Assessing frailty in older individuals

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The aging process occurs gradually, is highly individual, with a high degree of inter and intra-individual differences. As such, within an aging population there is significant variation in regards to extent of age related disease and functional impairment, which is often captured by the term 'frailty'. This variability between individuals is thought to be expressed as biological age. Currently, the comprehensive geriatric assessment (CGA), a multidimensional, interdisciplinary diagnostic process is used to determine an individual's medical, psychological and functional capability at older age. However, while the CGA utilises well-established markers of physical and functional parameters, it does not include any molecular measures that indicate an individual's biological age. Combining functional measures with molecular markers of biological age, could improve the current CGA by identifying individuals undergoing a rapid aging process. Over the last decade the biological processes that contribute to aging and deteriorating health are being increasingly understood and have been summarized as the nine overarching hallmarks of ageing (genomics instability, telomere attrition, epigenetic changes, loss of proteostasis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, altered intercellular communication, stem cell exhaustion). Interventions targeted at a biological age *i.e.* an individual's pathophysiological process; in addition to current functional status is the next step in advancing geriatric medicine. A BGA would complement and enhance the current CGA (Figure). This targeted, individualized treatment approach based on the underlying biology has proven to be successful in the field of oncology, particularly in regards to tumor phenotyping.