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Fundas of Parenting

February 2021

Hello all. It gives me immense pleasure that the previous edition of the January newsletter was shared across many and helped you all be empowered with knowledge. This month we bring forth to you another issue, addressing a lot more on child development. Our focus is on hearing in children. We have witnessed a lot of advancement in the field of Hearing in every aspect. From routine screening, early detection, intervention, improvised hearing aids & latest cochlear implants to tremendous work on post implant therapy and language development.

This has allowed many hearing impaired children to lead a near normal life reaching their full potential. But, despite such tremendous advancement in the field , India still has around 63 million people with significant hearing loss. There seems to be quite a gap between the latest advancement and its reach to a common man. To help bridge this gap, we have several programs being designed by the government. One such successful program is the universal centralized hearing screening program for every new-born baby , launched by the state of Kerala. Marking its milestone, Kerala was declared as the FIRST HEARING FRIENDLY STATE in the country on December 20 th 2020. It's important for other states to in-corporate similar models and very soon reach our dream of HEARING FRIENDLY INDIA.

Another important aspect of development is nutrition. In this edition, Our focus on nutrition covers weaning food for children. Having said the importance of breastfeeding , it's also crucial children get introduced to the right kind of weaning food , at the right time , in the right way. Nutrition plays a crucial role in growth, development and health. Introducing the right kind of diet , right from the early years, helps the taste buds develop the right palate to healthy, nutritious food.

On this note, I hope you enjoy reading this issue as much as we enjoyed compiling it.

DR NANDINI MUNDKUR,
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CO-FOUNDER TOTSGUIDE

EDITORIAL BOARD

Over a course of time, we will be sharing knowledge on various aspects of child growth and development. As the previous year ends with a lot of despair, we hope this new year dawns great strength and builds more confident parents.

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LISTEN

HEARING IN CHILDREN ALL EARS PLEASE!!!

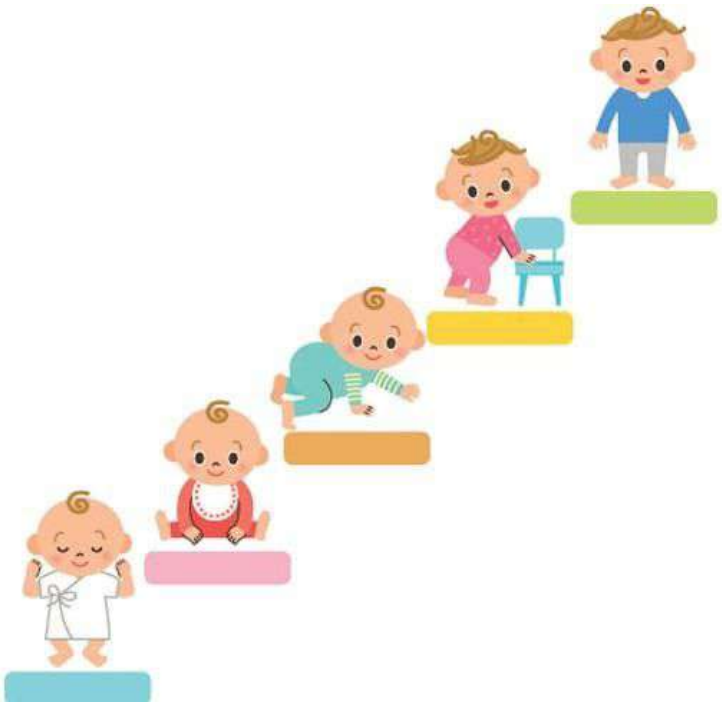
Hearing is one of the most important senses, as the ability to hear, connects us to the world by communication- enabling one to socialize and stay connected.
Hearing is very critical to speech and language development, learning and communication. Babies learn through sounds, and in the first few years of life, normal hearing is an absolute must for kids' cognitive, social, emotional and speech-language development.
Significant hearing loss can occur in 1 to 2 per 1000 newborns and 2 to 5 per 1000 young children, and if detected early can be addressed by early intervention to maximize the child's development and help to achieve the child's full potential.

How does normal hearing develop?

- Studies have shown that the auditory system structures start to develop at 8-9 weeks gestation which continue throughout the first and second trimesters.
- By 16-18 weeks of gestation, the auditory system starts functioning and the fetus starts hearing sounds – like mother's heartbeat, intestinal sounds and voices. These sounds appear muffled as sound has to pass through the amniotic fluid.
- The structural parts of the auditory system develop in the first 20 weeks of gestation and the neurosensory part develops after the 20 th week of gestation.
- The period from the 25 th week of gestation to 5-6 months age is the most critical period for the development for the auditory systems.
- Unlike the visual system, the auditory system requires outside auditory stimulation like speech, music, voices, meaningful sounds for optimal development.
- Babies' hearing is fully functional from birth. It is very important to know what to expect as a baby grows, because hearing problems can go unnoticed for a long period of time, and can cause significant delay in the development of voice, speech and language skills.

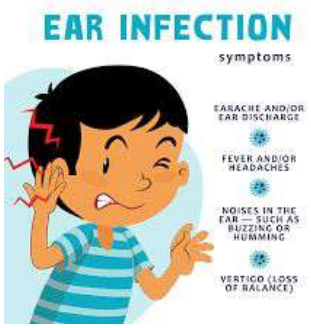
Hearing – Speech and language milestones that should be reached in the first years of life include:

- Most newborn babies startle to sudden loud noises, may blink, cry if quiet or quieten if crying.
- By 3 months, a baby usually recognizes a parent's voice, and turns to sound to make the level of the ear.
- By 6 months, babies can usually turn their eyes or head toward a sound and imitate sounds
- By 12 months, babies can usually imitate some sounds and produce a few words, such as "mama", "Baba", and can turn to his/ her name
- Between 1-2 years, babies can form more words and have increasing vocabulary, making 2 word phrases.



Absolute Red Flags in Development of Hearing, speech and language need immediate attention.

- No response to sound at any age
- No vocalisation by 6 months
- No polysyllabic babbling by 12 months
- No spontaneous single words by 18 months
- No spontaneous phrases by 24 months
- No spontaneous sentences by 36 months
- Any loss of babbling, single words or phrases at any age
- Any loss of comprehension, including responding to name, at any age.
- Poor voice quality at any age



Risk factors for hearing problems include:

- Family history of hearing problems
- Prematurity and Low Birth Weight
- Maternal infections- Intrauterine infections like Cytomegalovirus,
- Rubella
- NICU stay for more than 5 days
- Problems during NICU Stay
- Very high levels of jaundice in the neonatal period
- Infections like Meningitis, medications than can cause affect hearing
- Congenital anomalies of the ears, face and head
- Genetic syndromes that can cause hearing loss
- Frequent ear infections in childhood

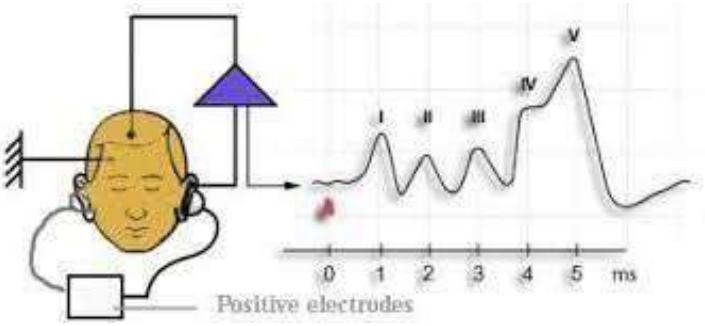
Why are hearing tests important??

