



DPT

DEVELOPMENTAL PEDIATRICS TODAY



September 2020

Monthly e-Newsletter of IAP Chapter of Neurodevelopmental Pediatrics

IAP CHAPTER OF NEURO DEVELOPMENTAL PEDIATRICS

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Editorial

“Dear Teacher, Thanks for inspiring hope in me; Igniting my imagination; And instilling in me - a love of learning. We will always be thankful to you for all the hard work and efforts you have put in, for educating us.”

Respected Seniors and dear friends,

The Covid pandemic is still going on unabated although now the recovery rate has improved. But now most people seem to be relaxed and not taking proper safety precautions. Everybody is doing their best in the given circumstances to keep up their work. But I feel the worst affected are the children, locked in their homes with no friends, minimal physical activity and worst of all, online classes.



5th September is teachers' day and all of us would have fondly remembered our teachers on that day. We and our teams should aim to be good teachers for parents and children with neurodevelopmental disorders, because good counseling also involves teaching skills and allowing as well as empowering these kids to find their strengths.

1st to 7th September is National Nutrition Week and good balanced nutrition has a very important role in brain development. We should spend time talking to parents about feeding issues which are very common in kids with NDD.

10 sept is world Suicide prevention day. Nearly one out of every eight children between the ages 6 and 12 has suicidal thoughts. The suicide rate is approximately 4 times higher among males than among females, but females attempt suicide 3 times as often as males. When a suicide occurs, everyone is affected, including the people who are left behind. Children with NDD do face anxiety and depression which can lead to suicidal thoughts. We should keep this in mind when treating these children.

In this issue we have Case reports by Dr Anjan Bhattacharya and team on LD and vision problems and actually an eyeopener case reports on Asthenopia and academic performance. A writeup on Echolalia is also worth going through. Journal scan focuses on important issues, as mentioned by our secretary.

I request you all to send your answers for the quiz questions by 25th October.

Keep up the good work.

Dr. Lata Bhat

Chief Editor



Chairperson's Message

Dear Readers,

As we release the September issue of DPT Newsletter, here is wishing you all Season's greetings for the forthcoming Puja festivals. While sending prayers to many a home who are struggling to cope with the loss of their loved ones during the Covid -19 pandemic and wishing safety to those who are working in the frontline.



What one needs at the end of the day is a safe stay and a restful sleep. Sleep is often called a sweet restorer of health but how many of us are aware of how well are patients have slept? How many hours of sleep, nature of sleep, time to bed. We talk of deterioration of social behaviour, drop in academic performance, increase of hyperactivity in children and neurobehavioural functioning. Unfortunately, the bidirectional relationship of sleep difficulties and performance is given very less importance.

Over the past decade there is a growing understanding of sleep. Parental practices, lifestyles, increased use of technology and viewing of television, smart phones and playing video games have affected sleep hygiene. Furthermore, research studies have shown neurodevelopmental problems like autism spectrum disorder and ADHD have increased the incidence of sleep difficulties, while conditions like Down's syndrome and Prader Willi syndrome, midfacial dysplasia's have greater evidence of sleep-related breathing disorder. Hence it is recommended that we take a routine sleep history which is problem-driven and developmentally focussed.

This issue has interesting topics to tickle the mind. Happy reading and we would love to get your feedback.

Long Live IAP !

Regards,

Dr. Shabina Ahmed MD, FIAP

National Chairperson

Neurodevelopmental Pediatrics Chapter of IAP



Snippets from the Secretary

“One child, one teacher, one book, one pen can change the world.”

- Malala Yousafzai.



Dear seniors and friends,

Hope this issue of newsletter find you all and your families in good health.

At the outset, I want to salute all my teachers till date who have guided me in my life. 05 Sep is celebrated as Teacher's day in India in memory of Dr S Radhakrishnan who wanted his birthday to be remembered as a dedication to the endless contribution of a teacher in shaping a student's educational life much beyond the school years. World over, 05 October is celebrated as World teacher's day.

Nov 17 is the world patient safety day and this year the WHO slogan for all stakeholders is to “Speak up for health worker safety!” which is very apt in the current pandemic which has resulted in high rates of COVID 19 infection and mortality among health care personnel worldwide. The ongoing pandemic has tested the healthcare infrastructure all over the world and highlighted the huge challenges for the healthcare personnel all over the globe. Working in difficult, stressful conditions expose healthcare personnel to multiple health risks and also lead to stress and related risks. During these difficult times, it is the need of the hour to raise the awareness among both society and healthcare workers to safety of healthcare personnel at work and invest in health infrastructure and sustainable long term actions for safety in health care.

In the journal scan section of this issue, we have selected two articles - a cross sectional study on sleep disorders among children by one of our fellowship students (Cureus journal)and a systematic review on Patient safety vulnerabilities for children with intellectual disabilities in hospital (BMJ Open) which make an interesting read as both sleep disorders and adverse events during hospitalization are common in children with neurodevelopmental disorders and we as developmental pediatricians should be aware of both these issues in our day to day practice.

As we are going to enter UNLOCK 5 soon and many child developmental centers are now open again for providing developmental services after few months of online consultation, we urge you to continue with all COVID 19 safety precautions in order to keep both yourself and your patients safe.

“ The true teachers are those who help us think of ourselves.” - Dr S Radhakrishnan.

Long live IAP,

Wg Cdr (Dr) KS Multani

National Secretary

IAP Chapter of Neurodevelopmental Paediatrics



YOUNG BRAIN BIG APPETITE

The brain is the organ with the longest development and maturation time - it starts in the third week of pregnancy and continues throughout adulthood



Sleep

Sleep plays an important role in healthy cognitive & psychosocial development during the transition from infancy to childhood.

Sleep is made up of three states:

Non-rapid eye movement (NREM) - restful and restorative with low brain activity

Rapid eye movement (REM) - consolidating memories, dreaming and building connections in central nervous system

Wakefulness



Sleep timelines

0-3 months	2-3 months	4-12 months	12-18 months	18 months - 4 years
day/night reversal is common, no circadian rhythm	regular periods of sleepiness & alertness	more nocturnal	two naps a day	one or no daytime nap

Important factors for infant sleep

- ✓ Regular and consistent bedtime
- ✓ Safe and comfortable place to sleep
- ✓ Being put in cot drowsy but awake
- ✓ Limited screen time
- ✓ Appropriate activity & exposure to daylight

Good sleep benefits:

- Learning & memory
- Emotional regulation
- Cognitive development

Nutrition

Optimal nutrition in the fetal period and first few years of life is central to the development of a healthy brain architecture needed for lifelong cognition

Iron is currently the quintessential nutrient for the discussion of:



When a fetus is iron deficient for extended periods of time, brain development does not proceed on a typical trajectory

Six nutrients commonly associated with early cognitive development

These nutrients are important from pre-conception to pregnancy and after birth:

● Pre-conception ● Gestation ● Post natal



Iron deficiency is the No. 1 nutrition issue in the world. Up to **50%** of women worldwide are deficient

Energy

The brain consumes a high proportion of the body's energy, especially during times of rapid growth

The developing childhood brain uses up to 60% of the body's energy requirements

Infant brain volume vs that of an adult:



The adult brain uses glucose for energy



The developing brain needs glucose and fatty acids to produce energy





Journal Scan

The Spectrum of Sleep Disorders Among Children: A Cross-sectional Study at a South Indian Tertiary Care Hospital

2020 Narasimhan et al. Cureus 12(4): e7535. DOI 10.7759/cureus.7535; Udayakumar Narasimhan , Fatima Shirly Anitha Chamelee Anbu , Mohammed Fazil Abdul hameed

Abstract

Introduction

Sleep problems during infancy and early childhood are fairly common and rarely recognized in pediatric practice. These are mostly related to the initiation and maintenance of night-time sleep. Understanding sleep patterns and disorders associated with sleep is challenging, especially in the pediatric age group. This study was done to estimate the magnitude of sleep disorders in children and to evaluate the associated risk factors.

