vestibular Activities

* Scooter board
* Bouncing on a ball / Rolling on ball
* Jumping on a mini tramp or jumping rope
* Jumping Jacks
* Obstacle course
* Bike riding
* Skating
* Universal design: Exercise/movement

Breaks for all students/movement seat options
Evidenced Based Practice: 
Exercise

Currently six studies have found that students who participated regularly in a structured exercise routine with a warmup and cool-down, demonstrated reduced (challenging) behaviors, increased positive behaviors, improved motor skills, and improved physical fitness.
EBP Exercise
*A daily program of aerobic exercise in combination with strength training and stretching was completed.


*They included a variety of exercises, including riding scooter boards, jumping on a trampoline, jogging, stretching, and arm curls with weights twice a day. Coach Dave
Sensory Circuits

Alert
Organize
Calm
Positioning

- Desk and chair: feet touch floor, approx. 2” above a flexed elbow
- Provide seating options: floor, butterfly chair, bean bag, rolled hoodie to sit on, bubble wrap
- Standing vs low table with floor sitting
- Vary work stations with easels for standing, lying on the floor with pillows, kneeling
Sensory Overload

“It’s like when your computer freezes because there are too many tasks open or a task is stuck. And your brain hits ‘Ctrl-Alt-Del’ automatically. In my case, this means sudden fatigue, balance problems, speaking problems, disorientation.” — Zahra Khan
Proprioception

* Housed along muscle fibers and tendons that connect muscle to bone
* Gives us our awareness of body position
* Automatic adjustments of body position/how much force to use
* Postural stability
* Motor Planning-allows us to move without thinking about what our body is doing

video clip
Proprioception Craving

* Rough in play
* Seek pressure to joints and muscles
* Break toys
* Limited in meaningful play as they attempt to get sensory needs met
* Crash/bang/bump
* Toe Walking
Proprioception Overresponsivity

* May not like firm touch and may not like activities that provide input to joints

* Does not feel good to run, jump, climb or hop
* Fight/flight for non preferred activities

* Therefore may not seek out movement based activities
Proprioceptive Underresponsivity

- Feels like a shot of Novocain: may have difficulty sensing or feeling their muscle or joints
- Poor motor planning and recall of motor sequence, lack automatic movement

- Clumsy
- Accident Prone
- Memories of familiar acts may not develop
Proprioception/ Big Muscle Activity

- Activities to support all sensory needs are most effective when they include structured movement with heavy work activity.

- Heavy work /Big muscle activity is extremely important because of the effect it has on giving the student feedback of where his body is in space as well as calming and internal organization to his nervous system.

- Big muscle activity stays in the nervous system 1 1/2-2 hours.
Big Muscle Activities Push Pull Lift Carry

- Push, Pull, Lift and Carry
- Return a stack of books to the library
- Wipe off tables in the cafeteria/chairs in library
- Push the trash containers/move boxes
- Work at the blackboard/wipe off blackboard
- Universal Design: Class wall push ups in the hall, jumping jacks, playground equipment, school jobs for all, exercise, PE
Visual Processing

*How we process visual information in relationship to light/dark
*Detail
*Visual Perception: figure ground, memory, spatial, discrimination
*Ocular Motor: Saccades
*Visual Motor
Visual Processing Over Responsive

- See very fine details that others don’t notice
- Sensitivity to bright colors and lights
- Attention to detail (Needle in a haystack)
- Difficulty reading non-verbal cues
- Difficulty visually viewing the big picture
Visual Underresponsivity

* Frequently the student may not be able to find what he is searching for though it may be right in front of him

* May not notice or respond to visual cues

* May have difficulty recognizing sights that should be familiar
Visual Craving

* Appears to enjoy intense visual input
* Drawn to bright light and visual movement
* Cannot always tell the difference in detail when they are looking at different items.
* May have challenges with the alphabet, reading and writing.
Visual Processing Difficulties can cause:

- Trouble with visual tracking
- Sensitivity to bright colors and lights
- Difficulty with depth perception
- Learning disabilities
- Difficulty reading non-verbal cues
- Seeing the big picture
Sensory Overload

“It feels like being trapped on a merry-go-round. All the lights and sounds come and go so quickly you can’t make sense of any of it. You’re up and then you’re down. No matter what you can’t get off. You have to wait for the ride to be over.” — Hailey Remigio
What do **Visual Processing** Challenges Look Like in the elementary classroom?

