How is FAS/FAE Diagnosed?

FAS/FAE is diagnosed after completion of a medical examination and psychological, occupational therapy and speech/language evaluations.

Medical examination - this includes:
- Evaluation of the prenatal and birth history and previous medical history
- General physical examination
- Evaluation of early and current growth patterns
- Measurement of facial features
- Psychological evaluation including developmental tests to determine abilities and deficits.
- Occupational therapy evaluation to determine motor functions and adaptive abilities.
- Speech and language evaluation to determine abilities to understand and communicate

Think about your child’s medical history. Write down what you know. Try to collect photos of your child taken between the ages of two and ten. Photos should be straight on, not smiling and without glasses. This may help your health provider or professional to obtain a diagnosis. Once the diagnosis is made, specific deficits will be identified. Recommendations for intervention and treatment services will then be made.

Discussing the Diagnosis with Your Child

Some parents and caretakers are hesitant to discuss the diagnosis with their child. By school age, children with FAS/FAE usually recognize that they are not like others. They may have suffered teasing, frustration and humiliation in the classroom or on the playground. Self-esteem may be bruised by the time the diagnosis is made.

Having a medical diagnosis is often a relief to children with FAS/FAE. A diagnosis provides a reason for their problems. They understand it is not their fault. They can begin to understand that their mother did not intentionally hurt them by drinking during pregnancy. Parents may also feel a sense of relief. A diagnosis provides a medical reason for their child’s behavior. They can understand that behaviors may not be intentional or due to poor parenting skills.
The Challenge to Professionals

Many health providers and professionals use the family-centered health care team approach to identify a child with FAS/FAE. This approach may also be used when providing treatment. Health providers, professionals and the family decide together which services are needed. This way the family takes an active part in planning health care for their child. They can help assure that needs are being met.

Health providers and professionals vary in their knowledge and experience. When choosing doctors or other health professionals, ask if they have training or experience with FAS/FAE. Try to find out if they are comfortable working with a child with FAS/FAE. If not, most health providers and professionals can refer you to others with knowledge, experience and interest in dealing with the disability.

These are the goals of interventions for a child with FAS/FAE:

- Early identification and treatment
- Increased family knowledge and understanding of FAS/FAE
- Family ability to manage the condition
- Supportive nurturing environment
- Normal lifestyle and activity, as much as possible

These goals may be reached if the family, health providers and professionals work together to:

- Provide a personal and family medical history
- Make an early diagnosis of FAS/FAE
- Develop a plan of care
- Teach the family about FAS/FAE and how to manage the condition
- Provide coordinated health care
- Modify or change the environment to meet the needs of a child with FAS/FAE
- Provide early treatment for illnesses
- Guide and support interests in activities appropriate for the developmental level
- Assist the family and child in the emotional adjustment to having FAS/FAE
- Foster healthy coping skills
- Foster self-esteem
- Encourage planning for post-secondary education, career and employment
- Plan for transition to the adult health care system
The Health Care Team

The child with FAS/FAE often requires services from a variety of health providers and professionals. Sometimes the same services are available from different members of the health care team. Parents are encouraged to be actively involved in planning and coordinating their child’s health care. They can help make sure services are not duplicated and needs are not overlooked. The following describes how each team member can contribute to the care of your child: (*: indicates optional members of the health care team, depending on the child’s and family’s needs.)

The Child or Teenager and the Family - The most important members of the team!
- Provide a personal and family medical and health history
- Provide a history of prenatal alcohol use
- Provide a history of growth patterns
- Observe and describe health problems and characteristics of FAS/FAE
- Communicate about emotional health, self-esteem and behavior concerns
- Help providers and professionals understand how to meet individual and family needs
- Help professionals understand what works best
- Coordinate health care
- Work with the team to plan interventions
- Communicate about other health problems

Pediatrician, Family Doctor or Pediatric Nurse Practitioner - The primary health provider
- Provides well-baby, well-child and physical examinations
- Conducts hearing and vision tests
- Screens for scoliosis
- Gives immunizations
- May perform facial measurements
- Reviews the medical history and test results
- Provides diagnosis
- Monitors growth and development
- Monitors nutrition
- Treats illnesses
- Prescribes medications and treatments
- Helps the child and family learn about FAS/FAE and how to manage the condition
- Recommends interventions
- Makes referrals to specialists and other health providers and professionals
- Communicates findings and test results to other members of the health care team
- Monitors the child’s and family’s strengths, emotional well-being and stress

