

Angelman syndrome
ABA Project

ABA Workshop
Las Vegas, NV
August 23 2008

Sponsored by the Angelman Syndrome Foundation

Presented by: Jane Summers, Ph.D.

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Overview of Presentation

- Background to ABA project
- What is ABA and why use it with children (and adults) with Angelman syndrome?
- Key aspects of ABA teaching approaches
- How to design a teaching program and run an ABA session
- Ideas for ABA in the classroom
- Individual and group exercises

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intensive behavioral therapy
class action lawsuit Hamilton
25 hours 1x1 Ontario
training, setup, eligibility
teach parents how to do this

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Premise behind ABA study

- Had seen ABA help children with autism to learn new skills
- Wanted to apply these approaches to children with AS because they deserve to receive systematic evidence-based interventions
- Also to determine how children with AS would respond and what modifications would need to be made in light of their particular characteristics

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ABA works for Autism can
work for Angelman

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Before starting

- Thanks to Sheila Wenger, Eileen Braun and the Angelman Syndrome Foundation
- Grace Sampson →
- Colleagues at McMaster Children's Hospital, Hamilton Health Sciences
- Acknowledge importance of other professionals in children's lives – neurologist, speech-language pathologist, physiotherapist, special educators, etc.
- Respect their input and need to coordinate our efforts with the work they do

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sleep study, sleep 1992
(Baltimore Kennedy Krieger)

Reading Manual & Practice
Learning Memory

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Before starting (continued)

- Like other children, children with AS have different patterns of skills and learn at different rates
- We know there are limits to what they will be able to learn
- Can't predict how well a particular child will do, but expect that all children will be able to benefit to some extent from these teaching approaches

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Learning and behavioral characteristics of children with AS

- Movement and balance disorder (difficulty performing actions that involve fine and gross motor responses)
- Lack of speech, so depend on motor skills
- Difficulty imitating people's actions
- Hypermotoric (always "on the go")
- Seizure disorder and anticonvulsant medication

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Learning and behavioral characteristics (continued)

- Sleep disturbances and decreased need for sleep
- Pica and mouthing
- Laughing excessively
- BUT – happy and endearing to work with = very rewarding experience
- Can help draw people to them and keep them motivated

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Cautions

- Workshop is an overview of ABA and teaching strategies (starting point)
- Tried to follow the tradition of parents as therapists for children with autism and parent training manuals (e.g., Ivar Lovaas, Catherine Maurice)
- Takes a lot of time and training to become a qualified ABA therapist and supervisor

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Cautions

- If you are interested in taking this further, find out what ABA services are being offered to children with autism in your area
- If you want to hire therapists, this may be a good place to start
- Find out about training opportunities for yourself

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When will study be out? months?

2/4
6
84

Dr. Summers'
Handbook
Adults?

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**ABA Workshop:
Part 2**

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Overview of Part 2

- Definition of ABA
- Selection of skills to teach and setting teaching goals
- Rationale for teaching foundation skills

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What is ABA?

- **Applied Behavior Analysis** – branch of science that uses findings from basic research on the principles of learning to develop technologies that have practical benefits for society (Steege, M.W., Mace, F.C., Perry, L. & Longenecker, H. (2007). Applied behavior analysis: Beyond discrete trial teaching. *Psychology in the Schools*, 44, 91-99)
- Its effectiveness has been established in thousands of studies with many different populations
- Best known for educating children with autism

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all types of kids (adults)
range of folks

ABA not just for autism...

Important Aspects of ABA*

- (1) Choose skills that have a high functional value for the child
- (2) Break skills down into a series of smaller, component steps
- (3) Use prompts or guidance to decrease the child's errors and frustration during teaching
- (4) Use systematic reinforcement
- (5) Collect data on the child's learning performance
- (6) Focus on generalization and maintenance of newly mastered skills

*Adapted from: Anderson, S.R., & Romanczyk, R.G. (1999). Early intervention for young children with autism: Continuum-based behavioral models. *Journal of the Association for Severe Handicaps*, 24(3), 162-173

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Selecting skills to teach



- Skills should be functional (helpful in everyday situations)
- Realistic (within child's abilities)
- Can be used to build more complex skills
- 3 important questions

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Selecting skills to teach



- 3 important questions:
- What are the skills I want my child to learn?
- How will these skills help my child to become more independent or function better?
- How will I make sure these skills are used regularly?

