



FOR MEMBERS  
**OFFICIAL  
NEWSLETTER  
OF IACP**  
**SEPTEMBER 2016**

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The logo consists of a circle in the centre of which runs a step ladder showing gross motor milestones of a child. The Circle represents the all encompassing Environment progressively moving from the child development centered micro focus to the larger policy making exo environment depicting Urie Bronfenbrenner's socio ecological model of child development. The IACP vision thus encompasses efforts to improve services at all these levels with a lifespan approach from infancy to adulthood.

The step ladder itself represents the touch point model of Brazelton where the landings or the natural plateaus suggest periods of developmental stagnation which are periods of opportunity for parental counselling addressing their coping ensuring our commitment to a family center approach with an unwavering accent on optimal development rather than impossible dream of normalization.

The background shows a radiant topical sun showing light & warmth on children's developmental progress symbolizing the WHO slogan of international decade of the handicapped [1981-1991] – "A PLACE UNDER THE SUNSHINE FOR ALL HANDICAPPED" – confirming our commitment to a rights based approach which unifies the biological model of disability care with the social model as envisaged by our slogan "FROM DISABILITY TO DIFFERENT ABILITY".

## BACKGROUND

The Indian academy of cerebral palsy is a national body consisting of pioneers drawn from different regions and specialties across the country. With decades of work behind them, they share a common futuristic vision to contribute to the welfare of persons with cerebral palsy and related neuro developmental disabilities and their families at all socio ecological levels.

In fact it is dream come true of the first founder president Late Dr.Perin K Mulla Feroze, the dynamic lady orthopedic surgeon who spent her whole life running the cerebral palsy wing of children's orthopedic hospital, Haji Ali, Mumbai. This institution was the first multidisciplinary service provider for children with cerebral palsy in India. Dr.Mulla Feroze was a fire brand inspirational leader in the field who used to describe herself as a battle scarred veteran in the fight against cerebral palsy. The Indian Academy of cerebral palsy was inaugurated officially at Mumbai during the Asia Pacific Childhood Disability Update held in December 2005 and we were privileged to have Dr. M.S. Mahadeviah Developmental pediatrician, Spastic society, Karnataka, as the First president of the organization. He is the pioneer to have started teaching developmental pediatrics at Bangalore after returning from USA.

The first annual conference was held at Hyderabad during Nov 2006 under the leadership of the General Secretary Dr.Anirudh K Purohit with the theme of "Spasticity Manage-

ment". The second annual conference was held at Bangalore during Nov 2007 with the theme "Infancy to Adulthood" under guidance of the President Dr.M S Mahadeviah & Mrs.Rukmini Krishnaswamy of Spastic Society of Karnataka. The third annual conference was held at Nagpur in collaboration with NKP Salve Institute Of Medical Sciences during Nov 2008 with the theme "From Intention To Action- Family Centered Services" under the leadership of Dr.Vittal Rao Dange of NKPSIMS and Dr.G.Shashikala, Asso. General Seretary of IACP. During this conference we had the distinguished presence of Prof. Peter L Rosenbaum of McMaster University, Canada as a guest teacher and a mentor.

The new body under the leadership of Dr.Ashok N Johari as President was unanimously elected during the GBM held at Nagpur Conference for a period of three years. During these three years, bi annual news letters of the academy have been published with enlightening scientific articles both for professionals and parents along with the details of the various activities undertaken. The academy also has a web site [www.iACP.co.in](http://www.iACP.co.in) which has all the related information of the academy and the activities. The aims and future plans of the academy are detailed in this brochure. We call upon all developmental health & rehabilitation professionals, organizations and parents of differently abled persons to join hands with us for achieving the welfare of persons with disability across life span at all levels.



