

INDIANA UNIVERSITY HOSPITALS
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HISTORY-PHYSICAL.PROGRESS.OTHER

RILEY CHILD DEVELOPMENT CENTER
INTERDISCIPLINARY EVALUATION

NAME: Nathan
DOE: 10/27/98
DOB: 6/29/94
C.A.: 4 years, 4 months

SOURCE/REASON FOR REFERRAL: Greg Smith, M.D.

Nathan was referred for a developmental evaluation. After apparently normal development until about 4 years of age, Nathan began to give indications of vision problems (poor dark adaptation, depth perception problems, and difficulty with peripheral vision) and possible loss of fine motor and language skills. He was evaluated separately by two ophthalmologists, Dr. Faramarz Hidaji and Dr. David Neely. Dr. Hidaji felt that Nathan could have retinal degeneration. Dr. Neely used the term "possible sub-normal vision worse in dim lighting conditions". Both suggested additional work up for possible underlying systemic problem that could relate to both the vision difficulties and developmental delays.

PROCEDURES ADMINISTERED:

Audiology
(Achenbach Child Behavior Checklist (CBCL)
Gesell Infant development Scale (GIDE)
Nursing/Nutrition Consultation
Peabody developmental Motor Scales (Gross Motor) (PDMS)
Pediatric Medical Consultation
Social Work Interview
Speech and Language Evaluation
Stanford Binet Intelligence Scale, Fourth Edition (SBISA)
Vineland Adaptive Behavior Scales, Interview Edition. Survey Form (\(ABS)

BACKGROUND INFORMATION:

The pregnancy was complicated by preterm labor at 35 weeks however, Nathan was born at 39 weeks gestation with a weight of 8 pounds, 1/2 ounce. Medical history is significant for hypospadias repair at 16 month. Family medical history includes some mental health problems. Nathan's developmental milestones have been within normal limits. Performance assessed by parent report on the Denver in the past has shown Nathan to be at age level or above in developmental skills.

Mr. and Mrs. reported that they began to have concerns about Nathan when they noticed that he appeared to have vision problems. For example, he was able to hit a thrown ball with a bat at age 2 years. He began to have problems with this skill near his fourth birthday. He also seemed to have problems tracking a ball rolling on the floor. His parents described Nathan as appearing to have problems seeing in dim light and being uncomfortable taking steps into shadow. He was evaluated by two pediatric ophthalmologists. These evaluation suggested that Nathan might have retinal degeneration, which might be a sign of another more systemic disorder. It was suggested that Nathan receive a full evaluation, which would include developmental testing and medical testing.

Nathan was seen at Innovative Therapies in Greenwood. He received evaluations from occupational therapy (OT), physical therapy (PT), and speech language therapy (ST). The results of these evaluations suggested average range gross motor skills with delays in speech and fine motor areas. Physical therapy (PT) recommended a home program and occupational therapy (OT) and speech-language therapy (ST) recommended therapy. Nathan attended sessions, but his parents did not feel that he was benefiting. Mrs. stated that the therapists thought Nathan needed further testing elsewhere.

Nathan lives with both parents and two younger brothers. Mr. owns a business, which requires many hours of work. He enjoys playing with the children and is an involved parent. Mrs. is able to stay home with the children.

SUMMARY OF FINDINGS:

Behavioral Observations

Nathan is an attractive, even-tempered child. He was cooperative, interactive, and attentive with all evaluators. Nathan was sometimes shy initially, but by the end of the day he was approaching examiners to show them his backpack full of Power Rangers.

Nathan demonstrated nice play skills with his own and unknown toys. He particularly seemed to enjoy dramatic pretend play with his action figures. Nathan frequently drew his parents or other adults into his play, assigning them a role and instructing them on what to do.

During testing, Nathan sometimes had trouble understanding directions. He frequently appeared to be having problems with depth perception. For example, when placing items on a table, Nathan would put them down hard as though he did not realize how close he was to the table. He acted as though he could not tell that a form board had indentations for shapes to go into until he felt it; he pushed hard to put them into the board when it was unnecessary. Nathan could recognize colors of beads, but appeared to be best able to recognize their shape if allowed to hold the bead. He sometimes missed items that he was reaching for. Several evaluators noticed Nathan staring at times. Examiners had to call his name several times to return him to task.