Methods

This cross-sectional study was carried out among 450 children visiting the pediatric outpatient department of Sri Ramachandra Institute of Higher Education and Research, Chennai, India between November 2018 and June 2019. Children with chronic illnesses and a history of physical or mental trauma in the past six months were excluded. The Sleep Disturbance Scale for Children (SDSC) was used to gather information regarding sleep disorders.

Results

It was observed that a majority of the participants (72.2%) slept 9-11 hours per day. Among 46.2% of the participants, the time lag between bedtime and sleep time was less than 15 minutes. Overall, sleep problems were present in 34% of the participants. History of sleep problems in infancy, absence of siblings, and parental presence while sleeping emerged as statistically significant risk factors for childhood sleep disorders ($p: <0.05$).

Conclusion

We believe our study provides a basis for exploring the pattern and problems associated with sleep behavior among children. There is a need for setting up routine screening measures in pediatric outpatient departments to facilitate early detection of sleep disorders in order to avoid complications.



Journal Scan

Patient safety vulnerabilities for children with intellectual disability in hospital: a systematic review and narrative synthesis

Mimmo L, et al. BMJ Paediatrics Open 2018;2:e000201. doi:10.1136/bmjpo-2017-000201

Abstract

Purpose - Adults and children with intellectual disability (ID) are vulnerable to preventable morbidity and mortality due to poor quality healthcare. While poor quality care has been commonly identified among children with ID, evidence of the patient safety outcomes for this group is lacking and therefore explored in this review.

Data sources

- Systematic searches of six electronic bibliographic research databases were undertaken from January 2000 to October 2017, in addition to hand searching.

Study selection - Keywords, subject headings and MeSH terms relating to the experience of iatrogenic harm during hospitalisation for children with ID were used. Potentially relevant articles were screened against the eligibility criteria. Non-English language papers were excluded.

Data extraction - Data regarding: author(s), publication year, country, sample, health service setting, study design, primary focus and main findings related to measures of quality and safety performance were extracted.

Results of data synthesis - Sixteen studies met the inclusion criteria, with three themes emerging: the impact of the assumptions of healthcare workers (HCWs) about the child with ID on care quality and associated safety outcomes; reliance on parental presence during hospitalisation as a protective factor; and the need for HCWs to possess comprehensive understanding of the IDs experienced by children in their care, to scientifically deduce how hospitalisation may compromise their safety, care quality and treatment outcomes.

Conclusion - When HCWs understand and are responsive to children's individual needs and their ID, they are better placed to adjust care delivery processes to improve care quality and safety during hospitalisation for children with ID.



Quiz

Dr. Arun Prasad

Joint Secretary, IAP NDD Chapter

Secretary, IAP Chandigarh

Director, Asha Child Care And Development Centre

- QS.1. ROP Screening is done in all the following except**
- <28 weeks gestation
 - 30-32 weeks gestation
 - VLBW baby
 - Full term well baby
- 2. Incidence of ASD has been increasing gradually. According to CDC report, its incidence in 2006 was:**
- 1:56
 - 1:200
 - 1:64
 - 1:110
- 3. All the following occur in Social and communication disorder except**
- Symptoms :
- Difficulty in the acquisition and use of spoken and written language
 - The disorder limits effective communication, social relationships, academic achievement, or occupational performance.
 - Symptoms must be present in early childhood even if they are not recognized until later when speech, language, or communication demands exceed abilities.
 - Sensory issues
- 4. Which of the following are causes of inability to make friends in School**
- Attention-Deficit Hyperactivity Disorder (ADHD)
 - Autism Spectrum Disorder (ASD)
 - Non-verbal Learning Disability (NVLD)
 - All of the above
- 5. If the congenital hypothyroidism is missed in neonatal period. The features which are seen are :**
- Short extremities, thick hands and broad short fingers.
 - Wide fontanels, depressed nasal bridge, narrow palpable fissures,
 - Swollen eyelids, short neck and with delay in diagnosis mental deficiency sets in
 - All the above
- 6. TFT should be done earliest at what age to get reliable results to rule out Congenital Hypothyroidism**
- After 3-5 days of life
 - At birth
 - After 1 month
 - After 24 hours
- 7. Causes of Congenital Hypothyroidism include (There can be more than one answer)**
- Thyroid dysgenesis
 - Thyroid dyshormonogenesis
 - Transient hypothyroidism
 - Hypothalamopituitary hypothyroidism
- 8. Chromosomal abnormality in Downs syndrome includes all the following except**
- Full trisomy
 - Mosaicism
 - Translocation
 - Partial trisomy



Quiz

9. Which of the following can occur in Down syndrome (there can be more than one correct answer)
- Cognitive impairment
 - Behavioral and psychiatric disorders
 - Increased risk of atlantoaxial dislocation
 - Immunological impairments
10. Following defects can be associated with Down Syndrome except
- Duodenal atresia
 - Hirschsprung disease
 - Hypothyroidism
 - Corpus callosum agenesis

Please send answers to lata2207@gmail.com / Kawaljit000@gmail.com before 25 October 2020. Correct answer will be published in next issue

Answers - AUGUST

- (d) Ba-ba (Double syllable usually involves repetition of the same syllable)
 - (a) Children tend to be able to copy a shape 6 months before they can actually copy it. The usual development order of drawing shapes is line, circle, cross, square, triangle. Tripod pencil-grip is a more mature grip which occurs between 5-6 years.
 - (d) 5 Years
 - (d) A Child Builds 3 Blocks: 16-18 Months; 6 Blocks 18-22 Months, 9 Blocks 3 Years, Lining Blocks 23-26 Months
 - (d) Situationa Phobias
 - (b) Expected Panic Attacks
 - (d) Parent With Major Depression
 - (b) Inconsistent And /Or Overly Intrusive Parenting
 - (c) Epinepherine
 - (c) The brains of children with ADHD are 3-4% smaller than children without ADHD brain shrinkage in ADHD not caused by medications
- Date : October 9, 2002; Source: nih/national institute of mental health
- Summary:
- A 10-year study by National Institute of Mental Health (NIMH) scientists has found that brains of children and adolescents with attention deficit hyperactivity disorder (ADHD) are 3-4 percent smaller than those of children who don't have the disorder – and that medication treatment is not the cause. indeed, in this first major study to scan previously never-medicated patients, they found “strikingly smaller” white matter volumes in children who had not taken stimulant drugs. Still, the course of brain development in the ADHD patients paralleled that of normal subjects, suggesting that whatever caused the disorder happened earlier.
- (a) Hyperactivity , impulsivity, inattention
 - (c) Self control



ECHOLALIA

Dr. Ashish Sahani

Echolalia is the repetition or echoing of verbal utterances made by another person.

Immediate echolalia is defined as the repetition of a word or phrase just spoken by another person. (usually within 2 conversational turns of original language input). Immediate echolalia may be used with no interest or interest or may have specific purpose for the individual.

