

BARCELONA ALZHEIMER TREATMENT & RESEARCH CENTER

Diagnostic unit

Fundació ACE. Institut Català de Neurociències Aplicades is a **private foundation, defined as 'health care charity foundation'** since 1995. It focuses its activity in the field of aging, cognitive impairment and dementia.

Foundational objectives

The main objective of Fundació ACE is to promote research, information and teaching related to dementia, as well as to diagnose and treat age-related cognitive and behavioral disorders, particularly Alzheimer's disease or other related dementias. The specific objectives are:

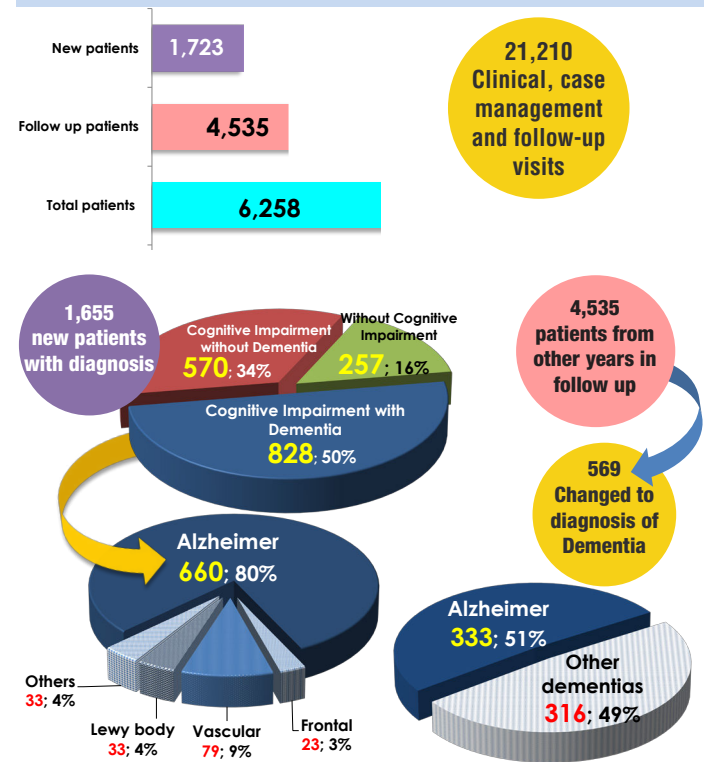
- To achieve through the Diagnostic Unit an **early diagnosis and treatment for dementia** which offers comprehensive and fully integrated attention, both in health care and social fields throughout the process of the disease.
- To carry out **basic, clinical and applied research** into dementia. This research is funded through sponsorships and the participation in multiple national and international studies of different types: clinico-epidemiological studies, social studies, clinical trials, non-pharmacological strategies and validation of both psychometric and biometric measurement instruments, as well as genetics studies.
- To become a **reference resource** for primary health care professionals in the Barcelona area and people that seek information about dementia.
- To **provide support and assistance** through the day care services to people with cognitive disorders or dementia who require treatment and/or monitoring, both in the pharmacological field and non-pharmacological interventions, and offer guidance to families and caregivers.

Main strengths

- Large clinical data base
- High annual clinical activity
- Diagnosis based on multidisciplinary consensus at daily meetings
 - Data correlation with GWAS
 - Analysis of brain tissue
- Participation in the main international clinical trials in AD and other dementias
- Research excellence acknowledged by international and national consortia: NeuroCHARGE, IGAP, ADGC, DEGESCO, EADC, and CIBERNED
- Biorepository of more than 8,500 DNA samples

Diagnosis is obtained through an interdisciplinary process that includes **five visits** to carry out a comprehensive assessment and to design intervention proposals that consider the patient's overall needs. Specialized medical staff (neurologists, geriatricians and psychiatrists), specialists in neuropsychology, nursing and social work comprise the **multidisciplinary team** that carries out the specific evaluation of the patient.

Health care activity & Typology of Diagnostics



993 patients diagnosed with Alzheimer's disease in 2014

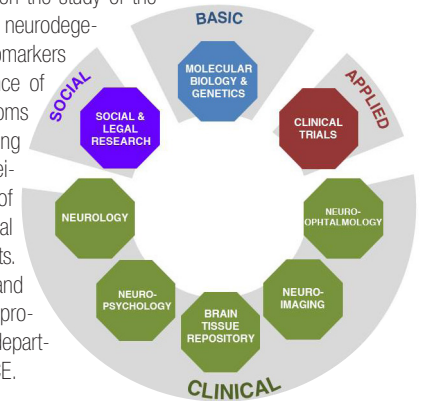
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Research Unit

Fundació ACE is a reference center in dementia research. Our strategy allows us to deal with patients and their environment. For this reason, Alzheimer's disease is not only studied from a biomedical point of view but also from a social stand point.

