

## Infant Behavioral State

Overview: The state of an infant's behavior can be determined by physical monitoring. Keefe et al adapted criteria for behavior from those given by Chappell and Sander. The primary authors are associated with Childrens' Hospital and the University of Colorado in Denver.

States:

(1) non-REM (quiet) sleep

(2) REM (active) sleep

(3) awake

(4) transition

(5) indeterminate

State	Behavioral Characteristics
non-REM sleep	regular breathing eyes closed no facial movements no vocalization no motor activity except an occasional reflex movement
REM sleep	irregular respirations eyes closed with ocular motility (REM) facial movements may occur vocalization may occur peripheral movements
awake	irregular respirations eyes open facial movements may occur vocalization may occur mild or gross motor activity
transition	regular or irregular inspirations eyes closed with no rapid eye movement vocalization may occur

	body movement may occur not awake (within sleep from quiet to active or from active to quiet)
indeterminate	behavior of infant does not fit any of the above states

where:

- An occasional reflex movement may include a sobbing inspiration or startle.

References:

Chappell PF Sander LW. Mutual regulation of the neonatal-maternal interactive process: Context for the origins of communications. pages 89-109. IN: Bullowa M (editor). Before Speech: The Beginning of Interpersonal Communication. Cambridge University Press. 1979.

Keefe MR Kotzer AM et al. Development of a system for monitoring infant state behavior. Nursing Research. 1989; 38 (6): 344-347 (Table 1 page 345).