FUNCTIONAL CATEGORIES OF IMMEDIATE ECHOLALIA (prizant and duchan, 1981)

INTERACTIVE:

1. Turn taking.....utterances used as turn fillers in an alternating verbal exchange
2. Declarative.....utterances labelling objects, actions or location
3. Yes answer.....utterances used to indicate affirmation of a prior utterance
4. Request.....utterances used to request objects or others actions

NON INTERACTIVE:

1. Non focussed.....utterances produced with no apparent intent and often in states of high arousal eg fear and pain
2. Rehearsal.....utterances used as processing aid, followed by action indicating comprehension of echoed utterance
3. Self regulatory....utterances which serve to regulate ones own actions. Produced in synchrony with motor activity.

WHY DO CHILDREN USE ECHOLALIA ?

CHILDREN WITH ASD USE ECHOLALIA BECAUSE THEY LEARN LANGUAGE DIFFERENTLY:

typically developing children tend to begin learning language by first understanding and using single words, and then they gradually string them together to make phrases and sentences. Children with ASD follow a different route. Their first attempts at language may be longer chunks of language (phrases and sentences), which they are not able to break down into smaller parts. These chunks are more grammatically complicated than they could put together themselves, and they don't understand what the individual words mean.

Initially children echo chunks of language without understanding what they mean.

Then children start to modify these chunks of language. They mix and recombine words and phrases they have used. (this is called mitigated echolalia).

As they start to understand more language, some children use shorter sentences or just one or two words to express themselves. Howlin (1981) , in fact discovered that children with autism who were echolalic developed good phrase speech later in life whether or not they received intensive language training. if you think of echolalia as as one of the phases of normal language development, it would appear that continued echolalia indicates that the person with autism is "stuck" at the level of



development for a time but then seems to overcome it and develop more normal speech patterns. Regardless of utility of echolalia for the person with autism, the habit can interfere with social interaction and learning.

DELAYED ECHOLALIA

Delayed echolalia happens after more than two conversational turns have taken place. In this kind of echolalia the autistic individual memorizes a phrase which he has heard from a book or a TV show. It is repeated after a period of time following the hearing of the phrase. ASD children have great aural memories. Delayed echolalia appears to tap into long term auditory

memory and for this reason may be a different phenomenon from immediate echolalia.

Prizant (1983) listed 14 possible functions of echolalia.

METHODS OF TREATING ECHOLALIA

1. THE CUES-PAUSE-POINT METHOD OF OVERCOMING ECHOLALIA

a) select 10 questions from each of three content areas

*identification eg. what is ur name

*interaction eg. how are u

*factual eg. what state do u live in

b) Baseline

ask each of the questions, record the answers, and score answers using following criteria...echolalia, incorrect and correct

c) Training has 4 steps : in the first step u teach the person to verbally label word cards or pictures that

will be used to prompt the correct answer. In the second step use prompt pause method to point to correct response and reinforce the answer. In the third step using no cards or prompts, ask 10 questions and use pause prompt and wait for response. provide feedback and reinforcement .In the fourth step fade all prompts and reinforcements and eventually eliminate them and have the person ask the same questions in random order to assure that that the person has generalized his learning.

2) THE ALTERNATED MODELLING METHOD FOR OVERCOMING ECHOLALIA

DOES ECHOLALIA ALWAYS INDICATE AUTISM ???

Echolalia is a natural part of language development in typically developing children, who imitate words and phrases they hear in order to practice their language skills. This usually peaks at 30 months of age though typically developing children differ from each other in the age at which this milestone is achieved.

Apart from Autism , echolalia is associated with congenital blindness, intellectual disability, developmental delay, language delay, tourettes syndrome and schizophrenia.

By recognizing differences in language learning styles, defining echolalia and embracing its social, communicative and cognitive functionalities, we can positively influence the way echolalia is perceived and treated.



Asthenopia and academic performance – An eye opener

Agarwal S, Bhattacharya A

Case#1

A 12-year-old boy presented with the history of blurred vision after 5-10 minutes of reading, along with a report of eyestrain. Initial history and testing to consider non-functional causes were negative. Visual acuity – 20/20 OU.

Case#2

A 20-year-old college student presented with complaints of blurry vision and discomfort around his eyes after 15 minutes of reading. Visual acuity – 20/20 OU.

Case#3

An 18-year-old presented with complaints of inability to read comfortably for more than 10 minutes. After 10 minutes her eyes burn, the print becomes blurry and if she continues, she experiences double vision. Visual acuity – 20/20 OU.

Case#4

A 15-year-old 10th grader presented with a history of asthenopia associated with short periods of reading. Visual acuity – 20/20 OU.

All the above cases are of academically good students, whose academic scores started falling over a period. They were unable to study for the required extent and were unable to concentrate on their studies. To ascertain their problems, they visited doctors of different specialties including ophthalmology. They were all reassured that nothing was amiss with their system and they just need to avoid distractions. They were later diagnosed to have non strabismic binocular vision disorders after they underwent a thorough optometric ocular and binocular evaluations.

INTRODUCTION:

Human eyes are highly versatile sensory organs with adaptive optics. These adaptive optics work by:

1. Changing the curvature of the crystalline lens which helps the eyes to focus at various distances
2. Changing the size of the pupils to allow appropriate amount of light to enter the eyes
3. Converge or diverge the eyes with the help of extra ocular muscles to maintain single vision

These properties always enable humans to maintain clear and single vision binocularly. This faculty of the human eyes is achieved in coordination with the cranial nerves supplying the muscles and the vestibular system which maintains the gaze by providing inputs from the vestibular centres.

This adaptive faculty of the human eyes is responsible for emmetropization and maintenance of visual comfort. Although our eyes are highly versatile, they also have certain limits within which they can function comfortably. With changes in life style, increased near point work and sedentary life style, our eyes are unable to cope with the stress and give out distress signals in the form of eye strain, headaches, problems with focusing abilities, problems with maintenance of single vision etc. The composite term for the above-mentioned symptoms is asthenopia.

Asthenopia can occur because of non-strabismic binocular vision anomalies. As the term suggests, these problems occur without the presence of strabismus. Some of the most important non-strabismic binocular anomalies are:

1. Convergence insufficiency
2. Accommodative insufficiency
3. Convergence excess
4. Accommodative excess



5. Basic phorias
6. Fusional vergence dysfunction
7. Divergence insufficiency
8. Divergence excess
9. Vertical phorias
10. Vergence and accommodative infacilities

Non-strabismic binocular vision anomalies are highly prevalent. In a recent study in India, Hussaindeen found that the prevalence of these anomalies was 31.5% and 29.6% in urban and rural areas respectively (Hussaindeen J. R. et al, 2016). They found that convergence insufficiency was the most prevalent disorder (16.5% and 17.6% in urban and rural populations respectively).

In a systematic review of prevalence studies done between 1986 and 2009, Pilar found that various authors reported wide range of prevalence of non-strabismic disorders (Pilar C. M. et al, 2010). Accommodative insufficiency ranged from 2 – 61.7% and convergence insufficiency ranged from 2.25 – 33%. The studies were carried out in schools and clinics. Most of these studies were done on children.

Scheiman et al carried out a major multi centre research – convergence insufficiency treatment trial (CITT) in the USA (Scheiman et al, 2005). This study assessed the symptoms through a validated questionnaire – convergence insufficiency symptoms survey (CISS), and also compared the efficacy of home and office-based treatments in a randomized trial.