The main lines of research carried out at Fundació ACE are basic, applied, clinical and social.

Basic and applied research focus on the study of the genome and phenome of common neurodegenerative diseases; the study of biomarkers used to assess the risk or presence of a disease before clinical symptoms appear; on the use of neuroimaging for the diagnosis of prodromal Alzheimer's disease, and on the design of new approaches to pharmacological and non-pharmacological treatments. The study of the social, ethical and legal impact of neurodegenerative processes are also addressed by the department of social work of Fundació ACE.

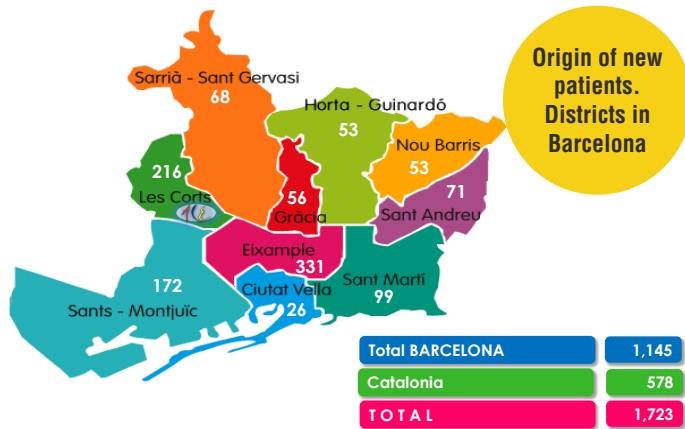
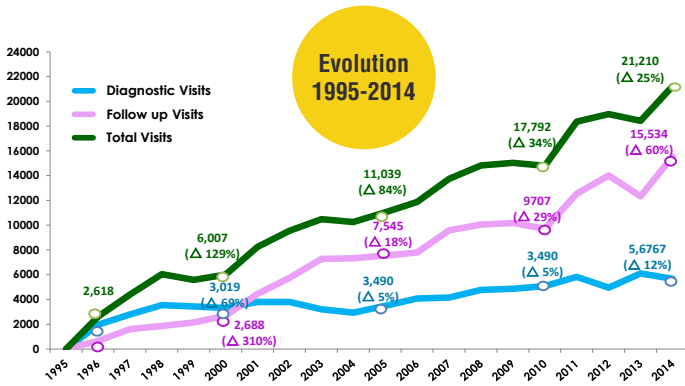


DNA collection and brain tissue repository

Over 17 years Fundació ACE has created a digital database with information on more than 18,000 individuals. It has developed tools for extracting systematic clinical data and has collected **samples from over 8,500 subjects** to extract and analyze their DNA. This collection of genetic material and its associated patient data is the most extensive in our country and one of the largest in Europe.

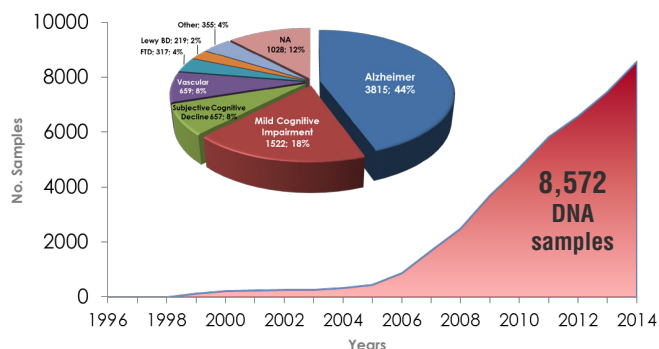
This biorepository, together with the expertise of Fundació ACE professionals, has led to significant collaborations with major international consortia related to genetic studies on aging. The Foundation is a partner in the transatlantic international consortium NEURO-CHARGE 2 and in the meta-GWAS IGAP project (International Genomics of Alzheimer's Project) and the national consortium DEGESCO.

Fundació ACE has signed cooperation agreements with the Centre for Genomic Regulation, the Autonomous University of Barcelona, the University of Pittsburgh, the Tanz Centre for Research in Neurodegenerative Diseases (Canada), the University of Bonn and the Institute Pasteur, among others.



