



January 2021

# DPT

DEVELOPMENTAL PEDIATRICS TODAY



Monthly e-Newsletter of IAP Chapter of Neurodevelopmental Pediatrics

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## Editorial

*Dear Friends and respected seniors,*

*Greetings from the Neurodevelopmental chapter of IAP!*



*We seem to be getting some respite from Covid 19 infection and the vaccination against Covid has given us some courage to move around more confidently. The hybrid Pedicon went much better than what we expected. In fact, it was a huge success with 17000 online registrations. In such a short notice, the Mumbai team organised a fantastic conference which was not only an academic feast but there was very warm hospitality and entertainment program.*

*4th January is World Braille day and 18th January is National immunization day (polio), so this month's issue touches upon these topics.*

*It's my humble request to all of you, especially the fellows to send answers to the quiz questions, so that we know that people are attempting the quiz and it is contributing to enhancing your knowledge.*

*Our Motto "To work in the best interest of every child "*

*Long live IAP!*

*Dr. Lata Bhat*

*Chief Editor*



## Chairperson's Message

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Dear Readers,

Greetings of the New Year! 2021 has been ushered in with the beating of drums bringing in hope for tomorrow. So did the PEDICION, to announce the focus on Early Child Development in keeping with WHO philosophy "Let no Child Behind".



This newsletter is a voice of the children who start life differently, but our concern and support make all the difference. As we celebrate World Braille Day, it only brings forward to us the wonders of learning and its survivality; to understand how to function without sight and how to use tools and adaptations that allow accomplishment of tasks without sight.

There is very little data in childhood blindness. There is an estimated 2-3 lakhs Indian children, of which 15,000 are in special schools as per the 2007 survey of National Programme on Control of Blindness. We the NDP members must raise consciousness towards data collection, prevention and support pertaining to this problem.

This issue covers insights into the challenges of the visually impaired.

Happy reading !

**Dr. Shabina Ahmed MD, FIAP**

National Chairperson

Neurodevelopmental Pediatrics Chapter of IAP



## Snippets from the Secretary

Respected Seniors and dear friends,

Seasons greetings from the IAP Chapter of Neurodevelopmental Pediatrics.

Wishing you and your families a happy, healthy & prosperous 2021!!

As we look back to the year gone by, we see a mix of despair and hope both - despair due to the Covid-19 pandemic throughout the year and hope of an effective vaccine/ treatment around the corner as the year comes to an end. IAP has done extremely well as it kept all of us together glued to the dIAP webinars as well as guidelines for Covid 19 management in children and school reopening guidelines. The children have been the silent sufferers in the lockdown and the resultant school closures and we all are seeing the effects of this now in our practice.

The pandemic has brought the focus back to the family centre care and taught each one of us the role the family plays in the child's life. The presidential action plan 2021 on "Early Childhood Development" is the perfect way to begin the year with the focus on first 1000 days of a child's life - the most critical period for a productive future later in life. The Pedicon 2021 - a hybrid conference planned at Mumbai in the month of February has the theme "Nurturing care in early childhood development" highlighting the importance of the subject in today's world. The IAP has collaborated with GoI, WHO, Unicef, NNF and FOGSI to take this initiative of early childhood development ahead in a mission mode and we will be seeing lot of activities related to the subject in the whole year.

We have some interesting articles and journal scan related to these topics. Happy reading.....

Jai Hind! Jai IAP !

**Wg Cdr (Dr) KS Multani**

National Secretary

IAP Chapter of Neurodevelopmental Paediatrics





## Multisensorial learning

Dr Shabina Ahmed, MD, FIAP

A blind mother, who has raised three blind children to successful adulthood says, “... expect the blind child to learn the same thing as any other child, but realize that he/ she may need to be taught differently”, quoted by Doris Willoughby (1).

Vision is one of the most important sensory tools in learning. 83% of the information reaches the brain through the eyes, 11% through hearing, 3.5% through touch, 1.5% through smell and 1% through taste. It is an integral part of the hierarchy in learning and impacts the foundation of education along with five other senses. Vestibular system, tactile, and proprioceptive systems are the first to acquire sensory information as soon as the child is born, and it organizes the information for the formation of appropriate motor and behavioral responses. This information then gets further refined by the visual and auditory system.