- Our Mission is to propel perceptions of disability from a label to the empowerment and enablement of ability to achieve inclusion in all streams of life. Towards this end, IACP will endeavour at all times to achieve reaching of the highway of enablement and empowerment for persons with developmental disability by the following 8 steps. We will try to inculcate these principles in our members not as a slogan but as a matter of attitude and habit in our daily professional practice.
- Early diagnosis of all developmental disorders as early as possible with in the limitations of presently available professional and technological competencies.
- Effective communication and education of parents for coping strategies required to meet the demands and stresses of parenting special children according to the needs of the families with a family centered approach.
- Evolving early developmental guidance models which are eclectic, need based, culturally sensitive & cost effective for optimal development without accent on therapy methods & techniques trying to fix disability & pursue the impossible dream of normalization.
- Enabling medical and educational management with a person first approach by creating opportunities for activities and participation as per ICF model.
- Environmental enrichment by breaking down architectural and attitudinal barriers from health care to employment levels.
- Enhancing quality of life of individuals with disabilities with competencies however compromised they may be and promote well being of their families to ensure their rightful place under the sunshine as envisaged in the WHO convention on the rights of the disabled.
- Encouraging networking at national and international levels among all professionals to facilitate intra and inter disciplinary interaction to care, share, learn and mentor generation next to take the movement forward.
- Ensure promote the usage of people first language universally among members of IACP and abolish derogatory labels like spastic, autistic, dyslexic etc by prefixing the person as an individual rather than the stereo typed disability caricature –for example referring to a child as child with spastic cerebral palsy and not as –MR/CP or spastic child.



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Late Dr.(Ms.) P. K. Mullaferoze

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# PRESIDENT MESSAGE



From the desk of the President:



**B**eing a member of the executive body of IACP for the past 10 years & now as its president, I have often wondered if we are all on the same page in conducting our conferences, why academies do conferences & what it should achieve. There is a need for us to think as we enter the second decade of the academy.

Academies are a bridge between educational institutions who are driven by a curriculum & university guidelines & the ever widening arena of scientific research & health care practices slowly moving towards management brilliance than felt need services. Translating the research findings & academic advances to improve the quality of services in neurodevelopmental disorders has been our mission. We intend to draw more IACP core members & influence younger generation to enter this difficult & challenging field. As Prof.Rosenbaum said in the previous conference message, this is the most exciting time to be working in this field. We continue to have questions on many issues but we are also having fascinating answers for possibilities. We are continuing the trend we started last year by dealing with the theme in the format of presidential symposium. When the end of a road as

in development as well as disability is often very hazy & not a curative proposition in diagnostic, prognostication & management prospects, we should be at least sure of the scientific basis for the pathway we are choosing- that is Early intervention & life span management! Hence, this theme of Brain, gene & Context- harnessing neuroplasticity for maximal developmental gains. We are trying to bind all symposia with in the ICF frame work & looking at the role of neuroplasticity from a multidisciplinary perspective. Knowledge translation efforts can be seen as threading all the symposia on both days of the conference as a continuous process with multiple hues.

The excellent, multi -disciplinary , international faculty & national faculty chosen with lot of brainstorming sessions will ensure that this learning path we are paving for you has many fantastic experiences. The 6 PCWs are singularly planned for improving hands on skills of our members to make a difference to the quality of life of those we serve- i.e. children, persons with disability & their families using interactive workshops to facilitate learning. We are taking a close look at developmental services, basis & efficacy of early intervention, advances in understanding motor development genetics & context, medical education, primary prevention, endocrines, Vision, transitional care, neu-

# PRESIDENT MESSAGE



roimaging , challenges of hip problems & many other issues. For details, log on to iacpcon.in. The fact that our program has been endorsed by ICMR shows that our mission is in tune with our Medical fraternity needs as per our highest regulatory Body!

For the first time, IACP conference is thinking beyond cerebral palsy towards Autism & ADHD & I am sure this is a very healthy move towards achieving developmental care as a holistic phenomenon & not an impairment specific, narrow zone! We have also tried to cater to different learning needs of beginners & seniors in the field of therapy. Research is being encouraged by awards to deserving presenters & subsequent publication in our IJCP.

I invite you all heartily to be with us from 25-27th at Dr.Premchandra Sagar auditorium at Kumarswamy lay out, Bengaluru & see if our nominated, executive team & the organizing team deliver what they are aiming to achieve as a new trend! We will try our best to make it a realistic conference high in terms of learning score & may be acceptably pleasant on the comfort score & with minimal exuberant grandeur some of our conferences showcase very often! We will humbly accept your verdict after attending the conference on either count! Be there with all of us! Do not forget to fill the conference evaluation papers & suggestion of themes

to the next conferences. Our conference will get credits from KMC & hopefully RCI. Your recommendations will help us draw better plans for future.

In the service of Academy & what its mission stands for,

Dr. G. Shashikala

# GENERAL SECRETARY'S MESSAGE



## BENDABLE BRAIN AND FLEXIBILITY



**S**eptember is a month for saying “goodbye” to Monsoon & looking forward to the festivities, full of joy & vibrant energy helping us take on new challenges with fresh zeal.

