DEVELOPMENTAL DELAY

What is developmental delay?

A siginifacant (>2sd)deviation in attaining a milestone is developmental delay. In a child less than 3 yrs DQ<70 is considered as significant delay. A child is only cruising but not walking hand held at 13 months has a motor mile stone of 10 month so the DQ is 10/13x100=>70 is not developmental delay. Erbs palsy can cause motor delay

What is global delay ?

Delay in at least two developmental domains is global delay. 1 yr old child sitting olny with support and has not developed transfer of objects has delay in two domains. When you see global try to identify a treatable cause, assess vision and hearing as early as possible

What are the causes of global delay?

Global Developmental Delay	Motor Dysfunction	Motor Intact but Otherwise Restricted
Genetic syndromes and chromosomal abnormalities	Central nervous system damage—kernicterus, birth injury, neonatal stroke, trauma, prolonged seizures, metabolic insult, infection	Congenital malformations—bony or soft tissue defects
Brain morphologic abnormalities	Spinal cord dysfunction—Werdnig-Hoffmann disease, myelomeningocele, polio	Diminished energy supply—chronic illness, severe malnutrition
Endocrine deficiencies—hypothyroidism, prolonged hypoglycemia	Peripheral nerve dysfunction—brachial plexus injury, heritable neuropathies	Environmental deprivation—casted, non–weight bearing
Congenital infections	Motor end-plate dysfunction—myasthenia gravis	Familial and genetic endowment—slower myelination
Neurodegenerative diseases	Muscular disorders—muscular dystrophies	Sensory deficits—blindness
Idiopathic intellectual disability	Other—benign congenital hypotonia	Temperamental effects—low activity level, slow to try new tasks
		Trauma—child abuse

Was there any *Adverse antenatal events, such as per vaginal bleeding*, gestational diabetes,intercurrent infections, or medical conditions?

Torch infections can damage multiple systems at a time- rubella- brain, heart

Has any Maternal medication use or the use of tobacco, alcohol, or illicit drugs may have important implications on the developing fetus ?

Valproate,steroids can induce changes

Is there any parental consanguinity needs to be probed for in addition to any previous familial neonatal or infantile deaths or maternal pregnancy losses ?

Consanguinity allows pooling abnormal genes . neonatal deaths could be due to iem

Is there any family history of neurological illness -family history that covers three generations and uses open-ended questions regarding the health and developmental status of family members ?

Fragile x, neurofibromatosis

What was the *The timing of labor, whether it wasspontaneous or induced, its duration, mode of presentation, and the actual means of effecting delivery ?*

Prolonged labour,precipate labor ,breech presentation increases the risk of the nonate

What was the baby's child's birth weight, activity,pulse, grimace, appearance, respiration (APGAR) scores (including those beyond 5 minutes if originally distressed); the duration of an infant's postnatal stay; and the occurrence of any relevant neurologic symptoms as a newborn?

Low birth weight, need for prolonged resuscitative assistance , hie increases the risk of sequale

What was the child's medical history, which includes possible hospital admissions, surgical procedures, chronic ongoing medical conditions, and current medication use?

Cyanotic congenital heart disease needing a bt shunt, severe acute malnutrition on treatment

What is current status- in terms of development,activities of daily living, vision ,hearing abilities and functional status?

