

Assessment of Gestational Age






- **Mother's menstrual history**
- **Prenatal ultrasonography**
- **Postnatal maturational exam (Ballard)**
 - **Assesses neuromuscular and physical maturity**

Neuromuscular Maturity

Posture

With the infant supine and quiet





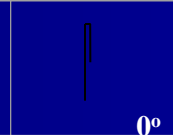
- Arms and legs extended = 0
- Slight or moderate flexion of hips and knees = 1
- Moderate to strong flexion of hips and knees = 2
- Legs flexed and abducted, arms slightly flexed = 3
- Full flexion of arms and legs = 4

	0	1	2	3	4	
Posture						

Wrist

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:






- 90 degrees = 0
- 60 degrees = 1
- 45 degrees = 2
- 30 degrees = 3
- 0 degrees = 4

	0	1	2	3	4		
Wrist							
	90°	60°	45°	30°	0°		

Arm Recoil

With infant supine, fully flex the forearm for 5 sec, then fully extend by pulling the hands and release. **Score**







- Remains extended 180 degrees, or random movements = 0
- Minimal flexion, 140-180 degrees = 1
- Small amount of flexion, 110-140 degrees = 2
- Moderate flexion, 90-100 degrees = 3
- Brisk return to full flexion, <90 degrees = 4

	0	1	2	3	4
Arm Recoil	180° 	140-180° 	110-140° 	90-110° 	<90° 

Popliteal Angle

With infant supine and pelvis flat on the examining surface, the leg is flexed on the thigh and the thigh fully flexed with the use of one hand. With the other hand the leg is then extended and the angle scored:






- 180 degrees = 0
- 160 degrees = 1
- 130 degrees = 2
- 110 degrees = 3
- 90 degrees = 4
- <90 degrees = 5

	0	1	2	3	4	5
Popliteal Angle	180° 	160° 	130° 	110° 	90° 	<90° 

Scarf Sign

With infant supine, take infant's hand and draw across neck and as far as possible across opposite shoulder. OK to lift elbow across the body. **Score Elbow:**

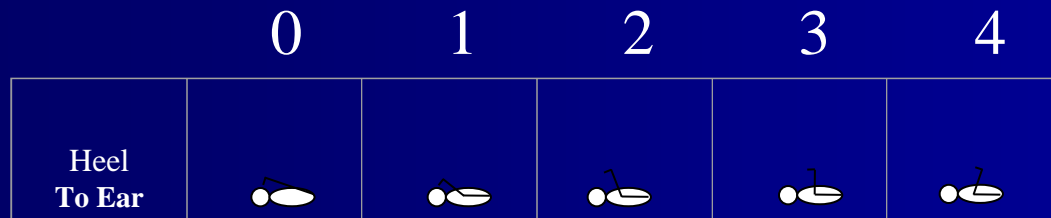
- Crosses opposite anterior axillary line = 0
- Reaches opposite anterior axillary line = 1
- At midline = 2
- Does not reach midline = 3
- Does not cross proximate axillary line = 4

	0	1	2	3	4
Scarf Sign					

Heel to Ear

With infant supine, hold foot with one hand and move it as near to the head as possible without forcing it.

Keep pelvis flat on the examining surface.



Physical Maturity

- Skin
- Lanugo
- Plantar creases
- Breast
- Ear
- Genitals (Male/Female)