- Newborn Hearing Screening helps to identify significant hearing loss
- early on, so that intervention can be initiated early.
- There is a chance that significant hearing problems could go unnoticed
- and undiagnosed for months or years.
- It would be an understatement to mention that, an early diagnosis of a
- hearing problem is an absolute must, as delays can cause profound
- negative impact on the child's speech and language development, social
- skills, reading and learning skills, and overall self esteem and cognitive
- development of the child.
- So getting help early is the key and helps in improved language,
- behavioural, cognitive and academic outcomes.

There are a lot of myths and misconceptions about HEARING AND HEARING SCREENING in children. Let us try to address a few of them:

- Hearing loss does not occur very often, so newborn screening is not necessary
- There is no rush to identify hearing loss, it can wait
- Parents can identify hearing loss in children by noting their response to sound
- Newborn hearing screening is normal, so there can be no problem later
- Boy babies speak late.
- Hearing tests are difficult to perform in babies
- Babies cannot use hearing aids

All the above mentioned myths are untrue and we can realise the facts after we have understood the rationale of screening tests and the paramount importance of hearing in a child's development.



What are the Newborn Hearing screening tests:

1. OAE (Otoacoustic Emissions)
2. ABER(Auditory Brainstem Evoked Response)

Both these tests are effective, painless, inexpensive, reproducible, portable and automated.

Newborn hearing tests are painless and can be performed prior to discharge from the hospital. It is called OAE(Oto-Acoustic-Emissions), takes just a few minutes, and is ideally done in the first 4 weeks. A small soft-tipped earpiece is placed in the baby's ear and response noted. If the test is inconclusive (REFER), it does not always mean that The baby has a problem.

It could be because of a crying restless baby, the baby's ear has fluid or wax causing temporary blockage or background noise. If the repeat test also comes as REFER, then a confirmatory test called Auditory Brainstem Evoked Response(BERA), no later than 3 months of age

These tests are completely safe for babies.Recommended TIMELINE FOR HEARING EVALUATION IN EARLY INFANCY

Normal hearing has a threshold of -10 to 15 Db. The severity of the hearing loss can be defined as follows:

No hearing loss – 10 to 15 dB

Slight 16 to 25 dB

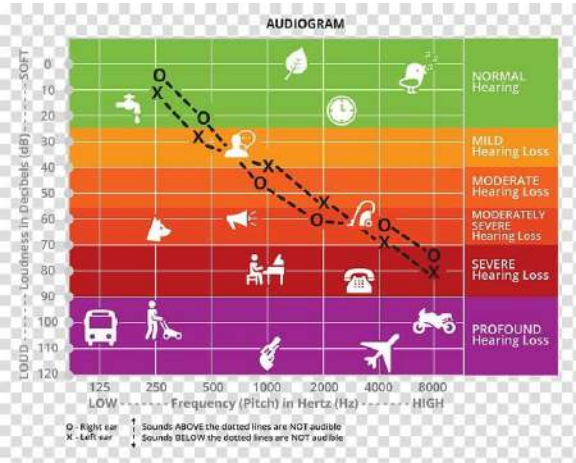
Mild 26 to 40 dB

Moderate 41 to 55 dB

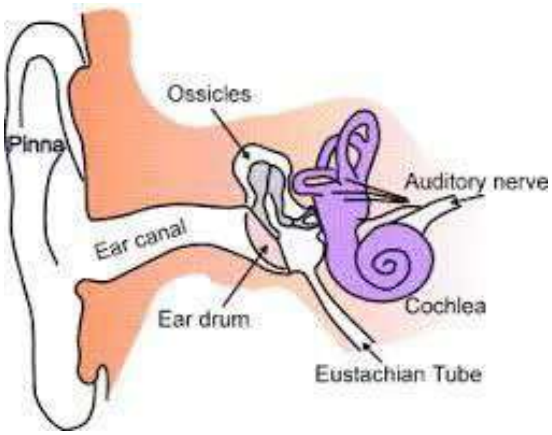
Moderately severe 56 to 70 dB

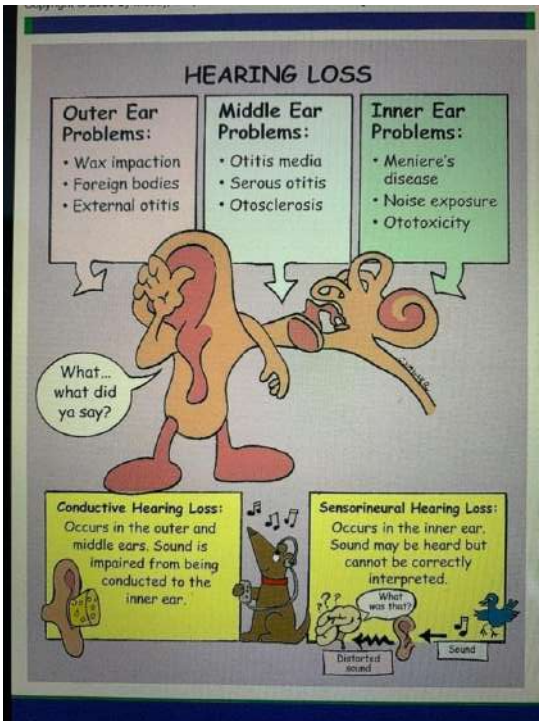
Severe 70 to 90 dB (61 to 80 based on WHO definition)

Profound > 91 dB (>80 based on WHO definition)



outline of external/middle/inner ear and auditory cortex





Types of Hearing loss in children include:

- Conductive Hearing loss (problems in the external ear canal/ middle ear)
- Sensorineural hearing loss (problems in the auditory nerve and inner ear)
- There is also another important condition called Auditory Processing disorder, where the structures are normal, but there is a problem in the way the brain handles the auditory signals. These children have trouble understanding speech

Degrees of Hearing loss can vary from mild, moderate, severe to profound hearing loss.

Hearing loss can be unilateral or bilateral, sudden or progressive, symmetrical or asymmetrical and congenital or acquired

Hearing problems can happen at any time during childhood and hence it is important to monitor the child's speech and language milestones at every health visit.

In older children, signs of a possible hearing problem can be

1. Not responding to name
2. Talking loudly and listening to television or music at a high volume
3. Inattentiveness or poor concentration
4. Difficulty in localizing the direction of sound
5. Mispronouncing words
6. Deterioration in school performance

Conductive hearing loss: Causes

1. Outer ear : Congenital anomalies, infections, trauma, blockage of the external auditory canal
2. Middle ear: infections(Acute Otitis Media), eardrum perforations, tumours, congenital malformations like ossicular fixations, and dislocations.

