

ACT

The Academic Centre for Geriatric Dentistry

Mission statement

ACT strives to improve oral health in older persons through research, education, and clinical practice.

Action plan

Oral health and general health, including oral problems and disease, are mutually related. Thus, we apply a multi-disciplinary approach to oral health and disease as part of the ageing process. ACT strives for efficient integration of oral health and function in the health profiles of older persons. Knowledge translation and implementation are key elements in ACT activities. This includes scientific knowledge and understanding of critical factors and treatments that influence the oral health of older persons.

ACT disseminates knowledge and information about oral health in older persons and has the ambition to be acknowledged as a national centre.

Research

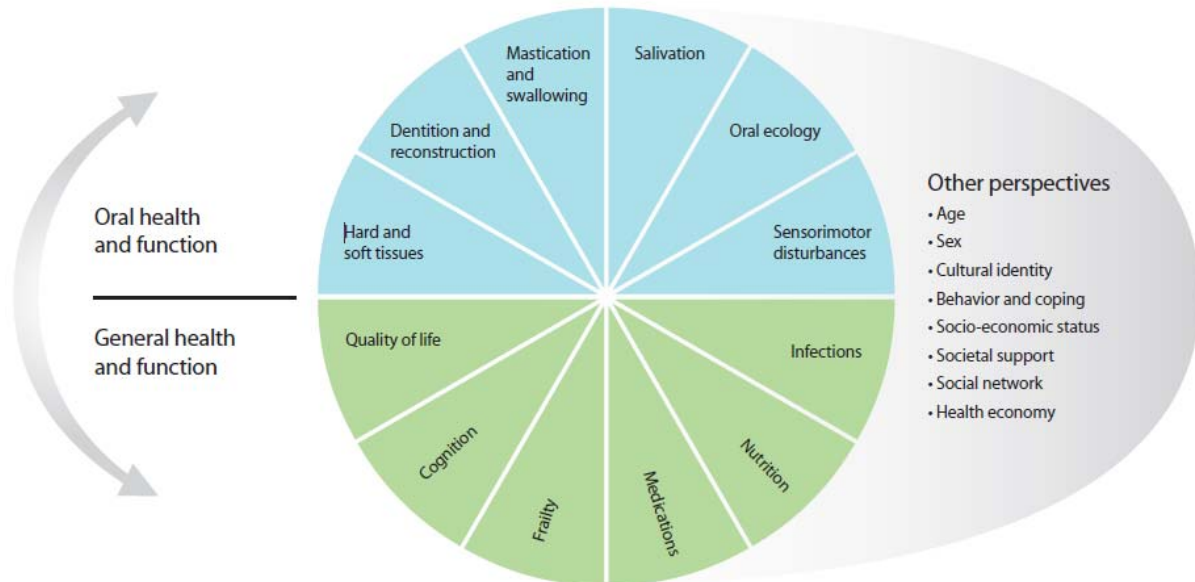
ACT pursues research in three areas:

- Associations between oral and general health-related problems and diseases in older persons.
- Treatment and care aspects of the oral health of older persons in a multi-disciplinary perspective.
- Associations between cognitive functions and sensorimotor disturbances in the masticatory system due to loss of teeth or dental reconstructions.

ACT research targets the complex interrelations between oral and general health, and quality of life. Compromised eating and swallowing abilities affect nutrition and contribute to impaired quality of life, cognitive impairment, and frailty. Systemic disease can heighten the risk of oral disease and vice versa. Multi-morbidity and polypharmacy may further generate oral and general complications. The ethical aspects of oral care and treatment, that is, integrity and nonmaleficence ('do no harm'), is another sensitive and challenging area.

Our initiative proposes a new algorithm, based on the association between oral and general health, for solving the emerging health problems of older persons in a multi-disciplinary approach.

The ACT algorithm



The ACT algorithm: Factors related to oral health and function appear in blue, and to general health and function, in green, with these operational definitions and rationale:

- *Hard and soft tissue* – tooth constituents, facial skeleton, oral mucosa, and gingiva
- *Dentition and reconstruction*: number and quality of teeth and physical restitution of their decline
- *Mastication and swallowing* – all aspects of oral sensorimotor function in mastication, transport of food and drink through the oral cavity, and reflex swallowing
- *Salivation* – phenomena such as reduced salivary volume and altered content, pathophysiological consequences, and compensatory strategies
- *Oral ecology* – the microbial profile and its pathophysiological variability, disease consequences, and control mechanisms
- *Sensorimotor disturbances* – neurological dysfunction influencing oral function, aesthetics, and self-perception
- *Infections* – invasion and multiplication of micro-organisms in body tissues, for example, urinary tract, respiratory, and periodontal infections
- *Nutrition* – malnutrition as well as undernutrition
- *Medications* – polypharmacy and the attendant risks of adverse effects, interactions, and inappropriate dosing
- *Frailty* – greater vulnerability due to aging-associated functional decline
- *Cognition* – mental processes of memory, such as awareness, perception, reasoning, and judgment
- *Quality of life* – a multidimensional concept comprising subjective evaluations of positive and negative aspects of life that include activities and physical, material, social, and emotional well-being.