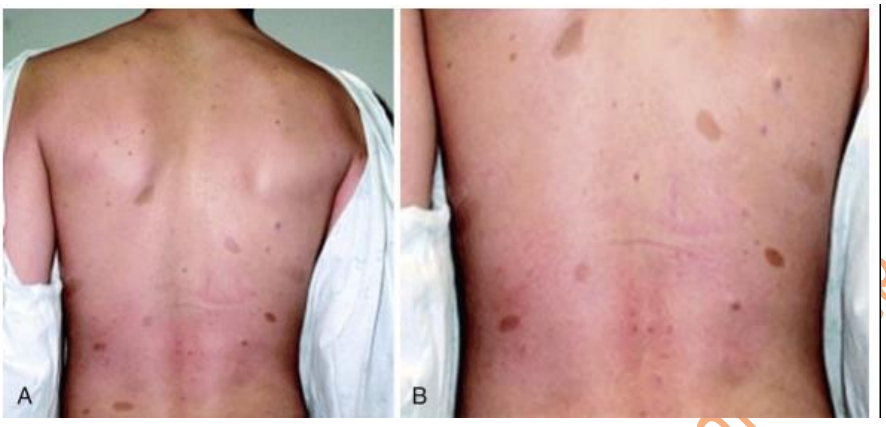
Normsl delayed

Severe malnutrition- global delay

THESE QUESTIONS SCREEN THE ANTENATAL NATAL,POST NATAL FACTORS WHICH AFFECT DEVELOPMENT. 3 GEBERATION PEDIGREE GIVES A CLUE REGARDING SIGINIFCANT NEUROLOGICAL ILLNESS .

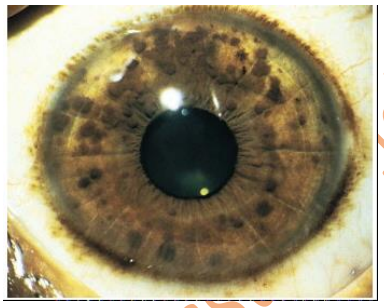
- A GENERAL EXAMINATION FOCUSSING **DYSMORPHISM,MICRO/MACROCEPHALY**,
- **NEUROCUTANEOUS MARKERS**

Café au lait spots: (1) Six or more café-au-lait macules over 5 mm in greatest diameter in prepubertal individuals and over 15 mm in greatest diameter in postpubertal individuals. Café-au-lait spots are the hallmark of neurofibromatosis and are present in almost 100% of patients. They are present at birth but increase in size, number, and pigmentation, especially during the first few yrs of life

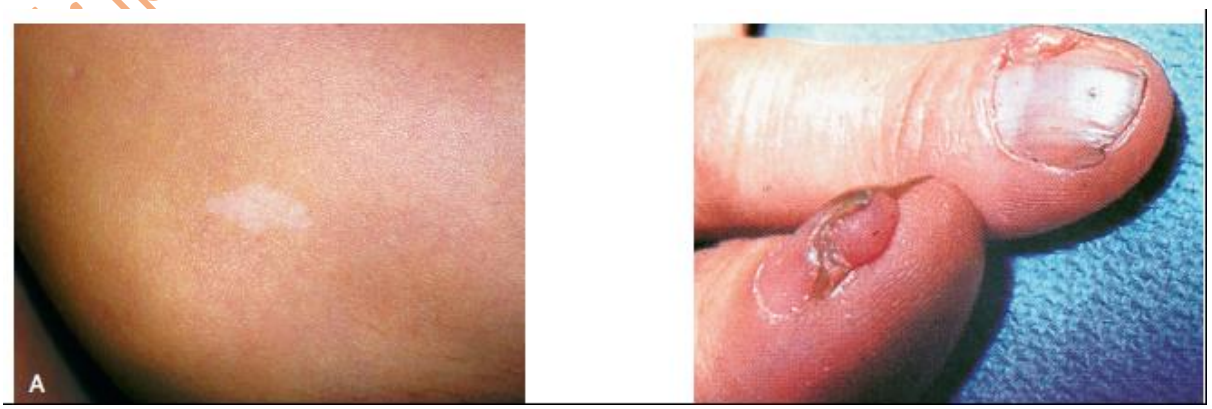


Axillary or inguinal freckling consisting of multiple hyperpigmented areas 2-3 mm in diameter. Skinfold freckling usually appears between 3 and 5 yr of age

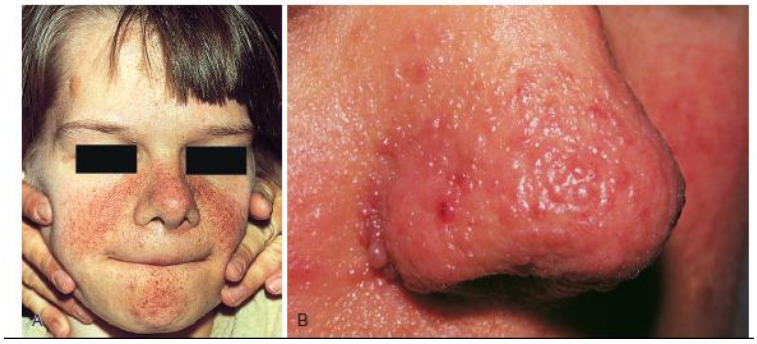
Two or more iris Lisch nodules. Lisch nodules are hamartomas located within the iris and are best identified by a slit-lamp examination



