of drugs prescribed and with the severity of frailty. Some general rules to minimize the chances of adverse drug events are as follows: (1) Always ask patients to bring in all medications, including prescription drugs, over-the-counter products, vitamin supplements, and herbal preparations (the "brown bag test"). (2) Screen for unnecessary drugs; those without a clear indication should be discontinued. (3) Simplify the regimen in terms of number of agents and schedules, try to avoid frequent changes, and use single-daily-dose regimens whenever possible. (4) Avoid drugs that are expensive or not covered by insurance whenever possible. (5) Minimize the number of drugs to those that are absolutely essential, and always check for possible interactions. (6) Make sure that the patient or an available caregiver understands the administered regimen, and provide legible written instructions. (7) Schedule periodic medication reviews.

Disability and Impaired Recovery from Acute-Onset Disability The prevalence of disability in self-care and home management increases steeply with aging and tends to be higher among women than among men (Fig. 11-5). Physical and cognitive function in older persons reflects overall health status and predicts health care utilization, institutionalization, and mortality more accurately than any other known biomedical measure. Thus, assessment of function and disability and prediction of the risk of disability are cornerstones of geriatric medicine. Frailty, regardless of the criteria used for its definition, is a robust and powerful risk factor for disability. Because of this strong relationship, measures of physical function and mobility have been proposed as standard criteria for frailty. However, disability occurs late in the frailty process, after reserve and compensation are exhausted. Early in the development of frailty, body composition changes, reductions in fitness, homeostatic deregulation, and neurodegeneration can begin without affecting daily function. As opposed to disability in younger persons, in which the rule is to look for a clear dominant cause, disability in frail older persons is almost always multifactorial. Multiple disrupted aging processes are usually involved, even when the precipitating cause seems unique. Excess fat mass, poor muscle strength, reduced lean body mass, poor fitness, reduced energy efficiency, poor nutritional intake, low circulating levels of antioxidant micronutrients, high levels of proinflammatory markers, objective signs of neurologic dysfunction, and cognitive impairment all contribute to disability. The multifactorial nature of disability in frail older persons reduces the capacity for compensation and interferes with functional recovery. For example, a small lacunar stroke that causes problems with balance in a young hypertensive individual can be overcome by standing and walking with the feet further apart, a strategy that requires brain adaptation, strong muscles, and a high energy capacity. The same small lacunar stroke may cause catastrophic disability in an older person already affected by neurodegeneration and weakness, who is less able to compensate. As a consequence, interventions aimed at preventing and reducing disability in older persons should have a dual focus on both the precipitating cause and the systems needed for compensation. In the case of the lacunar stroke, interventions to promote mobility function might include stroke prevention, balance rehabilitation, and strength training.

As a rule of thumb, the assessment of contributing causes and the design of intervention strategies for disability in older persons should always consider the four main aging processes that contribute to frailty. One of the most popular approaches to disability measurement is a modification of the International Classification of Impairments, Disabilities and Handicaps (World Health Organization, 1980) proposed by the Institute of Medicine (1992). This classification infers a causal pathway in four steps: pathology (diseases), impairment (the physical manifestation of diseases), functional limitation (global functions such as walking, grasping, climbing stairs), and disability (ability to fulfill social roles in the environment). In practice, the assessment of functional limitation and disability is performed either by (1) self-reported questionnaire concerning the degree of ability to perform basic self-care or more complex ADLs or by (2) performance-based measures of physical function that assess specific domains, such as balance, gait, manual dexterity, coordination, flexibility, and endurance. A concise list of standard tools that can be used to assess physical function in older persons is provided in Table 11-4. In 2001, the WHO officially endorsed a new classification system, the International Classification of Functioning, Disability and Health, known more commonly as the ICF. In the ICF, health measures are classified from bodily, individual, and societal perspectives by means of two lists: a list of body functions and

TABLE 11-4 TOOLS FOR FUNCTIONAL ASSESSMENT IN OLDER PATIENTS

Measurement Instrument	Evaluation	Activities/Reference	Notes
Index of independence in ADLs	Self-reported	Difficulty/need for help in bathing, dressing, using toilet, transferring, continence, feeding *(S Katz et al: JAMA 185:914, 1963)*	Short and simple, but subjective
Instrumental ADLs	Self-reported	Difficulty using the telephone, using a car/public transportation, shopping, preparing meals, housework, managing medications, financial management *(MP Lawton et al: Psychopharmacol Bull 24:609, 1988)*	Short and simple; sex-biased and culturally biased items
Functional Independence Measure	Consensus multidisciplinary team	Motor (eating, grooming, bathing, dressing, toileting, managing bladder/bowels, transferring, walking, climbing stairs); cognitive (auditory comprehension, verbal expression, social interaction, problem solving, memory) *(RA Keith et al: Adv Clin Rehabil 1:6, 1987)*	Administered by trained health professionals
Barthel Index	Professionally evaluated	Independence and need for help in feeding, transferring from bed to chair and back, grooming, transferring to and from toilet, bathing, walking, climbing stairs, dressing, continence *(FI Mahoney et al: Md State Med J 14:61, 1965)*	Administered by trained health professionals
Mobility Questionnaire	Self-reported	Severe difficulty walking ¼ mile and/or climbing stairs	Short and simple
Short Physical Performance Battery	Objective performance based	Time required to walk 4 m, rise from a chair 5 times, maintain balance for 10 sec in the side-by-side, semi-tandem, and tandem positions *(JM Guralnik et al: J Gerontol 49:M85, 1994)*	Some training required
Berg Balance Scale	Objective and professionally evaluated	Performance in 14 tasks related to balance *(KO Berg et al: Arch Phys Med Rehabil 73:1073, 1992)*	Typically used by physical therapists
Walking speed	Objective performance	Measure walking speed over a 4 m course *(S Studenski: J Nutr Health Aging 13:878, 2009)*	Simple and powerful, but limited to patients who can walk
6-Minute walk	Objective performance based	Distance covered in 6 min *(GH Guyatt: Can Med Assoc J 132:919, 1985)*	Good measure of fitness, walking capacity/endurance
Long-Distance Corridor Walk (400 m)	Objective performance based	Time to fast-walk 400 m *(AB Newman et al: JAMA 295:2018, 2006)*	More challenging than the 6-min walk

Abbreviation: ADLs, activities of daily living.