

Dubowitz Score

Overview: The score proposed by Dubowitz et al assesses an infant for the apparent gestational age by considering both neurologic and external signs of development.

Components:

- neurological signs: 10
- external signs: 12

Neurologic Signs	0	1	2	3	4	5
posture	wrists arms hips and legs straight	wrists bent and legs slightly bent	elbows hips and legs bent but do not reach 90°	elbows hips and legs bent to 90°	elbows & legs drawn close to body	NA
square window (wrist)	90°	60°	45°	30°	0°	NA
ankle dorsiflexion	90°	75°	45°	20°	0°	NA
arm recoil	180°	90-180°	< 90°	NA	NA	NA
leg recoil	180°	90-180°	< 90°	NA	NA	NA
popliteal angle	180°	160°	130°	110°	90°	< 90°
heel to ear	leg straight toes reach ear	leg straight toes reach chin	knee slightly bent heel reaches 140° from prone	knee bent heel reaches 120° from prone	knee bent to 90° heel reaches 90° from prone	NA
scarf sign	elbow to opposite axillary line	elbow to opposite midclavicular line	elbow to midline	elbow to axillary line	NA	NA
head lag	head lags without forward movement at 90° to body axis	head slightly forward but does not reach body axis	head in line with body axis	head bent forward beyond body axis	NA	NA
ventral suspension	heads droops down and back greatly arched arms & legs straight	heads slightly raised and back less curved	head raised but not to body axis back slightly curved	head in line with body axis back straight	head raised above body axis back straight	NA

External Signs	0	1	2	3	4
edema	obvious edema of hands and feet pitting over tibia	no obvious edema of hands & feet pitting over tibia	no edema	NA	NA
skin texture	very thin gelatinous	thin and smooth	smooth medium thickness; rash or superficial peeling	slight thickening superficial crack-ing & peeling especially of hands & feet	thick & parchment-like superficial or deep cracking
skin color	dark red	uniformly pink	pale pink; variable over body	pale; only pink over ears lips palms or soles	NA
skin opacity	numerous veins & venules seen especially over abdomen	veins & tributaries seen	a few large vessels seen over the abdomen	a few large vessels seen indistinctly over the abdomen	no blood vessels seen
lanugo	none	abundant; long & thick over whole back	hair thinning especially over lower back	small amount of lanugo & bald areas	at least half of back devoid of lanugo
plantar creases	no skin creases	faint red marks over anterior half of sole	definite red marks over > anterior 1/3; indentations over < anterior 1/3	indentations over more than anterior 1/3	definite deep indentations over more than anterior 1/3
nipple formation	nipple barely visible no areola	nipple well-defined are-ola smooth & flat diameter < 0.75 cm	areola stippled edge not raised diameter < 0.75 cm	areola stippled edge raised diameter > 0.75 cm	NA
breast size	no breast tissue palpable	breast tissue on one or both sides < 0.5 cm diameter	breast tissue on both sides 1 or both 0.5 - 1.0 cm	breast tissue both sides one or both > 1.0 cm	NA
ear form	pinna flat and shapeless little or no incurving of edge	incurving of part of edge of pinna	partial incurving whole of upper pinna	well-defined incurving whole of upper pinna	NA

ear firmness	pinna soft easily folded no recoil	pinna soft easily folded slow recoil	cartilage to edge of pinna but soft in places ready recoil	pinna firm cartilage to edge instant recoil	NA
genitals female	labia majora widely separated labia minora protruding	labia majora almost cover labia minora	labia majora completely cover labia minora	NA	NA
genitals male	neither testis in scrotum	at least one testis high in scrotum	at least one testis right down	NA	NA

Dubowitz score = SUM (points for each parameter)

Interpretation:

- minimum score: 0
- maximum score: 72 (neurological sign 35 external sign 37)

estimated gestational age =

= (0.2642 * (total score)) + 24.595

References:

Dubowitz LMS Dubowitz V Goldberg C. Clinical assessment of gestational age in the newborn infant. J Pediatr. 1970; 77: 1-10