Vision, unlike sight, is not a skill a child is born with; rather it develops as we integrate our senses. Movement, the basis of all learning, teaches eyes to make sense of sights. In every movement there are multisensory inputs, and the child has to utilize the vestibular, proprioceptive and tactile systems information to start visualization experiences as explained by Carol Stock Kranowitz (2).

Children who are visually impaired become dependent on haptic skills for their daily functioning. Many of the skills need to be done differently from sighted children through the medium of touch and proprioception. Haptic ability refers to an individual's sensitivity to touch and the ability to combine partial tactile



(Source: [ilslearningcorner.com](http://ilslearningcorner.com))



information about an object into a whole mental image. Haptic communication is a branch of nonverbal communication that refers to the ways in which people and animals communicate and interact via the sense of touch.

The exact nature and development of tactile skills in visually impaired is still not clearly understood. Thus, we do not know whether we need to train or stimulate touch skills, but studies have shown that congenitally blind children outsmart those who become blind at later age. This says that early intervention is helpful.

Therefore, providing opportunities for children to actually use their senses as they explore their world through sensory play is crucial to brain development. Sensory activities stimulated parallelly allow them to refine their thresholds for different sensory information, leading to supporting language development, cognitive growth, fine and gross motor skills, problem solving skills and social interaction; this is the basis for multiple learning theory.

Visually impaired children can understand shapes and their perspectives if the pictures have raised lines. This led to development of Braille, a tactile learning system developed by Louis Braille in 1824. Early Braille literacy is crucial for education and employment. It is easy to learn vocabulary if the brain can link a given word with different sensory perceptions. The motor system in the brain appears to be especially important because we remember better if it is associated with gestures and to a lesser extent with images.

The problems lie mainly in visuospatial tasks, as the external cues become limited and they must use body-centered cues to solve spatial tasks such as assessment of distance by arms.

Tips to support learning in visually impaired children.

- 1) Be more verbal
- 2) Tactually help them to perform the task and feel, relate and handhold
- 3) Examine things systematically
- 4) Teach relationships and position in space
- 5) Teach the child to basically 'look' with his hands
- 6) Color is strictly a visual concept; this needs to be taught in comparison with high pitched and low pitched sounds.
- 7) Teach colour of his belongings.
- 8) Teach what he should and what he should not touch
- 9) Teach raised dot computing
- 10) Multipurpose concept building aids.
- 11) Help independent movement with cane use.

By the age of 18 months, we have to prepare the child for the real world. He/she will ultimately learn to use sound, memory and mental mapping.

In the words of a mother, "...we can change what it means to be blind, but they know as much as the sighted". Our belief is important, because what we believe affects the way we believe.

## Recommended reading

1. Doris Willoughby, Handbook for Itinerant and Resource Teachers of Blind and Visually Impaired Students
2. Carol Stock Kranowitz , The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder, 2012
3. Tactile Functioning in Children Who Are Blind: A Clinical Perspective. Journal of Visual Impairment & Blindness, January 2010 (43-54)



## Quiz

**Dr. Lata Bhat**

Director and Developmental Paediatrician

Palak Child Development Centre, Delhi

Lata2207@gmail.com | 9818294797

**1. Which of the following is true about Braille:**

- a) Braille is a system of raised dots that can be read with the fingers by people who are blind or who have low vision.
- b) Braille is a language
- c) Braille is a code which is common in all languages
- d) All the above

**2. How many types of Braille are there :**

- a) Two types
- b) Three types
- c) 64 types
- d) One type

**3) Is there Braille for different languages (there can be more than one correct answer) :**

- a) Yes
- b) No
- c) For only 5 languages
- d) There are 64 possible combinations

**4) Who Invented Braille**

- a) Louis Braille from France
- b) Peter Braille from France
- c) Charles Barbier from England
- d) None of the above

**5) Which of the following is true about Braille (there can be more than one correct answer):**

- a) When every letter of every word is expressed in braille, it is referred to as uncontracted braille
- b) Some books for young children are written in uncontracted braille although it is less widely used for reading material meant for adults
- c) The standard system used for reproducing most textbooks and publications is known as contracted braille.
- d) Braille symbols are formed within units of space known as braille cells. A full braille cell consists of six raised dots arranged in two parallel rows each having three dots. The dot positions are identified by numbers from one through six

**6) Which of the following statements is true regarding Polio (there can be more than one correct answer )**

- a) India completed a full 5 years as a "polio-free nation" on January 13, 2016
- b) Currently wild poliovirus remains in only two countries: Afghanistan and Pakistan.
- c) The last reported cases of wild polio in India were in West Bengal and Gujarat on 13 January 2011.
- d) On 27 March 2014, the World Health Organization (WHO) declared India a polio free country, since no cases of wild polio been reported in for five years



