

# Case Study

**Age:** 2.11 years

**Gender:** Male

**Diagnose:** Attention Deficit Hyperactivity Disorder (ADHD) before 4 months from developmental hospital.

## **Brief description of the diagnosis:**

It is a medical condition that affects children (the most commonly diagnosed mental disorder of children) and teenagers and can continue into adulthood. A child with ADHD has differences in brain development and brain activity that affect attention, the ability to sit still, and self-control. Also children with ADHD may be hyperactive and unable control their impulses, which interferes with school and home life. It's more common in boys than in girls and it's usually discovered during the early school years, when a child begins to have problems paying attention, sitting still, focusing and not moving around.

## **History:**

Previously diagnosed with Global Developmental Delay (GDD) at the age of 6 months. His occupational therapy intervention at earlier time (previous program) included the following frames of reference: sensory integration, play therapy, cognitive behavioral, hands function, neuro-developmental theory (NDT), home program, and caregiver education.

And the main goal was to reduce his tactile hypersensitivity, improve his attention and fine motor skills, increase age-appropriate play skills, reduce throwing behavior, and increase bilateral skills.

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He is admitted in daily care unit in order to take a full intensive **rehabilitation course**, which focus on:

- Physical therapy role: (improving)
  - Improving gait pattern by core stability
  - Lower leg strength (leg muscles)
  - Coordination
  - Hydrotherapy
- Speech therapy role: (improving)
  - Articulation of words and letters
  - Flow of speech
- Occupational therapy role will be explained in the following section.

### **Occupational therapy role:**

He was referred to occupational therapy to decrease his hyperactivity and improve his attention and hand function.

After interviewing the mother, her concern was to improve his attention level and basic activities of daily living. After that, he was assessed by the occupational therapy specialist.

When he was assessed, some main problems showed up. The therapist is going to work on these problems during the course.

### **The problems are as follows:**

1. He is hyperactive (focus on everything but the wanted thing, keeps looking around).
  - For improving his activity tolerance for daily living activities such as eating

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2. Attention (activity tolerance is short).
  - To prepare him for school life and focusing in classes.
3. Has no basic concept of colors and shapes.
  - He needs this for his basic life activities (dressing, eating, etc.)
4. Hand function (needs improvement in fine motor skills).
  - To gradually learn how to grasp a pen to write and a spoon to eat.
5. Directionality (holds peg or clip upside down)
  - To help him in dressing (shirts, shoes)
6. Stability (can't stand on an unstable surface).
  - For his functional mobility in activities of daily living such as dressing and toileting.
7. Behavior of stubborn (throwing behavior)
  - For following his parent's commands and learning about rules.

### **Frames of reference used:**

#### **❖ The applied behavior theory:**

The occupational therapy specialist uses positive reinforcement from the applied behavior theory to give him input of vestibular system by using a swing.

It is also used to reduce his throwing behavior and stubborn.

#### **❖ Positive reinforcement:**

Positive reinforcement occurs when a desirable event or stimulus is presented as a consequence of a behavior that makes it more likely that the behavior will occur again in the

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future. When a favorable outcome, event, or reward occurs after an action, that particular response or behavior will be strengthened.

### ❖ **Sensory integration frame of reference:**

The usage of the swing is to give him the sensory input he needs (vestibular input) from sensory integration frame of reference. People have four behavioral responses: low registration, sensory seeking, sensory sensitivity and sensation avoiding. In our case he has sensory seeking behavior which means he has high threshold, hyperactive, excitable personality.

### ❖ **Client centered approach:**

The occupational therapy specialist worked on the goals of the mother, and when he developed a personality, she started to follow his preferences.

### ❖ **Educational approach:**

The occupational therapy specialist educated the mother on her son's condition.

### ❖ **Biomechanical frame of reference:**

The occupational therapy specialist worked on strengthening his fine motor skills (such as scribbling and pre-writing) and increasing his endurance.

### ❖ **Cognitive behavioral frame of reference:**

The occupational therapy specialist worked on forming some basic concepts such as shapes and colors and some cognitive skills such as problem solving

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### ❖ Occupational therapy practice framework:

The occupational therapy specialist worked on some activities of daily living by performing some lacing activities to prepare for buttoning skills for dressing.

### ❖ Hand to hand technique:

The OT specialist also teaches him by hand-to-hand strategy to open a clip and clip it to a board.

### **He showed an improvement in:**

- Color concept that now he can differentiate up to three colors for nine times
- Fine motor skills of scribbling and pre-writing
- Verbal skills that now he speaks more and imitates some of the therapist words.
- He developed his own personality, and now he is able to choose some preferences
- Shape concept that now he can lace shapes in a specific order.
- Longer activity tolerance (attention) that now he can perform more lacing in lacing activity
- His behavioral issue of throwing is solved

### **Recommendations for him/ his parents (next step):**

- Weighted vest (The effect of the wearing of weighted vests on the sensory behavior of learners diagnosed with attention deficit hyperactivity disorder within a school context,2011, link in reference page)
- Hippo therapy (What is hippotherapy? The indications and effectiveness of hippotherapy, 2016, link in reference page)

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- Weighted objects
- Educate his parents about the importance of engaging him in activities with other people like telling him: “**give** your uncle this book”, “**bring** the bottle from the man working in the market”, to improve his social skills and following commands.
- Some nurseries and recommendations for the teachers, for his social and communicating skills.
- Educate the parents about having a home program to give him vestibular input, then start activities and to change the environment of house hold to fit his needs
- as part of attention, teach him body parts, listen to educational songs

### **Recommendations for next occupational therapy course:**

- As for fine motor skills, to handle a pen and a spoon and start using them.
- As for cognitive skills, as mentioned above (educate parents about home program) to improve his attention and reduce hyperactivity.
- As for directionality, to start dressing by giving him some techniques, like for wearing shoes they can buy him Velcro shoes and teach him that Velcro goes to outside, or draw half circle in each shoe and he have to complete the shape to wear it correctly.
- As for social skills, to join more sessions with other patients
- as for peer interaction (Also for social skills), swimming center to develop motor planning, learn about taking turns and being patient

Finally, we can conclude that he has significantly improved, after almost one year of therapy in several aspects as mentioned above, and has developed sense of personality.

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## References:

1. <https://kidshealth.org/en/parents/adhd.html>
2. <https://www.webmd.com/add-adhd/guide/attention-deficit-hyperactivity-disorder-adhd#1>
3. [https://en.wikipedia.org/wiki/Reinforcement#Positive\\_reinforcement](https://en.wikipedia.org/wiki/Reinforcement#Positive_reinforcement)
4. <https://www.verywellmind.com/what-is-positive-reinforcement-2795412>
5. <http://www.sajot.co.za/index.php/sajot/article/download/48/61>
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5175116/>