

DEVELOPMENTAL DIAGNOSIS

Development, as well as disease, falls within the scope of clinical medicine. In recent years there has been an increasing tendency to look upon problems of health and disease from a developmental point of view. Development has ceased to be a vague abstraction, and is instead regarded as an organic process which yields to scientific analysis and to diagnostic appraisal. Experimental embryology, biochemistry, and endocrinology have supplied new insights into the physiology of growth. A scientific journal entitled *Growth* was recently established for "the coordination of studies of increase and development as general properties of nature," the term "growth" being freely interchangeable with "development." Another journal bearing the name *Psychosomatics* reflects the new trend which brings the physical and the functional aspects of growth into closer correlation. From a biologic standpoint no sharp distinction can be made between bodily and mental manifestations of development. Developmental status, accordingly, must be appraised not only by physical signs, but by dynamic signs, by modes of reaction, by patterns of behavior. Behavior is in fact the most integrated and inclusive expression of developmental status.

Physical development in the infant and young child is appraised on the basis of height, weight, and anthropometric indices, by body build, by characteristics of the skin and its appendages, by biochemical and other tests. A four-weeks'-old infant is from 20.5 to 23 inches long, weighs from 8.5 to 12 pounds. A sixteen-weeks'-old infant is from 23.5 to 26 inches long, weighs from 12.5 to 17 pounds. A twenty-eight-weeks'-old infant is from 25 to 27.5 inches long, weighs from 14 to 19.5 pounds. By these and similar signs we appraise the physical maturity of a growing infant. This type of developmental diagnosis is well represented in the pediatric supervision of infant nutrition.

The infant's nutrition, however, is closely bound up with the infant's feeding behavior. Many feeding difficulties have a behavior basis rather than a dietary one. For this reason it becomes important to appraise the infant's abilities in terms of his maturity. Infants are individuals. Routines cannot be rigidly imposed. The ability to take solids, the ability to use a cup, the voluntary control of bladder and bowel sphincters depend primarily on the infant's neuromotor maturity, rather than on habit training. The protection of nutrition by periodic health examinations therefore leads very naturally into a broader, and more inclusive kind of developmental supervision which will take account of the functional and mental aspects of maturity even in the first years of life. Such supervision will demand a more formal diagnostic consideration of behavior symptoms and indices.

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The behavior characteristics of the infant afford a clue to his "mind." As the infant matures, his nervous system undergoes progressive changes, which are evidenced in his reflexes, in sensorimotor coordinations, in posture, locomotion, prehension, oculomotor control, attention, speech, and adjustments to a social environment. The infant is a growing action system. His patterns of behavior take on new shapes in obedience to laws of growth. A four-weeks'-old infant stares at a window—holds an object passively, without looking at it. A sixteen-weeks'-old infant looks at an object held in hand. A twenty-eight-weeks'-old infant inspects the object and transfers it from one hand to the other hand. By such signs and tokens we may also appraise the developmental maturity of a growing infant. So lawful are these changes in behavior patterning that it has proved possible to codify a system of clinical norms of development after the manner of the Yale *Atlas of Infant Behavior*.

The developmental diagnosis of infant behavior is certain to become a more routine feature of clinical care in office, dispensary, and hospital. Timely application of norms of behavior makes possible the early detection and improved management of developmental defects and deviations. Almost all cases of mental deficiency can be diagnosed in the first year. Timely recognition of mental deficiency puts the physician in the most favorable position for imparting the diagnosis gradually, constructively, and helpfully. Many cases are never recognized because the physician relies on physical signs and stigmata alone.

Failure to use developmental norms results, for example, in serious errors in the diagnosis of cerebral palsy. Congenital and birth palsies often stimulate feeble-mindedness. A diagnosis of feeble-mindedness is not warranted on the basis of motor disability alone. A careful examination of behavior symptoms may disclose considerable normality in the field of intelligence and of personality development. A complete survey of the neurologic status of an infant can scarcely be made without a developmental diagnosis of his total behavior equipment.

Many parents take an over-zealous, over-conscientious attitude in the matter of habit training. This leads to faulty modes of discipline. The only corrective for such misguided notions is a developmental point of view which looks at the ever-changing problems of behavior from the standpoint of the child's maturity or immaturity. *Growth* is a more useful concept than *Habit* in child management. The physician who diagnoses and interprets behavior problems from the standpoint of development is able to place them in the right perspective for the parent and for himself.

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