



DUBOWITZ/BALLARD SCORING FOR GESTATIONAL AGE

Instructions for doing it properly

Obtain a gestational age score on all babies weighing less than 2000g, within 24 hours of delivery. This assists in making appropriate care plans, especially at the limits of viability. It is preferable to wait until baby is "settled" before scoring, but sometimes an early score (soon after delivery) is essential

Score for both **neuromuscular** and **external/physical** features. Add each to give a final score, and then give a maturity rating (in weeks) by referring to the conversion table. Complete the process by plotting baby's weight and length on the neonatal growth chart, and documenting whether baby is appropriate, under- or overweight for gestational age.

Neuromuscular Maturity

Assess all **six** features with baby lying supine (spine on bed), and awake but not crying. Refer to the chart while assessing. Accuracy is improved if you assess both sides of the body, and use the average score.

1) Posture:

Observe the posture. Handling the infant may improve the assessment.

2) Square Window:

Flex the hand at the wrist. Exert pressure sufficient to get as much flexion as possible. The angle between the hypothenar eminence and the anterior aspect of the forearm is measured and scored.

3) Arm Recoil:

Fully flex the forearms with the hands at the shoulders for 5 seconds, then fully extend by pulling the hands. Release as soon as the elbows are fully extended, and observe the recoil (degree of flexion at the elbows). Random movements do not count.

4) Popliteal Angle:

With the pelvis flat on the examining surface, use one hand to bring the knee onto the abdomen. With the other hand, gently push behind the ankle to bring the foot towards the face.

5) Scarf Sign:

Take the infant's hand and draw it across the neck and as far across the opposite shoulder as possible, like a scarf. Assistance to the elbow is permissible by lifting it across the body. Score according to the location of the elbow.

6) Heel to Ear:

Hold the infant's foot with one hand and move it as near to the head as possible without forcing it. The knee may slide down the side of the abdomen. Keep the pelvis flat on the examining surface.

	-1	0	1	2	3	4	5
Posture		○←	○←	○←	○←	○←	○←
Square Window	□ >90°	□ 90°	□ 60°	□ 45°	□ 30°	□ 0°	
Arm Recoil	○ 180°	○ 140-180°	○ 110-140°	○ 90-110°	○ <90°		
Popliteal Angle	○ 180°	○ 160°	○ 140°	○ 120°	○ 100°	○ 90°	○ <90°
Scarf Sign	○	○	○	○	○	○	
Heel to Ear	○	○	○	○	○	○	

Physical Maturity

The **six** features examined are self explanatory in the table below.

Sign	-1	0	1	2	3	4	5
Skin	Sticky, friable, transparent	Gelatinous, red, translucent	Smooth, pink, visible veins	Superficial peeling and/or rash, few veins	Cracking, pale areas, rare veins	Parchment, deep cracking, no vessels	Leathery, cracked, wrinkled
Lanugo	None	Sparse	Abundant	Thinning	Bald areas	Mostly bald	
Plantar Creases	Heel-toe 40-50 mm = -1, Heel-toe >50 mm, no creases		Faint red marks	Anterior transverse crease only	Creases over anterior $\frac{2}{3}$	Creases over entire sole	
Breast	Imperceptible	Barely perceptible	Flat areola, no bud	Stippled areola, 1-2 mm bud	Raised areola, 3-4 mm bud	Full areola, 5-10 mm bud	
Eye & Ear	Lids fused, loosely = -1, tightly = -2	Lids open, pinna flat, stays folded	Slightly curved pinna, soft with slow recoil	Well-curved pinna, soft but ready recoil	Formed and firm, with instant recoil	Thick cartilage, ear stiff	
Genitals, male	Scrotum flat, smooth	Scrotum empty, faint rugae	Testes in upper canal, rare rugae	Testes descending, few rugae	Testes down, good rugae	Testes pendulous, deep rugae	
Genitals, female	Clitoris prominent, labia flat	Prominent clitoris, small labia minora	Prominent clitoris, enlarging minora	Majora and minora equally prominent	Majora large, minora small	Majora cover clitoris and minora	

Maturity Rating

Add up the individual Neuromuscular and Physical Maturity scores for the **twelve** categories, then obtain the estimated gestational age from the table below.

Total Score	-10	-5	0	5	10	15	20	25	30	35	40	45	50
Gestational Age (in weeks)	20	22	24	26	28	30	32	34	36	38	40	42	44

Use a scoring sheet with weight chart ([Form Paed/02](#)). Write the score in the designated space on page 1 of the Infant Care Record ([Form Paed/01](#)).