Developmental or Behavioral Pediatrician* - Health provider who specializes in developmental and behavioral concerns
- Conducts neurological assessments
- Provides genetic screening
- Reviews the medical history and test results
- Provides diagnosis
- Helps parents understand disabilities
- May provide follow-up medical care

Audiologist* - Hearing professional
- Evaluates hearing
- Provides hearing aid assessments and recommendations
- Teaches the child and family about hearing loss and how to manage the condition
- Teaches the family about hearing aids and assistive listening devices (ALDs)
- Communicates test results to others

Child Psychologist or Developmental Psychologist - Mental health professional
- Assesses the IQ, academic achievement and abilities
- Assesses the emotional and social development
- Assesses parent/child relationships
- Performs tests to assist in diagnosis
- Communicates test results to others
- Teaches the family about expected behaviors and interventions
- Recommends education, counseling and therapy
- Helps the child and family handle difficulties related to a chronic condition
- Helps the family learn to balance family life with managing FAS/FAE
- Monitors the child’s and family’s strengths, emotional well-being and stress
- Counsels on ways to cope with stress, grief and family life
- Helps maintain the child’s self-esteem
Classroom Teacher(s)
- Discusses strengths, concerns and strategies to improve learning abilities
- Works with the health care team and family to promote an understanding of FAS/FAE
- May also be able to:
  - Develop highly structured learning environments
  - Provide consistency in persons and events
  - Teach about social, life and problem-solving skills, decision-making, peer relationships and stress management
  - Provide structured transition between activities

Occupational Therapist* - Professional who helps improve motor functions
- Assesses arm and hand movement and function
- Assists in making the diagnosis
- Develops a plan of exercise or activity to improve arm and hand motion, strength and function
- Teaches adaptations of fine motor tasks and activities of daily living (ADLs) such as personal grooming and handwriting
- Directs or supervises activities at school to improve arm and hand function

Opthalmologist or Optometrist* - Doctor who treats eye conditions
- Evaluates visual problems
- Prescribes medical treatment for eye problems
- Recommends glasses or other treatments

Otolaryngologist* - Doctor who treats ear, nose and throat problems; sometimes called an Otologist or ENT (ear/nose/throat) doctor
- Examines the ears, nose and throat
- Evaluates hearing tests with the audiologist
- Determines the type and cause of hearing loss
- Recommends treatment
- Consulti with the family and other professionals about the treatment plan
- May surgically put tubes in ears to prevent or treat hearing loss due to frequent ear infections

Public Health Nurse* - Registered nurse for the care of people in their home and in the community
- Develops a plan of care
- Teaches the child and family about FAS/FAE
- Monitors growth and development
- Provides health services in the home and school
- Provides preventive and educational counseling
- Helps the family coordinate health care
- Makes referrals to health providers and professionals and to community resources
- Communicates with other providers and professionals about needs

Registered Dietitian* - Nutrition professional
- Evaluates the quality and adequacy of diet with a nutritional assessment
- Teaches about nutrition, meal planning and special diets
- Monitors growth and development
- Develops a nutrition care plan

School Counselor*
- May assess difficulties in the classroom
- May advise teachers on classroom management for learning and behavior problems
- May help plan education and career goals
- May assist with curriculum planning

School Nurse* - Registered nurse and licensed school nurse who provides health-related services
- Develops an Individual Health Plan (IHP)
- Provides medical treatment and gives medication
- Coordinates health care needs in school and for school-related activities
- Communicates with teachers and other school personnel about health needs
- Communicates with the health care team about health concerns at school
- Helps teachers provide an appropriate learning environment

Social Worker* - Professional who helps arrange, refers or provides direct support services
- Helps the family learn to balance family life while managing FAS/FAE
- Counsels on ways to cope with stress, grief and family life
- Finds community resources such as support groups, educational programs and financial assistance
- Provides referrals to community resources

Speech-Language Pathologist* - Professional for speech and language development
- Evaluates speech and language development
- Checks voice quality
- Designs an intervention plan
- Provides speech and language therapy
Health Concerns

The most important concern for children with FAS/FAE is the altered brain function. Physical health problems related to the central nervous system (CNS) are frequent. These may include visual problems, seizures, tremors and incoordination. CNS problems may also cause a wide variety of behavior and learning difficulties.