September has always seemed to me like a new beginning with broader Horizons.

We celebrate Our 7th National Cerebral Palsy day on 3rd October 2016 across India to create awareness of the issues faced by the differently abled children and adults with Cerebral Palsy. Our theme for this year is “Happy Healthy Mother, Happy Healthy Child”. We want to raise awareness about importance of promoting maternal well - being & safe environment for the child.

To end this year, we have our 11th National conference, and it promises to be fantastic, living up to the high standards we have set for ourselves. The national conference is the product of the hard planning of our dynamic President IACP & Local organising committee's determination. This year's conference intends to bring pediatric interdisciplinary team in care of children with Neuro motor disabilities, under

the umbrella of brain plasticity. No easy task. We want to bring forth that; with harnessing neuroplasticity, the ageing or impaired changes in the brain can potentially be reversed and any brain can be trained to move forward. As an organisation, IACP has had to embrace plasticity and flexibility in order to grow. We are thrilled to have a growing steady membership and are committed to continue finding ways to better serve our members and meet their needs as we move into the future. Stay tuned and look for more information to come in the future

Exceptional wishes & blessings

Dr Asha Chitnis

# 11th ANNUAL CONFERENCE



## INDIAN ACADEMY OF CEREBRAL PALSY 11th ANNUAL CONFERENCE IACPCON - 2016



**Organised By:**

**Indian Academy of Cerebral Palsy & Sagar Hospitals & Dayananda Sagar University**

**Venue:** Dr. D. Premachandra Sagar Auditorium for Performing Arts, Bengaluru

**Date:** 25th-27th November, 2016

The theme is being deliberated upon by a galaxy of national & international experts furthering our strong commitment to knowledge translation & evolving culturally relevant management modules in various forums, plenary & hands on workshops, paper presentations & debates catering to the needs of generation next as well as the academically alert senior professionals. The organizing committee joyously welcomes you to enjoy the scientific feast as well as the visual delights surrounding the lovely city & its neighborhood.

# INTERNATIONAL FACULTIES



Prof. Peter.L.Rosenbaum, MD, FRCPC, Canada

Professor, Department of Pediatrics at McMaster University, held a tier 1 Canada research chair in childhood disability research, co-founder of Can Child Center for Childhood Disability Research.



Prof. Hans Forsberg, Sweden

Professor in Neuro Sciences, Karolinska Institute, Consultant in Pediatric Neurology, he also has more than 200 original research articles to his credit.



Prof. Margaret Mayston, PhD, London

Ph D, Principal Teaching Fellow, Division of Biosciences, Clinical Consultant Physiotherapist, rich teaching experience, workshops on motor control, teaches Bobath clinical disability pediatric courses.

**THEME:**  
**DEVELOPMENTAL CARE AS AN ONWARD JOURNEY FROM NICU.**

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Target audience: Pediatricians, Neonatologists, Pediatric Neurologists, Developmental Pediatricians, Post graduate students in Pediatrics, Senior therapists.

Course level : Advanced

**OBJECTIVES:**

- To define development care for children as an ongoing process from NICU onwards.
- Identify major diagnostic dilemmas & their resolution.
- Build interdisciplinary partnership & support skills between pediatricians & therapists.
- Present an early diagnosis module for common developmental impairments in the first year.
- Capacity building towards this end through interactive work stations.

**TOPICS:**

- Developmentally supportive care in NICU- Definition & road map for implementation
- High risk neonate, definition, types & follow up -where, how [Developmental monitoring], how long [Developmental surveillance]?
- Developmental assessment tools- From BSID-3 to NBA- why so many? Seeking Clarity amidst grey zones of Confusion.
- EBM – What evidence do we have for benefits of early intervention?
- Early Prediction of cerebral palsy - how early can early be & is it possible?
- Prevention of Mental retardation- Pediatrician's Role in Indian scenario.
- NICU intervention, Infant stimulation & early Intervention - A continuum of developmental services. How can pediatricians help?
- Retinopathy of prematurity, current scenario, screening & culturally appropriate management protocol-West versus India
- Newborn hearing & Pre speech behavioral assessment – when, why & how
- Global developmental delay- should this term be retained? Debate
- Has neonatal care increased disability rates- who will take the call for resuscitation?
- Ethical dilemma- Panel discussion
- Hands on workstation with case scenario



## THEME:

### INTERVENTION PLANNING & FINDING SOLUTIONS FOR DIFFICULT THERAPEUTIC SITUATIONS ENABLING EFFECTIVE MANAGEMENT.

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Target audience – All therapists, General practitioners, Special educators, Post graduate students from therapy specialties.