Sensorineural hearing loss : Causes

1. Hereditary causes: syndromic(associated with other abnormalities) causes constitute one-third , and two-thirds nonsyndromic
2. Acquired causes of SNHL : Prematurity, infection, high jaundice, ototoxic medications, noise and tumors

Central causes of Hearing loss: Central auditory processing disorder(CAPD) is due to defects in the processing of the auditory information

A specific mention is made herein about NOISE INDUCED HEARING LOSS(NIHL). Constant exposure to loud noises, for example, with the use of personal listening devices, can cause high frequency SNHL

There are clear cut guidelines regarding the limits of sound exposure: for a typical listener, with supra-aural headphones at 60 percent maximum volume, should be limited to less than one hour per day

- For the typical listener, listening to a digital earphone with 70 percent of maximum volume should be limited to less than 4.6 hours per day, and at 80 percent of maximum volume should be limited to less than 1.2 hours per day, in order to reduce the risk of NIHL
- A short blast of loud noise can cause severe to profound SNHL, pain and usually involves exposure to noises above 120-155 dB(eg. Firecracker exposure or ambulance siren). Hence hearing protection in the form of muffs / earplugs are highly recommended when one is exposed to high pitched sounds.

Hearing risk assessment and periodic screening should be done for all children between 4 and 21 years of age. No child is too small to get hearing evaluated. Formal audiological testing can be done by different methods like pure tone audiometry, speech audiometry, behavioural audiometry, play audiometry, impedance audiometry, electrophysical studies like OAE and BERA. Children who have abnormal results should be referred immediately for early intervention. Screening for genetic causes and other associated anomalies should be done. Full comprehensive eye evaluation should be done by an ophthalmologist as these kids rely heavily on their sight for communication and learning.

A multidisciplinary team that includes audiologists, otolaryngologists, speech pathologists, educational specialists, genetic counsellors and education specialists should be involved in the management of children who have hearing loss.

Hearing aids are the primary form of amplification devices used which improve hearing, and using them before 6 months of age is known to improve the language outcomes in children.

Cochlear implants are surgically implanted prosthetic devices that electrically stimulate the nerve and provide hearing, Bilateral cochlear hearing implants have been recommended as the child is able to hear better in conditions of background noise,(like classrooms, playgrounds) and localise sound better.

HELLEN KELLER

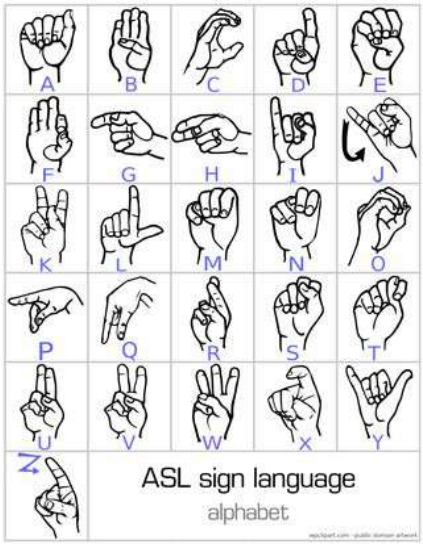
Hellen Keller is considered by many to be a leading figure of the twentieth century. When she was 19months old, an illness robbed her of her vision and hearing. Thanks to the pioneering strategies developed by Perkins' first director, Samuel Gridley Howe, and the tenacity of Perkins alumna, Anne Sullivan, she became the world's best known individual with deaf blindness.

Today, she is still regarded as one of the most powerful and well-known advocates for people who are blind and deafblind. Her books and speeches have inspired millions. Keller published many articles, essays and books.

Through her tireless efforts, she transformed the way the world viewed people with disabilities. Keller received numerous awards throughout her life for her humanitarian efforts

This article is mainly intended to emphasise the importance of hearing in a child's overall development, the need for early detection and intervention.

These are a few sign languages for the hearing impaired to communicate. Let's learn them too and help make communication easier for them.



All India Institute of Speech and Hearing is one of the country's first institutes at Mysore, Karnataka in 1965. Thereafter, many centres have come across INDIA.

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AUDITORY PERCEPTION & PROCESSING

What is Auditory Perception?

Auditory perception is the brain's ability to interpret sound that is heard through the ears. It is about attaching meaning to the sound heard.

Why is Auditory Perception Important?

Auditory perception is very important and necessary for your child's language development, which is part of their overall development.

What are the aspects of Auditory perception skills?

1. Auditory Discrimination: Ability to differentiate between sounds of different frequencies, intensities and duration
2. Discrimination of speech in noise (figure-ground discrimination): Ability to selectively listen to speech in a noisy setting
3. Auditory closure: Ability to fill in missing sounds/ words to recognize the whole signal (Eg a degraded speech)
4. Auditory memory and sequencing: Ability to recall the heard information; ability to recall the order of sounds/ words
5. Auditory pattern recognition: Ability to recognize sounds patterns
6. Auditory separation: Ability to process an auditory message coming into one ear while ignoring a different message being presented to the opposite ear at the same time
7. Auditory integration: The ability to process information being present to both ears simultaneously with the information being presented to each ear being different.

Few suggested activities to develop auditory perception of your child include:

Reciting rhymes and poems
Playing with instruments
Playing sound games
Playing word games

What is Auditory processing disorder (APD) ?

A child with APD is able to hear but struggles to process the information received from the ears.
Some parents may find that their children have problems with auditory perception. Here are some common manifestations of children who struggle with auditory processing;

Things to look for/ Signs and symptoms of APD:

The signs and symptoms of APD can range from mild to severe and it may vary from child to child. Children with APD may show many of the following characteristics:

1. Asks for frequent repetition
2. Difficulty following conversations
3. Takes a longer response time during conversation
4. Finds it hard to express himself clearly
5. Trouble hearing in crowded/noisy places
6. Appears to be inattentive or may be easily distracted
7. Difficulty following directions
8. May have reading, spelling, writing or other speech-language difficulties
9. Often mistakes two similar sounding words

If your child shows any of these concerns please consult your pediatrician. Treatment for APD is highly individualized and is based on the test results obtained during evaluations. Deficit specific therapy approach is followed.

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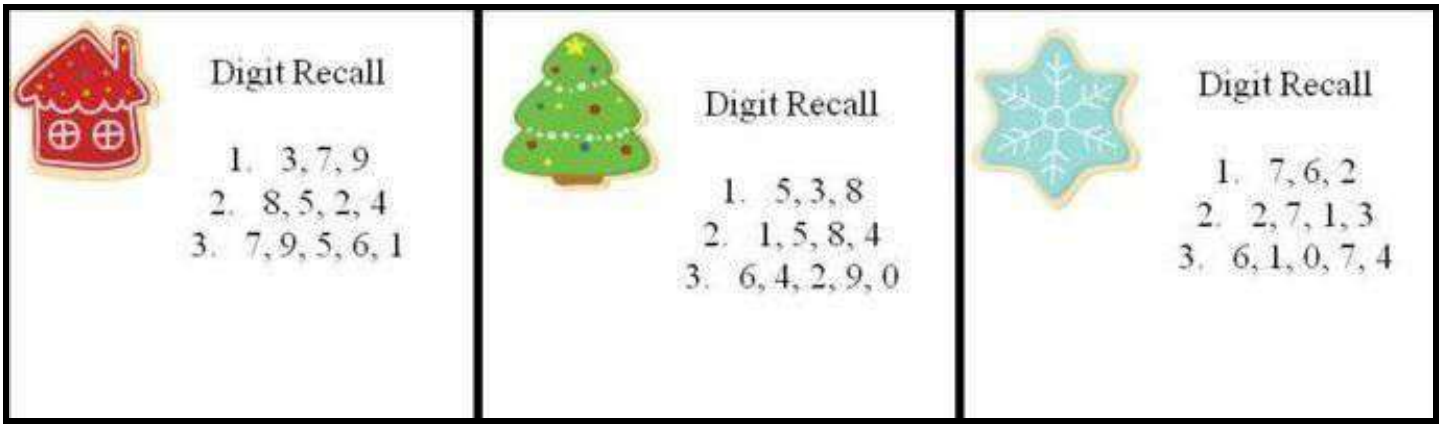
ACTIVITIES ZONE : AUDITORY PERCEPTION ACTIVITIES

