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European Network in  
Nutritional Education  
for Acquired Disabilities

# EUROPEAN NETWORK IN NUTRITIONAL EDUCATION FOR ACQUIRED DISABILITIES (ENNEADI) POLICY RECOMMENDATIONS

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Public Health Agency of Emilia-Romagna- Rehabilitation Medicine and Neurorehabilitation Unit of the IRCCS - Institute of Neurological Sciences of Bologna (Italy)

Association "Amici di Luca", Bologna (Italy)

Region Örebro County (Sweden)

Association "La RETE" (Italy)

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## 1. Introduction to ENNEADI Project

ENNEADI is a transnational project co-financed and carried out according to EU Programme Erasmus + KA2 – Strategic Partnerships for Vocational Education and Training in the framework of the call for proposals EAC/A02/2019.

The ENNEADI project is mainly addressed to professionals who, with different roles, work and assist people with acquired disabilities, with particular reference to neurological disabilities resulting from a traumatic event (e.g. after a brain or spinal cord injury).

The "sedentary" condition of these subjects requires special attention to healthy behaviours and good lifestyles related to nutrition, in order to prevent diseases such as overweight and obesity, diabetes, and cardiovascular diseases.

For this reason, it is important to raise awareness and make the professionals working with people with acquired disabilities more aware of the importance of their role towards the quality of life and good nutritional practices of these non-self-sufficient subjects, in particular in chronic phase at home.

### 1.1. The Goals of ENNEADI

To let involved professionals and stakeholders improve their knowledge on good practices (at European level), related to quality of life, wellbeing and nutritional practices in favour of people with acquired disability;

To start up a methodological review of new training paths aimed at teaching in innovative, flexible and open ways, the aforementioned subjects in favour of professionals with very different educational and professional background;

To raise awareness among partner's entities, local stakeholders, institutions and European networks on the importance of practices on quality of life and dietary good standards for assuring wellbeing of disadvantaged people such as persons with acquired disability.

### 1.2. Outcomes of ENNEADI

1. [Guidelines on training](#) and educational methodologies and practices in favour of professionals ordinarily working with people with acquired disability, taking stock of most recent scientific research in the field of life sciences, health, life quality, etc.
2. An [e-Learning course](#) addressed to those professionals on preventive dietary habits and quality of life.
3. Policy recommendations that contribute to the promotion of structured training modules on healthy and correct nutritional habits for people with acquired disability in the institutions and bodies that offer study courses and refresher courses for professionals.



### 1.3. Scientific Evidences and State of the Art

The right to adequate food is recognized in the food security guidelines of the UN Food and Agriculture Organization (FAO Council, 2004); Article 28 of the UN Convention on the Rights of Persons with Disabilities (UN CRPD).

In a recent study, Waltz et al. (2018) interviewed people with disabilities about their experience with food and food inclusion. Respondents differentiated between physical accessibility and social accessibility. Usually, the first barriers mentioned were physical. First issues that people with disabilities have to tackle are: 1) the facility accessibility, 2) the possibility to move around freely, 3) the presence of an available toilet.

Then participants to the study were also concerned about the atmosphere, lighting and sound, the attitude of staff towards them. Finally, they mentioned the social experience of going out for a meal. The majority of people spoke about the quality of their company, the meal itself, the feeling of togetherness. Respondents from this study highlighted the fact that experiences involving food, such as eating out and attending community events, are crucial factors for exclusion or inclusion.

At the European level, Directive 2019/882/EU on the accessibility requirements of products and services is part of the Union's actions aimed at guaranteeing the rights of people with disabilities.

At the Italian level, the law that regulates the elimination of architectural barriers in private structures open to the public (and therefore also in restaurants and bars) is Law 104/92 which in article 24 refers to DM236/89, and it indicates the technical characteristics that private buildings open to the public must have in order to guarantee accessibility, adaptability and therefore the overcoming and elimination of architectural barriers. If the attention of the legislator towards the problems of accessibility and the removal of physical barriers that hinder the participation of disabled people in social life is evident, what is still lacking are legislative references that address the issue of inclusiveness of access to food. Arrangements that allow people with disabilities to use catering services independently are still lacking and left to the will of private individuals who decide to organise their restaurants in order to grant disabled people's full accessibility. Examples are those restaurants that have menus available in Braille language, or larger fonts for visually impaired people.

Worldwide, people with disabilities are more likely than people without disabilities to encounter barriers to adequate food (Conference of States Parties to the Convention on the Rights of Persons with Disabilities, 2015). Access barriers include physical barriers, attitudinal barriers, differential treatment, and inadequate information (de Jong et al., 2013). Impaired capacity, lack of support to prepare food or eat, lack of adequate income, lack of transportation or other help to obtain food, being unable to enter and use public eating facilities, or feeling unwelcome in public situations involving food (cafés, restaurants, public celebrations and events) can impact access (Webber et al., 2007).

The quantity and quality of food that disabled people can access may be limited by these barriers, even in developed Western countries (Webber et al., 2007). Inadequate access to food can also



produce disability through the long-term effects of malnutrition, or exacerbate existing disability (Groce et al., 2014).

Beside the well-known right to adequate food inclusion and access, recent researches have documented food access disparities for people with disabilities and limited interventions that address food inequities for this population. To be effective, these interventions must go beyond the individual, and should include a food systems approach that advances equity for people with disabilities as called by The World Health Organization (WHO) Sustainable Development Goals (SDGs).

Holden and Corby in 2019, revised the evidence on approaches to ensuring people with disabilities are reached through nutrition programming. They highlighted that factors responsible for poor access to nutrition programming of these people can be classified into four levels: Individual, Environmental, Attitudinal, Institutional.

