


# SUPPORTING LEARNING AND ATTENTION IN CHILDREN WITH NFI

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## IN THIS TALK, YOU WILL HEAR ABOUT...


What we know about attention and learning for children with NFI

Recommendations for ways to support your child's attention and learning

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**Every child has a different learning style and pace.**

**Each child is unique, not only capable of learning but also capable of succeeding.**



-Robert John Meehan

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### COMMON COGNITIVE AND PSYCHOSOCIAL DIFFICULTIES IN NFI

- High level of variability
- Not a consistent pattern

**Cognitive Functioning**

- Intellectual functioning lower than siblings
- ↑ Language problems
- ↑ Visual-perception problems
- ↑ Visuomotor difficulties

**Learning**

- ↑ learning problems and learning disabilities
- ↑ executive functioning challenges

**Psychosocial Functioning**

- ↑ attention problems
- ↑ social problems

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NFI gene change

Subcortical T2 hyperintensities and white matter abnormalities

Vulnerability to less "efficient" brain

Attention, Executive Functioning, Cognitive Challenges

Learning problems  
Social challenges


**In some young children:**

- Motor planning difficulties
- Difficulty staying with tasks
- Precademic difficulties

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### EXECUTIVE FUNCTIONING AND ATTENTION

- Attention difficulties
  - Rates of ADHD range from 30-50%
  - More with some attention difficulty symptoms
  - Evidence that inattentive type may be more common
- Executive functioning difficulties:
  - Even those who don't have attention problems, may have executive functioning difficulties
  - Set of processes that all have to do with managing oneself and one's resources in order to achieve a goal - mental control and self-regulation ([www.donline.org](http://www.donline.org))
  - Cognitive flexibility, organization, planning, set-shifting, inhibition




*Both attention and executive functioning affect academic and social functioning*

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## LEARNING DISABILITIES IN NFI

Reading Decoding	Reading Comprehension	<ul style="list-style-type: none"> <li>• Generally, children with NFI with attention problems have more learning problems than children with NFI without attention problems</li> <li>• Because of the variability, individual assessment is very important – psychoeducational or neuropsychological evaluation can be very helpful</li> </ul>
Mathematics	Written Expression	
Executive Functioning	Attention	

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**HOW CAN I HELP?**

**WHAT CAN I DO?**

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## SUPPORTING LEARNING AND ATTENTION


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### Pre-math

- Count! (past 10)
- Talk about quantities (more, less, full, empty)

### Mathematics

- Shorten mathematics assignments
- Develop strategy cards to guide problem-solving
- Extended time for mathematics tasks
- Specially lined paper
- Focus on real-world context




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### Pre-reading

- Read to your child, especially rhyming books
- Practice phonics
  - Sing rhyming songs together
  - Point out how different words sound the same or different
- If you are seeing language difficulties, seek out a Speech Therapy evaluation

### Reading




- Additional reading instruction with focus on phonetic approaches
- Vocabulary enhancement
- Assistance with development of strategies for tackling reading comprehension
- Extra time for reading-related assignments
- Books on tape for content management



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### Writing


- Note-taker in class
- Strategy cards to structure approaches to writing
- Assistance with organization
- Use of computer
- Assistive technology for mapping out writing tasks

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## Attention


- Gradually build up time at a table doing a task
- Alternate between tasks the child enjoys and tasks that are of less interest
- Remove distractions
  - Seat toward front of class
  - 1:1 time to work on academics
- Assistance with attention to detail
  - Have teacher sign homework notebook at check book bag
  - Encourage checking of work
  - Reminders
- Gradually extend the amount of time on less preferred tasks
- Reinforcement system



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## Executive Functioning

- Simplify
  - Break tasks down into their components
- Routinize
  - Make step-by-step plans for tackling tasks
  - Phone alarms can be helpful
- Organize
  - Structure time
  - Use a planner
  - Provide organizational schemes (e.g., bins, different color folders)
- Talk through how you approach tasks




*Fantastic Resource: Dawson, P., & Guare, R. (2010). Executive Skills in Children and Adolescents: A Practical Guide to Assessment and Intervention.*

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## Language Functioning


- **Speech therapy evaluation and services**
  - Articulation
  - Vocabulary
  - Grammatical abilities
  - Verbal expression
- Focus on phonological awareness as building block for reading
  - Reading rhyming books
  - Playing word games
  - Singing songs
  - Phonics activities



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## Motor/Visuomotor Functioning

- If seeing difficulties, seek an **Occupational Therapy** evaluation
- Assess hand strength
- Handwriting work
- Practice daily living tasks
- Practice drawing – make it fun
- Do puzzles
- Use a computer for written work
- Alternate between motor and nonmotor tasks



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## Other Considerations


- Set achievable goals
- Focus on and celebrate successes
- Not all strategies will work for every child; requires trial and error
- Consider using assistive technology
- Consider tutoring; more formal, less formal
- Build independence and agency: Children need help learning strategies in the beginning, but we want them to be able to internalize and use these strategies by themselves
- Collaborate with your child
  - Children can help us understand what might be getting in their way
  - Behavior change and learning is most likely when child is an active participant in developing goals and deciding how to reach them

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## CURRENT RESEARCH STUDIES


- PEERS NF Study:
  - 13 to 17 year olds who would like to improve social skills and peer relationships
  - Telehealth – all online
  - We have not finalized our plans for Spring/Summer, but if you want to be put on a list for when we do finalize plans, feel free to be in touch
  - Email: cnrl-peersnf@uwm.edu

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- NF EEG Study:
  - 7 to 11 year olds
  - 3 groups:
    - NF1
    - ADHD (without NF1)
    - Unaffected
  - One ~3 hour session at UWM
  - Email: cnrl-eeeg@uwm.edu

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**Thank you to the children with NF1 and their families for participating in our research.**

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