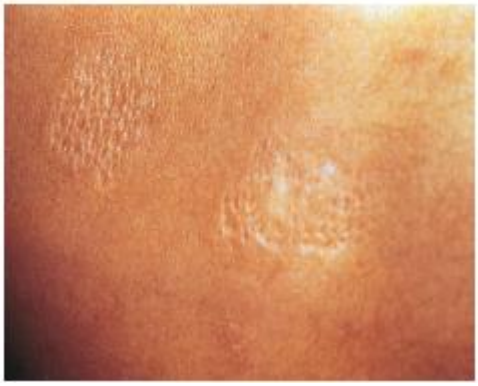
Ash leaf macule: Visualization of the hypomelanotic macule is enhanced by the use of a Wood ultraviolet lamp . To count as a major feature, at least 3 hypomelanotic macules must be present



Adenoma sebaceum: Facial angiofibromas develop between 4 and 6 yr of age; they appear as tiny red nodules over the nose and cheeks and are sometimes confused with acne

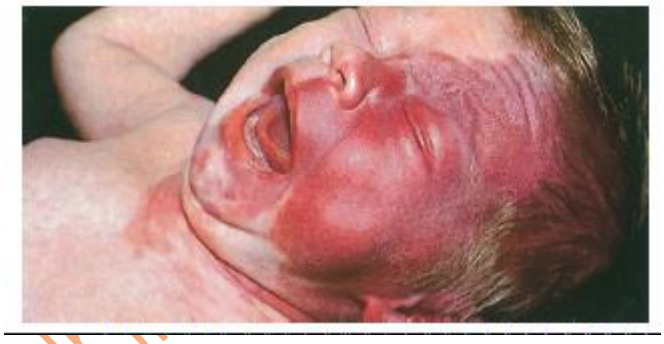


Shagreen patch: A *shagreen patch* is also characteristic of TSC and consists of a roughened, raised lesion with an orange-peel consistency located primarily in the lumbosacral region.

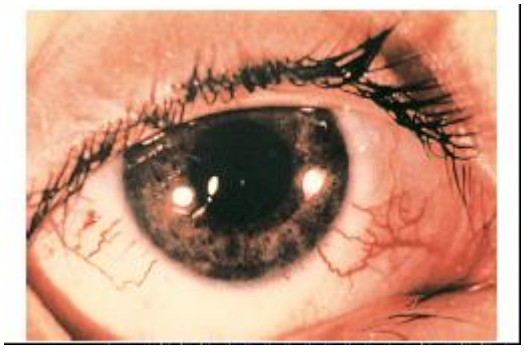


Periungal fibroma

Port wine stain



Telangiectasia:



DEVELOPMENTAL EXAMINATION

(infants examine in – supine,pulled to sit,vertical suspension,ventral suspension,prone positions and also note primitive reflexes,prontective reflexes and permanent reflexes)+vision and hearing

Figure 3-1 First phase of the Moro response. Symmetrical abduction and extension of the extremities follow a loud noise or an abrupt change in the infant's head position.

Figure 3-2 Second phase of the Moro response. Symmetrical adduction and flexion of the extremities, accompanied by crying.

