FLIXERCISE

ADAPTED PHYSICAL EDUCATION

CHILDREN WITH DISABILITIES

This information presents general adaptations for including children with disabilities in using Flixercise programs. The adaptations and strategies presented are merely suggestions. Much of the information was part of a collaborative paper submitted by Dr. Timothy Davis, Ph.D., CAPE.

The safe involvement of all who participate in daily physical activity is of critical importance. Although limitations may be likely for the child with a disability, the benefits of daily exercise far outweigh the risks. Parents and educators must be willing to make accommodations to ensure individual success.

FLIXERCISE

TABLE OF CONTENTS

DEVELOPMENT OF THE WHOLE CHILD

Physical activity and Movement Based Academics are very important in the development of the "whole" child in all three learning domains:

1) Cognitive (Academic)
2) Psychomotor (Physical)
3) Affective (Social/Emotional)

Physical activity is one of the few areas that allows for the development of all three domains that are so important to growth and development.

Psychomotor Domain

- Balance, coordination, eye-hand coordination, etc.
- Gross motor development
- Development of body/ kinesthetic/tactile and spatial learning styles
- Cardiovascular fitness
- Muscular strength and endurance
- Flexibility

Cognitive Domain

- Development of learning styles: musical/rhythmic, verbal/spatial, auditory/verbal, naturalist, & mathematical/logical
- Number awareness & math concepts
- Vocabulary, literacy, and reading skill development
- Learning and following directions
- Following auditory cues or visual cues
- Sequencing skills
- Problem solving

Social/Emotional Domain

- Non-competitive
- Non-aggressive
- Non-violent
- Gender equal
- All-age inclusive
- Culturally adaptive
- Work alone, with a partner, or in a small group
- Development of intra- and interpersonal learning styles

- General recommendations:
  - Provide short and clear instructions. Repeat the directions if necessary.
  - Demonstrate the task for visual understanding.
  - Have the participants demonstrate the task to show a clear understanding of it.
  - Provide frequent feedback to the participants.
  - Keep the learning environment consistent.
  - Eliminate distractions (visual and auditory).
  - Provide activities that will bring success.
  - Give the participants enjoyable activities.
  - Let the participant be the leader.

- Participants may use the Phone Desk Mat to tap the letters.

For those who are not mobile:

- Participants may perform the activities from a seated position on the mat.
- A Desk Mat may be placed on a participant's lap for ease of use.
- A Learnercise Mat or a Desk Mat may be mounted to the wall so that it is able to be touched with the hands from a seated position.

IMPORTANCE OF FITNESS AND FITNESS FOR CHILDREN WITH DISABILITIES

The Surgeon General's report (1996) on the status of the country's physical activity and health provides two key observations regarding the importance of physical activity for individuals with disabilities:

1. People with disabilities are less likely to engage in regular moderate physical activity than people without disabilities, yet they have similar needs to promote their health and prevent unnecessary disease.
2. Quality physical education, preferably daily and K-12, must be made available to children and youth with disabilities.

(Centers for Disease Control, 1996)

Although there has been great emphasis on physical activity and health over the past two decades, information specific to adaptations and strategies for exercise in children with disabilities remains scarce. However, there are some reports of model fitness programs that have demonstrated success in children with disabilities. For example, the Learnercise Mats are designed to engage children of all ability levels while promoting cross-disciplinary collaboration.

The use of activities that promote cardiovascular fitness, are inclusive, and connect with key concepts across the discipline promotes a "win-win" for educators who struggle to include children with disabilities. Activities that can address the full continuum of abilities often found in the general physical education environment are critical for the success of today's children and teachers (Davis, 2007).

COMMON FITNESS BARRIERS FOR CHILDREN WITH DISABILITIES

There are many definitions of physical fitness, but almost all of them have been directed at adults. When defining fitness in the context of a child's life, and in particular a child with a disability, a variation of the definition proposed by Pate, Pratt, and Blair (1996) seems appropriate:

"Physical fitness denotes a level of energy that allows children and adolescents to

engage in daily activities without incurring high levels of stress or fatigue. This includes but is not limited to performing daily household chores, attending school, participating in sports and recreation programs, and possibly engaging in part-time employment of a vigorous nature. Physical fitness also denotes a reduction in health risks that may occur in adulthood as a result of physical inactivity, including such conditions as coronary heart disease, hypertension, obesity, low stamina, type II diabetes, osteoporosis, low back pain and depression."

According to the literature, the two primary factors contributing to children's inactivity and poor overall physical fitness include the lack of opportunity for daily vigorous physical activity coupled with poor eating habits. In addition, the following have been documented:

- Reduction of physical education time in schools
- Limited focus on vigorous cardiovascular activity
- Minimal opportunities to engage in walking, running, or riding bikes
- A drastic increase in time spent watching television, on the computer, and playing video games, with children spending as much as 25 to 35 hours a week engaging in sedentary activities

For children with disabilities, the factors mentioned above, combined with any limitations of physical mobility, sensory impairment, intellectual disability, and/or social delays, significantly impacts their ability to engage and be involved in daily physical activity.