Widespread prevalence of non-strabismic anomalies, increased near point work, sedentary lifestyle and decreased outdoor activities etc have affected the comfort levels of the functioning of our eyes. This in turn leads to avoidance of near work due to asthenopic symptoms. This avoidance could possibly be related to academic performance as we “see to learn”.

Maino describes how visual system develops, how visual acuity evolves for distance and near. He described development of visual skills and how technology which has increased use of near work has given rise to asthenopic symptoms (Maino et al,

2011).

Abdi worked on school children to assess the reasons for asthenopia. They assessed the reasons for asthenopic symptoms by evaluating binocular parameters and provided training to improve them. After improving the parameters they assessed if the symptoms continued (Abdi et al, 2005).

Borsting et al worked on the individuals with poor CITT scores and assessed their ABS (academic behavior survey) scores. After providing therapies to them, their CITT scores showed an improvement and the ABS scores improved. This showed that academics were related to asthenopia (Borsting et al, 2012).

Rouse in 2009 worked on children with asthenopic symptoms. He found that children with symptoms with parent report of no ADHD scores higher on ABS as compared to children with normal binocular vision and parents reporting of ADHD (Rouse et al, 2009).

Cheryl Lynn in 2009 worked on CISS and convergence insufficiency. She assessed when the subjects should be treated for it. She found that subjects with CISS scores higher than 16 need treatment and benefited from it (Cheryl Lynn, 2009).

Catalina Palamo worked on binocular ability of children with poor reading skills, but who did not have dyslexia. They suggested that the distance fusional reserves should be measured and taken care of. They felt that it is not near measurements alone but distance evaluations too that matter in binocular instability (Catalina Palamo Alvarez et al, 2010).

Signs of the functional vision problems are:

1. Avoidance of reading or near vision tasks
2. Poor attention and concentration
3. Poor academic performance
4. Takes a long time to complete tasks
5. Likes to lie down and read, covers an eye while reading
6. Uses finger or pen as pivot to track while reading.
7. Skips words or lines while reading
8. Has poor eye hand coordination while playing



and performing other physical activities

9. May hold reading material too close or too far
10. Often complains of headaches and or/eyestrain
11. Often irritated and fight with peers
12. May go into depression
13. Loss of self esteem
14. Become less communicative and participative

Do we have a solution?

- Present simple diagnostic routine comprising of a comprehensive optometric eye and binocular evaluation

Emphasize case analysis based on the findings

- Present simple, sequential, treatment approach in the form of refractive correction, added lenses, prisms, and vision therapy.

Conclusion:

- It is important to assess and diagnose the non strabismic binocular vision disorders through a comprehensive optometric evaluation. Non-strabismic binocular vision are highly prevalent conditions, most prevalent conditions other than refractive errors.
- Treatment is highly successful with lenses, prism and vision therapy
- Successful treatment leads to significant improvement in quality of life for the patients.

REFERENCES

A Randomized Clinical Trial of Treatments for Convergence Insufficiency in Children. Scheiman M., et al, Arch Ophthalmol. 2005;123:14-24

Academic behaviors in children with convergence insufficiency with and without parent-reported ADHD. Michael Rouse, Eric Borsting, G Lynn Mitchell, Marjean Taylor Kulp, Mitchell Scheiman, Deborah Amster, Rachael Coulter, Gregory Fecho, Michael Gallaway, CITT Study Group, Optometry and vision science: official publication of the American Academy of Optometry 86 (10), 1169, 2009.

Asthenopia: a technology induced visual impairment: as technology advances, eye strain and other symptoms of asthenopia are on the rise. Dominick M Maino, Christopher Chase, Review of Optometry 148 (6), 28-36, 2011.

Asthenopia in school children, orthoptic and ophthalmological findings and treatment. Saber Abdi, Agneta Rydberg, Documenta ophthalmologica 111 (2), 65-72, 2005.

Binocular function in school children with reading difficulties. Catalina Palomo-Álvarez, María C Puell, Graefes' Archive for Clinical and Experimental Ophthalmology 248 (6), 885-892, 2010.

Do we really know the prevalence of accommodative and non-strabismic binocular dysfunctions? Pilar C.M. et al, Journal of Optometry, Volume 3, Issue 4, October-December 2010, Pages 185-197.

Improvement in academic behaviors following successful treatment of convergence insufficiency. Eric Borsting, G Lynn Mitchell, Marjean Taylor Kulp, Mitchell Scheiman, Deborah M Amster, Susan Cotter, Rachael A Coulter, Gregory Fecho, Michael F Gallaway, David Granet, Richard Hertle, Jacqueline Rodena, Tomohiko Yamada, CITT Study Group, Optometry and Vision Science 89 (1), 12, 2012.

Prevalence of non-strabismic anomalies of binocular vision in Tamil Nadu: report 2 of BAND study. Hussaindeen, J. R., et al, 2017, Clin Exp Optom, 100: 642-648.



LD and Vision problems When a parent asks : What does my child see ?

S Rekha Chalapathi BSc. Optometry

Dr. Anjan Bhattacharya FRCPCH

Introduction

We have all heard parents complain about their children being slow learners. Difficulty in reading, writing and finishing tasks which involved near work. Such children often get labelled as dyslexic, slow learners, learning disabled and sometimes ADHD.

Case 1

Anush aged 10 came with symptoms double vision, dizziness/nausea with near work and difficulty in copying from the board. He felt the words run together while reading and always complained of burning, itchy and watery eyes. His vision was worse at the end of the day writes either uphill or downhill. He had trouble keeping attention on reading and had poor eye-hand coordination which resulted in bad handwriting. He avoided any form of sports or games. His time management was poor. He is under care of OT and special educator and studies in an inclusive school.

His evaluation showed the below values -

RE -3.50DC*180 (6/9P) LE -0.25/-3.75*180(6/9P)

Pursuits and saccades - in accurate and loses attention

NPC(Convergence) - 10cms/12cms

MEM : -0.50D

After 4 months of vision therapy his values were as follows-

RE -0.50DS/-2.75*180 (6/6P)

LE -0.50DS/-4.00*180 (6/6)

NPC (convergence) - 7cms/8.5cms

MEM RE -0.25 And LE Plano

Pursuits and saccades - multiple fixations constant head movement and minimal body movement.

His reading comprehension improved vastly and his mother shared that this was the first time she had seen him read for 45 min continuously. He continues to receive therapy even as this article is published.

Case 2

Laksh aged 9 presented with poor reading comprehension with anisometropic amblyopia with vision of 6/60 in the RE and 6/12 in his LE.

He avoided any form of sports or games and always says "can't" before trying and does not judge distance accurately. He does not adapt to change well and his vision was worse at the end of the day. He is a pre term child and was under care of speech therapist for delayed speech and was seeing an OT for balance issues.

His evaluation revealed the following values -

RE -7.50DS/-3.25DC*10(6/12P)

LE -3.75DC*170(6/9)

He presented with RE suppression

NPC - 12cms/15cms

Exophoria (distance) -18 Prism diopters

Exophoria (near) - 12-14 prism diopters

After 13 months of vision therapy his values were as follows-

RE -7.00DS/-3.00*10 (6/6)

LE +0.75DS/-3.50*165 (6/6)

NPC - 9cms/11cms

He did not have any phoria for distance and near both.

He was active in sports and depth perception was better as there was reduced suppression.