Children with FAS/FAE sometimes also have congenital anomalies. These may include abnormalities of the ears or eyes, cleft lip and palate and heart defects. Heart defects occur in about one-third of the children. Skeletal problems such as scoliosis may also occur. Children born with heart murmurs or other defects may need monitoring, medical management or surgery. Medical management difficulties can occur if the child is unable to cooperate with the treatment plan.

Early intervention is the first step to an improved prognosis. Discuss a plan for early intervention with your health providers and professionals.

These health problems need medical attention between regular visits:

Ask your health providers or professionals when to call or bring your child in for medical care. Call for advice if you have a health concern or are unsure if medical attention is needed. Always call if your child has:

- High fever or fever unusual for the child
- Difficulty breathing or swallowing
- Signs of depression, withdrawal, anxiety, sudden change in school performance or school attendance
- Urges to harm him or herself or others
- Noncompliance with the treatment plan
Periodic Health Care

Regular health care visits are important to the well-being of all children. The visits are necessary to check FAS/FAE-related problems as well as growth and development. The schedule of visits will depend on the child’s age and needs. Children are individuals and their needs will vary. Periodic health care may include any of the following health issues:

• Physical examinations
• Immunizations including Haemophilus Influenzae Type B (HIB)
• Influenza (flu) shots
• Height and weight measuring and graphing
• Nutritional assessments
• Vision, hearing and scoliosis screening
• Discussion of the treatment plan
• Discussion of the medication plan, medication effectiveness, possible side effects and adjustments
• Discussion of dental and other specialty care
• Discussion of development since the last visit
• Discussion of emotional adaptation and self-esteem
• Discussion of performance at school
• Discussion of problems, questions and concerns
Record Keeping

Record keeping is an important part of coordinating health care. Some parents find it helpful to keep their own records. Others prefer to rely on their health provider’s records. If you keep your own records, you can use a loose-leaf notebook which can be divided into sections to fit your needs. Calendars or expandable pocket files can also be used.

Section topics may include:

- Names, titles, addresses and phone numbers of health care team members
- Immunization records
- Growth charts and development records
- Dates of developmental milestones such as walking and saying first words
- Results of vision, hearing and scoliosis screenings
- Results of vision and hearing processing evaluations
- Nutritional information such as food intake
- Results of tests
- Dates of illnesses and complications
- Daily care plans if any
- Medication plans and medication side effects
- Reports from hospitalizations and surgeries
- Appointment dates
- School records including assessments, performance reports and copies of the Individual Family Service Plan (IFSP), Individual Education Plan (IEP) and Individual Health Plan (IHP)
- Resource information such as financial assistance and support systems
- Copies of financial information such as bills and payments, insurance policies and applications for financial assistance

Write down questions before visits to health care team members. It is easy to forget what you want to ask during a busy clinic visit. Some parents tape record instructions from health providers and professionals. The tape can be replayed later to review the instructions. It can also be shared with others working with the child.
Occupational Therapy in the Treatment of FAS

Diane Anderson, MPH, OTR
University of Minnesota Program in Occupation Therapy

Occupational therapy (OT) is the use of purposeful activity and other interventions to help a person become as independent and healthy as possible. The goal is to increase functioning in any person with mental, physical, cognitive, or psychosocial difficulties, including learning, developmental disabilities or limited functioning resulting from adverse environmental conditions. Occupational therapists use many different approaches to help persons function to the best of their ability, by improving motor skills, working with behavior, focusing on social skills, addressing school and vocational skills, and so forth.

Sensory integration (SI) therapy is one of the approaches that occupational therapists use, that seems to be getting a good response in children with fetal alcohol syndrome and fetal alcohol effects. Sensory integration is the organization of sensory input for functional use. Through sensory integration, the many parts of the nervous system work together so that a person can interact with his/her environment effectively and experience appropriate success and satisfaction.