FLIXERCISE SOLUTIONS

The mission of Flixercise is to promote physical fitness and academic achievement by enriching the lives of millions of individuals, young and old alike, on all different fitness levels. The company strives to accomplish this by engineering fun, safe, and exciting physical activity products that meet the unique needs of all ability levels. Flixercise founder, Dr. Debby Mitchell, is passionate about fitness and strongly promotes the following curriculum to benefit children of all ability levels.

Flixercise curriculum:

- Provides activities that engage children of all ability levels
- Promotes academic integration for cross-disciplinary collaboration and the incorporation of academic standards
- Provides programming that is fun with exercise that is hidden in the programming
- Uses music to motivate
- Includes popular activities that are developmentally appropriate for the age group
- Provides a "security blanket" with each individual having his or her own personal

space on the GeoMat or Learnercise Mat

- Provides an emotionally safe, non-violent/non-aggressive learning environment
- Provides opportunities to develop the "whole child" and the use of different learning styles
- Uses the latest brain research to develop curriculum
- Offers options so that each individual can be successful

SAFETY AND COMMON SENSE CONCERNS FOR FITNESS PROGRAMS

For physical educators, safety is of utmost concern when teaching all students. Because of the limited number of fitness programs available for children with disabilities, they are often limited in their understanding and knowledge of fitness concepts. When conducting fitness units teachers should be aware that children with disabilities may not wish to participate because it is difficult for them to keep up with their non-disabled peers (Block, 2006). Whether the child with a disability is accompanied by the adapted physical educator, assisted by a peer helper, or is independent, it is important to establish individual safety guidelines for exercise. Most children with physical and intellectual disabilities should not have difficulty participating in high intensity fitness activities unless there is evidence of a cardiac or pulmonary disorder (Rimmer, 1997). In this case, a physician should screen the child. Specific fitness protocols may have to be followed to ensure safe and successful exercise. Nevertheless, it is always wise to start off slowly and follow procedural guidelines to ensure personal safety. The following general guidelines for conducting safe fitness programs were developed by Dr. Jim Rimmer (1997).

GENERAL SAFETY GUIDELINES

General Safety Guidelines for Conducting Fitness Activities for Children with Disabilities

- Check medical history to make sure there are no contraindications to fitness-related activities (e.g., heart condition, exercise-induced asthma, osteopenia, drug interaction).
- Monitor cardiovascular exercise by using rating of perceived exertion (RPE) and an intensity level between 60 and 85% of target heart rate range to assure safety in the activity. If discomfort is exhibited at the 60% threshold, drop to 50%.
- Avoid conditions where there is a likelihood of hypothermia or hyperthermia. Some children with paralysis have difficulty retaining or dissipating heat.
- Teach the physical education instructor how to transfer a child from a wheelchair so that fitness activities can be performed in different positions (e.g., mat, exercise machine).

Note: Target heart rate range is equal to maximum heart rate (220 - age) minus resting heart rate multiplied by the intensity level (60 to 85%) and then added to the resting heart rate.

STUDENTS WITH MOBILITY IMPAIRMENTS

When conducting aerobic activity with students who have limited mobility, balance, or who may use a mobility device to ambulate, an essential question is whether they should sit or stand when conducting the activity. Depending on the ability of the individual, basic adaptations can be made without much difficulty for either. Consider the individual's balance first when assessing their ability. If possible, consider using parallel bars when focusing on lower extremity movement and a seated position when focusing on upper extremity workouts. Generally, wheelchair users or those with mobility impairment need to work on cardio-respiratory endurance and upper body mobility, including muscular strength. Consider the following when conducting aerobic exercise and using Learnercise Mats:
A child with balance issues may use a chair (with rubber tips), a walker, or crutches placed directly on the mat. Movements should be slowed down so the individual has the chance to step and gain balance before moving to the next step.

A child may be taken out of his or her wheelchair and may sit in the middle of the mat. The child may make responses by tapping their hands or feet on the appropriate locations.