Changes in diagnoses 1996-2014

| Typology of Diagnosis | | Initial diagnosis | Final diagnosis |
|---|--|-------------------|-----------------|
| WITHOUT COGNITIVE IMPAIRMENT CDR 0 | Without Impairment / Subjective Memory Complaints | 1,952 | 1,746 |
| | TOTAL WITHOUT COGNITIVE IMPAIRMENT | 1,952 | 1,746 |
| COGNITIVE IMPAIRMENT WITHOUT DEMENTIA CDR 0.5 | Mild Cognitive Impairment (MCI) | 4,972 | 3,478 |
| | Other cognitive deficits due to psychiatric diseases | 380 | 363 |
| | TOTAL COGNITIVE IMPAIRMENT WITHOUT DEMENTIA | 5,352 | 3,841 |
| COGNITIVE IMPAIRMENT WITH DEMENTIA CDR 1,2,3 | Alzheimer's disease (AD) | 7,068 | 8,365 |
| | Frontotemporal Dementia (FTLD) | 431 | 486 |
| | Vascular Dementia (VD) | 1,132 | 1,406 |
| | Lewy body Dementia (LBD) | 509 | 607 |
| | Other degenerative dementias | 49 | 46 |
| | TOTAL DEMENTIA | 9,189 | 10,91 |
| UNFINISHED | Unfinished, withdrawals and deduced | 833 | 829 |
| | TOTAL | 17,326 | 17,326 |



Clinical trials

Since 1995, Fundació ACE has participated in more than 95 clinical trials, which included over 1,000 patients.

In 2014 ACE conducted **15 pharmacological clinical trials** in Phase I, II and III targeting AD patients at different stages of the disease and Mild Cognitive Impairment. More than **3,000 acts** associated with clinical trials were conducted the same year. Fundació ACE carries out clinical trials in collaboration with Grifols, Roche, Lilly, Lundbeck, Janssen, Nutricia, Araclon, TauRx Therapeutics, Merk Sharp & Dohme and Genentech, among others.

| PHASE | Active from other years | New 2014 | TOTAL |
|-------------------|-------------------------|----------|-----------|
| I | | 2 | 2 |
| II | 3 | 2 | 5 |
| III | 3 | 5 | 8 |
| TOTAL 2014 | 6 | 9 | 15 |

Research activity 2014

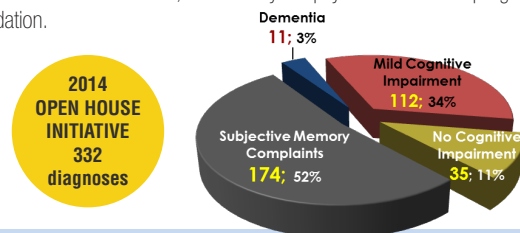
- 2 European Grants funded by H2020 & EFSD and 3 grants funded by Spanish Public Research Institutions
- €1,200,000 was obtained from grants (€487,117 from new grants and €743,474 from previous years)
- 3 clinical research studies supported by Fundació ACE, biotech companies and pharmaceutical industry
- 25 published articles with a total impact factor of 127.5
- 8 oral communications and 6 posters submitted to the main national and international dementia conferences.

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Corporate social responsibility

Fundació ACE is a responsible institution, supportive of the social environment.

- During 2014, thanks to the action of Fundació ACE Social Responsibility, of the 6,258 patients treated at the Diagnostic Unit, **37% of new visits and 41% of follow-up visits were covered by ACE.**
- To raise awareness of the importance of predicting cognitive disorders, Fundació ACE organizes the **Open House Initiative** (OHI). 8 sessions took place in 2014, with more than 300 memory assessments to citizens over 50 years, totally covered by ACE.
- Fundació ACE joined two museums, Museu d'Història de Barcelona (MUHBA) and Museu Frederic Marès, to initiate the project **"Estimul'Art. History, art and Alzheimer's disease"**. A program of several visits to museums specially designed for people with early-stage dementia, and for their families or carers.
- Fundació ACE organizes fortnightly **educational-group meetings**, addressed to patients' families and carers, financed by the psycho-educational program of the Foundation.