Course Level - Advanced for seniors & teaching faculty

#### OBJECTIVES:

- To familiarize therapists with the concept of functionality as per ICF.
- To introduce functional classifications as means to the end of optimality & not normalization.
- To enhance quality of developmental care efforts beginning from where it all begins-NICU.
- Identify common problems in handling in therapeutic situations & their management.
- Capacity building towards these ends through interactive work station

#### TOPICS:

- GMFCS & other functional assessments. How do they help therapy planning
- Theoretical framework for interventions
- Motor development- what is new in our understanding?
- Neonatal interventions
- Intervention Planning as per ICF
- Process model of Developmental assessment for therapist
- Understanding seizure disorder in Cerebral Palsy from a therapist's perspective
- Case presentations- GMFCS mixed type of cp cases across different age groups treated in Indian scenario- Multi disciplinary versus inter- disciplinary versus trans disciplinary models



## THEME: THERAPY IN CLINIC

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Target Audience : Final years & Interns from therapy specialty

Course Level - Basic

### TOPICS:

- Why a basic course
- GMFCS, MACS, CFCS (What is it? How do you apply?)
- Goal setting with Clinical Examples
- ICF in Clinic
- Eclectic Indian model – Video demonstration
- Videos of patients - Delegates tell the Classification
- Videos of patients - Delegates tell the ICF assessment
- Postural control and its understanding in practice
- Can we look beyond Methods & techniques towards child development ahead of disability?
- New definition of Cerebral palsy
- Startles & seizures
- Communication with parents
- Age appropriate communication with children
- Managing kids with difficult behavior, crying & non-cooperation
- Feeding difficulties
- Hands on demonstrations



**THEME:**  
**VISION AND NEURO IMAGING**

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Target Audience : Pediatricians, Neonatologists, Pediatric Neurologists, Developmental Pediatricians, Post graduate students in Pediatrics, Senior therapists.

**TOPICS:**

- Eyes-the window to Brain- Unraveling the Brain-Vision Mystique
- Vision and learning in children with CP
- Common vision problems in children with CP in India
- Protocols for clinical and functional assessment
- CVI
- Principles of early intervention
- Imaging in neuro developmental disorders- does seeing the brain images answer riddles?
- Introduction to neuro imaging from basics to advanced, from low cost to high cost technology. Where are we in India?
- Role of MRI in diagnosis & management of cerebral palsy-Reading the structure-function dilemma correctly
- Clarity & confusion of a normal MRI in an established syndrome. What should be done?
- Functional MRI & PETSCANS- how far do they take us in conclusions on etiopathogenesis?
- Case Scenario. Role of MRI in diagnosis & management

**THEME:**  
**THE PIVOTAL JOINT IN CEREBRAL PALSY- HIPS.**  
**FROM BASICS TO RESOLVING DIFFICULT CHALLENGES.**

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Target audience – Orthopedic surgeons, PMR specialists, Therapists, Pediatricians, developmental pediatricians, Post graduate students in Pediatrics & orthopedics, Orthotists.

Course Level - Advanced

**OBJECTIVES:**

- To define importance of hip abnormalities in cerebral palsy & evolve guidelines
- Identify major diagnostic dilemmas & their resolution.
- Build interdisciplinary partnership & support skills between orthopedic surgeons, PMR specialists & therapists Present an early identification module for common hip abnormalities from as early as the second year
- Capacity building towards this end through interactive work stations

**TOPICS:**

- The pivotal role of Hip in the bio mechanics of normal walking
- Hips in different types of gaits in cerebral palsy (this will cover in different types of CP)
- Hip surveillance in CP -why, when, how & How long?
- Hips after SDR & ITBP & in wheel chair enabled sitting (role of hip in sitting balance).
- Botulinum toxin & injection phenol (used commonly in government set ups where affordability is an issue) for hip abnormalities- positives & pitfalls.
- Surgical management of hip abnormalities with special emphasis on GMFCS 4 & 5
- Therapy guidelines for hip management across GMFCS levels & life span
- Are we neglecting Spine in Cerebral palsy management?
- Orthotics for hip & spine management
- Panel discussion on a rough draft of protocol for hip management in CP