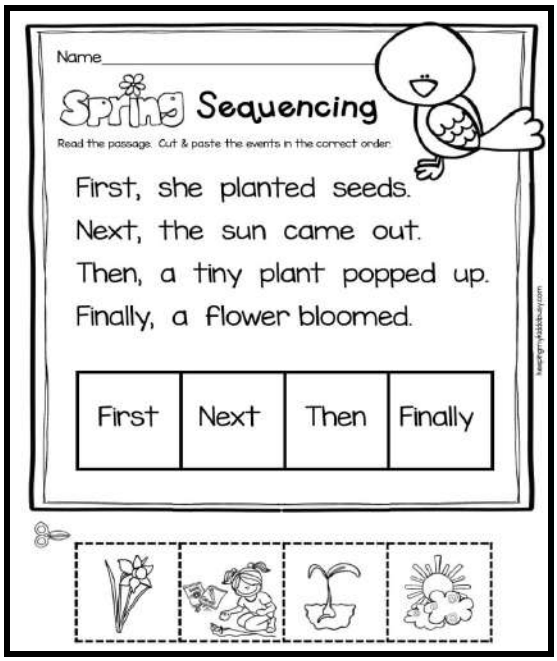
Try the below fun activities with your child (3-5 years) on Auditory perception skills

1. Read the below sequence of numbers one after another slowly . Ask your child to remember the numbers in the same order and repeat to you.

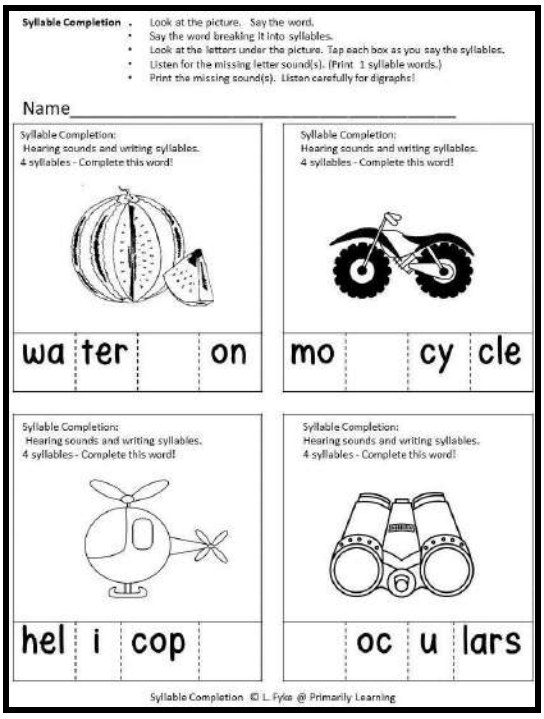


2. Find the correct picture that matches the phonics and colour it.

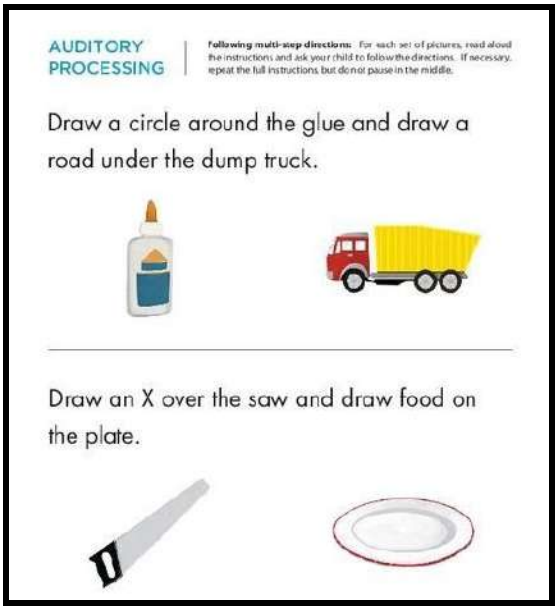
3. Read the passage to your child and ask the child to order the pictures in the sequence as heard.



4. Complete the missing words



5. Read the instruction aloud to your child and ask your child to follow.



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COCHLEAR IMPLANTATION

FAQS IN STEPS TO COCHLEAR IMPLANTATION AND AURAL REHABILITATION

The government has made several attempts to create awareness among parents and implement hearing screening at birth to identify hearing loss early. Though medical services are available, it is always the parent who is the first to report any suspect of hearing loss. Therefore, the role of parents/caregivers is important to make the appropriate treatment/management decisions for their child.

The following questions are put together from a parental perspective about steps after detection and rehabilitation of a child with hearing impairment.

1. How will you find the 'right' professionals for a child with severe hearing loss?

- Ensure you have the right team of specialists from various backgrounds and expertise to help your child. The professionals will guide you to make decisions about use of hearings aids, or cochlear implants.
- While hearing aids are a solution to children born with permanent hearing impairment, recently cochlear implant is another choice of treatment.
- Cochlear implant (CI) is an electronic device that is surgically implanted in the ear.
- After surgery, the child has to undergo regular training to listen and learn spoken language.
- The earlier the child receives a cochlear implant, the better the possibility of them developing spoken language like any other hearing child.

2. What are the candidacy criteria for cochlear implant surgically?

- Audiologically, any child with a severe to profound degree of sensorineural hearing loss with minimal or no benefit from a hearing aid is a candidate for cochlear implantation.
- The other important criteria are to determine if the inner ear structures and the auditory nerve are normal, based on CT and MRI imaging.
- Further, the opinions of the paediatrician, psychologists, and ophthalmologist is important for decision to implant.

3. What kind of vaccinations are required before surgery?

- In addition to the normal immunization schedule, the child will be given pneumococcal and haemophilus influenzae vaccination as they are the common organisms that can cause serious infection in the ear that can spread to the brain.

4. What are the cost and financial implications for a cochlear implant surgery?

- The cost of the device as such starts from Rs.5.45 lakhs approximately apart from the surgical cost. The cost of the CI device differs depending on the company that you choose to buy the implant.
- The main challenge for most parents is the cost of the implant which is still a problem in our country. But central and state governments have initiated the fully funded cochlear implant programs for individuals who fall in the low-income category.

5. What is aural rehabilitation?

- Once your child receives a cochlear implant, the next step is to teach them to "LEARN TO LISTEN" to sounds.
- Their brain must be trained to process the sounds and interpret them into meaningful speech. This process of learning is what is referred to as (re)habilitation of children with CI.
- A habilitationist/auditory verbal therapist/special educator are some of the terms that you will hear often, and they are the professionals who will train your child to listen and learn spoken language with CI.
- Rehabilitation helps the child to understand and learn spoken language with the help of a CI.

6. How long will my child need to attend CI rehabilitation post-surgery?

- Rehabilitation is an ongoing process that begins when the CI device is activated about 2-3 weeks after surgery.
- Every child is different, their learning processes are different, so the concept of one program fits all does not work. Therefore, the activities are planned based on each individual child.