Case 3



Lalit was diagnosed with ADHD and had history of Phenylketonuria and post natal seizures and was in NICU for 11 days post birth. He presented with delayed development and was under the care of an OT and speech therapist. He was on medication for ticks and seizures and was on vitamin B supplements. He had poor eye contact and poor attention. His tracking eye movements was delayed and had poor localization of objects. He fixated occasionally and only on illuminated objects.

His evaluation showed following results -

No significant refractive error

Pursuits and saccades - in accurate and multiple fixations > 10 times

Exophoria (both eyes)

NPC - not measurable

After 40 sessions his values are as follows -

Pursuits and saccades - constant with slight head movement and over shooting. Refixations only in down gaze.

Orthophoria (both eyes)

NPC - 11cms (poor recovery)

He continues therapy and his values have improved immensely. His eye contact has improved. Rocking movement has completely stopped. Hyperactivity is reduced drastically. He has reading comfortably and is not skipping letters. He is able to appreciate stereopsis on the standardized RANDOT stereogram which was not possible at all initially.

As the cases illustrate the children were receiving multi disciplinary care of special educator, PT and speech. Vision was the neglected aspect in each case. Children with learning disorders should be evaluated for vision deficiencies and robustness of their visual systems.

Learning disability is an umbrella of conditions which affect the ability of the children to process information. Dyslexia is perhaps the best-known learning disability. It is a learning disorder that impedes the student's ability to read and comprehend a text. Learning disorders can be classified into three major types: disorder of written expression (DWE); reading

disorder (RD); and mathematics disorder (MD).

Thanks to advances in imaging techniques and scientific inquiry, we now know much more about learning disabilities (LD), dyslexia, and the role of vision problems. The American Academy of Pediatrics, the Council on Children with Disabilities, and the American Academy of Ophthalmology published a joint statement that summarizes what is currently known about visual problems and dyslexia. The statement also covers what treatments are and are not recommended when diagnosing and treating vision problems, learning disabilities, and dyslexia.

Two principal higher visual pathways have recently been described, namely the dorsal stream and the ventral stream. The dorsal stream passes between the occipital lobes and the posterior parietal lobes. This brain unit serves the functions of appraising the whole visual scene, and (along with the frontal lobes) attending to elements within the scene. It facilitates immediate visual guidance of movement through the scene, by interacting with area V5 (or the middle temporal lobes MT), the area of the brain responsible for processing perception of motion. The dorsal stream system is automatic and unconscious. It is 'on-line' and is not memory based. Damage in this brain territory is associated with a range of visual behaviors described in Table I.

The dorsal pathway is also known as 'where' pathway or occipitoparietal pathway.

Difficulties with orientation cause problems:

Navigating inside the house Use colour coding for doors

Put footprints on the floor to follow

Navigating outside Create songs and poems for routes



Features	Strategies
Dorsal stream dysfunction	
<i>Difficulty handling the complexity of the visual scene causes problems:</i>	
Finding a toy on a patterned background	Use plain bed spreads and carpets
Finding a toy in a toy box	Store toys separately (with linear storage)
Finding clothes in a drawer or in a pile	Store clothes separately in compartments
Seeing a distant object (as there is more to see)	Get close. Reduce clutter around blackboard Share screen of a digital/video camera
Finding someone in a group	Wear bright clothes, wave, and speak Adopt buddy or similar strategy for playground
Getting lost in crowded places	Training in seeking and recalling landmarks
Distress in crowded locations	Arrive at parties early Go shopping when quiet
Reading	Enlarge and space out text. Mask surrounding text Wear full spectacle correction for hypermetropia to gain magnification. Use magnifiers
<i>Difficulty with visual guidance of movement causes problems:</i>	
With inaccurate reach and grasp	Use tactile guidance with other hand as part of occupational therapy Reach beyond and gather up
Difficulty walking over uneven ground and steps despite viewing directly and good motor function	Provide tactile guidance to the height of the ground ahead, such as using a toy pram or allow to hold on to clothes of an accompanying person (while pulling down)
<i>Difficulty 'dual tasking' causes problems:</i>	
Bumping into obstacles when talking while walking Marked frustration when distracted from task	Limit conversation when walking Limit background clutter and activity
Ventral stream dysfunction	
<i>Difficulty with recognition causes problems:</i>	
Recognizing people and knowing who is unknown	Family and friends introduce themselves and wear identifiers
Understanding the language of facial expression	Language is used to explain emotions
Recognizing shapes and objects and their alignment	Include training in tactile recognition using blind methods
<i>Difficulties with orientation cause problems:</i>	
Navigating inside the house	Use colour coding for doors Put footprints on the floor to follow
Navigating outside	Create songs and poems for routes



The ventral stream passes between the occipital lobes and the temporal lobes where the 'image libraries' are stored. The recognition of faces, shapes, objects, and routes is attained by matching what is seen, with what is stored in the 'library'. A match leads to recognition. Table I outlines the visual problems resulting from damage to this territory. In children, dorsal stream damage is seen more frequently than ventral stream damage.

The symptom complex of dorsal stream dysfunction, which is associated with a range of pathologies affecting the posterior parietal area, ranges in character and severity. It may be associated with slightly or significantly impaired visual acuities and visual fields, and may also be associated with varying degrees of cerebral palsy. It has recently been shown to be common in children with periventricular white matter injury, those born very preterm, and in those with Williams syndrome. Ventral stream dysfunction is seen less frequently and there is usually concomitant dorsal stream dysfunction.

A specific symptom complex of dorsal stream dysfunction is emerging, which comprises difficulty handling the complexity of a visual scene (of varying degree), and which may include impaired visual guidance of the limbs (optic ataxia), possibly associated with reduced visual acuities, homonymous visual field impairment (particularly inferiorly), and occasionally additional impaired recognition (which could be considered as 'dorsal stream dysfunction plus').

How dorsal stream dysfunction affects children

Reading

Vision problems will affect reading in two significant ways:

When a student is learning to read, a vision problem could reduce their ability to know what they are looking at and impact their ability to develop an effective strategy for reading.

When a student is reading to learn and has blurry or double vision, their ability to read for long periods of time and comprehend what they are reading can be severely reduced.

Instead of reading fluidly and visualizing the words and the message as a whole, student with vision problems may focus on each specific word. Naturally, this becomes

a struggle to process the information and increases the amount of time they spend reading.

Spelling

In spelling, a student needs to have visual recall. This is the ability to create a mental image of a word without being able to look at the word. Students with poor visual skills often have not developed this skill.

Writing

It is necessary for vision to lead the hand for handwriting and this can be very difficult if the student cannot see well. In fact, often you can see in the handwriting where the student stopped looking or became fatigued. Difficulty writing straight on a page is often a result of poor peripheral awareness.

Visualization is important in handwriting because the student needs to remember what different words look like in order to reproduce them on the page. Spatial concepts are important in handwriting to know and plan how words will go together. Good laterality and directionality are important to differentiate similarly-shaped letters in different orientations (e.g. b, d, p, q). Visualization is also critical for writing composition because the student needs to be able to organize and re-organize the composition in his or her head.

Math's (arithmetic)

If a student has difficulty seeing things clear and single, they may have trouble seeing decimals and/or signs. An important skill in math is to organize what is being written and the student may have trouble lining things up and keeping their place if their visual skills are poor.

Laterality and directionality are also important concepts in math. If a student sees the orientation of numbers incorrectly, they will have difficulty completing the problem.

Students who lack visualization skills can often be found counting on their fingers or verbalizing sequences. They can't think things through in their head. Given enough time, they can generally compute an answer, but they tend to do poorly on timed tests.