Physical Findings

On physical examination, Nathan's height (110 cm) is between the 75th and 90th percentiles and his weight (20.5 kg) is between the 90th and 95th percentiles. His height for weight is at the 75th percentile. Nathan's head circumference is 51.8 cm. All of these measurements are within the normal range. He has a heart murmur, which was judged to be probably functional. Nathan's neurological examination was essentially within normal limits. His reflexes were slightly brisk. Nathan has normal tone and range of motion. No evidence of cerebellar abnormality is found on physical examination. Nathan's hearing was within normal limits for both ears.

Nathan's parents were interviewed about his eating habits. He eats a nice variety of meats, including chicken nuggets, roast beef, turkey hot dogs, and sausage links. Nathan loves bread and pasta. He does not like vegetables, except for raw carrots eaten with Ranch salad dressing. Nathan eats several fruits, including grapes, bananas, strawberries, and raisins. He will not drink milk but will eat cereal with milk poured on it. He does like cheese, pudding, and some ice cream. Nathan does not like other sweets. Nathan drinks diluted fruit juices and sometimes takes a multivitamin.

Nathan's gross motor skills were found to be slightly delayed, although his skills were functional (Age Equivalent = 31-32 months). Comparison to the previous evaluation showed that his skills are not changed. Nathan is able to walk and run, and he made an effort to skip. He could kick a ball, but had problems standing on one leg when asked. Nathan could go up and down steps with an alternating gait and without using support. Nathan could jump over a 2 inch hurdle, broad jump 15 inches, and jump off a 24 inch step landing on two feet without losing his balance. Nathan was able to take three steps on a balance beam before stepping off. On tiptoe, Nathan could stand still for about 1 second and walk forward about 5 feet. Nathan was able to ride a trike and steer independently. He threw a 2 inch ball overhand about 10 feet and an 8 inch ball about 5 feet. Nathan could catch an 8 inch ball about 1/4 of the time, with elbows extended.

Nathan's fine motor skills were roughly at a 36 month level, but he had some scattered skills up to the 42 month level. He was able to stack 10 blocks, copy a block design, and place forms in a form board in different orientations. He could also name the shapes and put together halves of shapes to make the circle, square, and triangle pieces. Nathan did not use scissors or add parts to a drawing of a person, although he could identify what was missing.

Adaptive skills were measured through parent report. Nathan's skills fall within the mildly delayed range and are at about a 30 month level. He has some problems with feeding and dressing. Nathan is uncoordinated with and does not like to use utensils, preferring to finger feed when possible. He has problems holding a cup, and usually uses a straw. He assists with dressing. Nathan is able to use the bathroom, needing help for wiping after bowel movements.

Mr. and Mrs. separately completed behavior checklists. Their views of Nathan's behavior are similar. No scales reached significance, indicating that Nathan has no serious behavior problem. Some concerns about his attention were evident.

Cognitive and Language Skills

Nathan's overall performance was in the range of mild delays. He was not able to complete all of the tasks at his age level. The tasks in which he was not successful are not included in the overall score reported. Nathan was able to name 6 of 9 pictures shown. He repeated short sentences said one time. He pointed to body parts on a picture of a boy. He can answer comprehension questions, such as "What do you do when you are cold?" and count from 1 to 4. Nathan's parents reported that he was able to point to letters in their home. At this time he could not sing the alphabet song.

Today's evaluation consisted of informal structured play activities. Nathan was initially reluctant to accompany the examiner into another room, but with encouragement from his father he entered the room easily. Nathan was quite verbal throughout the examination period. He responded to comments and directions from the examiner, directed comments and questions to the examiner, and used language for pretend play schemes, indicating appropriate development of the uses of language. Nathan's typical sentences were four to five words long. Examples of sentences that Nathan used include: "This guy got white boots"; "That girl fall down too"; "What is your name"; "I'm sleeping up here"; "I flying"; "He was on a house and he knock him down"; "He's not gonna sleep in the garage." Nathan's use of grammatical structures places him in stage III with structures from early stage IV emerging according to criteria for Brown's stages of syntactic development. Nathan inconsistently marked the past tense in sentences and inconsistently used a helping verb with present progressive tense (e.g., "I flying" instead of "I am flying"), although he was beginning to use some complex sentence structures (e.g., combining two sentences with "and"). This represents a mild-moderate delay when compared to typical patterns of acquisition of grammatical structures. A typically developing child of Nathan's age would be expected to be using helping verbs consistently and to be using ~d endings to mark past tense. He would also be expected to have irregular past tense forms emerging (e.g., "fell").

Nathan appeared to be having difficulty understanding some concepts and directions. He followed some directions (e.g., "Make them all sit") but did not respond to others (e.g., "Put him in the green chair"). As his father had commented, Nathan focused his attention on other activities when a task was difficult for him.