- Whenever possible, focus on functional movements of the individual (e.g., leg, trunk, upper extremity mobility). Have the individual move as much as they can independently and without pain.
- Try upper body mobility exercises, including lifting arms straight out in front for a few seconds, then lowering. Increase time with successful performance.
- Try lifting arms to the sides (stopping at shoulder level), holding, and then lowering.
- Additional upper body activities include shoulder shrugs, overhead "air" presses, wrist curls, finger extensions/dexterity, bicep curls, and triceps extensions.
- For students who are able to stand, a proper warm up and a cool down promoting flexibility are also important for reducing the chance of injury. Work on flexibility and range of motion of the shoulders, arms, back, and neck. Rehab Team Site offers examples of stretches for the upper body for individuals with spinal cord injury. (http://calder.med.miami.edu/pointis/self.html)

STUDENTS WITH SENSORY IMPAIRMENTS

The specific concerns for those with visual and/or sensory impairments (vision or hearing loss) involve environmental awareness and exercising safely. As with any student, the first concern should be on using proper form. Start slowly with exercise and, whenever possible, use the educational medium that is most familiar to the student. For example, for the individual with visual impairment who uses braille, provide a list of movements that describe the proper fitness form as well as hand over hand modeling.

- Place raised tape on the middle of the mat. This will be the "home" position for the child. Familiarize the individual with the mat and the location of each visual on the mat.
- The Learnercise Mats are very bright in color. Therefore, some children may be able to detect areas on the mat.
- Give directions in reference to the home position. For example, "Directly in front of home is the number '2.' Step forward and balance on one foot." Activity cards providing the directions can be developed using braille.
- Provide more activities that use music and are performed to a steady beat. Many children may be able to feel the vibration of the music and move to the beat.
- It is important to keep the area safe and clear.

The following are suggestions as outlined by PE Central's disability fact sheets for physical educators (www.PEcentral.org):

- Ask the student what he or she is able to see.
- Use positive reinforcement to shape the movement performance.
- Use bright colors and/or auditory materials when possible. Consider that some individuals will be able to feel the vibrations of music.
- Use materials that are self-explanatory or post the sequence of movements (braille card or poster).
- Familiarize the student to the environment (e.g., personal fitness mat). Consider adding raised, taped bumps or sensory targets to the mat so that students with visual impairments can maintain orientation.
- Consider using facilitated communication for students who are blind and nonverbal.
- Keep the environment clear of clutter and equipment.

In addition, students with sensory impairments that are included in general classes commonly feel segregated or left out. Promote their physical activity through sports by introducing them to national athletic organizations. The US Association of Blind Athletes (http://www.usaba.org/) and US Deaf Sports Federation (http://www.usdeafsports.org/) are two very good resources for those with visual or hearing impairments. They offer information, benefits, and competitions that people can join, as well as specific strategies

to workout safely and effectively.

STUDENTS WITH INTELLECTUAL DISABILITIES

The Flixercise curriculum helps provide structure needed for children with intellectual disabilities by working to:

- Increase body awareness by placing different body parts on different locations on the mat and by tapping, bending, and stretching different body parts.
- Improve pre-locomotion skills by clapping, snapping, and tapping on the mat or on different body parts.
- Improve object manipulation skills by adding beanbags, streamers, paper plates, shakers, rhythm sticks, balls, etc.
- Develop posture by using directions such as “stand up tall,” “move on your tiptoes,” “freeze like a statue,” etc.
- Develop locomotor skills by marching, jumping, hopping, running, skipping, galloping, sliding, bouncing, dancing, etc. around the mat or on the mat.
- Stimulate the visual and auditory senses by using visual or auditory directions alone or by using additional tactile manipulation to develop each learning style.
- Focus on functional skills by having children pretend (e.g., “pretend you are cooking and stirring a stew,” “pretend you are a washing machine,” “pretend you are a basketball player and jump up to reach the ball,” etc.).

STUDENTS WITH SOCIAL/EMOTIONAL DELAYS

- Give a personal mat to each participant to provide a “security blanket” (personal space). Remind students that they need to stay in their designated spaces. Keep directions simple.
- Provide one direction or “piece” of information about the activity at one time so the students do not feel overwhelmed.
- Have clear “go” and “stop” signals and practice those signals in the context of a game.
- Use movements to “control” an individual or group that is getting overly excited (e.g., “Let me see how you can balance on three body parts quietly on your mat,” “Show me how you would move slowly around the edge of your mat. Pretend you are in slow motion.”).
- Provide structured routines and maintain consistent rules.

- On the first day, explain class goals and a specific routine to be followed.
- Discuss goals often with each student and develop a contract of what each student must do to achieve a goal.
- Keep rules simple. Set as few as possible while encouraging students to participate in the development and selection of rules.
- Clearly explain the consequences of not following the rules or regulations, as well as the rewards for following them.
- Allow participants to be involved in the consequence process. Post the process in the room or allow them to take part in making it.
- Demonstrate consistency in enforcing rules and providing feedback.
- Target behaviors that need to change and define the components of these behaviors.
- Observe, chart, and analyze behaviors to change.
- Select and apply specific strategies to achieve behavior changes (e.g., start and stop signals, routines for transitions, techniques for forming groups, and strategies for coping with disruptive behaviors).
- Periodically evaluate progress toward changing an individual's behaviors and revise their behavior change plan.
- Allow individuals to feel safe by task analyzing and structuring activities to assure personal mastery.