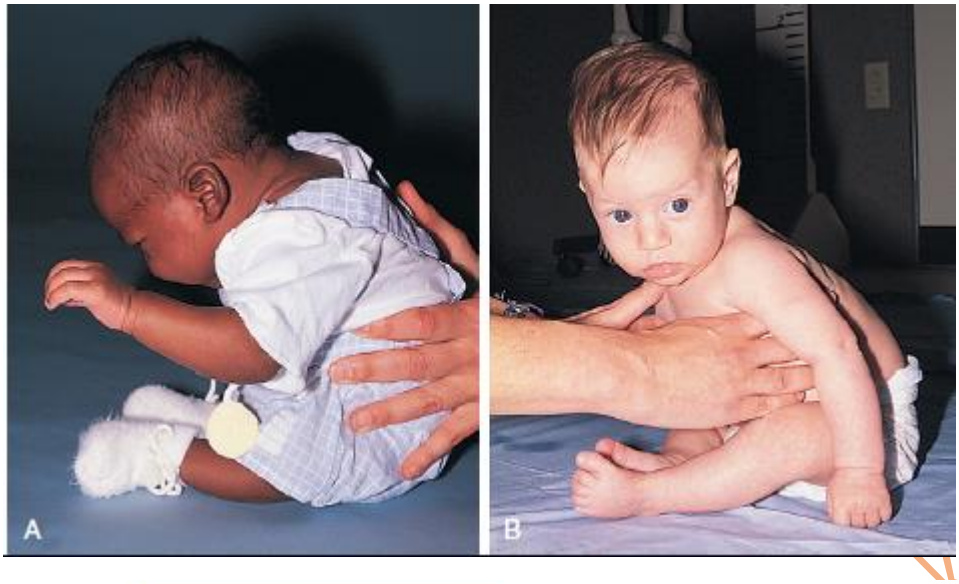


Figure 3-7 Standing. By 1 year of age, the lordotic curve, exaggerated here by a diaper, is evident.

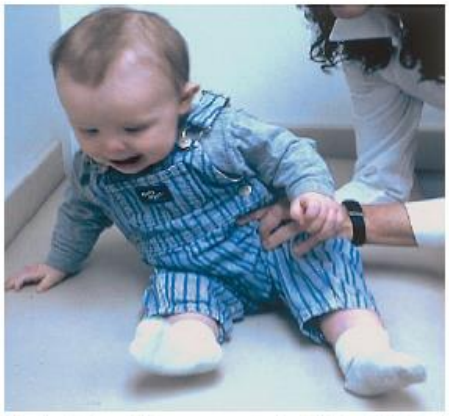


Figure 3-8 Protective equilibrium response. As the child is pushed laterally by the examiner, he flexes his trunk toward the force to regain his center of gravity while one arm extends to protect against falling (lateral propping).

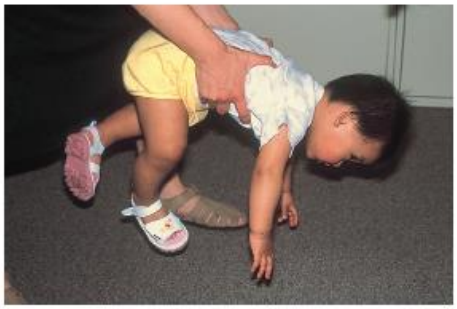


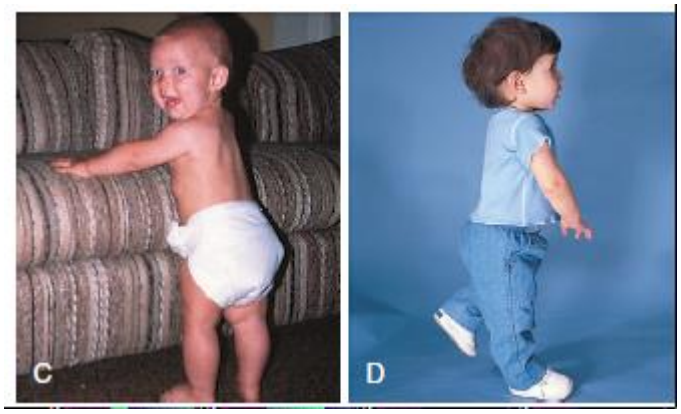
Figure 3-9 Parachute response. As the examiner allows the child to free fall in ventral suspension, the child's extremities extend symmetrically to distribute his weight over a broader and more stable base on landing.

Table 3-3 Early Gross Motor Milestones in the Normal Child

Task	Age Range*
Sits alone momentarily	4-8 mo
Rolls back to stomach	4-10 mo
Sits steadily	5-9 mo
Gets to sitting	6-11 mo
Pulls to standing	6-12 mo
Stands alone	9-16 mo
Walks three steps alone	9-17 mo

*Wide ranges in the attainment of these gross motor milestones in healthy children are the rule rather than the exception.

From Bayley N: *Bayley Scales of Infant Development*, ed 2, San Antonio, Tex, 1993, Psychological Corporation/Harcourt Brace.



AND NEUROLOGICAL EXAMINATION examination