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how can we help
school professionals
know what our kids
are capable of or
how ABA works?

only ABA for autism

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Sample teaching curriculum

- Motor imitation —
- Matching objects and photos —
- Functional expressive communication —
- Receptive commands and more complex receptive language skills if possible —
- Self-care skills —
- Play and leisure activities —

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How are the schools doing on this?

• Not so great ... need ABA

Need to be in sync with schools so skill gets reinforced...

Education as babysitting or play time

problem solver
drive when she wants something

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Foundation skills

- Attending (paying attention to people)
- Responding to simple instructions
- Accepting reinforcement
- Imitation
- Matching

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Imitation

- Important way for children to learn new skills is to watch other people and copy their actions ("imitate")
 - Gross motor – movement of arms and legs
 - Fine motor – movement of fingers
 - Motor imitation using objects – performance of action with an object

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Imitation (continued)

Imitation skills can be used as a basis to teach:

- Play skills
- School-related and work skills
- Self-care skills
- Sign language

clothes
arts/crafts
PECS

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signs for communicating
in distracting environments
[use for receptive]

gross motor all affect oral motor imitation

Matching

- Refers to an ability to detect similarities and differences among different types of stimuli
- Teaching sequence – easiest (actual object) → most difficult or abstract (line drawings, written text)

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Matching (continued)

Matching skills can be used as a basis to teach:

- Receptive commands (child looks at photo and gets her shoes)
- Functional sequences – child matches photos to items of clothing to assist with dressing
- Vocational and recreational activities – setting the table, sorting laundry, leisure activities (playing matching games)

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Importance of communication skills

- For children to express wants and needs for:
 - Food/drink
 - Access to preferred objects and activities
 - Social attention and physical contact
 - Requesting help, break or bathroom
- Responding to functional commands in everyday situations
- More complex receptive language (e.g., labels, attributes)
- Ability to understand and be understood may prevent or ameliorate behavior problems

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when Johanna tips things over
is she just asking to "go outside?" or...

Augmentative and alternative communication systems (AAC)*

- Two types of AAC techniques – unaided and aided
- Unaided communication – doesn't require "equipment" that is external to the body
- Examples – manual signs, pantomime and gestures (Enhanced Natural Gestures, Calculator)
- (Sliemers, P. (2003). Toward functional augmentative and alternative communication for students with autism: Manual signs, graphic symbols and voice output communication devices. Language, Speech and Hearing Services in Schools, 34, 203-216).

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workshop in October
Dr. Calculator

AAC (continued)

- Aided communication -- relies on devices that are external to the person who uses them and involves the use of symbols such as photos, line drawings, letters and words
- Examples – communication books, voice output devices

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Getting back to goal setting

- What are the skills I want my child to learn?
- How will these skills help my child to become more independent or function better?
- How will I make sure these skills are used regularly?

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Goal setting: Skills I want my child to learn

- Communication – telling people that he wants a drink
- Social – greeting people with a wave
- Self-help – using a spoon to eat
- Play – push the button on a pop-up toy

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How will these skills help my child to become more functional or independent?

- Communication – other people can understand what he wants; he won't get upset because he can't ask for something
- Social – he can greet other people on his own and be accepted by his peers; he can learn not to grab people for attention
- Self-help – he can feed himself so I don't have to feed him
- Play – he can amuse himself for a short time and fit in better with other children

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**How will I make sure these skills
are used regularly?**

- Communication – put a photo of juice on the refrigerator
- Social – show him how to wave whenever he greets people
- Self-help – show him how to use a spoon whenever he eats solid food
- Play – set aside a few minutes each day for him to play with his siblings or peers

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John & Tolena Wersenfeld

Hit Clips - mini cassettes & player - found at Target

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ABA Workshop:
Part 3

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take Nia out to dinner before school starts

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Overview of Part 3

- Phases of teaching
- A-B-C contingency
- Elements of teaching programs

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reinforcer inventory - list of toys we have + that Johanna enjoys

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Phases of teaching

- Baseline
- Skill building (acquisition)
- Mastery
- Generalization and maintenance

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nothing like smoking addiction - have specific times/places for breaks after work times