The figure above is a tool for visualising the characteristic profile of each ACT project, illustrating how projects relate to oral and general health aspects. The algorithm also describes other important perspectives. For example, modern society is multicultural, and its diversity is on the rise. Patients and their families, other relatives, and care providers may vary widely in background. Greater knowledge of the role of cultural identity is essential. There is also a strong trend today for older persons to live independently longer with institutionalization occurring later in life.

ACT research questions target numerous stages in the chain of events for each health problem, from prevention and early diagnostics to terminal stages of dysfunction:

To investigate the incidence and prevalence of disorders related to oral health and function in older persons, and determine factors of importance for oral health. Treatment of conditions involves diagnostics of the main problems. Performance of causal therapy should result in relief of symptoms and enhanced function. The experiences and understandings of older persons in relation to oral health, oral care, and treatments need to be explored, including those of relatives and caregivers who might be the persons supporting or assisting the older person. Systematic evaluation of research results increases knowledge, which will be shared and disseminated, for example, via publications and educational events that target various groups, such as researchers, clinicians/staff, older persons/clients, and other stakeholders, to ensure that the knowledge will be incorporated in implementation strategies and quality improvement.

Another need is the systematic evaluation of implementation strategies and interventions – implementation research – to optimize the impact and use of knowledge in practice and policymaking.

Research collaborations

ACT has established collaborations with a number of researchers at Karolinska Institutet, primarily at the Department of Neurobiology, Care Sciences and Society and the Department of Medicine Solna. Several projects are conducted in collaboration with the Research unit at Stockholms Sjukhem and the Academic Primary Healthcare Centres (APHC) in Stockholm. Ongoing projects also involve cooperation with private dental care actors (e.g., Oral Care AB), companies in the business sector, and development companies.

For details of ongoing projects, see the ACT research project catalogue at aldretandvard.se.

Information and education

ACT organizes and participates in conferences and programs on oral health in older people. Within Stockholm County, a network focusing on oral health in older persons has been established for dental personnel. Web-based seminars occur on a monthly basis and constitute an important means of skills development and continuing education.

ACT participates in the undergraduate training of dental and dental hygienist students by offering internship. At the undergraduate level, clinical projects are supervised regularly. Our near-term aim is to establish a collaboration between ACT, dental and dental hygiene education, and other programmes such as medicine and nursing. Interdisciplinary seminars on oral health will be one of the first steps.

ACT also arranges courses and seminars on geriatric dentistry for dental professionals, and nursing home and home care staff on a regular basis. These educational activities include theoretical and practical aspects of oral health and oral hygiene. ACT lecturers strive to prepare the next generation of dental clinicians and healthcare workers for geriatric dentistry. This is a field where teamwork involving multi-professional expertise is essential if patient care and oral health is to improve on both the population and the individual level. The knowledge accrued from the research activities at ACT is implemented in their educational activities, with the end result of better, more effective care programmes and dental treatment plans for patients.

Clinical practice

The Public Dental Service in Stockholm County [Folktandvården Stockholms län AB] manages the dental clinic at ACT, which provides comprehensive dental services to individuals with special needs, such as frail older persons. Clinical work focuses primarily on diagnostic services, preventive care, oral pathology consultations, and restorative dentistry. We offer general dental care that is tailored for frail older persons who suffer from cognitive decline and functional limitations, or who have complex medical or medication histories. Older persons do not need a referral to seek treatment. Clinic patients may be asked to participate in various research projects. Clinical staff may be offered part-time work in clinical evaluation projects or research programmes. This strategy, which integrates research and daily clinical work, ensures that ACT projects retain clinical relevance while also providing continuing education of clinical staff.

Organization

ACT was established in 2013 and is the first establishment in Sweden to undertake academic studies and activities in geriatric dentistry. The Centre is a collaboration between the Department of Dental Medicine at Karolinska Institutet; Folktandvården Stockholms län AB (the Public Dental Service in Stockholm County); Stockholm County Council; and Stockholms Sjukhem.

The board consists of representatives from these bodies. The Director and the co-Director are employed by Karolinska Institutet and Folktandvården Stockholms län AB, respectively.

The Academic Program Group comprises senior researchers from adjacent fields who support the directors in their guidance of the Centre. At present, the various disciplines involved in ACT include geriatric dentistry, geriatrics, pharmacology, care sciences, epidemiology, microbiology, and nutrition.

The ACT organisation (2016)

