

POSTURAL CONTROL

Definition

Postural control refers to the ability to maintain and change the position of the trunk and neck. When postural control is well developed, a child is able to sit at a desk in an upright posture with hands free for manipulative activities, stand steadily while drawing on the chalkboard, or walk while carrying a lunch tray. The trunk is used as a stable base for positioning and movement of the extremities, and the head is maintained in the optimal position for eye contact with others and for looking at the classroom environment.

Development

Newborns have little muscular control of the neck or trunk. They maintain primarily flexed (bent) positioning of the arms and legs (physiological flexion). During the first few months of life, infants "straighten out" as gravity and the development of extensor muscles counteract the initial bent positioning. They engage in many hours of activities that develop trunk extensors (lying on stomach, straightening arms and legs and pulling head and trunk up to "fly like a bird") and flexors (lying on back pulling feet up to the mouth). They develop the ability to hold the head upright by balancing extensor and flexor muscle activity around three to four months, and by six months they can lift or flex the neck against gravity in all positions.

Spinal extensor control also increases in the six-month-old so that a baby can sit with a straight back and use the arms for manipulation or for protective responses (catching self if the body falls forward, backward, or to one side). By the eighth month babies can rotate (turn the body at the trunk) and shift weight to either side without falling, and can counterbalance these movements by using the arms to stop falls (protective extension reactions) or by automatically shifting weight the other way (equilibrium reactions).

Nine-month-old babies have well-developed trunk control and can use the sitting position as a stable base for practicing fine motor and cognitive skills. By eleven months children move continuously from one sitting pattern to another, and from sitting to hands and knees, to kneeling, to pulling to stand, while equilibrium reactions prevent the shifts from interfering with balance.

By twelve months children have full postural control in sitting and are able to stand, shift weight to lift one leg, and may attempt to walk without assistance.