

PEDIATRIC GRAND ROUNDS  
Wednesday, February 10, 1960

EVALUATION OF THE NEWBORN INFANT

APGAR SCORE USED TO EVALUATE NEWBORN INFANT

Sixty seconds after the complete birth of the infant (disregarding the cord and placenta), the following five objective signs are evaluated and each given a score of 1, 1 or 2. A score of 10 indicates an infant in the best possible condition. This method of scoring was developed by Virginia Apgar, M. D., M.P.H.

SIGN	SCORE OF 0	SCORE OF 1	SCORE OF 2
Heart rate	Absent	Slow (below 100)	Over 100
Respiratory effort	Absent	Weak cry Hypoventilation	Good Strong cry
Muscle tone	Limp	Some flexion of extremities	Well flexed
Reflex irritability (Response of skin stimulation to feet)	No response	Some motion	Cry
Color	Blue Pale	Body pink Extremities blue	Completely pink

References:

- 1) Apgar, V., Holaday, D. A., James, L. S., Weisbrot, I. M. and Berrien, C.: Evaluation of the Newborn Infant - Second Report, J.A.M.A. 168:1985-1988 (December) 1958.
- 2) James, L. S.: Physiology of Respiration in Newborn Infants and in the Respiratory Distress Syndrome, Pediatrics 24:1069-1101 (December) 1959.
- 3) Apgar, V.: Proposal for New Method of Evaluation of Newborn Infant, Anesth. & Analg. 32:260-267 (July-Aug) 1953.

- 4) Apgar, V.: Comparison of Results to Infant Following Maternal Regional or General Anesthesia for Delivery, New York J. Med. 57:2955-2956 (Sept 15) 1957. Reference 1.
- 5) James, L. S., and others: Acid-base Status of Human Infants in Relation to Birth Asphyxia and Onset of Respiration, J. Pediat. 52:379-394 (April) 1958.
- 6) Weisbrot, I. M., and others: Acid-base Homeostasis of Newborn Infant During First 24 Hours of Life, J. Pediat. 52:395-403 (April) 1958.
- 7) Hingson, R. A., and Hellman, L. M.: Anesthesia for Obstetrics: Labor, Delivery, Infant Care, Philadelphia, J. B. Lippincott Company, 1956.
- 8) Beecher, H. K., and Auld, P.: Personal communication to the authors.

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The following information is related to the above weight according to the chart.

$P =$  molecular weight.  
 $V =$  partial specific volume of polymer.  
 $\rho =$  density of solution.  
 $N =$  Avogadro's number.  
 $\chi =$  Flory-Huggins parameter.

Reference: H. L. Frisch, J. Polym. Sci., 1957, 23, 197.