Children exposed to alcohol in utero demonstrate many of the behaviors that are traditionally treated with sensory integration. These may include changes in reflexes and muscle tone, difficulty calming and focusing themselves, poor muscle coordination, difficulty attending to task (school problems, inability to “tune out” visual or auditory noise in the environment, and hyperactivity, for example), and difficulty in social situations. These children also often display what seems to be an inability to accurately sense what is going on around them.

By treating with a sensory integration approach, the brain can be helped to organize and make sense of the many sensations that a child takes in every minute of every day. Occupational therapists are trained to provide and control sensory input in a way most usable to the child to form responses that integrate those sensations. When these sensations are organized, the child can then use them to move and behave and learn normally.

To find out if sensory integration treatment is right for your child call your local school district and talk to the occupational therapist or the Special Education Director. If they are unable to provide information on sensory integration themselves, they should be able to refer you to someone who can. (Excerpted from Links Newsletter http://cfl.state.mn.us/ecfi/yourlink/spring_98/page09.html)
Therapy - Sensory Integrative Dysfunction

A pediatric neurologist explains this more fully:

Imagine you are sitting in a stiff back chair (uncomfortable) trying to read a book (concentrating) but there are huge speakers on each side of your head booming loud music (auditory overload) and a bucket of bleach sitting at your feet (smell overload) and you were simultaneously trying to watch your favorite TV program... you would literally be completely sensory overloaded... you would not be able to recall the words you were reading, the conversations etc. on the TV you were watching... right? This would be extremely frustrating if you couldn’t get away from the speakers, the bleach or the stiff chair no matter how hard you struggled. More or less a low sensory threshold issue is the same for these kids, and ADHD just complicates it because they literally pay attention to all of these things to the same high degree (attention deficit... cannot ignore anything) and how would you react to such overstimulation with no route of escape... your body would do it even if you didn’t... you would physically try to destroy the thing compromising your thought.

What are some signs of Sensory Integrative Dysfunction?

- Hypersensitive (overly-sensitive) to touch, sound, smell, movement, and/or visual stimuli
- Hyposensitive (under-sensitive) to these same types of stimuli
- Hypersensitive to some types of stimuli and Hyposensitive to others
  - Overly sensitive to touch, movement, sights, or sounds
  - Under reactive to touch, movement, sights, or sounds
  - Easily distracted
  - Social and/or emotional problems
  - Activity level that is unusually high or unusually low
  - Physical clumsiness or apparent carelessness
  - Impulsive, lacking in self control
  - Difficulty making transitions from one situation to another
  - Inability to unwind or calm self
  - Poor self concept
  - Delays in speech, language, or motor skills
  - Delays in academic achievement
  - Loves to spin, swing, and jump—this will seem to calm them down after several minutes
  - Complains of how clothing feels, do not like tags left in their clothing and have to wear their socks on just so or a certain kind of sock
  - Picky eaters—get stuck on one certain food and is basically impossible to get them to eat anything else
  - Over sensitivity to smells. Or under sensitivity—may sniff people, objects, food
  - Over sensitivity to sounds—will frequently cover ears. Or under sensitivity
  - May have an exceptionally high pain tolerance
  - May tire easily
  - Unusually high or low activity level

- Resists new situations
- Problems with muscle tone, coordination, motor planning
- Can be very impulsive or distractible
- Persistently walks on toes to avoid sensory input from the bottom of the feet

Sensory seekers are children who are always on the go with a short attention span and will often respond positively to increased sensory input in repetitive activities, which work muscles (muscle resistance/heavy work) — this helps children focus their attention and actions.

Sensory avoiders are children who react deeply, are sensitive or distressed by everyday sounds like vacuum cleaners, blenders, being touched lightly, tickling, lights in the room, sunlight, but find others enjoyable like bear hugs, sleeping under quilts or massage.

An occupational therapist can help you understand how to help your child more fully.

What can I do in my family to help my child?

One thing you will learn is that what works for most kids does not work when your child has an SI disability. Most tactics that are used are behavioral. Which is fine if it is behavior you want to change. This isn’t behavior. This is an inability to do something. Would you punish a child who needed glasses for not being able to see the blackboard. No you would provide the glasses and allow the child to move up close to the black board (make the environmental changes necessary).