## Quiz

### 7) How did India eliminate polio?

- a) In the years since 2004, India started the annual pulse polio vaccination campaigns — conducted 10 times each year.
- b) Virtually every child was tracked and vaccinated.
- c) The government would organise two National Immunisation Days (NIDs) each year usually in January and March.
- d) All the above

### 8) India's triumph over polio is replete with lessons to be learned. What are the reasons for this success :

- a) Government ownership,
- b) Innovations in program delivery,
- c) Technical advances,
- d) Building partnerships with private and social sectors, and massive social mobilization

### 9) Which of the following is true ( there can be more than one correct answer )

- a) Though, India is a wild, poliovirus, disease-

free country currently. But, the cases of Vaccine Derived Polio Virus (VDPV) disease, (around 50 cases documented by India lauded AFP surveillance system) can be seen.

- b) VDPV is caused by OPV
- c) There are four types of VDPVs — circulating vaccine-derived poliovirus (cVDPV); immunodeficiency-related vaccine-derived poliovirus (iVDPV); and ambiguous vaccine-derived poliovirus (aVDPV).
- d) According to WHO, there is evidence of community transmission in case of cVDPVs — if a population is poorly vaccinated, there would be enough susceptible children for the excreted vaccine-derived polioviruses to begin circulating in the community.

### 10) Which of the following is True :

- a) IPV is not a Live attenuated Vaccine
- b) IPV gives > 90% immunity against Polio
- c) IPV does not give herd immunity
- d) All the above

Please send answers to [lata2207@gmail.com](mailto:lata2207@gmail.com) / [Kawaljit000@gmail.com](mailto:Kawaljit000@gmail.com)  
Correct answer will be published in next issue

## Answers - DECEMBER 2020

- 1) d
- 2) d
- 3) c
- 4) d
- 5) a,b,c,d

The winner of the ped ortho quiz was Dr Haneesha.  
She is doing her IAP Neurodevelopment Fellowship from CCDD Bengaluru





## Journal Scan

DR. ASHISH SAHANI

### **Sleep Variables as Predictors of Treatment Effectiveness and Side Effects of Stimulant Medication in Newly Diagnosed Children with Attention-Deficit/Hyperactivity Disorder**

Davidson, Fiona PhD\*; Rigney, Gabrielle PhD\*,†; Rusak, Benjamin PhD\*; Chambers, Christine PhD\*; Rajda, Malgorzata MD‡; Corkum, Penny PhD\*

#### **Author Information**

Journal of Developmental & Behavioral Pediatrics: January 2021 - Volume 42 - Issue 1 - p 1-8

#### **Abstract**

##### **Objective:**

There is a growing body of research on the impact of stimulant medication on sleep in children with attention-deficit/hyperactivity disorder (ADHD). Negative sleep side effects are a common reason for nonadherence or for discontinuing a course of treatment. However, there is no published evidence as to whether pretreatment sleep can predict responses to treatment and the emergence of side effects.

##### **Method:**

In this study, baseline sleep variables were used to predict therapeutic effect (i.e., reduction of ADHD symptoms) and side effects (both sleep and global side effects) in a sample of newly diagnosed, medication-naive children (n = 50).

##### **Results:**

The results of hierarchical regression analysis showed that parent-reported shorter sleep duration before medication treatment significantly predicted better response to treatment, independent of pretreatment ADHD symptoms. Baseline sleep features did not significantly predict global (nonsleep) side effects but did predict increased sleep side effects during treatment

##### **Conclusion:**

These results indicate that baseline sleep variables may be helpful in predicting therapeutic response to medication and sleep disturbance as a side effect of stimulant medication.



## Journal Scan

**NEW RESEARCH | VOLUME 60, ISSUE 2, P252-261.E3, FEBRUARY 01, 2021**

Sleep, Growth, and Puberty After 2 Years of Prolonged-Release Melatonin in Children With Autism Spectrum Disorder

- [Top](#)

Sleep, Growth, and Puberty After 2 Years of Prolonged-Release Melatonin in Children With Autism Spectrum Disorder

- Beth A. Malow, MD, MS Robert L. Findling, MD, MBA Carmen M. Schroder, MD, PhD Tali Nir, DVM Nava Zisapel, PhD Paul Gringras, MD, MRCPCH

### Objective

A recent 3-month double-blind, placebo-controlled study demonstrated efficacy and safety of pediatric prolonged-release melatonin (PedPRM) for insomnia in children with autism spectrum disorder. This study examined the long-term effects of PedPRM treatment on sleep, growth, body mass index, and pubertal development.