7. What are the areas that are focussed during the rehabilitation sessions?

Rehabilitation sessions focus on the following areas.

1. **Listening**: Your child will be able to hear sounds with the help of the cochlear implant. However, there are stages of learning that they will pass:
    - Becoming aware of the environment
    - Learn to differentiate between sounds
    - To associate sound with meaning of words spoken by others
    - To understand spoken language.
2. **Language**: A child with CI will start to associate sound to meaning and they will start expanding their vocabulary. This development is important for more complex understanding of language as they grow older, for communication and literacy skills.
3. **Speech skills:** Your child will start hearing sounds and gradually also try to speak meaningful words with the help of the habilitationist/speech therapist. The words are formed combining different vowels and consonants specific to a particular language.

8. How long does my child have to wear the cochlear implant device?

The device must be worn by the child during all waking hours as it is the only way they will hear the outside world and learn. As, hearing is extremely important as it is the foundation for learning communication skills, social skills, and all other life skills.

9. How can I help to make listening easy for my child?

- Children learn language from an environment where there are lots of different kinds to sounds.
- Therefore, make them hear important sounds better by reducing background noise.
- At home, noise coming from TV sets, fans, refrigerators, air-conditions, and water running from taps can be minimized to improve the listening environment for your child with the CI device.
- This will help the child listen to a pure signal with reduced background noises and listening will be effortless for the child.

In conclusion, as parents you must learn to set reasonable expectations of your child's progress. Every child is unique and will achieve goals at different stages. Build a support system with your child as the focus, collaborate with the team of professionals who help your child achieve optimum listening and spoken language.

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PARENT'S PERSPECTIVE

HEARING LOSS - THE WAY FORWARD

Hearing impairment is quite a challenge. Early identification, early intervention and rehabilitation places a very crucial role in their lives. Looking at it from a parents perspective, we have Mrs. Suchitra answering a few questions for us.

Mrs Suchithra

1. What is hearing impairment and its associated co-morbidities?

In many cases, Hearing impairment is a neuro-developmental condition and therefore early identification and early intervention are extremely crucial for full and positive rehabilitation.
This includes- language, cognitives and socio-emotional needs which top the list. Like most neuro-developmental disorders the possibility of co-morbidities like cognitive delays, sensory processing disorders , Autism spectrum disorder, specific learning disability, Cerebral palsy, etc need to be watched out for in these children too.

2. What is the medical model and what are its limitations?

In the last 20 years or more there has been a tremendous process in early diagnosis of hearing impairment, which is highly commendable.
However, the model stops at the medical model and INTERVENTION EVEN TODAY STARTS ONLY BY THE AGE 6.
Crucial developmental years are lost and the myth that " Not much can be done" continues, which is an absolute fallacy.
The solution the medical model offers is cochlear implant. Followed by cochlear implant, there must be a structured intervention Model such as speech therapy &; special education to improve child's language & cognitive skills.

3. In your opinion, what are the practicalities of cochlear implant?

Once an early diagnosis of hearing impairment is made, Cochlear implant promises good clarity and communication abilities rather very quickly. But the reality is, not many can afford to buy and maintain such expensive equipment.
The initial prohibitive cost, in many cases, is borne by the family with a lot of hope. However, the family has no idea that the cost of replacement of a faulty part takes time and at least 20,000 INR for a unit to be replaced.
That in my opinion is so cruel to the parents who feel hopeless to replace a part many times. This is equally distressing for a bewildered child whose brain suddenly stops getting signals he/she got until then.
A medium range good Digital Aid along with good intervention is more useful for a family who cannot afford to bear these costs.

4. What is the role of speech therapy in a child with hearing impairment?

Very often parents are given to believe that speech therapy is the solution to get speech. While speech therapy provides the necessary inputs to get better articulation, it DOESN'T provide the crucial cognitive inputs.
They can only be provided by incessant exposure to normal everyday situations and age appropriate associated communication.
This helps to build a vast repertoire of receptive language, which in turn helps the child to be observant and aware of sights and sounds around him/her- thereby helping to build on their expressive language abilities.
Lot of online resources are made available and easily accessible to parents to improve interaction and optimize their potential.

5. What is the role of parent empowerment and family support?

There is no parent In the world who cannot speak and play meaningfully with their child. Even if the parent Is illiterate they can easily learn along with their child.
For this BOTH THE PARENTS have to be made partners in the process and not just the mother.
The Extended Family needs to be counseled in the case of joint family situations. They should provide positive support to the parents who will need a lot of emotional support and understanding.

6. What are the education and learning opportunities for these children?

Parents and families need to be guided on identifying specific interests and abilities from very early on, so that the child can get as many opportunities as possible to be the best they can be. Also, to be an active part of the mainstream society, Sensitizing teachers and peers early on plays a crucial role.
Based on their cognitive abilities and interests, they can be either in Inclusive school or special schools to help learning.

7. In the end, what is your take on the way forward?

In my opinion it's high time the medical model is carefully thought out to be replaced by the RIGHT based model (RPWD act 2016) parents and families need to be given all the necessary information on medical intervention options available (cochlear implant vs hearing aids) & necessary intervention which need to follow/given along with medical intervention and adequate empowerment & support.
With the right inputs early on, **THE SKY IS NOT THE LIMIT**.

DEVELOPMENT QUIZ

1. **What age should babies respond by gestures to traditional baby songs?**

2. **When do babies start localizing sound made above and below the ear?**

3. **Babies' first response to name occurs at what age?**

4. **Every newborn should have a hearing screening done. Is this statement TRUE or FALSE**

5. **Which of the following statements regarding Hearing Evaluation in Children is true?**

   Hearing evaluation should be done :

   - Only if hearing problem is suspected
   - All babies before 3 months age
   - Children with congenital anomalies of face
   - All children at 4 years age

6. **State which of the following statements are true except**

   - Hearing aids and Cochlear Implants can be used in infants less than 1 year
   - Frequent ear infections can cause hearing loss in children
   - Child's ear examination is normal, hence hearing should be normal
   - High noises can cause hearing loss in children

Compiled by :

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DCH, DNB (Paeds)
CCDD NDP fellow

Dr Haneesha Pinamraju
MD Paediatrics, MRCPCH(UK)
IAP NDP Fellow

Answers:

1) 6-9months , 2) 3-6months 3) 7 months 4) True 5) All are true 6) iii

THE EXPERTS SPEAKS

The critical period for identification and remediation of hearing loss is before the age of 6 months. Pediatricians are the first point of contact as the primary care providers for the newborn baby. Hence, it becomes the sole responsibility of the primary care physician, to evaluate the newborn baby for hearing loss, and to ensure early intervention is started.

Realizing the importance of hearing in a child's development and the need for early diagnosis, Dr. Abraham K Paul, a pediatrician based in Kochi, Kerala started the Newborn Hearing Screening Programme on 20 th January 2003.