Baseline

- An assessment to determine the child's present level of skills (prior to intervention)

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Skill building

- Refers to teaching a new skill
 - Break skill down into series of smaller steps
 - Use prompts to guide child to respond correctly
 - Provide opportunities for repeated practice
 - Use positive reinforcement to strengthen the new response

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Mastery

- We continue to teach a new skill until the child demonstrates that he/she is competent at performing the behavior
 - Behavior is performed consistently and accurately
- For instance, he/she has to meet a criterion for performance mastery (e.g., correct independent responding the first time asked, 2 days in a row)

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Generalization

- Once a skill has been mastered, it needs to be generalized beyond the teaching circumstances to "real life" situations
 - People
 - Places
 - Materials
 - Instructions

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Maintenance

- Ensure that a new skill is not lost or "forgotten"
- Should be practiced or used frequently

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A-B-C contingency

Teaching trial consists of following steps:

- Adult gives instruction (**antecedent**)
- Child makes response (**behavior**)
- Child is reinforced for the behavior (**consequence**)

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bribery
(before)

vs. reinforcement
vs (after) behavior

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Giving an instruction

- Child should be paying attention (look at you, not turning away, not distracted, call his/her name or say "look")
- Give clear, simple instruction and state it once

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Child response

- Child makes a response (correct or incorrect response) or does not make a response
 - If child makes correct response, reinforcement is provided
 - If child makes incorrect response or does not respond, he/she is prompted and reinforced

not
bribed

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Positive reinforcement

- Positive reinforcement is something that is given following a behavior and increases the likelihood that it will occur again
- Motivates children to learn
- Makes learning fun and enjoyable

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Types of reinforcers

- Consume – food and drinks
- Manipulate – playing with toy cars
- Activity-based – listening to music, watching movies
- Social – praise, high fives, pat on back

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Finding out what your child likes

- Observe to see what they like to do naturally
- Give free access or offer choices
- Look for signs of interest and enjoyment
- How long does these signs last

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General tips



- Reserve highly preferred items for teaching sessions
- Give small amounts and give consistently at first
- Once a skill is generalized, reinforcement should be "faded" from being given constantly to being given occasionally and randomly
- Always pair with social praise
- Skills that are never reinforced after teaching will likely stop happening altogether

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"Schedules" of reinforcement

- Continuous = behavior is reinforced each time it occurs
- Intermittent = behavior is reinforced occasionally
- Continuous reinforcement is better when teaching a new skill; intermittent reinforcement is better when maintaining a skill (more "real life")

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Prompts

- A prompt is a form of assistance or guidance to help a child respond correctly
- Very important in the initial stages of teaching when mistakes are common and child can become frustrated or confused
- Prompts can be physical, gestural, verbal and positional

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Errorless learning

- Errorless learning – prompt child to respond correctly before he or she has an opportunity to make an error

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Prompt fading

- Prompts are faded systematically to prevent child from becoming dependent on them
- Since many children with AS have a movement disorder, it may not be possible in some cases to fade prompts altogether
- In these situations, still try to provide the least amount of assistance possible in order for child to respond correctly

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Elements of teaching programs

- Skill domain
- Teaching goal or objective
- Set up
- Teaching procedures
 - Instruction
 - Target response
 - Reinforcement
 - When to move to next teaching target

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Elements of teaching programs (continued)

- Prompting sequence and procedures
- Description of prompts
- Mastery criteria
- Generalization criteria
- Maintenance

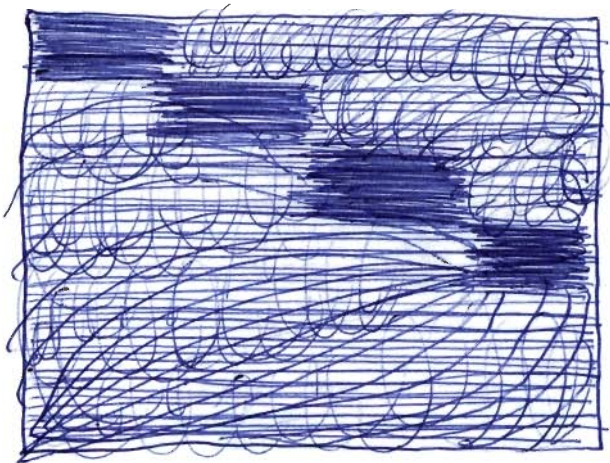
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- autistic kids often use other people's hands as "tools" / prompts

- need motivation and compliance

- push BSD for ABA TA? - follow through

report on findings w/ AS kids



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ABA Workshop: Part 4

Jane Summers, Ph.D.