Awareness of numbers and what they mean as well as being able to visualize numbers and quantities are critical to success in math and can be impacted if a child has a



vision problem.

It should be noted that a child with vision problems may do well in math, but may be a poor reader primarily because math doesn't require as much sustained visual attention as reading.

Functional vision assessment

Why is vision therapy so effective in changing behavior and improving performance ?

To answer that question , it is first necessary to discuss the shortcomings of the traditional medical model of vision.

This medical model considers visual dysfunction as a structural problem, involving the recognition of forms. A child can't see the blackboard, so he is given glasses for nearsightedness. A middle-aged person can't see small print, so she receives a prescription for magnifying lenses. An elderly person's vision is blurred by a cataract, so his anatomical lens is replaced by a man-made one. This is a static concept: an eye has a defect, so something optical is done to correct it.

A newer and much more accurate paradigm—the developmental model—recognizes that vision is a dynamic process, which controls the action of the entire body and, in turn, is influenced by feedback from other sensory systems. Vision is not a static receptor of information, according to this model, but an interactive one.

A key difference between the medical and developmental models of vision is that while there are two visual systems, vision professionals

trained under the medical model primarily address the structural problems that occur in only one of these: the focal vision system. This is the high-resolution central vision that allows us to identify objects, and it is the system that can be impaired by cataracts, refraction errors, and other "hardware" problems. Focal vision, limited to only a few degrees of the visual field, operates largely under conscious control and makes it possible for us to see colors and identify stable features of our surroundings. Defects of the focal vision system typically are treated either surgically or with corrective lenses that compensate for the eye's inability to focus correctly.

Developmental optometrists recognize the importance of focal vision problems, but they also recognize that severe problems can arise in the second system that allows us to interpret our visual world: the ambient visual

system. Ambient vision, also referred to as peripheral vision, encompasses the entire visual field. It is a lower-resolution system that operates largely on a non-conscious level, and allows us to rapidly identify where we are and what is happening in our environment. While focal vision is largely static, ambient vision is dynamic, integrating with other sensory systems to update us constantly about our changing world—and it works correctly only if the "software" of the neural system is intact.

Identifying deficits in ambient vision is crucial, because this system is key to defining both our self-image and our view of our world. Right now, for example, your ambient vision is sending you a constant stream of data about the location of your body in space, and the location of other people or objects—in addition to telling you how quickly they are moving, and in what direction. If someone walks up to you, your focal vision will tell you who the person is—but your ambient vision will quickly transmit critical cues about the person's changing "body language," how close he or she is to you, and whether you should be relaxed or alarmed by the encounter. If you move to another spot, your ambient vision will tell you where you're going, and update your position in relation to doors, chairs, tables, and walls. Turn on the television, and your ambient vision will allow you to watch the moving picture, coordinate that picture with the sound from the TV, and form both into a coherent whole. It will also allow you to watch the TV while still being aware of a friend passing by outside the window, or a cat creeping up beside you.

Ambient vs. focal vision

Ambient vision

- "Where am I/Where is it?" function
- Dynamic (kinetic)—identifies movement, change
- Low-resolution non-color vision (rods)
- Involves entire visual field
- Not degraded at night Largely non-conscious
- Integrates with other sensory systems
- Is largely learned, and thus can be greatly enhanced through a program of visual management

Focal vision

- "What is it?" (object recognition) function



- Static—identifies stable features of surroundings
- High-resolution color vision (cones)
- Involves only central vision—limited to central two degrees of visual field (fovea)
- Degraded at night Largely conscious Works in isolation

Is innate rather than learned

Disrupt this ambient visual system, and simple activities that you take for granted—from climbing stairs, to watching TV, to talking with another person—can become highly difficult and stressful ordeals. Objects will appear closer or farther away than they really are, causing you to be clumsy or disoriented. Other people's body language may be hard to read, making social situations frightening. Catching a football, navigating a crowded hallway, or driving a car can be terrifying. If the disruption is severe, even identifying where your own body ends, and the outside world begins, can become impossible.

Because ambient visual problems affect the “software” of the visual system, we can't address them effectively with surgery or standard glasses. However, a crucial aspect of ambient vision is that, unlike focal vision, it is largely learned and thus can respond to intervention in the form of vision therapy. This fact, overlooked by much of the medical profession, has enormous implications for professionals in the field of vision.

The earliest clues that the visual circuitry adapts to environmental changes came in the early 1960s, when Harvard researchers David Hubel and Torsten Wiesel altered the eyesight of very young cats by blurring their vision with contact lenses, patching one eye, or causing strabismus. When Hubel and Wiesel autopsied the cats later, they discovered that the neurons associated with binocular vision had atrophied. Similarly, Austin Riesen found that binocular cells in the brain cannot be stimulated by input from one eye alone; his research showed that “synchronous inputs from the two eyes are required during early development if normal binocular function is to appear.” These findings provided definitive proof that early visual disruption changes the brain's response to visual stimuli, and thus that experience alters what a cat (or a human) actually sees.

Equally important, studies show that if given intensive training, animals subjected to early visual disruption can learn ambient visual skills—a finding that is equally true for humans. Moreover, we now know that the concept of a “critical period,” after which visual problems are

not correctable, is inaccurate. Vision therapy works best with young children, but studies show that remarkable improvement can occur in adults as well.

This is consistent with animal studies by von Noorden, Van Sluyters, and Pettigrew, all of whom found that visual anomalies due to early deprivation could be completely reversed, well after any supposed “critical period” had elapsed.

The brain can be compared to a system of roads, with information traveling from one location to another. If the roads are direct and smooth, travel is easy. If construction creates a barrier, however, the highway is blocked and traffic may be redirected into clogged side streets. There is still movement, but it is slow and frustrating. Children with severe visual dysfunction spend too much time on these side streets, and the simple act of perceiving the world, and reacting to that perception, becomes a nightmare.

Why do vision problems have such far-reaching consequences?

The human organism is a “spatial action system,” and most of the information we receive from our environment comes from our visual processes. When these processes break down, the result can be catastrophic—because seeing a world that's distorted, fragmented, two-dimensional, or incomprehensible can be as disabling as not seeing anything at all.

Frequently, disabled children or adults respond to the confusion and fear created by visual impairment by developing the symptoms that doctors see as “problems”—rocking, hand-flapping, toe-walking, poor eye contact, social withdrawal, tantrums, odd posture, rituals, hyperactivity.

children with behavioral problems have multiple sensory issues, and visual dysfunction is just one of them. But because 80 percent of the information we receive from our environment is visual, the visual aspect of sensory dysfunction can have far-reaching and devastating consequences. It is hard to overestimate the difficulty of functioning in a world where you can't tell where you are, where other people are, where objects are, or even where your body ends and the outside world begins.

To show a parent or professional just how debilitating visual dysfunction can be, I like to offer a real-life example. To do this, I set up two chairs, 10 to 15 feet apart, and ask my subject to sit in one of the chairs. Then I ask the person to stand up, walk to the other chair, and sit down



on it without “feeling” for it by hand. It’s a simple task, and no one has any trouble performing it.

Next, I place disruptive ambient lenses on my subject, and ask, “Can you see the other chair?” The answer is always “Yes,” because ambient lenses have no effect on the ability to identify an object. I then ask my subject, once again, to walk to the other chair.