1. Student may skip lines and leave empty spaces on worksheets.
2. Student may confuse similar letters (d/b), numbers (3/5), and shapes (circle / oval)
3. Student may skip lines when he reads
4. Student may have trouble remembering what he just read.
5. Student may constantly touch things (and people)
6. Student may write over his own writing.

7. Student may have trouble filling in missing letters or words.

8. Student may have trouble with depth perception - may trip on stairs or constantly stumble over things in his path.

9. Student may leave words out of sentences when he writes.
Visual Sensitivity - What can I do about it in the classroom?

- Reduce amount of fluorescent lighting - try table lamps or natural lighting
- Try less words and bigger print on worksheets
- Visual cues (start and stop points) for writing and reading
- Watch for ‘bleed through’ on books.
More classroom strategies for 
**Visual Processing** challenges

**Yellow highlight answer lines on worksheets**

*Cut worksheets into strips*

*Color Overlays for reading*

*Use of slant board/3 ring binder*

*Highlight important text*
Visual Cues To Support Writing

Using highlighted paper helps students with letter size differentiation.
Auditory

Touch may have the biggest impact on social development, but hearing is the most difficult sense to deal with.

Auditory problems, not only limit communication, but are almost impossible to avoid. A person can avoid looking, touching and feeling, but sounds are everywhere.
Why do you think I had so much trouble paying attention in class. I hear everything that goes on in the building. The phone ringing in the principal’s office. The principal talking on the phone. An 18 wheeler down shifting on the highway 3 blocks away. I HEAR EVERYTHING. I can hear people talking outside the building and I can understand their conversations. There are so many noises in my head. I can’t focus, I can’t pay attention. I try so hard. I JUST CAN’T DO IT!
What do **Auditory Processing** challenges look like in the classroom?

1. Student may have poor memory and sequencing skills
2. Student may have trouble following directions
3. Student may have trouble paying attention
4. Student may have speech and language disorders
5. Student may have trouble with “Wh” questions
What does Auditory Over-Responsivity look like in the classroom?

1. Screaming, meltdowns, hands over ears in noisy environments.

2. Behavior issues in rooms with an echo – like the gym or the school atrium.

3. Agitation or withdrawal from people who talk loud, fast, or talk constantly.

4. Unusual responses or actions, responding to noises you can’t hear. Watching the fluorescent lights!
What about Auditory Underresponsivity?

* Student may always be the last one to hear his name called
* Student may always appear to be bored or tuned out
* Student may appear oblivious to what is happening around him
* Student may OFTEN misunderstand the directions (your words may sound ‘garbled’ to him!)
What about **Auditory Discrimination** Problems?

Student may have trouble hearing differences between similar words (*cap / cat; top / tap*)

Student may have trouble with phonetic based reading programs.

Lots of noises and sounds jumbled and confusing [video clip](#)
And what about the students who **crave Auditory stimuli**?

* Loud talker
* Loud noise maker
* Enjoys loud, constant noise
* Needs TV or music on when doing homework
Auditory Sensitivity in the Classroom – What do I do?

1. USE VISUAL SUPPORTS. TALK LESS. USE MORE PICTURES. USE PRINTED LISTS OF INSTRUCTIONS IF THE CHILD CAN READ.

2. Use a quiet voice. Don’t yell. Find other ways to get students’ attention.

2. Use short, direct sentences. Just tell the child what to do. Don’t explain the reasons.

3. Do not immediately repeat- allow processing time.
Auditory sensitivity – What do I do, continued…

4. Limit background noise as much as possible. Close doors and windows if there is noise outside.

5. Provide a quiet place where student can work when the room is too noisy.

6. Keep a close watch on the big three: the cafeteria, the gym, and the playground. These are high noise areas. Sensitivity to noise may be the trigger for some major
Auditory

- Tennis balls on bottom of chair legs
- Calming music/Alerting music
- Tone of voice/personal cues
- Tune out background noises
- Visual supports
- Processing time
- Ear buds/headphones
- Microphone
- Universal design works for all
Auditory Underresponsivity
Strategies

* Use of a microphone
* Personal Cue
* Visual Supports
* Check for understanding
* Reduce background noise
Interoception

- *Heart Beat
- *Breathing
- *Hunger
- *Thirst
- *Bladder/bowel
- *Sexual Arousal
- *Emotions
Interoception Overresponsivness