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Overview of Part 4

- Preparing for a teaching session
- Running a teaching session

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Prepare the teaching environment

- You and your child should have comfortable, sturdy chairs to sit on and a sturdy table to work at
- Chair should be at comfortable height and distance from the table so child can reach toys and materials easily
- Adult should be sitting at child's eye level
- Floor is clear and free of clutter

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Prepare the teaching environment (continued)

- Is there enough light for your child to see? Is the room temperature comfortable?
- Is the room free of visual and auditory distractions?
- The goal is to maximize comfort and minimize distractions

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Prepare your child

- Does your child need to be taken to the washroom or changed first?
- Is your child hungry or thirsty? You want him or her to be a little hungry or thirsty to increase motivation to work for food/drink.
- Is your child excessively tired or having a lot of seizures? Would it be better to try again later in the day?

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How to run a teaching session

Preparation and set up

- Teaching sessions may last from 60-90 minutes, including several short breaks
- It is possible to work on 5-10 different programs during a session
- You will need to set aside some time at the beginning of the session to prepare your teaching material, programs and data sheets

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How to run a teaching session (continued)

- You will also need some time at the end of the session to clean and put away material, summarize your data and prepare data sheets for the next session

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How to run a teaching session (continued)

Teaching trials

Program objective – Teach motor action with an object (roll car).

- You will need: (1) the program for teaching motor actions with objects, (2) skill tracking sheet, (3) acquisition (cold probe) data sheet and (4) graph.
- Have child sitting quietly in chair with hands placed on the table.

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How to run a teaching session (continued)

- Make sure child is paying attention (looking at you). If necessary, call child's name and praise ("good looking").
- Give appropriate instruction once (say "roll car") while you roll the car across the table.
- Take child's hand and use full physical (hand-over-hand) prompt to move the car across the table.

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How to run a teaching session (continued)

- Provide enthusiastic, descriptive verbal praise ("Good rolling the car") and a toy or small piece of food.
- Continue to run teaching trials in this manner, moving to a different level of prompt as indicated in the teaching program.
- Indicate if the child achieved independent responding by the end of the session or needed a prompt (as well as the level of prompt needed).

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How to run a teaching session (continued)

- Repeat the steps outlined above for the other teaching programs.
- When you have finished the session, make sure your data sheets are filled in correctly. Prepare data sheets for the next session. Once a week, add the number of new skills that were mastered to the previous total and record on the graph.

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Ideas for incorporating ABA into the classroom for children with Angelman syndrome

Activity	Possible Teaching Goals
Arrival in class	<ul style="list-style-type: none"> -Put coat, backpack away -Follow visual schedule to transition to different activities -Greet others
Circle time	<ul style="list-style-type: none"> -Find seat in circle -Raise hand to take turn -Imitate actions to song -Give objects to others
Individual ABA instruction – teach foundation skills	<ul style="list-style-type: none"> -Requesting -Receptive instructions -Play -Self-help -Fine and gross motor -Imitation -Matching -Attending
Snack	<ul style="list-style-type: none"> -Request food or drink -Help set table -Pour drink -Eat with spoon -Wipe mouth with napkin
Toilet	<ul style="list-style-type: none"> -Indicate need to use toilet -Help with pants up/down -Sit on toilet -Wash hands afterward
Individual ABA instruction	
Play	<ul style="list-style-type: none"> -Copy others using play material -Waiting and taking turns -Request items for play -Appropriate touching of other children -Keep play materials out of mouth

Notes: New skills can be taught during individual ABA instruction periods and once mastered can be brought into activities for generalization and maintenance
 -need to consider children's specialized physical and learning needs and make allowances or modifications to the set-up in the classroom – e.g., seizures, unsteady when walking, putting things into mouth, sleeping problems so need for a quiet place to go to for rest, distractibility so need a way to minimize noise and visual distractions

make copies for Niam