You must remember that each child with SI is different, but here are some things families have done to help their children cope with SI issues. Remember quiet spaces are for regrouping and calming, not for punishment.

Reduce distractions if child is easily over stimulated

- Provide quiet place for the child who gets too wound up to go. When you see the child getting excited say “you know, it looks like you could use a quiet place now, you look a little excited”
  - Bean bag under a table with a blanket over it works well, with blanket, pillow, stuffed animal, dimmer lighting and soft music or whatever the child finds calms them
  - Behind the couch or under a bed
  - In the persons’ room or private place
  - A large box
  - Use your imagination
- Make a sandwich with couch cushions and apply pressure (harder or softer) based on what the child says
- Roll into a cocoon or jelly roll with blankets
- Practice slow movement finger plays
- Warm bath or hot tub
- Sound blocking headphones
- Tree house or garden place
Encourage appropriate social behavior through non-conventional strategies

- Drink from a straw use a covered glass or bottle
- Have the child get up and get whatever someone forgot to put on the dinner table allowing a break from sitting still
- Use a weighted lap blanket to help child remain seated for a longer time

Provide a variety of movement experiences

- Provide indoor movement opportunities
  - Have child push the shopping cart, carry groceries help put them away.
  - Knead bread or tenderize meat
  - Crumple newspaper for the fireplace
  - Carry pots of cold water to stove (not hot)
  - Mix ingredients for cooking
- Make an obstacle course to practice hopping, skipping, jumping, running, crawling, climbing, swinging
- Rock in a rocking chair - reading and singing
- Let the child help vacuum, move furniture, dust, scrub floors
- Let the child dig in the garden
- Swimming
- Trampolines (use safety precautions) - bounce balls to each other
- Pull a heavy wagon or push a heavy doll buggy
- Swing sets and jungle gyms with climbing, sliding, swinging opportunities

Offer various tactile experiences

- Playing with play dough, Gak, Fimo or wax
- Paint with shaving cream, silly soap or soap lather
- Walk in grass, leaves, sand or snow
- Rub oils or lotions on skin
- Scrub with washcloth or hand cloth in tub
- Fill a container with snow, sand, beans or water for play
- Try different sheets and pillow cases
- Massage, scratch, brush or write on back prior to bed
- Discover the appropriate hugs or kisses that work for your child
- Using ankle weights while walking - this discourages toe-walking and aids in balance awareness
- Using hand weights while coloring
- Sleeping under a weighted blanket

Encourage child to join in sequential movement games

- Hopscotch, sidewalk games

Situations to avoid

- Standing in long lines
- Crowded hallways/spaces
- Unstructured environments (lunchrooms, auditorium)
- Loud and busy parties (secure a quiet available place for time away if needed)

Home organization

- Keep routines and possessions in the home organized
- Make a list of daily routines and post so everyone can see. May use pictures for younger children
- Be consistent with daily rules and consequences
- Keep a large calendar or schedule posted with event stickers or notes so you can limit surprises for the child
- Create specific routines for difficult times of day
- Bath time
- Morning program
- School program
- Bed time (break each task into small steps)
  - go into room
  - get undressed
  - get out pjs
  - put on pjs
  - put away clothes
  - pick out a book
  - brush teeth
  - climb into bed
  - snuggle with mom and read book
  - turn off the lights for a 10 STAR BED TIME

Exposure and experience!

This is the tough one. Sometimes you have to try something many times until the child will actually enjoy it. Break the experience down into very small pieces and add one new piece at a time.
What is sensory integration?

The senses work together. Each sense works with the others to form a composite picture of who we are physically, where we are, and what is going on around us. Sensory integration is the critical function of the brain that is responsible for producing this composite picture. It is the organization of sensory information for on-going use.

For most of us, effective sensory integration occurs automatically, unconsciously, without effort. For some of us, the process is inefficient, demanding effort and attention with no guarantee of accuracy. When this occurs, the goals we strive for are not easily attained.

Sensory experiences include touch, movement, body awareness, sight, sound, and the pull of gravity. The process of the brain organizing and interpreting this information is called sensory integration. Sensory integration provides a crucial foundation for later, more complex learning and behavior.