ASPERGER'S SYNDROME

Asperger's Syndrome is a specific type of pervasive developmental disorder characterized by problems in the development of social skills and behavior.

CHARACTERISTICS

Cognitive:

- Normal intelligence
- Use words by age two
- Speech patterns may be different; speak rapidly
- Attention Deficit Disorder
- Obsessive Compulsive Disorder
- High IQs
- Speech inaccuracies

Psychomotor:

- Coordination difficulties
- Normal fine and gross motor development

- Clumsy

Affective:

- Difficulty interacting with peers
- Tend to be loners
- Display eccentric behaviors
- Depression
- Frustration
- Low self-esteem

EFFECTIVE TEACHING STRATEGIES

- Limit the amount of stimuli in activity.
- Include activities that encourage interaction.
- Provide positive reinforcement.
- Avoid large amounts of down time.
- Provide direct instruction.
- Provide tactile (or learn by doing) directions.

AUTISM

Autism is a brain disorder that impairs a person's ability to communicate, form relationships, socially interact, and respond appropriately within a given environment.

CHARACTERISTICS

- May avoid eye contact
- May seem deaf or not listen
- May lack awareness of the existence of feelings of others
- Can be physically aggressive or have outbursts when familiar environment is changed
- Can remain fixated on single activity or object
- May engage in strange actions such as hand flapping, rocking, or flicking objects
- May lick toys/objects
- May not show sensitivity to pain (burns, bruises)
- May engage in self-mutilation, such as eye gouging
- Impaired social interaction
- Impaired verbal/nonverbal communication
- Seeks sensory input (e.g., a weighted vest)
- Shows repetitive interests and activities
- Preoccupation with certain objects
- Absence of imaginative activity
- May withdraw from people
- Abnormal response to external stimuli such as sound and lights
- May lack appropriate play
- May be tactile defensive with some textures
- May be sensitive to touch

IMPLICATIONS FOR PHYSICAL ACTIVITY

- In the community, the child may need 1:1 supervision.
- Use a PECS book (Picture Exchange Communication System) to allow nonverbal students choices of physical activities.
- Provide an initial screening process to determine a student's physical strengths and weaknesses. This will help in writing IEP objectives and goals.
- Establish routines and smooth transitions throughout the lesson.
- Modify equipment so that the student can be successful, yet challenged.
- Provide balls that will provide sensory output during activities (e.g., Knobby balls).
- Provide videos, which can be useful for autistic children who can follow visual cues.

CONTRAINDICATED ACTIVITIES

- Having a loud and/or bright environment; providing too much stimuli within the environment (e.g., over stimulating with too much noise/equipment) (Block et al, 2003)
- Providing too many activities that require a lot of contact
- Spending too much time on a single activity and not providing enough choices (Block et al., 2003)

EFFECTIVE TEACHING STRATEGIES

Preschool-Elementary

- Use a sticker chart as a reward system.
- Teach students basic locomotor and object control skills.

Middle School-Secondary

- Provide a reward system that allows students the opportunity to participate in an enjoyable activity.
- Teach students lead-up activities for team, individual, and cooperative activities.
- Have the child perform a task and draw parts of a picture (face) every time a task is completed.
- Use a peer tutor to assist the child in learning.
- Teach students activities that can be used for the rest of their lives. Allow choices when setting up the curriculum so they can choose activities that are of interest to them.

Preschool-Secondary

- Use teaching stations or give students their own personal space.
- Change activities regularly.
- Eliminate different distractions.
- Keep directions short and age-appropriate (limit prompts).
- Use sensory stimulation to increase attention spans.
- Use smooth transitions.
- Instruct in an environment where noises, smells, and lights will not interfere with learning. Teach in less stimulating environments.
- Provide students with ear plugs/cotton balls in noisier environments.
- Keep motivational music at a low level.
- Establish predictable routines within lessons.
- Create a highly structured environment that is organized and predictable.
- Use visual aids during activities.
- Use vigorous aerobic exercises to keep students on task.
- Use a consistent behavior modification program.
- Provide lots of practice time/repetitions.
- Show enthusiasm when teaching.

Positive Behavior Management Strategies

- Set realistic goals and expectations.
- Increase the amount of activity time while decreasing instructional and transitional periods.
- Check for basic understanding to make sure students know expectations.
- Provide a structured environment with appropriate routines.
- Challenge the students to keep them motivated.
- Provide a reward system for good attitudes and behavior.
- Provide nonverbal feedback and encouragement with high fives and cheering.
- Be consistent and fair with your rules and consequences.
- Use proximity control if a problem is arising.
- Get to know the students and show interest toward them outside of the physical education environment.
- Create a positive and enthusiastic environment for everyone.
- Provide vigorous activities to help students remain on task.

