A 30 year change in life expectancy has led to dramatic changes in demographics in the last century, increasing the absolute number of the elderly as well as their proportion of the population. An ageing population is at greater risk of developing age-related conditions including physical impairments, cognitive decline and age-related mental disorders. All can severely affect elderly peoples’ working capacity and quality of life.

From a clinical perspective, age-related conditions should be tackled in four dimensions: prevention; early detection and diagnosis; monitoring; intervention. Since prevention and early detection include large scale screening, there is a growing need to set up reliable technology-based assessment and intervention methods, especially in the individual’s everyday settings, enabling all stakeholders to use and manage the valuable information they produce to foster better care and prolong healthy, independent living, while enabling the wider healthcare systems to cope with the challenge professionally and financially.

The aim of this Special Issue is to bring together the latest technological developments aimed at addressing these challenges. We are particularly interested in:

1. smart, unobtrusive and seamless technologies for early detection and monitoring of age-related symptoms
2. technologies for intervention among people with age-related conditions both in the clinic and at home, including virtual reality (VR) and augmented reality (AR)
3. novel feedback mechanisms to patients, their caregivers and healthcare professionals
4. holistic approaches to using technology to tackle the challenge of age-related conditions, supporting active and healthy ageing

Therefore, we are interested in papers, which cover the following areas for age-related conditions:

- sensors and systems that unobtrusively measure changes in cognition and behaviour that can be linked to age-related cognitive and mental decline
- sensors and systems to measure healthcare outcomes
- technologies for early detection and monitoring that make use of the Internet of Things
- technology-based interventions among elderly countering identified risks
- adaptable technology-based solutions for stakeholders that will enable implementation of the emerging solutions
- personalisation of technological solutions for assessment and treatment
- algorithm development for clinically relevant outcome measures and/or user-friendly metrics
- use of VR and AR in assessment and treatment both at clinics and at home
- best practices in user-centered design of monitoring symptoms
- challenges and solutions in devising holistic, multidisciplinary technological solutions for the elderly
- use of social media in early detection, monitoring and treatment of cognitive and mental decline
- design of older patient- and clinician-friendly feedback interfaces

This Special Issue will be guest edited by:

- Dr Refael Barkan, Holon Institute of Technology, Israel
- Dr Hadas Lewy, Maccabi Institute for Health Services Research, Israel
- Dr Amit Dvir, Holon Institute of Technology, Israel

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Submitted articles should not have been previously published or be currently under review by other journals or conferences/symposia/workshops. Papers previously published as part of conference/workshop proceedings can be considered for publication in the special issue provided that they are modified to contain at least 40% new content and no passages of text are identical. Authors of such submissions must clearly indicate how the journal version of their paper has been extended in a separate letter to the editorial office at the time of submission. Moreover, authors must acknowledge their previous paper in the manuscript and resolve any potential copyright issues prior to submission.

Papers should be a maximum of 6 pages and formatted according to the Healthcare Technology Letters Author Guide, found at http://digital-library.theiet.org/journals/htl/author-guide. Submissions should be marked as being for the Healthcare Technologies Addressing Age-related Conditions Special Issue. All submissions are subject to the journal's peer-review procedures.

Important Dates

Submission deadline: 1st December 2016
Final manuscripts: April 2017
Publication: June 2017

E-first publication on final acceptance

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