THEME:  
UNCOVERING DISABILITY ICEBERG-AUTISM & ADHD

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**TOPICS:**

- Autism- Hidden challenges in India
- Early Diagnosis of Autism-positives & pitfalls
- Etio-pathogenesis of Autism- Recent advances
- Family perspectives in Autism- Coping as a continuum across life span
- Applied Behavioral Analysis
- Spectrum disorder- Classroom management
- ADHD- Etiology, incidence, Cultural nuances affecting diagnosis & management
- Communication Difficulties- Correlation with attention & Behavior
- Class room management
- Pharmacological management of Attention & Hyperkinesis
- Case scenarios

# CONFERENCE HIGHLIGHTS



- Scientific paper podium presentations
- Family Forum & public awareness meeting & Media briefing
- Instructional course – Adult C.P care
  1. To do or not to do, when & how?
  2. Musculoskeletal changes in cerebral palsy with Growth
  3. Strength training & spasticity- where are we heading to?
  4. Handling the teenagers during the Black hole of transition- Can we make it easier for parents?
  5. Growth & Obesity in cerebral palsy- Dealing with double trouble with aging.
- Developmental pediatrics-History, growth & future in India
- Keynote address by Prof.Peter.L.Rosenbaum Knowledge -translation in applied child development -How, why & to whom should this matter? Global Perspectives.
- Neuro developmental disorders: Epidemiology, etiology & interventions – sharing experience from Uganda
- Symposium on Neuroplasticity:
  1. Harnessing Neuroplasticity for maximal developmental gains (Vision, Cognition & Speech)
  2. Learning Induced Plasticity: Basis for Activity Based Interventions in Neuro developmental Disorders
  3. Neuroplasticity & Sensory - motor domain-what should be known to Orthopedic surgeons?
  4. Neuroplasticity- Behavior & Seizure disorder- A Pediatric neurologist's perspective
  5. Neuroplasticity - a Neurosurgeon's perspective
  6. Neuroplasticity &its role in early intervention -A Therapist's perspective
- Symposium on Endocrines-Brain body Interphase
- Developmental Delay and Hypothyroidism
- Endocrinial Path Way in Causation of Cerebral Palsy in Preterm & term infants- Neuro protection Measures
- Endocrinial manifestations of Down syndrome & Prader Willi syndrome
- Symposium on Developmental care-Towards Reaching the unreached
- Developmental pediatrics training for pediatricians- A road map

# CONFERENCE HIGHLIGHTS



- IDDEA Module
- RBSK
- Towards a national child registry
- Enabling communication with assistive technology
- W.H.O. guidelines on Wheel Chair Adaptation
- Orthotics – The biomechanical framework for their Utility in Cerebral palsy.
- Group therapy with in a psychosocial & developmental framework. Video presentation
- Exercise prescription for adults with neuro developmental disabilitiesSymposium on Context, genetics of developmental disorders & International Disability policy
- The Neuroscience of Yoga.
- Context in ICF framework for health as well as disability. New horizon for therapeutic interventions –Theme lecture
- Childhood Disability: A fundamental issue in national and international public health Policy
- Genetics of Neuro developmental disorders-Recent advances in early diagnosis- Riddles & solutions
- Intervention types: orthodox/heterodox- road map for future action
- Newborn screening for developmental disorders in India- catching them early for maximal developmental care.
- Fetal Origin of diseases
- Prevention of developmental disorders in India in 21st century- Can we do it?
- Preterm birth syndrome- Feasible Solution anywhere in the Horizon
- App based Obstetric surveillance

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## FOR FURTHER DETAILS VISIT

[www.iacpcon.in](http://www.iacpcon.in)



## PREVENTION OF NEURODISABILITIES - 21ST CENTURY POSSIBILITIES AND CHALLENGES IN INDIAN CONTEXT



**DR. G. SHASHIKALA- PRESIDENT-IACP**

**P**revention of Neuro disabilities requires accurate identification of causes and antecedents by trained professionals. It is also necessary to understand the biology of birth and neonatology; taking the help of diagnostic advances such as different trimester scans, biochemical tests, MRI and genetic testing & Optimal prenatal & antenatal care for the mother.

