

## New Ballard Score

Overview: The New Ballard Score is an enhancement of the original Ballard Score. It is designed to provide greater accuracy and to include extremely premature infants.

Study Parameters:

- neuromuscular maturity: 6 parameters
- physical maturity: 7 parameters

### Neuromuscular Maturity

	-1	0	1	2	3	4	5
posture	NA	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 bent and drawn close to body	NA
square window (wrist)	> 90°	90°	60°	45°	30°	0°	NA
arm recoil	NA	180°	140-180°	110-140°	90-110°	< 90°	NA
popliteal angle	180°	160°	140°	120°	110°	90°	< 90°
scarf sign	elbow beyond opposite axillary line	elbow to opposite axillary line	elbow to opposite midclavic- ular line	elbow to midline	elbow to axillary line	elbow does not reach axillary line	NA
heel to ear	leg straight heel reaches 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	knee bent heel reaches 45° from prone	NA

### Physical Maturity

	-1	0	1	2	3	4	5
skin	sticky friable trans- parent	gelatinous red trans- lucent	smooth pink visible veins	superficial peeling &/or rash few veins	cracking pale areas rare veins	parchment deep cracking no vessels	feathery cracked wrinkled
lanugo	none	sparse	abundant	thinning	bald areas	mostly bald	NA
breast	imper- ceptible	barely percep- tible	flat areola no bud	stippled areola 1 mm bud	raised areola 3 mm bud	full areola 5 mm bud	NA

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	NA
genitals female	clitoris prominent labia flat	clitoris prominent small labia minora	clitoris prominent enlarging minora	majora & minora equally prominent	majora large minora small	majora cover clitoris & minora	NA

	-2	-1	0	1	2	3	4
plantar surface	heel-toe length < 40 mm	heel-toe length 40-50 mm	heel-toe > 50 mm no crease	faint red marks	anterior transverse crease only	creases anterior two thirds	creases over entire sole
eye and ear	lids fused tightly	lids fused loosely	lids open pinna flat stays folded	slightly curved pinna soft with slow recoil	well-curved pinna soft with ready recoil	formed & firm with instant recoil	thick cartilage ear stiff

new Ballard Score =

= SUM (points for each parameter)

Interpretation:

- minimum score: -13
- maximum score: 54

Correlation of score with gestational age

Score	Week
-10	20
-5	22
0	24
5	26
10	28
15	30
20	32
25	34
30	36
35	38
40	40

45	42
50	44

References:

Ballard JL Khoury JC et al. New Ballard Score expanded to include extremely premature infants. J Pediatr. 1991; 119: 417-423