

# Frailty Screening and Interventions

## Considerations for Clinical Practice



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### KEYWORDS

• Frailty • Clinical • Assessment • Screening • Prevention • Intervention

### KEY POINTS

- Frailty is a recognized health problem among older adults and vulnerable populations that increases the risk of adverse outcomes, including falls, hospitalization, and death.
- Multiple instruments exist to screen for frailty in clinical settings and more research is needed to validate these instruments beyond their predictive value.
- Frailty interventions include exercises, nutrition, and multicomponent strategies, though findings to date have been mixed.
- Preventing frailty is an important area for further research.

### INTRODUCTION TO FRAILITY

Over the past 100 years, advances in medicine and public health have led to a nearly 2-fold increase in average lifespan.<sup>1</sup> Approximately 8.5% of the global population is 65 years or older, and this will increase to an estimated 16.7% by 2050.<sup>2</sup> Many health problems are related to aging, including chronic diseases, infections, disability, falls, and cognitive disorders.<sup>2</sup> There also seems to be a trend for increased vulnerability to health risks and poor outcomes as humans age.

Frailty has been viewed as a cornerstone of geriatric medicine and a platform of biological vulnerability to a host of other geriatric syndromes and adverse health outcomes.<sup>3</sup> Using a common frailty assessment instrument, an estimated 15% of noninstitutionalized adults in the United States are frail,<sup>4</sup> and global estimates of frailty range from 3.5% to 27.3%.<sup>5</sup> Clinical perspectives on the definition of frailty were initially broad; in the 1980s, chronologic age, care requirements, and disability were used

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synonymously with frailty.<sup>6</sup> In the following decade, clinical definitions became more refined though still included a wide range of domains.<sup>7</sup> The topic of frailty began receiving serious attention in the medical literature in the 1990s, as a reflection of the unexplained vulnerable state of older patients commonly observed by health care providers. Several key theoretic papers on frailty emerged during this time,<sup>8–10</sup> as did early operational definitions.<sup>7</sup> In 1992, Buchner and Wagner<sup>8</sup> discussed 3 components central to frailty: neurologic control, mechanical performance, and energy metabolism. In the same year, Fried,<sup>9</sup> in summarizing a workshop on the physiologic basis of frailty, described the syndromic nature of frailty with specific components, including weakness, fear of falling, and weight loss. This conference also distinguished frailty and disability as separate entities.

Fried and Walston<sup>9</sup> proposed the frailty phenotype with 5 components interlinked to form a cycle of frailty: weakness, slowness, exhaustion, low activity, and weight loss. Fried and colleagues<sup>11</sup> defined frailty “as a biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative declines across multiple physiologic systems, and causing vulnerability to adverse outcomes,” and operationalized it using the frailty phenotype. The deficit accumulation approach emerged during the same period, which included counts of diseases, conditions, and comorbidities across many domains to determine frailty status.<sup>12</sup> More recently, a geriatric clinic in France has implemented a frailty screening tool based on the frailty phenotype that includes social and cognitive factors, along with physical components.<sup>13</sup> In 2013, members of a consensus group reached agreement on the following definition of frailty, “A medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual’s vulnerability for developing increased dependency and/or death.”<sup>14</sup>

### ***Frailty Screening Instruments***

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Over the past 20 years, dozens, if not hundreds, of frailty assessment instruments have been developed and in part validated by showing the association between frailty and adverse health outcomes in older adults.<sup>15</sup> Most of these instruments are either (1) frailty phenotype instruments, in which motor and activity measures predominate and lead to an aggregate score that spans from robust to frail; or (2) frailty index instruments, in which comorbidities, social factors, psychological conditions, and function and cognitive decline measures are incorporated into an index in which the higher the number of conditions, the higher the frailty score.<sup>16</sup> Many frailty instruments are useful for identifying individuals at high risk for adverse outcomes but less so at informing clinical practice or the development of clinical interventions to prevent or treat frailty. Additionally, agreement between these instruments has been shown to vary greatly.<sup>17</sup> Maintaining validity in terms of ensuring that instruments are measuring their intended frailty-related constructs is another important consideration.<sup>18–20</sup>

Because short and simple instruments are most feasible in clinical practice, several quick screening tools have been developed and validated.<sup>14</sup> These include the Clinical Frailty Scale (CFS)<sup>21</sup> and the Fatigue, Resistance, Ambulation, Illnesses, and Loss of Weight (FRAIL) scale.<sup>22</sup> The CFS is based on clinical observation by the physician and assigns a score between 1 and 7 based on activity, function, and disability. The FRAIL scale is based on self-reported fatigue, mobility, strength, and weight loss, as well as a tally of the number of comorbidities. These 2 scales are especially relevant in clinical practice and require only a few minutes. The frailty phenotype and the G erontop ole screening tool have also been recommended for screening purposes,<sup>14</sup> along with gait speed, as a single screening measure.<sup>23</sup>

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