But in reality, these medical and diagnostic advances don't reach every strata of society. Knowledge on preventable causes is not reaching common masses due to informational barrier. For e.g, treatable causes like anemia, folate deficiency, Rh incompatibility, subclinical thyroid deficiency in the mother, hyper coagulatory state of pregnancy, TORCH infections, non -infective fever before & during delivery are frequently overlooked.

Stress to the mother during pregnancy both micro [Innate to the biology of pregnancy] as well as macro [ environmental or contextual] should also be considered as a risk factor as higher glucocorticoid hormone levels (as seen in stressful conditions) can reduce fetal nutri-

tion across placenta, leading to low fetal weight. Stress is known to decrease both the no of dendrites & dendritic spines in a neuron as well as its synapse forming ability. Corticotrophin releasing factor which is called the placental clock is crucial to fetal well-being to be delivered before the uterine environment gets unsupportive to the viability of fetus. It is now known that low birth weight mothers tend to compromise the growth of fetus in the last trimester.

Fetus is a total parasite on the maternal nutrients & any substrate deficiency can upset the homeostatic relation between the mother & fetus. 24% of our births are still due to prematurity & consanguinity is a huge social practice which is hard to change unless community gets aware of its role. The excessive trend for opting for boys is again a significant factor in developmental disabilities increasingly seen in boys as the male fetus is more vulnerable to brain injury.

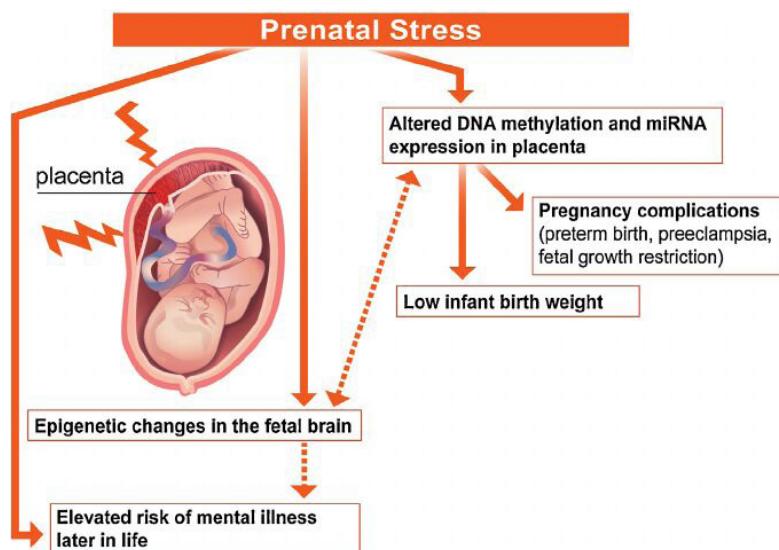
This current scenario warrants developing effective, efficient and ecologically valid prenatal screening and intervention strategies which,

in turn, have the potential to prevent a range of neuro-developmental problems arising in clinically significant proportion of children. It is important to encourage pregnant women to look after themselves nutritionally & emotionally and to seek help if needed. This dictates that the health professionals should sensitively question pregnant women at first contact, with regards to their emotional history and current emotional state.

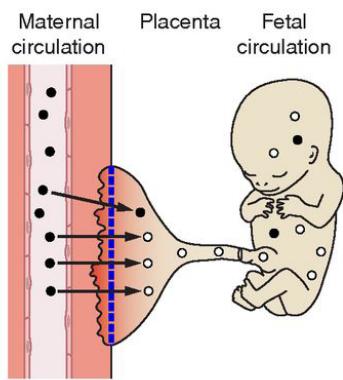
The role of obstetricians & neonatologists needs to be well-defined which would pave the way for primary prevention while simultaneous efforts are taken for secondary and tertiary prevention. Parents, professionals and policy makers need to work hand-in-hand in these efforts of prevention and bridge the commonalities to reach to a common consensus regarding prevention of neuro disabilities.

