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## LETTER TO THE EDITOR

# Should intrinsic capacity be assessed in addition to frailty in older kidney transplantation candidates?

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To the Editor,

Frailty, a state of increased vulnerability to poor resolution of homeostasis, is prevalent in end-stage kidney disease (ESKD) and is increasingly considered as a major concern for nephrologists, notably in kidney transplantation (KT) candidates [1]. There are many strengths and advantages to measuring frailty in ESKD patients, notably during pre-KT assessment. Recently, McAdams-DeMarco and collaborators summarized the key arguments for and against the assessment of frailty as part of KT evaluation [2]. They proposed a list of “pros” for frailty assessment (objective and holistic assessment, improve risk stratification, inform shared decision-making, identify care needs and targeted interventions and waitlist optimization strategies...) but also “cons” (uncertainties regarding practical implementation, concerns of frailty language, resource implications, ambiguity regarding intervention effectiveness...).

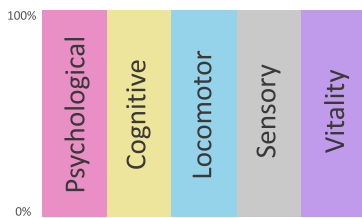
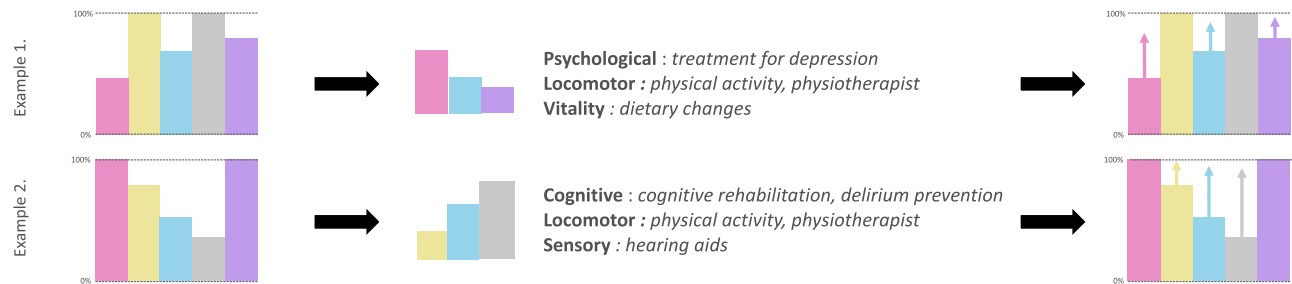
Beyond frailty assessment, the World Health Organization described the new concept of intrinsic capacity (IC), defined as “the composite of all the physical and mental capacities of an individual,” including five domains: locomotion, vitality, cognitive, psychological and sensory functions (Fig. 1A). This model,

which aims to promote healthy aging, may also be developed in the care pathway of chronic diseases, and notably in ESKD. Indeed, lower IC were previously associated with worse outcomes after KT, notably for decreased psychological, cognitive or physical capacity. We recently showed a relationship between lower IC and frailty phenotype in older ESKD patients [3]. We assume that IC may be measured as part of pre-KT global assessment. Indeed, measurement of IC can complement frailty assessment, and address the “cons” highlighted by McAdams-DeMarco and collaborators [2].

- (i) “Uncertainties regarding practical implementation:” The integrated care for older people (ICOPE) program constitutes an innovative function-centered and person-centered program emphasizing the optimization of IC. This program is now implemented in clinical practice, and the experience in France confirmed the feasibility of this approach at a large scale [4]. This type of assessment and intervention program could be implemented in nephrology units.
- (ii) “Concerns of frailty language:” If frailty is “the clinical viewpoint of a glass half empty” (a deficit-centered model), IC

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**A. Intrinsic Capacity (IC): 5 domains****B. Individual Assessment of IC**

**Figure 1:** Intrinsic capacity according to the World Health Organization and possibility of personalized targeted interventions (prehabilitation). (A) Five domains of IC according to the World Health Organization: psychology, sensory, locomotion, cognition and vitality. (B) Example in two patients. After individual assessment of IC, patient 1 showed an impairment in psychological, locomotor and vitality domains, and patient 2 showed impairment in cognition, locomotion and sensory domains. Specific individualized interventions (prehabilitation programs) should be promoted to enhance these domains, to decrease frailty, and finally to improve outcomes during KT waiting time and after KT.

represents “a glass half full” (a capacity-centered model) [5]. This paradigm shift is important, as this positive view may lead to a better involvement of participants and healthcare professionals. Frailty has not been conceived as a condition for excluding patients from interventions [6], notably KT, but is usually considered by clinicians as a negative and exclusionary condition. A positive capacity-centered approach addresses these language concerns.

- (iii) “Resource implications for transplant centers:” Based on ICOPE screening and monitoring digital tools for IC assessment this approach is feasible at a very large scale [4] and would require few resources for transplant centers.
- (iv) “Ambiguity regarding intervention effectiveness:” It may be difficult to disentangle the cause and origin of frailty in older adults, leading to difficulties in implementing interventions. The IC framework is an easy-to-understand approach and may be adapted to develop individual prehabilitation programs (Fig. 1B). Prehabilitation is the “process of enhancing pre-operative functional capacity to improve tolerance for the upcoming stressor”, and is becoming increasingly important in the KT field [7, 8]. The effectiveness of interventions targeting IC changes in KT candidates needs to be explored, but in other settings these interventions are very encouraging [9].

To conclude, we propose that IC assessment would be useful in older persons with ESKD, because this patient-centered and positive approach is easy to implement beyond the perimeter of geriatric medicine, and may be an effective way to implement personalized interventions and improve functional status. This approach is complementary to frailty assessment, and could in some cases be completed by a comprehensive geriatric assess-

ment (an interdisciplinary process to assess and manage complex health issues in older adults, based on multidimensional assessment and goal-driven interventions). The respective contribution of these different assessments (frailty phenotype, IC, comprehensive geriatric assessment) in the care pathway of older KT candidates needs to be further studied.

## CONFLICT OF INTEREST STATEMENT

None declared.

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