DEPRESSION AND EMOTIONAL DISTURBANCE

Depression

A feeling of low self-esteem that adversely affects the student's behavior, education, and social relationships

Emotional Disturbance

An inability to learn, build relationships, and maintain happiness over a period of time that negatively affects academic performance

CHARACTERISTICS

- Depressed mood most of the day, nearly every day
- Markedly diminished interest or pleasure in almost all activities most of the day, nearly every day
- Significant weight loss/gain
- Feelings of helplessness and hopelessness
- Feeling useless
- Self-hatred, constant questioning of thoughts and actions, an overwhelming need for reassurance
- Being vulnerable and "over-sensitive"
- Feeling guilty
- Self-harm
- Difficulty getting to sleep or feeling more tired than usual
- Agitation and restlessness
- Finding it impossible to concentrate for any length of time, forgetfulness
- A sense of unreality
- Physical aches and pains, sometimes with the fear of serious illness
- Suicidal tendencies
- Loss of appetite
- Decline in participation of everyday activities
- A loss of energy and motivation that makes even the simplest tasks or decisions seem difficult

IMPLICATIONS FOR PHYSICAL ACTIVITY

- The student may have a developmental delay
- Lack of confidence could lead to inactivity
- The student may not be social and may have poor teamwork habits

- The student could be overweight or have an eating problem resulting in low energy levels
- The student may have an inability to focus on activities due to a short attention span
- The student may not feel like doing activities or have a loss of interest

RECOMMENDED ACTIVITIES

- Provide activities that will bring success.
- Give the participants enjoyable activities.
- Let the participant be the leader.
- Have the individual perform continuous activities such as running, walking, biking, and swimming.
- Use stress management techniques.

CONTRAINDICATED ACTIVITIES

- De-emphasize competition. Do not pit the students against each other.
- Perform activities in separate areas, not in front of all of the students.

EFFECTIVE TEACHING STRATEGIES

- Structure the activity/class for success. Do not set a student up for failure.
- Establish rules that are stated positively. Do not be negative.
- Have a set routine, not a different outline each time.
- Organize and plan class for active participation with little waiting time.
- Show same attention to all students. Don't play favorites.
- Use teamwork skills to help with socializing and taking eyes off of individual students.

POSITIVE BEHAVIOR MANAGEMENT

- Reward appropriate behavior.
- Enforce fair consequences for inappropriate behavior.
- Provide students with a safe space to be alone so that they can develop skills to control their behavior.

DOWN'S SYNDROME

Down's syndrome, also called trisomy 21, is the most common cause of mental retardation and malformation in a newborn.

CHARACTERISTICS

Psychomotor

- Possible difficulty in walking
- Severe motor delays put the individual at a disadvantage
- Balance deficits limit motor skills
- Poor muscle tone
- Hyperflexibility
- Heart conditions could affect activity and fitness levels throughout the individual's lifetime

Cognitive

- Delayed mental or social skills

Affective

- Stubbornness and refusal to talk when not fully understanding what is expected of them or when trying to gain control over their lives
- Will talk to oneself in an uncomfortable or confusing situation

IMPLICATIONS FOR PHYSICAL ACTIVITY

Some important things that may affect a student's performance in physical activities include:

- Visual problems
- Mild to moderate hearing loss
- Possible cardiovascular irregularities

In addition, some individuals with Down's syndrome have Atlantoaxial Instability (AAI), a condition where there is increased mobility between the first and second cervical vertebrae, allowing the vertebrae to slip out of alignment easily and causing damage to the spinal cord. Because there are no symptoms of AAI, it is important for individuals with Down's syndrome to have X-rays taken. Copies of these X-rays should be given to the school before any participation in physical activities.

RECOMMENDED ACTIVITIES

Yoga poses help to stretch, tone, and strengthen the whole body. Yoga benefits central nervous system and helps develop balance, body awareness, concentration, and

memory. (www.specialyoga.com)

CONTRAINDICATED ACTIVITIES

Students and athletes with Down's syndrome should be restricted from participation in gymnastics, diving, the butterfly stroke in swimming, the high jump, "heading" in soccer, and any exercise which places pressure on the muscles of the neck.

EFFECTIVE TEACHING STRATEGIES

Preschool

- Teach individuals in a highly structured environment.
- Allow for touching and feeling to learn.
- Use lighter weight equipment.
- Use a smaller teaching space.
- Use visual and auditory aids.

Elementary

- Allow students to make choices with some activities to help their decision-making skills.
- Keep the same routine for class structure.
- Keep directions specific and brief.
- Use visual and auditory aids.
- Demonstrate skills.
- Use lighter weight equipment.
- Breakdown the task into simple, small steps.
- Use peer partners.
- Use positive behavior management strategies.