Dr Abraham K. Paul
Consultant Pediatrician, Indira Gandhi Hospital,Kochi
Executive Director, Child Care Centre(Centre for Learning Disabilities) Kochi
Lead Expert, World Health Organisation for Newborn Hearing Screening in South East Asia Region

Excerpts from an interview with Dr Abraham K Paul :

1. What was the starting point and how did the implementation happen?

We initially started by implementing the Newborn Hearing Screening Programme in hospitals in the city of Kochi. It involved sensitizing the obstetricians, pediatricians, hospital managements about the importance of universal newborn hearing screening. Initially, the screening was started in 2 hospitals with a single screening equipment and a single trained person for administering the test. The first case was detected two months after starting the program in Kochi, when the program received a boost. It was extended to 32 hospitals with 5 training equipment and training personnel.

Screening for hearing impairment launched

By Our Staff Reporter

Abraham R. Paul, paediatrician, screening an infant for hearing impairment at the launch of the project in the city on Sunday.

Inauguration of Newborn Hearing Screening Programme by District Collector, Sri. Gyanesh Kumar IAS on January 20, 2003

2. How does the centralized Universal Newborn Hearing Screening program happen?

Hospitals with in-house screening facilities, screening is routine. The hospitals which had no in-house screening equipment needed a trained person coming regularly on fixed days of the week so that all hospitals in the district were covered. The centralized program is headed by a co-coordinator, who ensures that the trained people administer the test regularly and smooth functioning of the process happens with regular training. We also organize a sensitization program for creating awareness among hospitals & public.

3. Can you let us know which screening method is followed?

The protocol of screening is using the two-tier model - all newborns undergo OAE test (Otoacoustic Emissions) prior to discharge from the hospital. Babies, who fail the OAE test twice, undergo the ABR (Auditory Brainstem Response) test and the second OAE test not later than 6 weeks age (which usually coincides with the time of the first immunization visit). All NICU babies undergo ABR. Using this method, the incidence of hearing loss is about 1-2 per 1000 well babies and 1.5% among NICU babies.

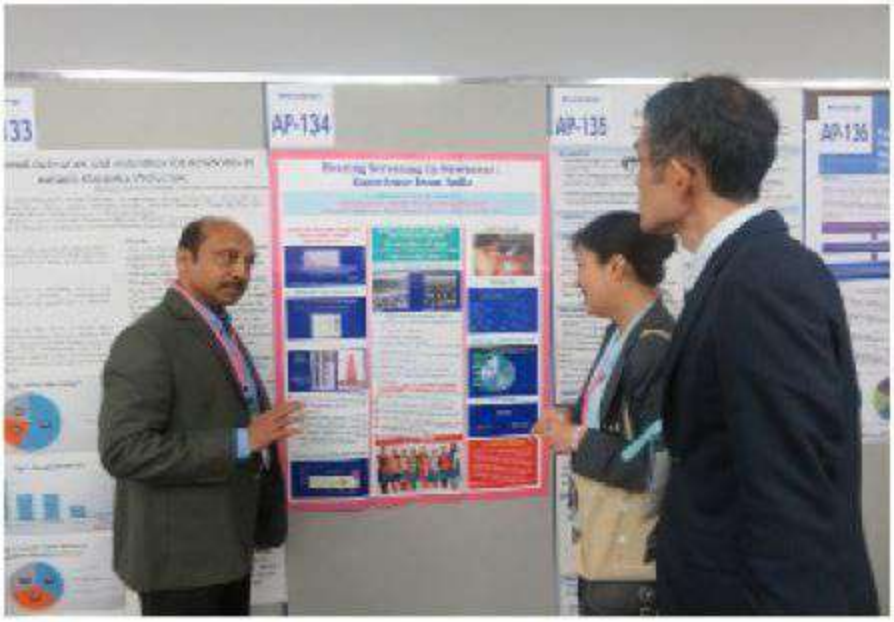
4. What were the factors that helped in the success of the program?

The first case of hearing loss, after the start of the program in January 2003, was widely projected through print and electronic media. Sensitization programs for parents, teachers and the public played a major role in the awareness build up.

Workshop Newborn Hearing Screening at Pedion 2009 Kochi

Ernakulam was the first district in the state to be declared Hearing Friendly in March 2014. It involved a concerted effort by IAP district office bearers, IAP members and Hospital managements. Kerala Government had already initiated the Newborn Hearing Screening Program in Government Hospitals with delivery facilities, Medical Colleges and ESI hospitals by the end of 2014.

Following the successful Ernakulam District Model, all other districts followed suit and Kerala was declared as the **FIRST HEARING FRIENDLY STATE** in the country on December 20 th 2020.



Presented Scientific paper on Newborn Hearing Screening -
Asian Society for Pediatric Research - April 18th, 2015, Osaka, Japan.

5. What were the practical difficulties and challenges faced during the implementation of the UNIVERSAL NEWBORN HEARING SCREENING Program?

The initial days had challenges as there was no awareness on the need for early detection and early remediation of hearing loss in children. With constant educational workshops, sensitization programs, the awareness increased and the acceptance for the hearing screening improved. Good meticulous organization and training with coordination, the program became successful.

The way forward, Dr Abraham K Paul opines that this is a successful model that can be replicated across all districts throughout the country, thus providing Universal Newborn Hearing Screening in the country.

It is cost-effective, centralized, and practically feasible helping children identified with hearing problems rehabilitated early.

Centralized Hearing Screening can be adopted by the Private Hospitals. Pediatricians and District IAP Branches should take the lead, by which we can make India, “A Hearing Friendly Country”

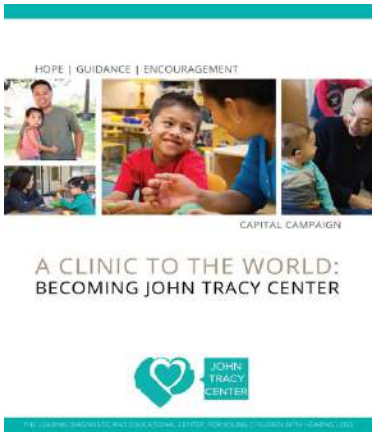
A TRUE INSPIRATION

Inspiring stories of people from all over the world who have turned adversity into a learning experience and have grown beyond their personal problems, and have helped others are numerous.

One such inspiring story is about the famous Hollywood Actors Spencer Tracy and Louise Treadwill and his son John Tracy. The turning point in their life was the day Louisse realized that John Tracy was deaf. Tests revealed that John Tracy had Usher Syndrome, a congenital disorder that causes deafness and blindness later in life due to Retinitis Pigmentosa.

The Tracys started their work immediately, talking to him, reading and playing with him and focused fully on their son. There was no institution at that point in time that rendered services for deaf children Out of this came the formation of John Tracy Clinic, in 1942, one of the world's first centres to provide education and support to the parents of children who have hearing impairment. Their efforts paid off well and John Tracy learnt how to lipread perfectly, to speak, read and write well right from the age of 11.

John Tracy Clinic, based in Los Angeles, USA, has evolved over the years to be single largest service provider to parents of deaf children, providing educational and emotional support and empowering them with knowledge and skills to teach their children to bridge the gaps in communication and helps them acquire speech, language and listening skills needed to thrive in this world.



The key highlights of John Tracy Clinic are providing comprehensive pediatric audiological services, parent-infant programs, family and parent support programs, counselling services, worldwide parent education, auditory verbal preschool and professional courses.

Visit https://www.jtc.org Link for further information.