In a clinical scenario where there is one doc-

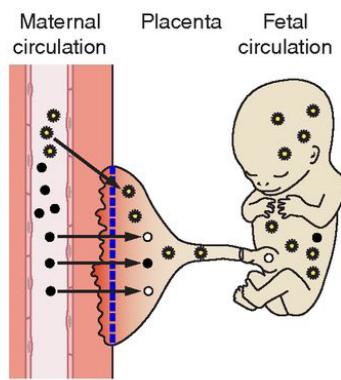
tor –that too likely only an MBBS for every 10,000 population, doctors forced to see 100 patients in a span of 4 hours of OPD, all these recommendations are not practically easy to implement unless we have high priority placed in our medical curriculum on anticipatory & preventive healthcare training on a war foot as well as create community awareness. Eligible couples & their families need to be targeted at every possible opportunity. This should be IACP's priority for the next few years at least!



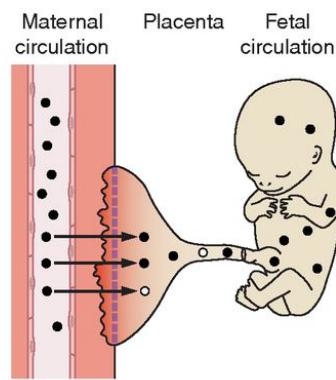
#### A Normal placental 11 $\beta$ -HSD2



#### B Dexamethasone



#### C Deficient placental 11 $\beta$ -HSD2



----- 11 $\beta$ -HSD2 barrier

● Active cortisol

○ Inactive cortisone

● Dexamethasone

----- 11 $\beta$ -HSD2 deficiency

## CEREBRAL PALSY : CAN WE DECREASE THE RISK OF DEVELOPMENT?



**DR SUREKHA RAJADHYAKSHA**

Professor in Pediatrics & Chief Pediatric Neurology, Bharati Vidyapeeth, Pune

Consultant in Pediatrics, Pediatric Epilepsy & Neurology,

Deenanath Mangeshkar Hospital, Pune

**T**he etiology of Cerebral Palsy (C.P.) is multifactorial and may be congenital, genetic, inflammatory, infectious, anoxic, traumatic or metabolic. The injury to the developing brain may be prenatal, natal or postnatal.

Majority of the cases are due to prenatal injury with less than 10% being due to significant birth asphyxia. Perinatal asphyxia refers to hypoxic ischemic neonatal encephalopathy (HIE) due to deprivation of oxygen for a sufficient length of time leading to neurologic injury. Most cases of perinatal asphyxia are not necessarily caused by intrapartum events, but rather, associated with underlying chronic maternal or fetal conditions. Prematurity and low birth weight increases the risk of CP, and this risk increases, with decreasing gestational age and birth weight. Although term infants are at relatively low absolute risk, term births constitute the large majority of all births, as well as approximately half of all births of children with cerebral palsy.

Prenatal maternal chorioamnionitis is also a significant risk factor for cerebral palsy in term infants and preterm infants. Cystic periventricular leukomalacia (CPVL) is a risk factor for developing CP. Prenatal risk factors include intrauterine infections, teratogenic exposures, placental complications, multiple births more in twins and triplets than singletons , and maternal conditions such as mental retardation, seizures, and thyroid dysfunction.

Perinatal risk factors are infections, intracranial haemorrhage, seizures, hypoglycemia, hyperbilirubinemia, and significant birth asphyxia. Postnatal causes include toxic, infectious meningitis, encephalitis, traumatic such as drowning. There is also a relation between coagulopathies, perinatal arterial ischemic stroke, due to prothrombotic factors causing cerebral infarction and particularly leading to hemiplegic type of CP. Postnatal events account for 12% – 21% of CP. **But in a large number of cases, the cause of CP remains unknown**

- Measures can be taken to prevent both congenital and acquired Cerebral Palsy, but more options seem to be effective only on curtailing acquired cases. In the case of genetic predisposition, a couple who is aware that they have a predisposition should plan whether they would like to conceive, or adopt children as a form of prevention to some extent.

- Low birthweight - Children who weigh less than 2,500 grams at birth, and especially those who weigh less than 1,500 grams have a greater chance of having CP.

- Premature birth - Children who were born before the 37th week of pregnancy, especially if they were born before the 32nd week of pregnancy, have a greater chance of having CP. Intensive care for premature infants has improved a lot over the past several decades. Babies born very early are more likely to live now with advance in technology but put them at risk for CP.

- Multiple births - Twins, triplets, and other multiple births have a higher risk for CP. Assisted reproductive technology (ART) have a greater chance of having CP. Most of the increased risk is explained by preterm delivery or multiple births, or both

- Infections during pregnancy - Infections can lead to increase in cytokines and cause inflam-

mation, which can lead to brain damage in the baby. Some types of infection that have been linked with CP include viruses such as chickenpox, rubella, and cytomegalovirus (CMV), and bacterial infections of the placenta, fetal membranes, or maternal pelvic infections.