Secondary

- Allow students to make choices with some activities to help their decision-making skills.
- Keep the same routine for class structure.
- Use visual and auditory aids.
- Demonstrate skills.
- Breakdown the task into simple, small steps.
- Use peer partners.
- Use positive behavior management strategies.

EPILEPSY

According to the Epilepsy Foundation of America, epilepsy is a physical condition that occurs when there is a sudden, brief change in how the brain works. When brain cells are not working properly, a person's consciousness, movement, or actions may be altered for a short time. These physical changes are called epileptic seizures. Epilepsy affects people in all nations and of all races. There are about two million Americans that have epilepsy. Some people can experience a seizure and have epilepsy. A single seizure does not mean that the person has epilepsy.

CHARACTERISTICS

Epilepsy is a group of symptoms caused from abnormal electrical activity in the brain, which results in seizures of varying magnitude. The symptoms listed are not necessarily indicators of epilepsy. It is wise to consult a doctor if you or a person you know experiences one or more of them:

- "Blackouts" or periods of confused memory
- Episodes of staring or unexplained periods of unresponsiveness
- Involuntary movement of arms and legs
- "Fainting spells" with incontinence or followed by excessive fatigue
- Odd sounds, distorted perceptions, episodic feelings of fear that cannot be explained

Seizures can be generalized where all brain cells are involved. Partial seizures are when those brain cells not working properly are limited to one part of the brain. There are many different types of seizures; not all of them involve convulsions. When naming seizures, it is important to use terms that describe what is happening during the seizure and to avoid terms such as "mild" or "major," which do not describe the event. A person can experience more than one type of seizure. The frequency, length, and pattern of seizures tend to be fairly constant for each person, although it may change in the longer term.

IMPLICATIONS FOR PHYSICAL ACTIVITY

Students with epileptic disorders are eligible for special education and related services under the IDEA. Epilepsy is classified as "other impaired" and an IEP would be developed to specify appropriate services. Some students may have additional conditions such as learning disabilities along with the seizures. Seizures may interfere with the child's ability to learn, and he or she may be missing parts of what the teacher is saying. Depending on the type of seizure and/or how often they occur, some children may need additional assistance to help them keep up with classmates. Assistance can include adaptations in instruction, first aid on seizure management, and counseling, all of which should be written in the IEP. It is important that teachers and school staff are informed about the child's condition, possible effects of medication, and what to do in

case a seizure occurs at school.

EFFECTIVE TEACHING STRATEGIES

Before actually setting up a strategy, check the district's medical history sheet and contact the student's physician, past teachers, and parents. Activities can improve both mental and physical health and should be encouraged for people with epilepsy. Most individuals with epilepsy can safely exercise in a gymnasium, pursue sports, and use equipment even though seizures aren't completely under control, but a buddy system may be needed. All activities should be monitored and individually adjusted to each person's exercise tolerance and medical history. Through the use of the buddy system and consistent use of safety equipment (helmet, knee, and elbow pads), the student can participate in most activities.
These are some activities where it is suggested that one require a physician's permission or should otherwise be modified:

- Water sports
- Activities that place the student a few feet above ground
- Archery
- Activities that have repeated blows to the head

Children and youth with epilepsy must also deal with the psychological and social aspects of the condition. These include misperceptions and fear of seizures, uncertain occurrence, loss of self-control during the episode, and medications. To help children feel more confident about themselves and accept their epilepsy, there should be education programs for staff and students, including information on seizure recognition and first aid.

FETAL ALCOHOL SYNDROME (FAS)

A pattern of mental and physical defects that develop in some unborn babies when the mother drinks too much alcohol during pregnancy

CHARACTERISTICS

- Distinct pattern of facial abnormalities, growth deficiency, and evidence of central nervous system dysfunction; most individuals affected by alcohol exposure before birth do not have the characteristic facial abnormalities and growth retardation identified with FAS, yet they have brain and other impairments that are just as significant
- Mental retardation; individuals with FAS, ARND, and ARBD may have other neurological deficits such as poor motor skills and hand-eye coordination
- May have a complex pattern of behavioral and learning problems, including difficul-

ties with memory, attention, and judgment

- Have trouble generalizing behaviors and information
- Act impulsively
- Exhibit reduced attention span or are distractible
- Display fearlessness and are unresponsive to verbal cautions
- Demonstrate poor social judgment
- Cannot handle money age-appropriately
- Difficulty structuring work time
- Show impaired rates of learning
- Experience poor memory
- Have trouble internalizing modeled behaviors

- May have differences in sensory awareness (hypo or hyper)
- Language production higher than comprehension
- Show poor problem solving strategies

IMPLICATIONS FOR PHYSICAL ACTIVITY

- Teachers will need to modify leisure, recreation, fitness, and sport activities.