### Method

Eighty children and adolescents (2–17.5 years of age; 96% with autism spectrum disorder) who completed the double-blind, placebo-controlled trial were given 2 mg, 5 mg, or 10 mg PedPRM nightly up to 104 weeks, followed by a 2-week placebo period to assess withdrawal effects.

### Results

Improvements in child sleep disturbance and caregiver satisfaction with child sleep patterns, quality of sleep, and quality of life were maintained throughout the 104-week treatment period ( $p < .001$  versus baseline for all). During the 2-week withdrawal placebo period, measures declined compared with the treatment period but were still improved compared with baseline. PedPRM was generally safe; the most frequent treatment-related adverse events were fatigue (6.3%), somnolence (6.3%), and mood swings (4.2%). Changes in mean weight, height, body mass index, and pubertal status (Tanner staging done by a physician) were within normal ranges for age with no evidence of delay in body mass index or pubertal development.

### Conclusion

Nightly PedPRM at optimal dose (2, 5, or 10 mg nightly) is safe and effective for long-term treatment in children and adolescents with autism spectrum disorder and insomnia. There were no observed detrimental effects on children's growth and pubertal development and no withdrawal or safety issues related to the use or discontinuation of the drug.



## Journal Scan

### Understanding Hippocampal Development in Young Children With Autism Spectrum Disorder

- Vanessa P. Reinhardt, PhD
- Ana-Maria Iosif, PhD
- Lauren Libero, PhD
- Simona Ghetti, PhD
- David Amaral, PhD
- Marjorie Solomon, PhD
- Show all authors
- Journal of American academy of child and adolescent psychiatry

*Published: August 23, 2019 DOI: <https://doi.org/10.1016/j.jaac.2019.08.008>*

#### Objective

We examined growth trajectories of hippocampal volume (HV) in early childhood in a longitudinal cohort of male and female participants with autism spectrum disorder (ASD) and typically developing (TD) individuals, and investigated HV in those with large brains. Relations between factors potentially associated with hippocampal size and growth were investigated.

#### Method

Participants received 1 to 3 structural magnetic resonance imaging scans between ages 25 and 80 months (unique participants: ASD, n =200; TD, n =110; total longitudinal scans, n = 593). HV growth during this period was examined using mixed-effects linear models. Associations between early HV and growth rates, and IQ and adaptive functioning, were evaluated.

#### Results

After accounting for cerebral hemisphere volume, male participants exhibited larger left and right HV than female participants. Hippocampal growth rates did not differ by sex. In children with larger hemisphere volumes, male and female participants with ASD had relatively larger HV than TD participants of similar hemisphere volume. This effect was present in a broader group than only those with disproportionate megalencephaly (male participants with large cerebral volumes relative to body size). Right hippocampi were larger than left hippocampi in both groups and sexes. Right versus left volume differences were greater for ASD. After adjusting for hemisphere volume, male participants with ASD showed a significant positive association between right hippocampal growth and adaptive behavior.

#### Conclusion

HV was relatively greater in ASD in analyses adjusting for hemisphere volume, whereas only subtle differences were observed in HV and growth between participants with ASD and TD participants in unadjusted analyses, suggesting that ASD involves atypical coupling between HV and brain size.



## Month in pics




IAP Cochin organized a zoom meeting  
Topic: PEDIATRIC POTPOURRI- Common Pediatric Orthopedic Problems  
on Jan 27, 2021



## Month in pics


REC

### Criteria for screening



- In 1968, Wilson and Jungner proposed the following criteria for inclusion of a condition in screening:
  - (i) condition should have an important health problem/frequency
  - (ii) test should be acceptable to the population (reliable/simple)
  - (iii) disease does not manifest at birth/ routine examination
  - (iv) treatment will prevent mortality and morbidity
  - (v) delay in diagnosis will cause irreversible damage
  - (vi) screening is cost-effective.

Lata Bhat's screen



**Dr. Lata Bhat gave a talk on Newborn screening - Indian Scenario during eNCDP (annual national and international conference of Neurodevelopmental Chapter of IAP)**