* May over feel their internal states

* Causing stress anxiety, decreased attention

* Frequent trips to the nurse’s office at school

* Little aches and pains may feel monumental

* Needing frequent trips to the bathroom
Sleep Supports for All

* Deep pressure touch
* Warm bath or shower
* Massage
* Sleeping bag
* Calming music

* Body Pillow
* Water/Snack at bedside table
* Remove all electronics at least at least 2 hours before sleep-
  Melatonin depleted
Interoception Discrimination Difficulty

• Has difficulty identifying the exact feeling they are having in an area.
• Sensation in stomach may be perceived as hunger but may be a need to use the bathroom.
• Intensity of identify emotions may be mildly challenging causing difficulty with emotional regulation.
• Amygdala and stress.
Olfactory/Gustatory

• Our sense of smell and taste
• Sense of smell and the limbic system/memories
• Under responsive/over responsive
• Sense of taste
• Under responsive/over responsive
Under Responsive to Taste

* Very picky eaters
* Food may taste bland/uninteresting
* Many tend to prefer very spicy and strong sour if they are under responsive
* 70-90% of children with autism have feeding challenges
Over Responsive

* Many foods do not taste good, unpleasant

* Very picky eaters
  * Taste: sweet, sour, salty, spicy
  * Texture: soft, chewy, crunchy, hard
  * Visual appearance of food
Gustatory Craving

*Seeks out very strong flavors
*Eating frequently and tends to over eat
Oral Sensory Craving

*Seeks Chewing on non food items
*Mouths or Licks on non food items
Taste sensitivity – why is this important?

Besides causing us concerns about healthy diet, taste sensitivity may result in other behaviors in the classroom:

• “I was supersensitive to foods. I had to touch everything with my fingers to see how it felt before I put it in my mouth.”

• “I like salt. I like to lick other people’s arms. They taste like salt.”
Feeding Strategies

* OT or SLP
* Respect differences
* Feeding is a positive experience
* Introduce and be exposed to a food at least 20 opportunities
* Consider similar foods to branch out from
* Opportunities to be part of the food prep
Oral Sensory Strategies for Self Regulation for All

* Water bottles

* Sugarless gum

* Chewy snacks: carrot sticks, raisins, dried fruit, pretzels, apples, fruit roll up, beef jerky

* Chew on a straw

* Ice chips

* Pencil toppers

* Chewys/Electric toothbrush
“I tell people that it’s like taking a bite of cake, but, instead of simply enjoying the cake, your brain decides that it needs to identify every single ingredient/textures/flavor of the cake all at exactly the same moment.”

— Kristy Steele Rose
Olfactory Over Responsivity

* May not tolerate smells that most people enjoy
* They are overwhelmed as well as distracted by these odors.
* May change mood and motivation
* Block learning
Smell Sensitivity (how can that possibly affect a student’s learning?)

Smell is the sense most likely to be overlooked by people working with individuals with autism.

A little brain research: When we smell, the molecules of odor are absorbed directly through the nasal cavity to the receptor cells of the olfactory nerves. These contain the body’s most exposed neurons. Messages from these neurons are sent straight to the limbic system of the brain.
Why is this important?

The limbic system controls many things, but especially:

• Memory
• Emotions
• The regulation of aggressive behavior!!!!!!
Smell sensitivity can affect behavior!

Smells which are undetectable to most of us can overwhelm the limbic system of a person with ASD:

Some triggers in the school environment:
Foods, perfumes, soaps, tooth paste, hand lotion, leather, deodorant, shampoo, mouth wash, paint, room deodorizers, body gas, cleaning supplies, bubble gum, animals, after-shave lotion, firewood, cut grass, flowers..
Olfactory/Smell

- Smells can be positive or negative
- Remember our sense of smell goes directly to our emotional center
- Calming and organizing: lavender, basil, chamomile, marjoram
- Concentration: rosemary, lemon, orange eucalyptus
Smell Sensitivity in the Classroom: What can I do about it?

1. Before you concentrate on the behavior, concentrate on the environment. Sniff! What can you smell?

2. Wear less perfume. Remember, many lotions smell stronger than perfume. Don’t use scented air fresheners in your classroom.

