

Disturbances, both external and internal, are a constant challenge for organisms. In spite of perturbations and uncertainties, it is remarkable how biological systems produce stable behavior and morphology. The characteristic of a biological system that responds to disturbance and ensures that the output is convenient in the case of considerable noise is known as stability or insensitivity. Biorobustness reflects the degree of variation in a biological system and is therefore important for systematic evolution. Frailty is defined as a syndrome of old age characterized by a reduction in the physiological reserves an individual needs to respond to both endogenous and exogenous stress. Using a discrete frailty definition that includes sedentary behavior, involuntary weight loss, fatigue, poor muscle strength, and slow walking pace, "frailty" was associated with increased disability, postoperative complications, and increased mortality. Despite the strong association between frailty and subsequent poor outcomes, limited attention has been paid to this common disease of old age in clinical Settings. A more fundamental understanding of the underlying biological factors that contribute to vulnerable phenotypes has begun to emerge. Multiple underlying biological factors, such as dysregulation of inflammatory processes, genomic instability, oxidative stress, mitochondrial dysfunction, and cellular aging, appear to contribute to the clinical presentation of frailty.