Transfer of knowledge

In order to raise awareness of dementia and to create social consciousness, Fundació ACE worked throughout 2014 in dissemination of knowledge and educational programs:

- In May 2014, Fundació ACE organized the 9th edition of the **Biennial Conference Barcelona-Pittsburgh**. This edition was attended by over 250 registered attendees and 41 international speakers.
- **Collaboration with the media**, radio, television and newspapers, requiring experts to discuss biomedical or genetic research, risk factors or social aspects. During 2014, professionals of Fundació ACE made 15 TV appearances, given 5 radio interviews and 25 opinion articles and interviews in newspapers both in digital and paper editions. In total there were 48 media interventions.
- Throughout the year ACE responded to all **queries from families and caregivers** sent to the Foundation website: www.fundacioace.com.
- During 2014, professionals from Fundació ACE have participated as **teachers** in 8 courses, including masters and participated as speakers or moderators in 28 lectures and conferences.
- Within the training program, ACE has hosted 1 geriatrician, 1 biologist and 1 neuropsychologist to complete their post doctoral and master **practices in house.**

ALZHEIMER CENTRE EDUCACIONAL DAY CARE SERVICES (DCS)

Day Care Unit

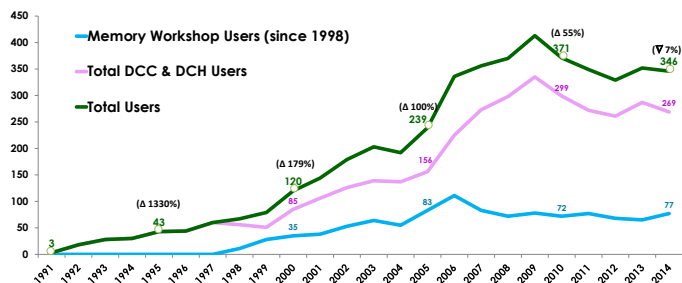
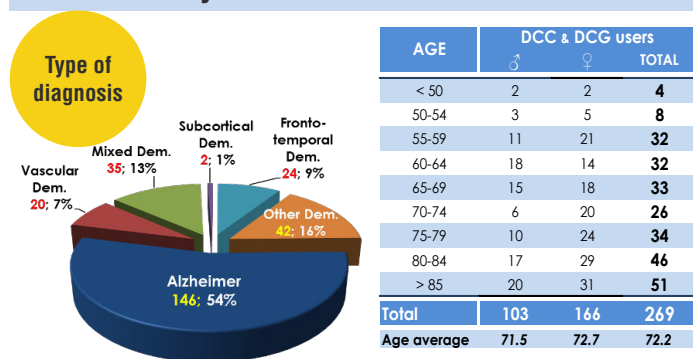
Alzheimer Centre Educacional (ACE) was created in 1991 and was the first therapeutic day care center in Spain focused on neurodegenerative diseases.

All ACE day care services are conducted under the guidelines of the Comprehensive Psycho-stimulation Program (Programa de Psicoestimulació Integral-PPI) (Tárraga L. & Boada M. 1990). The PPI is a psychosocial intervention designed to treat Alzheimer's disease and other dementias, to rehabilitate and **slow the evolution of the clinical process** from an ecological and comprehensive stand point. An Internet-based program called Smart Brain is also used as an effective tool for cognitive stimulation.

The day care unit comprises:

- Therapeutic Day Care Centre (DCC) for Late Onset Dementia (LOD):**
 Its activity is focused on patients with LOD. In 2014, 103 patients were attended in this resource.
- Day Care Hospital (DCH) for Early Onset Dementia (EOD)**
 This resource is devoted to people with EOD. ACE attended 166 people during 2014.

DCS activity



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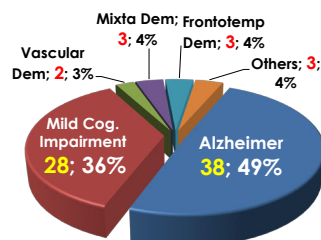
Memory unit

Memory workshops

Memory stimulation workshops are conceived as structured training programs. It is a service focused on patients with cognitive and functional status in memory complaints, Mild Cognitive Impairment and very early stage dementia. A total of 77 subjects participated in these workshops in very small groups in 2014.

OBJECTIVES

- To consolidate their cognitive status as long as possible.
- To increase the residual learning experience during the first stages of the disease.
- To create a weekly routine that helps patients to socialize within a group.
- To provide a status of wellness, decreasing responses of anxiety and depression, and improving their autonomy.
- To promote participant interaction through the group format, acting as a support and self-help tool.



Type of diagnosis

77 users

Support groups for families

Support groups are designed to offer patients' families skills to better manage the dementia process. These group meetings are based on horizontal link between families, professionals and community associations. These groups are addressed to spouses and children of Early Onset Dementia subjects to produce awareness of specific needs and to improve how spouses can manage emotional, social and daily challenges.

OBJECTIVES

- To **inform** about the diagnosis and treatment of the disease.
- To give **advice** to families about the expected evolution of dementia.
- To provide **intervention strategies** to manage emotional, social and daily challenges.
- To provide strategies for the use of **cognitive stimulation** at home and consolidate their benefits in their daily life activities.
- To promote a **change in perception and attitude** towards this disease.