For most children, sensory integration develops in the course of ordinary childhood activities. Motor planning ability is a natural outcome of the process, as is the ability to adapt to incoming sensations. But for some children, sensory integration does not develop as efficiently as it should. When the process is disordered, a number of problems in learning, development, or behavior may become evident.

The concept of sensory integration comes from a body of work developed by A. Jean Ayres, PhD, OTR. As an occupational therapist, Dr. Ayres was interested in the way in which sensory processing and motor planning disorders interfere with daily life function and learning. This theory has been developed and refined by the research of Dr. Ayres, as well as other occupational and physical therapists. In addition, literature from the fields of neuropsychology, neurology, physiology, child development, and psychology has contributed to theory development and intervention strategies.

Who has problems with sensory integration?

You may know a child who, although bright, has difficulty using a pencil, playing with toys, or doing self-care tasks, like dressing. Perhaps you have seen a child so fearful of movement that ordinary swings, slides, or jungle gyms generate fear and insecurity. Or maybe you have observed a child whose problems lie at the opposite extreme uninhibited and overly active, often falling and running headlong into dangerous situations. In each of these cases, a sensory integrative problem may be an underlying factor. Its far-reaching effects can interfere with academic learning, social skills, even self-esteem.

Research clearly identifies sensory integrative problems in children with developmental or learning difficulties. Independent studies show that a sensory integrative dysfunction can be found in some children who are considered learning disabled by schools (reference: Daems, Joan (Ed). (1994). Reviews of Research in Sensory Integration. Torrance, CA: Sensory Integration International).

Sensory integrative problems are not confined to children with learning disabilities, however. They transect all age groups as well as all intellectual levels and socio-economic groups.

Consider the following human problems:

Premature birth - More and more premature infants survive today; they enter the world with fragile, easily over stimulated nervous systems and multiple medical complications. Parents need to learn how to give their premature infant the sensory nourishment their child requires for optimal development, and how to avoid detrimental over stimulation.

Autism and other developmental disorders - Although autism is rare, it occurs more often than blindness. Severe difficulty with sensory processing is a hallmark of the disorder. Autistic children seek out unusual quantities of certain types of sensations and are extremely hypersensitive to other types. Similar traits are often seen in other children with developmental disorders. Improving sensory processing leads these children to more productive contacts with people and environments.

Learning Disabilities - As many as 30% of school-aged children are estimated to have learning disabilities. Research indicates that a majority of these children, although normal in intelligence, are likely to have sensory integrative problems. These children are also more likely than their peers to have had a premature birth, early developmental problems, and poor motor coordination. Early intervention can improve sensory integration in these children, minimizing the possibility of school failure before it occurs.

Delinquency and substance abuse - Numerous studies indicate that learning disabled children are at risk for later delinquency, criminality, alcoholism, and drug abuse. Repeated failure in school opens the door to self-destructive activities. By interrupting the vicious cycle of failure, intervention to help children with sensory integration and learning problems may also prevent serious social problems later in life.

Stress related disorders - Sensory integrative difficulties that appear in childhood often are not outgrown. When sensory inefficiencies in adults do not allow them to perform optimally in the workplace, stress can build up. Additionally, there is mounting evidence that stress in parents can lead to child abuse, violence in the home, and problems that pass from generation to generation. Recognition of the sensory processing component of these problems contributes an important element in aiding people to achieve greater satisfaction in their home life and competence in their work.

Brain injury - Trauma to the brain from accidents and strokes can have profound effects on sensory functioning. People who suffer from these effects deserve treatment that will lead to the best possible recovery. In order for this to occur, their sensory deficits must be addressed by the health professionals who serve them.
What steps can be taken?

If a child is suspected of having a sensory integrative disorder, an evaluation can be conducted by a qualified occupational or physical therapist. Evaluation usually consists of both standardized testing and structured observations of responses to sensory stimulation, posture, balance, coordination and eye movements. After carefully analyzing test results and other assessment data along with information from other professionals and parents, the therapist will make recommendations regarding appropriate treatment.

If therapy is recommended, the child will be guided through activities that challenge his or her ability to respond appropriately to sensory input by making a successful, organized response. Standards are available from Sensory Integration International.