When people try this with the disruptive lenses in the “down” position, they knock over the chair. When they try it with the lenses in the “up”

position, they stop short of the chair. Their loss of orientation affects their vestibular system, and they feel as if the room is swaying. Fearful, they respond by slowing down, shifting their bodies forward or back, toe-walking, or waving their arms as they walk. All of these are consistent with the “stims” we see in autism.

The people who participate in this experiment move from an ordered view to a disordered view, and within minutes they develop “symptoms” as a result. I ask them

to imagine what it’s like to live in that disordered world not for a few minutes, but for a lifetime.

Vision therapy uses a range of instruments like flippers, glasses, prisms etc and is a non invasive treatment of visual dysfunctions.





Functional vision assessment and vision therapy

The idea of 20/20 vision is deep rooted among professionals as be all and end all of vision measurement. It is just a small part of the entire gamut of abilities that need to be assessed. Human vision is too dynamic to be measured by just reading a chart. The basic act of reading requires 17 visual skills to work in tandem with each other. A complete binocular vision assessment covers all aspects like teaming of the eyes, accommodation, convergence, depth perception, peripheral vision and vestibular status of the child.

Healthy vision is an important component in the learning process. To detect learning-related vision problems, each of the following visual functions must be carefully evaluated:

Visual pathway integrity- ocular health, visual acuity and refractive status

Visual efficiency- accommodation (focusing), binocular vision (eye teaming) and eye movements

Visual information processing -identification and discrimination, spatial awareness, and integration with other senses.

What are the signs and symptoms of vision problems?

Eye strain or headaches

Double vision or blurred vision

Crossed eyes (strabismus)

Excessive blinking while reading

Avoidance of reading or writing

Reduced concentration during visual tasks

Poor reading fluency or comprehension

Poor short term or long term visual memory

Consistent reversal of words or letters (that continues after second grade)

There is no doubt that vision problems, specifically binocular vision anomalies, can seriously affect reading and learning success. Additionally, undetected vision problems can exacerbate learning problems, or mimic the presence of true dyslexia.

The following visual problems have been shown to adversely affect reading performances:

- Hyperopia

- Convergence Insufficiency

- Poor fusional vergence reserves

- Fixation disparity

- Phorias and Tropias

- Anisometropia

- Accommodative dysfunctions

- Reduced saccadic and pursuits eye movements

- Visual processing anomalies

Vision therapy can be defined as the science of achieving clear and comfortable vision.

Vision therapy is designed to teach the child how the brain controls the eyes, to improve their visual skills and how to apply these new skills to improve reading, learning, concentration and attention.

Vision therapy is a fully customized and personalized treatment program designed to improve and strengthen visual skills, and re-train the child's visual system to interpret visual input with increased accuracy and ease.

Vision therapy is more than just simple eye exercises — it improves brain-eye communication, and the effective operating of the child's visual system.

The aim of vision therapy is to enhance the visual skills— eye-tracking, focusing, convergence, eye-hand coordination, visual processing speed

Vision therapy activities

Activity 1 : Pegboard

Some of the activities done by therapists aim at improving more than one skills. For example using a pegboard we can

train the child in depth perception and as anti suppression too using red green glasses.

The Activity is shown in the link below: -

<https://youtu.be/BwSjZv87aus>

Activity 2: Light tapping

Simple instruments like torch light can be used effectively to work on the child having co-ordination, balance and depth perception issues.

The Activity is shown in the link below: -

<https://youtu.be/flyqI6TgCu4>



Hart Chart Variations:

One of the versatile exercise used in vision therapy is hart chart exercise. There are many variations to this simple setup. This is illustrated in the following video.

The Activity is shown in the link below: -

<https://youtu.be/Md0LFOzKpmY>

Take away points -

- 1) Children diagnosed with dyslexia could have a visual problem and these children may respond well to visual treatments such as eyeglasses or vision therapy.
- 2) All children and adults who are reading or learning underachievers require a detailed evaluation of visual function, especially of the binocular vision system— even if a formal diagnosis of dyslexia has been made.
- 3) Binocular vision problems such as eye teaming coordination and/or focusing difficulties often occur with, or can be mistaken for dyslexia.
- 4) These symptoms can be successfully treated with a customized program of vision therapy. Therefore, a comprehensive binocular eye exam is recommended before diagnosing a patient with dyslexia, or providing other treatments, such as colored lenses.
- 5) It is important to remember that not all people with dyslexia have the same problems with reading, learning or school work.
- 6) While this article concentrates on the optometric assessment and management of those who have dyslexia, the techniques described are equally valid for people who have not been formally diagnosed with dyslexia — but are underachieving at school or work.

“No other disabling condition affects so many people and yet has such a low public profile and low level of understanding as LD”, Washington Summit 1994 (Reid L, et al., 1994).

Poor binocular vision can result in ocular discomfort, headaches, diplopia, blurred vision and fatigue during reading and other near point tasks.

An examination of visual skills by an optometrist

experienced in vision therapy is essential for any child or adult that has been diagnosed with dyslexia or feels they may have this condition.

References

- 1) DUTTON, G.N. (2009), ‘Dorsal stream dysfunction’ and ‘dorsal stream dysfunction plus’: a potential classification for perceptual visual impairment in the context of cerebral visual impairment? *Developmental Medicine & Child Neurology*, 51: 170-172. doi:10.1111/j.1469-8749.2008.03257.x
- 2) American Academy of Optometry AOA (1997), Vision, learning and dyslexia: a joint organizational policy statement. *Journal of American Optometry Association*, 284–286.
- 3) Scheiman MM and Rouse MW. (2006) *Optometric management of learning related vision problems*. St. Louis
- 4) Scheiman, M., Mitchell, G.L., Cotter, S., Cooper, J., Kulp, M., Rouse, M. et al. (2005) “The convergence insufficiency treatment trial (CITT) study group: A randomized clinical trial of treatments for convergence insufficiency in children.” *Archives of Ophthalmology* 123, 14–24.
- 5) Cooper, J. (1998) “Summary of research on the efficacy of vision therapy for specific visual dysfunctions.” *The Journal of Behavioral Optometry* 9, 5, 115–119.

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Month in pics



MONSOON vibes



September 24, 2020 8.00 pm



DR A.S. VASUDEV DELHI

Management of UTI....
A Pediatrician's perspective.



DR CHHAYA PRASAD CHANDIGARH

Management overview of ADHD, Learning Disability & Autism



LINK IS ATTACHED BELOW

CHAIRPERSON

MODERATOR



DR ABRAHAM K PAUL KOCHI



DR. REMESH KUMAR R KOCHI

PASSCODE:
VIBE13

MEETING ID
862 6436 1366



Month in pics

BEHAVIORS & SKILLS		FIRST LINE OF TREATMENT	OF SECOND LINE OF TREATMENT DRUGS
INATTENTION	Attentional Skills	Beh Interventions & Parenting Skills, Peer Training	Drugs -
HYPERACTIVITY	Sitting Behavior	Beh Interventions & Parenting Skills, Peer Training	Drugs -
IMPULSIVITY	Turn Taking	Beh Interventions & Parenting Skills, Peer Training	Drugs -
ANXIETY/ DEPRESSION / MOOD BEHAVIOURS	Cognitive Interventions	Beh Parenting Skills, Peer Training	
POOR SELF IMAGE & CONFIDENCE	Coping Skills & Reward System, Praise, Social Rewards/ Build The Motivational Axis	Beh Interventions & Parenting Skills, Peer Training	No Drugs
POOR SOCIAL & EMOTIONAL DEVELOPMENT	Coping Skills, Emotional Stability, Motivational Axis	Beh Interventions & Parenting Skills, Peer Training	
SPEECH AND LANGUAGE	Listening Skills, Receptive Vocabulary, Non Verbal Language, Expressive Language	Beh Interventions & Parenting Skills	No Drugs