NUTRITION

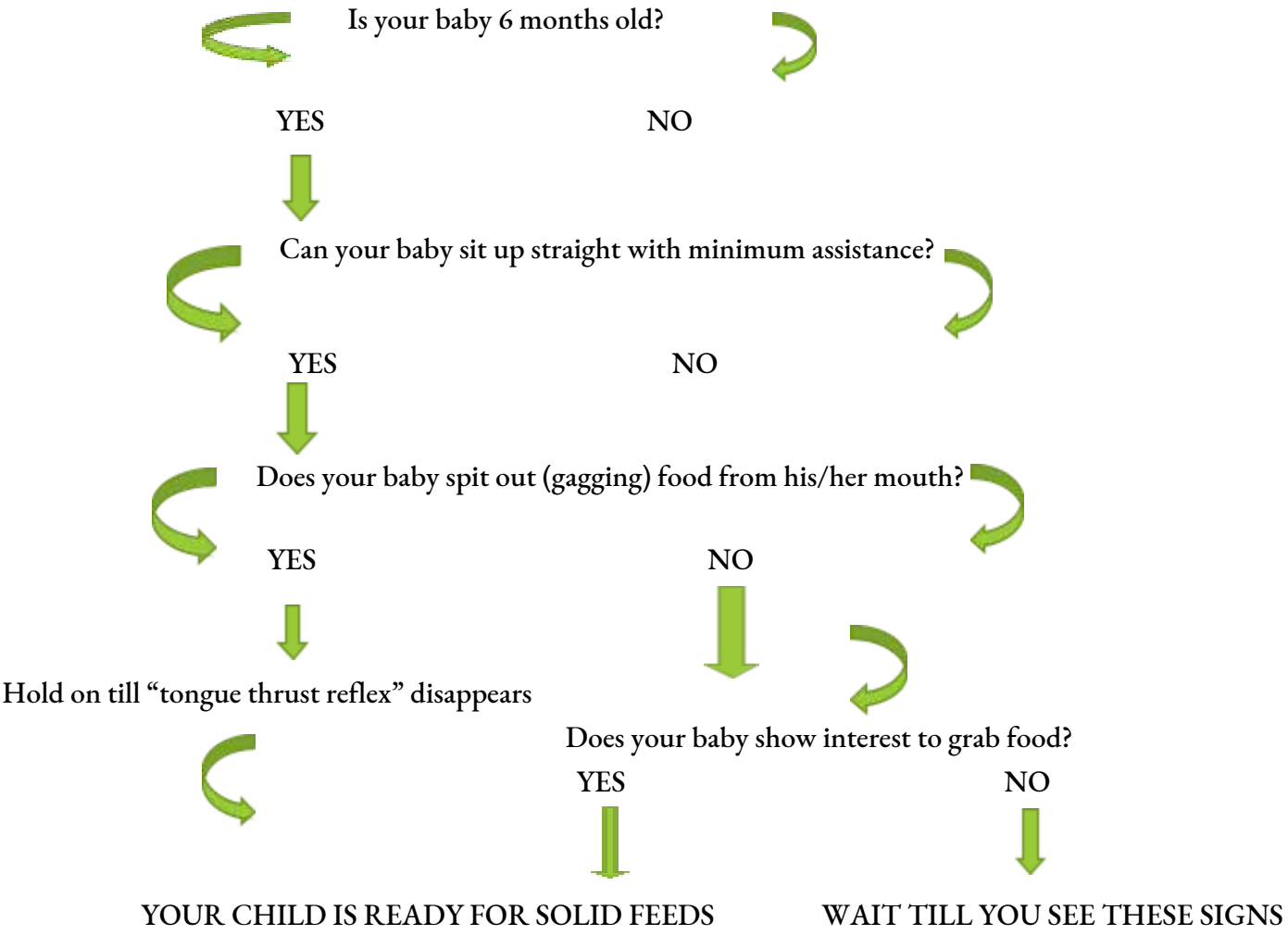
WEANING

Starting solids for babies is the first major milestone in becoming independent from mother.

The term 'weaning' comes from 'wemian', which means custom. Weaning begins from the moment supplementary food is started and continues till the child is taken off the breast completely. Before 2005, it was the Traditional Spoon-Feeding method (TSF), in practice. In 2005, "GILL RAPLEY", coined the term "Baby Led" weaning (BLW), which is a simple approach to start solid foods where you bypass the TSF, and encourage the infant to self-feed.

Babies are offered different varieties of foods and baby feeds themselves directly. It helps them know their own hunger signals, how much to eat and when to stop. It helps the baby understand the texture of the food, touch and feel, colour and appearance. It helps a healthy relationship with food later on in life.

When is the baby ready for solid feeds?



SIGNS OF READINESS WE SHOULD OBSERVE IN A CHILD FOR STARTING SOLID FOODS:

- Sitting up well and good head control, which helps in swallowing food,
- "Pincer Grasp" or picking up things with 2-fingers (thumb and forefinger),
- Curiosity/interest in solid foods,
- "Tongue Thrust Reflex" or not spitting out everything, - this is a natural reflux babies have to protect themselves from accidentally choking. This naturally goes away by 6-7 months.

FOODS THAT CAN BE GIVEN:

INTRODUCE ONLY 1 FOOD AT A TIME.

Vegetables and Green Leafy Vegetables (GLV): Well cooked vegetables, cut if finger size and thickness, mashed (well cooked) vegetables or green leafy vegetables along with cereal or gruels like rice, rice flakes, ragi flour. To make the meal calorie dense, add a small amount of ghee. Well cooked and strained green leafy veg. soups and mixed vegetable soups.

Fruits:

Soft fruits like banana, steamed apple, ripe avocados (mashed), honeydew, mashed deseeded berries, ripe mango.
Citric fruits might cause rashes hence look out for any symptoms.
Fruit juices should be initially given diluted with boiled water.

Curd:

Home-set, sweet curd can be given in small amounts and gradually increased.

Pulses:

Well cooked pulses along with cereals, like soft mushy kichadi can be given, gradually pulse and veg/GLV can be combined or pulse and meat can preparations can be given.

Millets:

Malted millet-cereals/ gruels are calorie dense and nutritionally power packed.

Egg:

Small amount of hard-boiled egg yolk can be given initially and if the infant tolerates, eventually whole egg yolk and then egg white should be offered. Egg white in some cases causes allergies, hence look out for symptoms.

Meat:

Minced well cooked meat, fish can be given with mild flavors and spices.

Foods to be avoided:

SALT, SUGAR AND HONEY are a strict NO-NO till the age 1.

Packaged foods, canned foods should be avoided. Store bought/animal milk can be given after the age 1.

In few cases nuts- especially peanuts, shellfish, soy, causes allergies in babies. Few newer studies suggest that these foods are advised to be given around 8-9 months, so the baby develops immunity towards them. Strictly look out for symptoms. These foods should be given 1/week and looked out carefully.
Can be regularly given if the baby tolerates, on the other hand if the baby has any allergic symptoms, avoid it for a few days and try later in small amounts and look out again.

"A baby's motivation to put food in their mouth is curiosity and copying-not hunger. For the first couple of months solid food is all about learning" -GILL RAPLEY

START WITH FINGER FOODS AND PUREES

Finger foods are easy to grab by the infant and hence has to be the size and thickness of the adult little finger. Few foods can be like:

Homemade gruels :- rice and dal mix, malted millets

Steamed green beans, steamed florets of cauliflower and broccoli, steamed and stir-fried vegetable sticks, such as carrot, potato, sweet potato, pumpkin, beets, raw sticks of cucumber(de-seeded), thick slices of avocado, rice balls along with dal or meat, or vegetables. Well cooked chicken.

