

UK and European policies promote research and innovation for people living with frailty (PLWF), as realistic strategies for independent living. Yet homes are not designed for PLWF or robots, even though robots could support PLWF with activities, i.e., exercise and companionship. Adoption of robots in homes is limited to devices such as automated vacuum cleaners and voice assistants. Robotics aimed at assisting PLWF have been thus far been tested in laboratories and the study of real homes for the co-habitation of robots and older people is often neglected. We draw on expertise from human-robot interaction, built environment, public health and clinical practice to facilitate optimisation of human and robot co-habitation for PLWF. For this, we have reviewed different robots-for-frailty, in terms of, ability to fit and move within homes. We utilised a range of methods and sources of information including meetings with allied health professionals, visited the Robot House and explored the available robots from a fit for purpose perspective, audited five flats for PLWF in Gloucester, England in accordance with the needs of those with frailty, simulated robot's function within the home environment, using persona's for different use case scenarios, trial testing of selected robots in the home environment for comparison with simulation, using knowledge gained to extrapolate this data to estimate suitability for frail individuals in their homes. Most robots currently available would not adequately fit in an independent living accommodation or the smaller ones could be a tripping hazard. The communal areas of independent living would be more realistic for such human robot interactions, rather than the actual households. The research informs the process facilitating the adoption of robots to benefit PLWF both feasible and desired. The research produced a framework that can lead to future research exploring robot and PLWF co-habitation in real home settings.

Key messages:

- The cohabitation of humans and robots currently faces barriers relevant to independent living built-environment spatial restrictions.
- Technologies that support independent living and frailty must develop in spatially-unobtrusive ways.

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**I am frail and my robot is stuck on the corridor:
cohabitation of people with frailty and robots**

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