LIVE on YouTube



Dr Chhaya Sambharya Prasad's screen

Padmapriya left

Case	Diagnosis	Behaviors	Parent Training	Home Environment	Speech & Language	Sensor Process
CASE 1	SLD, ADHD	✓	✓	✓	✓	✓
CASE 2	ASD, ADHD	✓	✓	✓	✓	✓
CASE 3	Seizures, ADHD	✓	✓	✓	✓	✓
CASE 4	TICS, ADHD	✓			✓	✓
CASE 5	HI, ADHD	✓	✓	✓	✓	✓





Month in pics

GoodMD

GoodMD Connect Live Series

Dr. Lata Bhat

Pediatrician | Experience - 30+ Years

Senior Consultant - Indraprastha Apollo Hospital, Delhi

Director - Palak Child Development Centre, Delhi

MBBS | Diploma in Child Health (DCH) | MRCPCH (UK) | Fellowship in Neonatology



Red Flags of Autism

5:30 PM, Thu, Sep 17th | exclusively on GoodMD



Dr. Lata Bhat gave a talk on Functional GI disorders on 10 September to Paediatricians of IAP East Delhi

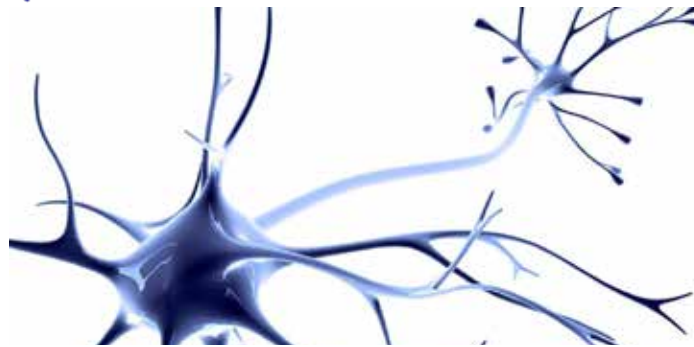


Month in pics

ACADEMY OF PEDIATRIC NEUROLOGY CHAPTER



NEURO-NEURODEVELOPMENT CHAPTER WEBINAR SESSION 19



DEAR MEMBERS,
GREETINGS FROM IAP!

Join us for a very enriching discussion on **neurological problems associated with neurodevelopmental disorders**

This webcast is brought to you under dIAP, an initiative of IAP to facilitate e-learning in all spheres of pediatrics. Live webcast of the webinar discussions, on-line clinics and their subsequent archiving is one of the activities under this banner.

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EXPERTS



Dr MKC Nair



Dr Sameer Dalwai



Dr Velmurugan



Dr Chandrika Rao



Dr Vrishab Gawli

Go to diapindia.org/event-calendar or [click here](#)

With warm regards
DR BAKUL JAYANT PAREKH
DR GV BASAVARAJ

DATE | WEDNESDAY, SEP 2
TIME | 8 PM TO 10 PM

If you are not able to view on the above link, [please click here](#)

an Custom Live Streaming Service

AUTISM & EPILEPSY

- Both are Neurobiologic disorders
- 5-46% cases of ASD have epilepsy
- Normal population - 0.5-1%
- Higher risk of epilepsy in
 - Syndromic ASD eg TSC, Fragile X
 - Females with ASD
 - Cases with motor impairments & ID
 - Prematurity

Singh Multani's network bandwidth

Kawaljit Singh Multani



Month in pics

NEUROWEBINAR

SESSION- XXIX

ACADEMY OF PEDIATRIC NEUROLOGY WITH INDIAN ACADEMY OF PEDIATRICS & MEDICOLEGAL CHAPTER AND CANCELE GROUP

INVITE YOU FOR INTERACTIVE WEBINAR

23 Sept. 2020 | 6:00 to 8:00pm

Topic: Medicolegal Issues of Child Neurology

SPEAKERS & TOPIC

DR. SHABINA AHMED, Guwahati
Addressing Child Abuse & Neglect with Children with Neuro-Developmental Delay & Disabilities

DR. SHEFFALI GULATHI, New Delhi
Brain Death Definition and Basics

DR. SANDHYA KHADSE, Jaipur
Abusive Head Trauma : Role of Pediatrician

DR. RAJEEV SETH, Delhi
Adverse Childhood Experience & Adult Onset Diseases

DR. ANURAG SINGH, Jodhpur
DNR Guidelines

DR. SATISH TIWARI, Amravati
Legal Issues in Developmental Disability / Cerebral Palsy

DR. ANJAN BHATTACHARYA, Kolkata
Brain Death Withdrawl of Life Support

DR. UMADEVI S. NAYAK, Vadodara
Trauma Informed Care and Multidisciplinary Team Approach to Handle Child Abuse

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Dr. Vasant Khalatkar
Ex. Secretary AOPN

CHILD ABUSE & NEGLECT WITH CHILDREN WITH NEURO- DEVELOPMENTAL DELAY & DISABILITIES



Dr Shabina Ahmed, MD., FIAP.

NATIONAL CHAIRPERSON, IAP NEURODEVELOPMENTAL PEDIATRICS CHAPTER
CONVENOR, EAST ZONE ICANCL, IAP
MEMBER, INTERNATIONAL WORKING GROUP ON DISABILITIES (ISPCAN)
PAST PRESIDENT, IAP CHAPTER GROWTH, DEV & BEHAVIOUR
NATIONAL AWARDEE FOR CHILD WELFARE, 2014
FOUNDER DIRECTOR, ASSAM AUTISM FOUNDATION
CHIEF EDITOR, UNDERSTANDING AUTISM, IAP 2007



Month in pics

IAP KARNATAKA STATE CHAPTER

AUTISM FOR PRACTITIONERS



DEAR MEMBERS,
GREETINGS FROM IAP!

Join us for a very timely and enriching discussion **on Autism**.
1 in 60 children suffer from Autism.
It is a silent epidemic.
What role can a pediatrician play?

This webcast is brought to you under dIAP, an initiative of IAP to facilitate e-learning in all spheres of pediatrics. Live webcast of the webinar discussions, on-line clinics and their subsequent archiving is one of the activities under this banner.

MODERATOR



Dr Nandini Mundkur

EXPERTS



Dr Somasundaram A



Dr Sowmyashree Mayur Kaku



Dr Kirthika Rajaram

[Please click here to join](#)

DATE

September 29, Tue

TIME

7.30 TO 9.00 PM

With warm regards

DR BAKUL JAYANT PAREKH

NATIONAL PRESIDENT 2020

DR GV BASAVARAJ

HON. SECRETARY GEN. 2020-21

DR SHANTHARAJ

PRESIDENT KIAP

DR NATESH BH

SECRETARY KIAP

DR RAGHUNATH CN

DR RAVISHANKAR M

PRESIDENT IAP-BPS

DR SUMITA NAYAK

SECRETARY IAP-BPS

DR CHIDANANDA NK



"IF WE ARE TO TEACH REAL
PEACE IN THIS WORLD, AND IF
WE ARE TO CARRY ON A REAL
WAR AGAINST WAR, WE SHALL
HAVE TO BEGIN WITH THE
CHILDREN."



MAHATMA GANDHI