During the evaluation, it was noted that Nathan was occasionally difficult to understand. The examiner attempted to administer the Goldman-Fristoe Test of Articulation (GFTA) to determine if any specific, developmentally inappropriate errors were contributing to Nathan's lack of intelligibility. This evaluation was attempted initially during play, with the examiner playing with Nathan and occasionally asking him to look at a picture and say a word. After several pictures, Nathan stopped saying the names of the pictures, and would not even repeat the name of the word after the examiner said it. At this point, the examiner brought Nathan to a table to finish administration of the test. Nathan had great difficulty naming the items on his own, and continued to be reluctant to repeat them after the examiner. For example, Nathan said "stick" when presented with a picture of a gun, said "stick" for knife, and said "cut" for scissors. When words became difficult for Nathan, his behavior was just as his father had reported - he changed his focus of attention, grabbing items off of a nearby shelf and playing with them. The fact that Nathan had such difficulty with this test, even when the examiner said the word for him to repeat, may suggest a problem with word-finding. Word-finding refers to a person's ability to retrieve the name of an object from their brain for words that have already been learned. However, the fact that Nathan did not cooperate in the testing situation does not necessarily mean that he could not name the pictures. Preschoolers typically prefer play situations to formal testing situations, and it is possible that Nathan was merely indicating that he did not want to continue the testing activity. The examiner's general impression of Nathan's articulation is that there did not appear to be developmentally inappropriate sound errors. It seemed more the case that Nathan was difficult to understand on particular sentences that he spoke rapidly. In some cases, it seemed as if Nathan might have been using jargon. In language development, jargon refers to the language that children use when they are just learning to combine words. The child will speak in sentences that are formed by strings of nonsense syllables with adult-like sentence intonation.

MEDICAL RECORD COPY U

DIAGNOSIS/CLINICAL IMPRESSIONS:

Nathan is a pleasant, 4 year, 4 month old boy with mild global delays. Changes in skills and behavior suggest problems with vision (possible retinal degeneration). Medical evaluations are in progress to confirm or rule out retinal degeneration and identify a possible systemic source for the vision problems and delays.

RECOMMENDATIONS:

Medical

1. MRI of the head scheduled for Monday, November 23, 1998 at 9:00 am.
2. EEG scheduled for Thursday November 12, 1998 at 9:00 am.
3. Electroretinogram is needed and will be scheduled by Pediatric Ophthalmology. We are still attempting to coordinate this test with the MRI.
4. Pediatric Neurology schedule for Monday, November 30, 1998.
5. **Labs obtained on day of the appointment: VLCFA, Vitamin A, Vitamin E, Pyruvate, Lactate.**
6. To increase calcium, offer cheese, pudding, yoghurt, or ice cream twice per day.
7. Give Nathan a juice with calcium, such as Sunny Delite. (Note individual bottles do not have calcium supplement.)
8. Continue to offer raw carrot with Ranch dressing and try other raw vegetables.
9. Continue to be aware of Nathan's impulsivity. Use a dead bolt on doors and be sure to watch Nathan in parking lots and other public places.

Educational/Therapy

1. Mr. and Mrs. are aware that Nathan is likely to be eligible for preschool special education services. This program can be accessed by calling Johnson County Special Education Preschool Coordinator, Toni Flowers.
2. Physical therapy (PT) recommends a Home Exercise Program, provided to parents on the day of the evaluation.
3. Nathan should continue to participate in soccer, basketball, swimming and other sports as appropriate.
4. Nathan should continue to be encouraged to work on preschool skills at home, including: cutting with scissors, shape recognition, letter recognition, and number recognition.
5. Encourage Nathan to practice crossing the midline with coloring, copying, and any sports activities.
6. Encourage Nathan to use a spoon or fork for a few bites at each meal and work up.
7. Encourage independent dressing by offering easy to put on clothes when possible.

8. Based on results of previous testing and observation conducted during today's session, it is recommended that Nathan continue to be enrolled in language therapy to foster development of age-appropriate language skills. The following should be considered as areas to target in therapy:

- a) Use of developmentally appropriate sentence forms including auxiliary (helping) verbs and past tense forms.
- b) Increasing vocabulary knowledge (understanding names of words and producing them) in the context of categories (e.g., animals, things you ride in, etc.) to help with word retrieval.
- c) Following directions of increasing length, progressing from directions that are related to the immediate context and moving to directions that are unrelated to context.