Fruits, such as pear, steamed apple, banana, peach, mango, honeydew—as sticks or small pieces.

Gradually, hard-boiled egg yolk-pieces. Home set-curd

SOFT FOODS

As babies get accustomed to having finger foods and purees by now, we can progress to soft cooked foods, such as: soft rice and dal, rice dal and green leafy vegetable, rice dal and vegetable, soft cooked pasta and minced meat, ragi kanji (with buttermilk), pancakes (roasted and powdered oats + malted ragi + egg +mashed bananas or other mashed fruits). Porridges (coconut milk + roasted oats/ malted millets + mashed fruit). Soaked – well cooked beans (like kidney beans), toasted paneer, cheese sticks, homemade hummus with dosa .

Salt, sugar and honey should be strictly avoided before 1-year, but still baby food can be made interesting with different Indian flavors like jeera power, ajwain (they also ease digestion), dhania powder, cardamom powder, cinnamon powder, pepper powder, add cloves or other whole spices while boiling/steaming veggies (here veggies absorb the spice flavor), stir fry along with garlic, hing can be added, dry mint powder, dry curry leaves powder can add good flavor, later on squeeze few drops of lemon juice. Also jaggery can be given in little quantities.

BREAD CAN BE A CHOKING HAZARD – (PUSH IT TILL 9-11 MONTHS).

Gradually start giving options on the plate.

By the time the baby is 10-12 months the baby should be well accustomed with soft foods and should be then gradually moved to normal meals after the first birthday. Slowly salt and sugar can be introduced in smaller amounts.

CHOKING AND GAGGING ARE DIFFERENT :
CHOKING IS FOOD ENTERING INTO THE RESPIRATORY TRACT AND DOES-NOT ALLOW THEM TO
BREATHE.
GAGGING IS SPITTING OUT FOOD. It is important that a child has to be under adult supervision while feeding.

Age	Frequency	Average amount of each meal
6-8 months	2-3 meals per day plus frequent Breastfeeding	Start with 2-3 tablespoonfuls
9-11 months	3-4 meals plus breastfeed. Depending on appetite offer 1-2 snacks	½ of a 250 mL cup/bowl
12-23 months	3-4 meals plus breastfeed. Depending on appetite offer 1-2 snacks	3/4 to one 250 ml cup/bowl

HOW MUCH TO GIVE

There is no hard and fast rule to standardize the quantities on how much to feed per feed, as each baby's requirement varies. But to give a broader idea, "INDIAN ACADEMY OF PEDIATRICS" have published an article in 2010sssss on the quantities of foods to be given for different ages, that is attached for reference. It is absolutely fine if baby eats more or less to the above mentioned quantities, each baby's appetite is different and they can better judge how much to eat.

Compiled by :

Mrs A.S Lakshmi ,
Clinical dietician,
Certified Lactation
professional , Maternal and child nutritionist.

ENCOURAGING GOOD EATING PATTERN IN TODDLERS

Chewing or mastication is biting and breaking up the food particles into smaller pieces to make it easier to swallow. The muscles of mastication move the jaws to bring the teeth into intermittent contact by which food is made softer and warmer. The well chewed food (bolus) is swallowed which is the first step of digestion.

Thinking of the word “feeding” might be overwhelming for some mothers which shows their true emotions , the struggle they are undergoing to feed their child. Meal time is literally a battle time because some toddlers might be a picky eater, poor eater or take longer time to eat, some might swallow the food without chewing properly and may even choke. Once choked few children might get aversion for food and will not initiate to explore solid or textured food.

To support them in this battle, parents resort to screen time while feeding .Does that help the parents & child in the right way? No not always in regard to proper eating patterns. Rather children might fully concentrate on the screen, forgetting to chew properly & resort to suckling eating patterns. This results in pocketing their food in mouth or getting stuck with puree or soft food and not progressing with age appropriate food. In the long run this sort of feeding habit will become habitual(without any sensory or motor concern) .

Inculcating Good Chewing habits in a child is very crucial as poor chewing can make a child picky eater resulting in inadequate nutrition and poor weight gain. Delay in introducing the baby to appropriate weaning foods can be one of the predisposing factors for poor chewing patterns at later age. Many researchers have found that babies introduced to lumpier textured food after 10 months of age had greater feeding difficulties at 15months than those introduced to them between 6-9 months. Early food choices may influence your child’s preferences and eating skills as they get older.

Like other motor milestones such as sitting & walking, babies do have feeding milestones from 0-24 months of age . It is good to monitor your baby’s jaw movements while they are chewing. You likely won’t see any chewing at all on baby food, so you need to check their chewing pattern in non-edible items. Around 4-6months old they begin to chew on their hands & toys and that’s the way to explore the world. As they put the toys onto their mouth they will move it from side to side & bite them with their gums and by doing so they gradually learn to chew . By 7-8months they can begin chewing some real food with up and down motion.

Prevention is always better than Cure. So introducing to age appropriate weaning foods (soft puree ,then mashed ,then finger food, then lumped textured) at the right age is very important to avoid any feeding difficulties later. Encourage your child to explore and have happy feeding time without gadgets from Young age.

Sharmila Evelin donata
Donata Pediatric Physiotherapist & Sensory Integration Therapist
Motherhood child development Centre, Indiranagar, Bangalore

FEEDBACK FORM

Here are a few feedbacks we got for the January edition of the newsletter. Thank you all for your overwhelming responses. Looking forward to hearing more from you all. These are a few feedbacks from our readers.

- Our daughter has high myopia and intermittent esotropia. She was prescribed with glasses and patching from the age of 18 months. She was advised to undergo cosmetic surgery to align her eyes, at that point we started Vision Therapy. Vision therapy (VT) has been around for a while, but is now finding some solid ground / acceptance in the field of ophthalmology. VT addresses the root causes, by strengthening the eye muscles and works on aspects beyond just acuity (20/20 vision). A noticeable improvement was seen in my daughter's vision since starting VT 2 years ago.

- It has been a pleasure to read the newsletter. Been so useful and informative. Looking forward to more knowledge and power.

- The newsletter has been written and presented so well. Most Importantly, it has been looked into from a parents perspective. Thank you to the whole team for the effort and giving us so much information.

- Fundas of parenting! It was a great joy to read the newsletter. Being a new parent, this has been so informative and filled with knowledge. Thank you Dr. Nandini and team.

- A Very elaborate and useful work. Thank you for sharing and spreading knowledge.

- Hello Dr Nandini mam. Applauds to the whole team for such wonderful work. The articles have been so well written. Vision has been written in a whole new perspective. Beautiful presentation. And enjoyable activities. Thanks for all the efforts.

- Great work ! I really enjoyed the tots guide for the parents. Very informative. Have recommended all our post graduates read this, so it would help them to counsel better in the future.

- Dear madam. I went through the book. Very informative parents. Dr Ramakrishnan sir's story is so inspiring. Looking forward to more issues.

Kindly let us know your feedback on this edition too at support@totsguide.com.
Hope you enjoyed reading this edition as much as we enjoyed compiling it.
Happy learning to better parenting! The previous issues of the newsletter are available at: https://www.totsguide.com