EFFECTIVE TEACHING STRATEGIES

- Provide short and clear instructions.
- Provide frequent feedback to the individual.
- Repeat directions.
- Have the individual demonstrate the task to show a clear understanding of it.
- Keep the learning environment consistent.
- Eliminate distractions (visual and auditory).
- Demonstrate tasks for visual understanding.
- Use peers as partners for the individual.
- Slow down the speed of the activity, especially if it is concerning a noncompetitive activity, (e.g., stretching, exercises, etc).

EFFECTIVE BEHAVIOR MANAGEMENT STRATEGIES

- Set limits and follow them consistently.
- Change rewards often to keep high interest in reward procurement.
- Have pre-established consequences for misbehavior.
- Review and repeat the consequences of behaviors. Ask the students to tell you

the consequences.

- Do not debate or argue over rules already established. "Just do it."
- Notice and comment when students are doing well or behaving appropriately.
- Avoid threats.
- Redirect behavior.
- Intervene before behavior escalates.
- Avoid situations where the students will be overstimulated.
- Have students repeat back directions to show understanding.
- Protect students from being exploited. Individuals with FAS are naive.

HEARING IMPAIRMENT

"An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance," from IDEA, PL 101-476 (Winnick, 1995)

CHARACTERISTICS

The following are the different severity of hearing impairment types: deaf, hard of hearing, and hearing impairment (conductive, sensory-neural, and mixed). The following focuses exclusively on hearing impairment as an overall disability (Winnick, 1995). An individual with a hearing impairment may experience:

- Muffled quality of speech and other sounds
- Difficulty understanding words; asking others to speak more slowly and with a clear/louder voice
- A need for longer times to process information
- A lack of attention
- A tendency to shy away from oral participation
- Using a monotone voice
- Difficulty following directions
- Responding to noises instead of words
- Withdrawing from conversations
- A clear delay in social/emotional interactions
- A developmental delay that teachers will see in how the individual learns, speaks, and interacts with others
- Acting out and imitating others to get attention or due to the inability to fully understand what is being asked of the individual
- A constant use of hand signals to communicate

- A tendency to cock his or her head to try to hear better or due to discomfort

IMPLICATIONS FOR PHYSICAL ACTIVITY

Individuals with hearing impairments can do just about everything with the same motor ability as non-disabled individuals. However, a hearing impaired individual may experience static and dynamic balance challenges, some delays in gross and fine motor skills, and some difficulty with applied force and coordination. Making small adaptations for individuals with hearing impairments will allow them to be able to be just as successful as anyone else in their classes. These adaptations include the following:

- Make the environment more conducive to them by eliminating excess noise (if you use music, have it at a reasonable level for all students), use an auditory device, have clear instructions, and keep a routine for the students.
- Educate all the students in the individual's class about his or her disability.
- Provide disability awareness for the entire school to increase acceptance, social skills, and tolerance of individuals that may be a little different.
- Simulating the student's disability can help everyone feel more comfortable and aware of what it is like to be hearing impaired.

RECOMMENDED ACTIVITIES

- **Bowling:**
  - Simplify/reduce the number of steps.
  - Allow the participant to use two hands instead of one.
  - Allow the participant to remain in a stationary position.
  - Allow the participant to use a bowling ramp.
  - Provide a partner.
  - Give the individual continuous signed cues.
- **Basketball:**
  - Allow the participant to use various size balls (bright colors).
  - Allow traveling.
  - Allow two-handed dribbling.
  - Use a larger/lower goal.
  - Slow the pace down.
- **Golf:**
  - Allow the participant to use club with a larger head.

- Allow the participant to use a shorter/lighter club.
- Allow the participant to use a larger ball.
- Allow the participant to use a tee for all shots.
- Shorten the distance to the hole.

- **Soccer:**
  - Allow the participant to walk instead of run.
  - Use a deflated ball, foam ball, or brightly colored ball.
  - Reduce the playing area.
  - Play six-a-side soccer.
  - Use a bigger goal.

- **Softball:**
  - Use a bright softball.
  - Allow the participant to use larger or smaller bats.
  - Allow the participant to use a batting tee.
  - Reduce the distances between the bases.
  - Provide a peer for assistance.

- **Tennis:**
  - Use a soft, bright ball.
  - Allow the participant to use a lighter racquet.
  - Allow the participant to use a larger head racquet.
  - Allow the participant to hit the ball off a tee.
  - Allow a drop serve.
  - Provide a peer for assistance.

