

Growth and Development A person's age and musculoskeletal and nervous system development affect posture, body proportions, body mass, body movements, and reflexes. Newborn movements are reflexive and random. All extremities are generally flexed but can be passively moved through a full range of motion. As the neurologic system matures, control over movement progresses during the first year. Gross motor development precedes fine motor skills. Gross motor development occurs in a head-to-toe fashion, that is, progression from head control, to crawling, to pulling up to a standing position, to standing, and to walking, usually after the first birthday. The contralateral motion of crawling, however brief, is an important building block for walking. Initially, walking involves a wide stance and unsteady gait, thus the term toddler. From ages 1 to 5 years, both gross and fine motor skills are refined. For example, preschoolers master riding a tricycle, dancing, running, jumping, using crayons to draw, fastening or using zippers, and brushing their teeth. Immobility can impair the social and motor development of young children. From 6 to 12 years of age, refinement of motor skills continues and exercise patterns for later life are generally determined. Many schools provide physical education and competitive sports programs to enhance physical activity. Posture in school-age children is usually excellent. In adolescence, growth spurts and behaviors such as carrying heavy book bags on one shoulder and extended computer use may result in structural changes that often persist into adulthood. Adults between 20 and 40 years of age generally have few physical changes affecting mobility, with the exception of pregnant women. Pregnancy alters center of gravity and affects balance. The most recent recommendations from the American College of Obstetricians and Gynecologists (Olson, Sikkat Hayman, Novak, & Stavig, 2008) suggest that healthy pregnant women should exercise 30 minutes or more with moderate intensity on most if not all days of the week. Thorough chemical evaluations should be completed prior to recommending any exercise regimen. In addition, the report indicates that exercise can prevent gestational diabetes, even in very obese women. Nutrition Both undernutrition and overnutrition can influence body alignment and posture. Undernourished people may have vitamin D deficiency causes muscle weakness and fatigue. bone deformity during growth. Inadequate calcium intake and vitamin D synthesis and intake increase the risk of osteoporosis. Obesity can distort movement and stress joints, adversely affecting posture, balance, and joint health. Personal Values and Attitudes Whether people value regular exercise is often the result of family influences. In families that incorporate regular exercise in their daily routine or spend time together in activities, children learn to value physical activity. Sedentary families, on the other hand, participate in sports only as spectators, and this lifestyle is often transmitted to their children. With the increase in TV, computer, and video activities, youth are increasingly sedentary with attendant declines in health. Values about physical appearance also influence some people's participation in regular exercise. People who value a muscular build or physical attractiveness may participate in regular exercise programs to produce the appearance they desire. Choice of physical activity or type of exercise is also influenced by values. Choices may be influenced by geographic location and cultural role expectations. For many, thinking of exercise more as "recreational movement," "enhancement Well-being" and essential part of daily self-care" may help overcome perceptions that exercise is drudgery. Options include informal and fun activities such as dancing to music. Motivational states influence our behavior and choices, and vary

widely from day to day. Exercise behavior may be improved by addressing an individual's awareness of their physiological response to activity and exercise. The design of individualized exercise prescriptions that tailor exercise mode and dose and address these varying states with each person will ensure greater adherence to an exercise program (Ruppar & Schneider, 2007). Prescriptions should include frequency of the activity, intensity, and time (the FIT model). In those who are building toward a fitness goal, these parameters will change over time to increase the client's level of conditioning (Oberg, 2007). Nurses must assess each client for potentially motivating factors such as the following: degree of fun or challenge of any given activity; use of music; opportunities for socializing and group cohesion and having an exercise partner; positive sensations of the exercise experience; pleasurable feelings associated with increased stress reduction; increased energy and fitness; mastering the activity; goal setting and progress; daily logs or weekly written schedules; competition with oneself or others; promotion of a sense of accomplishment; weight management; emphasis on self-talk about how exercise will prevent fatigue, depression, weight gain, or anxiety; and the need to explore less intense and challenging, noncompetitive activities (Oberg, 2007). Nurses, taking into account motivation to participate, medical conditions and level of fitness, and safety issues, can use individualized exercise prescriptions to encourage exercise and activity in all of their clients. Clients who experience orthostatic hypotension, impaired equilibrium, and gait disturbance should begin exercising in supervised environments: For example, a sedentary person may need to begin with a prescription that emphasizes stretching, strengthening, and development of balance rather than aerobic training. For physically active people, the prescription can immediately include moderate aerobic conditioning, strength training, and stretching.