3. Use scent free products when cleaning desks, etc.

4. Keep your radar on high alert. If your student is avoiding certain people, check for odor issues.
Calming Strategies for All

- Take a walk
- Exercise prior to testing
- Deep pressure touch/hands
- Reduce light
- Use of a bean bag chair
- Slow rocking
- Quiet music/Soft voice
- Increase visuals/less talk
- Yoga-www.yogayears.com
- Rolling over a large ball
- Deep breathing/Relaxation Techniques
Stress/Fidget Objects

- Basket of fidgets
- Koosh balls
- Squeeze ball
- Piece of Velcro under desk
- Soft piece of material
- Therapy putty
- Keychain fidget
- Stretchy band on leg of desk
- Universal offer a class basket
Mindfulness

Tools to help calm, sustain attention and focus
Decrease stress and anxiety, depression
Belly Breathing For All

- One hand on belly
- One hand on chest
- Take a deep breath in, belly gets big 1-2-3-4
- Chest little movement
- Blow out, slowly 1-2-3-4 belly gets small
- “Breathe in blue skies blow out gray skies”  

video
Move To Learn: Exercise to Support Attention, Memory, Learning, Mood and More
Aerobic Exercise

- Improves self control
- Improves behavior
- Improves attention
- Improves arousal
- Helps anxiety and mood regulation
- Reverses learned helplessness
- Combats depression
- Increases self esteem
Exercise Greatly Impacts Learning

The Prefrontal Cortex
Major Role in Executive Function

- EXERCISE particularly affects our Executive Function
  - Planning
  - Organization
  - Initiate or delay a response
  - Consequence evaluation
  - Learning from mistakes
  - Maintain the focus
  - Working Memory

- Dysfunction in these areas leads to disruption in the organization and control of behavior

http://www.driesen.com/prefrontal_cortex.htm
Brain Fitness Connection

John Ratey, MD  Clinical Professor of Psychiatry
at Harvard Medical School
Aerobic Exercise

Dr. Ratey:
“Mood, anxiety, attention, stress, aging and hormonal changes in women can all be positively affected. A staggering network of 100 billion neurons, each of which might have up to 100,000 inputs, all are stimulated to spur new growth.”
“Miracle Grow For The Brain”

- Exercise increases neurotransmitter activity, improving blood flow and producing more Brain Growth Factors ("Miracle Grow for the Brain")
- Exercise does all of this better than any other factor at the present time
- Exercise readies our nerve cells to bind more easily and stronger
Neurochemistry
Movement Based Learning

- Walking 20 minutes scored 15% better

- ADD- When Students began vigorous exercise every day –reduced meds and some came off completely

- Attention all increased, aggression decreased

- Behavior-in first four months-all kids are moving 45 min a day- discipline problems plunged by 85% in one district and 63% dropped in another district

- Science/math tests-99% took test- scored number one in science and six in math
We Need to Move

The areas of the brain that are responsible for human movement are the same areas that are responsible for cognitive thought and attention span.

Humans need to move in order to learn.
Walking for Learning

- Brain before a 20 minute walk
- Brain after a 20 minute walk

Research/scan compliments of Dr. Hillman, University of Illinois
The Research is Impressive: British Journal of Sports Med

19 studies, 586 kids, teens young adults found short 10 to 40 minute bursts of exercise led to an immediate boost in concentration and mental focus, improving blood flow to the brain.

Further evidence 20 min before taking a test: test scores went up.
Zoloft vs Exercise at 4 Months

Figure 3. Observed mean depression scores before and after treatment. All changes from pretreatment to posttreatment were statistically significant (P < 0.001 for all). The treatment groups did not differ on baseline or posttreatment levels of depression. Error bars represent SEs. HAM-D indicates Hamilton Rating Scale for Depression; BDI, Beck Depression Inventory.

Texas Cooper Study 2,600,000

- High levels of physical fitness are associated with better academic performance regardless of demographics: race, ethnicity, income or school.

- Higher level of attendance.