- **Volleyball:**
  - Use larger, lighter, softer, brightly colored balls.
  - Allow the participant to catch the ball instead of volleying.
  - Allow the participant to self-toss and set the ball.
  - Lower the net.
  - Reduce the size of the playing court.
  - Allow the participant to stand closer to the net to serve.
  - Allow the ball to bounce first.

- Hold ball and have the participant hit it.

CONTRAINDICATED ACTIVITIES

- Swimming is a contraindicated activity due to the nature of the individual's disability. Too much water pressure could further damage the individual's hearing.

EFFECTIVE TEACHING STRATEGIES

- It is necessary to have a safe environment in which individuals can perform activities. Keep the area free of obstacles and loud noises.
- Assistance may be needed for some activities to get the most out of the student.
- Learn basic sign language and keep a positive attitude.
- Use other teachers as a valuable resource.
- Make sure hearing impaired students can see your lips when you talk.
- Use visual demonstrations when you teach.
- Use an alphanumeric pager. An alphanumeric pager is basically like any other pager that you call and text a message to, except there are more options and a clearer display.
- Teach standing in one place and use visual attention-getters to help get the individual on task.
- Ensure that the individual feels safe and comfortable in his or her environment and with the people around him or her.

JUVENILE DIABETES

Juvenile diabetes, also called type 1 diabetes or insulin-dependent diabetes, is a disorder of the body's immune system (the body's system for protecting itself from viruses, bacteria, or any foreign substances).

CHARACTERISTICS

The warning signs of juvenile diabetes include extreme thirst, frequent urination, drowsiness or lethargy, sugar in the urine, sudden vision changes, increased appetite, sudden weight loss, fruity or sweet odor on the breath, heavy or labored breathing, stupor, or unconsciousness.

IMPLICATIONS FOR PHYSICAL ACTIVITY

- The lack of insulin production by the pancreas makes juvenile diabetes particularly difficult to control. Students will need a carefully regulated diet, planned physical activity, blood glucose testing several times a day, and multiple daily insulin injections in order to maintain participation in physical education. Participation in physical activities and sports should be encouraged. However, be aware that

hypoglycemia can occur during and after physical activity. Be prepared to recognize the signs and symptoms of diabetic emergency and how to treat diabetic individuals in an emergency situation.

- Treat students with diabetes the same as other students, except to meet medical needs.
- Make sure substitute P.E. instructors are aware of student needs without violating the student's right to privacy.
- Create a Quick Reference Emergency Plan (QREP) in case the student goes into diabetic shock. The student, his/her parent(s), the school nurse, and the physical education teacher should create the QREP. The plan should include:
  - Names and numbers of important contacts
  - Causes, signs, and symptoms of hypoglycemia
  - Locations (gym, playing fields, off-campus facilities) for all units of instruction to ensure quick responses from emergency medical personnel
  - Actions needed or instructions for response to hypoglycemia
- Include instructions for an emergency glucagon kit, if applicable
- Carry personal supplies and keep readily available:
  - Blood glucose monitoring equipment
  - Emergency glucagon kit, if prescribed
  - Sugar in the form of juice, candy, or glucose tablets

A Practical Program for Juvenile Obesity

Often times, children with diabetes also struggle with obesity. The following guidelines pertain to exercise recommendations for individuals who are obese:

- Activity must involve large muscle groups to induce large energy expenditure. Examples include walking, cycling, swimming, dancing, cross-country skiing, skating, basketball, and soccer. By performing such activities for 30 to 45 minutes, 10- to 11-year-old obese children burn 200 to 250 kcal (40). This amount will vary according to the body weight of the child and the intensity of exercise.
- It is the total energy expenditure, rather than the intensity of the activity, that matters. For example, walking one mile will have an almost identical effect to that of running one mile. At the start of a program, the intensity and duration of the activities should be low and gradually increase as the program progresses.
- Activity must be fun and the child should enjoy it. A play-like, recreational atmosphere is particularly important for children in the first decade of life. Compared with structured prescriptions, "lifestyle" activities yield more compliance during the intervention and a greater adherence once the structured element of the program has concluded (49).
- Obese children, particularly adolescents, feel less inhibited when they exercise in

the company of other obese patients rather than exercising with non-obese people.

RECOMMENDED ACTIVITIES

- Water-based activities are often more suitable for obese patients than land-based activities. The advantages of aquatic activities are threefold:
  1) Because of their high fat content, obese individuals are more buoyant than their leaner peers.
  2) Subcutaneous fat is an excellent thermal insulator, which gives obese people an advantage in cool water.
  3) During water-based activities, most of the body is submerged. This provides a psychological advantage over land-based activities in which the body shape of the obese child is exposed.

CONTRAINDICATED ACTIVITIES

- Vigorous or unplanned exercise can trigger a diabetic emergency.

EFFECTIVE TEACHING STRATEGIES

- Treat students with diabetes the same as other students, except to meet medical needs.