Training of specific skills is not usually the focus of this kind of therapy. Adaptive physical education, movement education and gymnastics are examples of services that typically focus on specific motor skills training. Such services are important, but they are not the same as therapy using a sensory integrative approach.

One important aspect of therapy that uses a sensory integrative approach is that the motivation of the child plays a crucial role in the selection of the activities. Most children tend to seek out activities that provide sensory experiences most beneficial to them at that point in development. It is this active involvement and exploration that enables the child to become a more mature, efficient organizer of sensory information.

Where can I learn more?

The most important step in promoting sensory integration in children is to recognize that it exists and that it plays an important role in the development of a child. By learning more about sensory integration, parents, educators and caregivers can provide an enriched environment that will foster healthy growth and maturation.
Attention Deficit vs Fetal Alcohol - How can you tell the difference?

Making the determination between ADD/ADHD and FAS/FAE is critical in order to establish appropriate expectations and treatment directions.

**ADD/ADHD**
- Have trouble focusing and sustaining focus
- When focus is attained, student can learn, problem solve, etc.
- Student can also shift focus when necessary
- May act impulsively without thinking things through
- When things go wrong, person is able to:
  - process
  - understand what happened
  - problem solve

**FAS/FAE/PAE/ARND/ARBD**
- Can focus and sustain focus
- Have trouble encoding (learning) the presented material
- Have difficulty shifting focus
- May act impulsively
- When things go wrong person is unable (or slow) to:
  - process
  - solve the problem
  - take responsibility

Source: FAS Times, Summer 1997,

Research Provides New Insight Into Characteristics Of Children With Fetal Alcohol Syndrome

A study by Emory overturns the notion that children with fetal alcohol syndrome have the same learning problems as children with attention deficit disorders.

The surprising findings by Emory University researchers offer parents, teachers and doctors guidance on developing new teaching methods and drug treatments for children with FAS. Those now used may be the opposite of what children with FAS need, the study suggests.

The new work, published in the February issue of Alcoholism, examined how children with FAS learn compared with children with attention deficit, hyperactivity disorder.

FAS affects children whose mothers drank heavily during pregnancy. Children with FAS have behavioral and learning problems in addition to brain damage and facial abnormalities. Researchers had long thought that children with FAS also have ADHD and should be given similar treatment, such as Ritalin.

The Emory team expected the new study to confirm that notion. But instead, it uncovered major differences in how children with FAS learn from those children with ADHD, according to the lead researcher, psychologist Claire Coles, Ph.D., an associate professor at Emory.

“FAS was never before looked at in this way,” Dr. Coles said. “We just assumed that the kids with FAS have ADHD and give them Ritalin.”

But the work found that children with ADHD are like impatient commuters who are frustrated by traffic and impulsively switch lanes or try detours in their rush to get where they’re going, Dr. Coles said.

She had expected children with FAS to behave the same way.

Instead, children with FAS behave like drivers who patiently inch forward through traffic, content to stay in line and pass up other, unfamiliar routes.

The study compared the learning capabilities and brain function of 122 teens with FAS ages 14 and 15 with a group of 27 teens of the same age with ADHD. The teens participated in several tests designed to look at their ability to focus attention, sustain that attention, switch focus and then use new information they have learned.

The tests - sorting cards, responding to computer commands, verbally repeating series of numbers - revealed sharp differences in the two groups of teens.

Children with FAS could focus on tasks, but they had trouble using the newly learned information and switching their attention to a new task, Dr. Coles found. “They had trouble learning new material, but once they did, they were as good as anyone else,” she said. The teens with ADHD had different trouble with the tests. “The ADHD kids could not focus well and keep their attention on things. They could not keep focus on the computer (tasks), but the FAS kids were just happy at the computer doing the same thing over and over,” Dr. Coles said.

Those differences may explain why drugs like Ritalin, which help focus attention, do not help children with FAS, who can focus but need help changing focus, Dr. Coles explained.

If the Emory findings are confirmed, they should point the way to new teaching methods or drugs designed to overcome the learning problems associated with FAS, Dr. Coles said.

For more general information on The Robert W. Woodruff Health Sciences Center, call Health Sciences News and Information at 404-727-5686, or send e-mail to hsnews@emory.edu.