- Higher level of fitness was associated with fewer disciplinary incidents. The research looked at the number of incidences associated with drugs, violence and truancy.
Research Copenhagen Denmark Johannes Skolens

- Increased PE to 5 times per week
- 250 students
- Prior physical activity ball play
- Increased to include military boot camp training, dance, indoor rowing, spinning, aerobics
- Only healthy super foods served
- Increase of 1.5 grade improvement
- Concentration increase by 33%
- Absenteeism decreased by 38%
- Three month span
Exercise Boosts Reading Skills

- Casper Alternative High School
- March 16, 2010
- Every morning reading class goes to the gym, run, jog, move on step benches, activity to keep heart rate between 135 and 180 beats per minute for 15-20 minutes
- Short cool down return to computers for reading comprehension
- Lowest performing readers have made big gains, for some four grade levels. Students regularly made gains but exercise caused double the gains.
Naperville, Illinois

- Primary focus in P.E. class involves high-intensity interval training two days per week, and motor development and recreation/play the other three days

Use of heart rate monitors by every student to enable and ensure participation at each individual’s personal optimum peak activity level

To raise heart rate to a zone between 145–185 bpm for twenty minutes to receive an A grade for that day – based on individual student heart rate target levels

Video

2004 CST* Scores in English-Language Arts by Number of Fitness Standards

Grade 5 – 371,198 Students  
Grade 7 – 366,278 Students  
Grade 9 – 298,910 Students

*California Standards Test

Source: California Physical Fitness Test, 2004 Results, Calif. Dept. of Ed., April 2005
Charleston Progressive Academy
Exercise Impacts Self Control

- Public Magnet School Grades 4-8
- Program added 40 minutes of exercise in the morning-stations – gym
- Stations: basketball, dance dance revolution, double dutch jump rope and pogo stick jumping
- Attention, behavior improved
- Test taking right after morning exercises scores increased
More than 1,820 students who visit Purdue's France A. Córdova Recreational Sports Center at least 16 times a month earned a GPA of 3.10 or higher. The correlation between grades and gym use also is shown with moderate users. Students who used the gym at least seven times a month had an average GPA of 3.06.
Aerobic Exercise

● 10-15 min.
● Ideally 30-40 min a day getting heart rate up to 80%
● Finland- performing at highest level on all tests
● 45 min instruct- 15 in between playing or exercising
Move To Learn Videos

- Movetolearnms.org
- PE teacher leads awesome aerobic exercise in the classroom setting -5 minutes
- Gets heart rate up and then calms the students back down
- Perform 2-3xs a day
Exercise Balls

Grand Valley State University

- Improves balance
- Improves core strength
- Improves posture body alignment
- Increase attention, taking notes, engagement, taking exams
Move To Learn/PE Central

- Site word twister
- Shapes on floor with beanbags
- Beach ball with numbers hands land add numbers
- Movement Math Flash card fun
- Over, under, around and through with three members and scarves
Good For Your Heart

- Eating 4 pepperoni pizzas - fall
- Walking your dog - jump
- Smoking cigarettes – fall
- Never going outside to play and watching TV all the time – fall
- Dancing with your friends – jump
- Skating – jump
- Never eating fruits/vegetables – fall
- Riding a scooter – jump
- Shooting baskets – jump
- Playing PlayStation – fall
- Eating fast food – fall
- Raking the leaves - jump
- Washing the car – jump
- Taking the stairs – jump
- Taking the elevator – fall
- Swimming – jump
Movement Activities

- Move and Learn exercise videos
- Rock paper scissors big muscle
- Just dance videos
- Circuitry training-jump rope
- Weights, hoola hoops, jog in place
- 20 minute walk around the building
- Hit and catch ball against wall
Class Movement Activities

- Race in place-run ask question/answer/run (yourtherapysource.com)
- Chair /wall push ups before writing
- Invisible jump rope-use music-add tricks/partner routine
- Noodle Balance preschool (pecentral)
- Peanut butter and jelly (ball game)
Brain Gym

- Designed to help the brain function better during the learning process
- Helps blood flow to the brain to help the brain stay alert during the learning process and to keep energy high
- Brain buttons
- Cross crawl
- Hook Ups
Yourtherapysource.com

- Throw the peanut butter and roll the jelly
- Movement Math Flash card fun
- Math Jump Around with Partner
- Over, under, around and through with three members and scarves
Resources

*Brain Gym three moves sensorystreet uploads

*http://afirm.fpg.unc.edu/afirm-modules  AFIRM

*Stickids.com

*Brainworks

*Movetolearncms.org

*Gonoodle.com

*http://www.nchpad.org/1399/6254/Autism~and~Exercise (Autism/Exercise videos)

*pecentral.com

*yogacosmickids.com
Autism and exercise webcast with Coach Dave:
https://www.youtube.com/watch?v=ErCxU_cJtOc
Thelearningstation.com
- Cheryl Boucher, MSEd, OTR
- Kathy Oehler, MS, CCC-SLP