Nathan's parents and teachers can help Nathan better understand what is being said by using language that is not too far above the level he is able to produce. This includes using commands that contain only one step at a time, and supplementing these commands with gestures or other cues to foster understanding. See supplemental handouts for additional strategies on simplifying language and giving directions.

8. More specific behavioral and educational recommendations may be possible if a medical etiology is identified. After the medical evaluations, contact Dr. Tomlin at (317) 274-8167 for an appointment to review the findings and discuss educational needs.

Angela M. Tomlin Ph. D.
Clinical Psychologist
Case Coordinator
Riley Child Development

EVALUATION TEAM:

PEDIATRICS:Greg Wilson, M.D.

SOCIAL WORK:Lann Thompson, Ed.D., ACSW, LCSW

PSYCHOLOGY:Angela M. Tomlin, Ph.D.

OT:Susan Prefontaine, OTR

PTAnita Burrell, PTR

AUDIOLOGY:Melissa Stanton, MA, CCC-A

NURSING:Marsha L. Ellett, DNS, RN

SPEECH/LANG:Jenna Powell, MA, Trainee/Annette Sage-Schrader, MA, CCC- SLP

ADDENDUM

GESELL INFANT DEVELOPMENTAL EVALUATION

This evaluation reveals developmental age equivalents in the areas of gross-motor skills, adaptive skills, fine-motor skills, language skills, and personal-social skills. It is designed for infants from 0-36 months and assists with screening those infants at risk for or who have developmental delays.

Age Equivalent

36 mos, with scatter to 42 mos.

PEABODY DEVELOPMENTAL MOTOR SCALES (PDMS)

The PDMS is a test which assesses a child's gross motor skills in the areas of reflexes, balance, nonlocomotor, locomotor and propulsion. It is designed for children ages 0 months through 83 months.

Basal Age Ceiling Age Age Equivalent

24-29m 42-47m 31-32m

STANFORD-BINET INTELLIGENCE SCALE -4th EDITION(SB/SA)

The Stanford-Binet Intelligence Scale measures the cognitive abilities of young children, adolescents, and young adults. The scale yields an IQ score (Composite Score) and area scores (Verbal Reasoning, Abstract/Alisual Reasoning, Quantitative Reasoning, and Short-Term Memory).

Raw Standard Age

Area Score *

VERBAL REASONING

Vocabulary 6 35

Comprehension 7 39

ABSTRACT/ALISUAL REASONING

Pattern Analysis 5 35

QUANTITATIVE REASONING

Quantitative 0

SHORT-TERM MEMORY

Bead Memory 0

Memory for Sentences 7 37

STANDARD AREA SCORES

VERBAL REASONING SAS 71

ABSTRACT/ALISUAL REASONING SAS 70

QUANTITATIVE REASONING SAS

SHORT-TERM MEMORY SAS 74

SUM OF AREA SAS'S 215

COMPOSITE SCORE 67**

* Scores between 42 and 58 are considered average.

** Scores between 84 and 116 are considered average.

VINELAND ADAPTIVE BEHAVIOR SCALES: IN. EDITION, SURVEY FORM

This is an interview instrument which is given to the parent/care-giver to assess the personal and social sufficiency of the child. Four domains of adaptive behavior are measured.

Raw Standard **Age**

Score Score Equivalent

Receptive **23**

Expressive 42

Written 2

COMMUNICATION DOMAIN 67 87 3-5

Personal 36

Domestic I

Community 10

DAILY LIVING SKILLS DOMAIN 47 66 2-5

Interpersonal Relationships 31

Play and Leisure Time 18

Coping Skills 7

SOCIALIZATION DOMAIN 56 81 2-11

Gross 31

Fine 14

MOTOR SKILLS DOMAIN 45 59 2-6

ADAPTIVE BEHAVIOR COMPOSITE 68

ACHENBACH - CHILD BEHAVIOR CHECKLIST/4-18 (CBCL)

The CBCL is designed to record in a standardized format the behavioral problems and competencies of children 4 to 18, as reported by their parents or others who know the child well.

(Mother Father

Scale Raw Score T-Score RawScore T-Score

Withdrawn 3 58 3 58

Somatic Complaints 3 64 3 64

Anxious/Depressed I 50 1 50

Social Problems 3 56 4 60

Thought Problems 3 67 2 64

Attention Problems 9 67 9 67

Delinquent Behavior 0 50 I 50

Aggressive Behavior 2 50 3 50

* T-Scores above 70 are statistically significant.