- Jaundice and kernicterus. When severe jaundice goes untreated for too long, it can cause kernicterus.

- Medical conditions of the mother - Mothers with thyroid problems, intellectual disability, epilepsy or seizures have a slightly higher risk of having a child with CP.

- Birth complications - Detachment of the placenta, uterine rupture, or prolapse of umbilical cord during birth can disrupt oxygen supply to the baby and result in CP.

### Acquired CP

A small percentage of CP is caused by brain damage that occurs more than 28 days after birth, called acquired CP, and usually is associated with CNS infections meningitis or encephalitis or head injury.

### Prevention:

#### Before Pregnancy

- Any infection, in the mother should be treated promptly. Rule out retroviral infections.
- Get vaccinated for diseases such as chicken-



pox and rubella before becoming pregnant.

- If assistive reproductive technology (ART) infertility treatment are used to get pregnant, limit ways to reduce the chance of a multiple pregnancy.

#### During Pregnancy

- Get regular prenatal care, both for your health and for that of your developing baby.
- Adequate nutrition, treatment of anaemia or any vitamin deficiencies
- Wash your hands often with soap and water to help reduce the risk of infections.
- Contact your physician if you get sick, have a fever, or have other signs of infection during pregnancy.
- A flu shot can protect pregnant women and their unborn babies, both before and after birth.
- Check for difference in the blood type or Rh incompatibility between mother and baby. Doctors can treat the mother with Rh immune globulin when she is 28 weeks pregnant and again shortly after giving birth to prevent kernicterus from occurring.
- Prolongation of pregnancy in case of preterm labour with 17 d progesterone, Ca channel blockers, cervical circlage etc
- Precept project for prevention of CP in preterm labour by administering Magnesium sulphate, antenatal steroids to mother can reduce chance of developing CP.
- Good antenatal care and hospital based de-

livery essential. Obstetric emergencies are the most common and are not always preventable. Screening high-risk pregnancies with ultrasound, Doppler velocimetry, and antenatal testing can aid in identifying fetus at risk. Interventions such as intrauterine resuscitation or operative delivery may decrease the risk of severe hypoxia from intrauterine insult and improve long-term neurologic outcomes.

#### After the Baby is Born

- Learn how to help keep your baby healthy and safe after birth.
- Induced hypothermia for a selected newborns with HIE, caffeine for extreme low birth weight neonate.
- Check for Rh or blood group type incompatibility and in case baby gets jaundice, monitor the bilirubin levels and steps taken to prevent kernicterus that potentially can be prevented.
- In case of low birth weight or infant of diabetic mother, careful monitoring of blood sugar and prompt treatment of asymptomatic hypoglycaemia is imperative and can prevent hypoglycaemic brain injury.
- Administration of Vitamin K soon after birth can prevent intracranial haemorrhage as a manifestation of Late onset Haemorrhagic disease of newborn
- Make sure your child is vaccinated against infections that can cause meningitis and encephalitis, including *Haemophilus influenzae* type B



(HiB vaccine) and Streptococcus pneumoniae (pneumococcal vaccine).

- Prevention of injuries.

- o Make living areas safer for children by using window guards and using safety gates Carefully watch young children at all times around bathing area and during swimming

- o Make sure your child wears a helmet while riding a bike.

- o Never hit, throw, shake, or hurt a child.

Often the cause of cerebral palsy is not known and nothing can be done to prevent it. Cerebral palsy is mistakenly attributed to act of omission or commission by obstetrician. Current strategies to minimise the incidence and interventions have been summarised

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NOTICE  
BCDC SURVEY AND GBM MEETING



(1)

**CALL FOR IACP GENERAL BODY MEETING:** All IACP members are requested to be present for the General Body Meeting scheduled to be on first day of conference – Saturday, 26th November 2016 between 5.30 to 7.30 pm at Sagar Memorial Hall.

(2)

Two of our research papers BCDC and IDDEA have been selected for scientific poster presentation at AACPDM meeting at Florida for this year. It will be presented by Dr. Meenakshi Girish (Associate professor of paediatrics at NKP Salve institute of Medical sciences, Nagpur)