In particular, several gaps have been found regarding nutrition in people with disabilities at the state and institutional level:

- Lack of national guidelines and disability specific guidance for nutrition programming.
- Lack of age, gender and impairment disaggregated data on access to nutrition programming.
- Lack of technical expertise around nutrition programming from a disability perspective.
- Lack of training and awareness in early identification and intervention.
- Suboptimal care and lack of follow up.

## 1.4. Figures of disabilities

The need and value of Policy recommendations on new e-learning courses are defined on the analysis of the statistical and scientific data concerning nutrition and life quality issues of people with acquired disabilities. Acquired disabilities mainly include Traumatic brain injury (TBI) and Spinal Cord Injury (SCI), currently recognized as global health priorities in view of the complex and expensive medical care they necessitate.

### European level

In Europe, the most common causes of traumatic injuries are motor vehicle accidents – 41,4%, falls/jumps into water – 34,9%, sports injuries and violent injuries – 20,1%. The share of people with disabilities differs between EU countries: Malta has the lowest share (11%) while Latvia has the highest (39.5%), average of Baltic countries (31,1%), (Eurostat, 2020). In European countries the number of persons suffering from acquired disabilities is still high.



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Acquired disabilities in school and working age are largely due to trauma and are constituted by Traumatic brain injury (TBI) and Spinal Cord Injury (SCI). These conditions are recognized as global health priorities in view of the preventability of most injuries and the complex and expensive medical care they necessitate. Data from the “Global Burden of Diseases, Injuries, and Risk Factors (GBD) Study 2016” show that, between TBI and SCI, 28 million new cases occurred worldwide in 2016, causing 8.1 million and 9.5 million years lived with disabilities (YLDs) respectively. According to the same study in 2016 in Europe there were over 4.29 million new TBI cases. Moreover, from 1990 to 2016, the prevalence of TBI increased by 8.4%.

It is well documented that prevalence of obesity and overweight is higher in people suffering from acquired disabilities such as TBI or SCI than in able-body people. In parallel, people with acquired disabilities are more likely to have insulin resistance, elevated LDL and reduced HDL cholesterol levels. All these factors are associated with an increased risk for type II diabetes and cardiovascular diseases that worsen both Life Expectancy (LE) and Quality of Life (QoL) of these patients. Plasma lipid profile, obesity and insulin resistance are factors modifiable through lifestyles and promoting healthy behaviours and nutrition over time might strongly improve QoL in people with acquired disabilities.

### Figures in Italy

In Italy, in 2019, people with disabilities - or those who suffer from health problems, serious limitations that prevent them from carrying out their usual activities - numbered 3 million and 150 thousand (5.2% of the population). This number includes very different disabilities, ranging from the maximum difficulty in the basic functions of daily life to much milder limitations, and also to chronic diseases. 15% of Italian families are directly involved in the phenomenon. ([ISTAT data 2021](#))

Previously, CENSIS (Italian Research Center for Social Investments) estimated 4.1 million people with disabilities in **Italy**, equal to 6.7% of the population and expected a growing trend: 4.8 million (7.9% of the population) in 2020 and 6.7 million (10.7%) in 2040.

In Italy in 2019, a total number of 86,360 acute hospitalizations were recorded in the ordinary regime for stroke. 75% of the surviving patients have some form of disability which in half of the cases leads to loss of self-sufficiency ([Salute.gov.it](#)).

### Figures in Lithuania

In **Lithuania** the number of traumatic injuries for 1000 residents has changed. In 2019, there were 1864 cases (0,067%); in 2020, there were 1724 cases (0.062%); and in 2021 the cases were 1419 (0.005%). According to the data of the Institute of Hygiene of Lithuania (2021), it was established that brain injuries of traumatic origin account for about 74,4-82,0 percent, of which even 49,4-62,1 percent are occurring during motor vehicle accidents, 26,7-43,1 percent during falls or jumps into water bodies, and 16,8-22,3 percent during sports injuries. In Lithuania, up to 120 people suffer from brain damage every year, and 24 new cases occur per 1 million inhabitants per year. According to the data of the Health Statistics Portal, more than 58.1% of persons injured in car



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accidents, domestic injuries, falls or violent crimes were under the influence of alcohol (<https://www.hi.it/>).

### Figures in Spain

In **Spain**, there are more than 435,400 people with Acquired Brain Injury (ACD) according to data from the Survey on Disability, Personal Autonomy and Dependency Situations published in April 2022 by the National Institute of Statistics (INE). 361,500 people have Acquired Brain Injury as a result of a stroke, more than 80%. 73,900 people as a consequence of a Cranioencephalic Trauma (TCE). Each year there are 104,701 new cases of Acquired Brain Injury: 99,284 due to cerebrovascular accidents, 4,937 due to head injuries (TCEs) and 481 due to anoxia. 65.03% of people with Acquired Brain Injury are over 65 years of age, a figure that is related to the high incidence of stroke in a group in which most of them (52%) are women. Despite this percentage, only 44% of the total number of people with Brain Injury who requested an assessment of their dependency were women. This point suggests a special vulnerability of women with brain damage, who request administrative recognition of their disability to a lesser extent than men; a situation that researchers relate to age and cultural factors. In the latter case, referring to the traditional relegation of women from public spaces, which may influence the slightest request by her, or her family environment, for this certificate (Europe.eu, 2020).

### Health risks in people with disabilities

People with acquired disability generally show a much higher risk of leading a bad life-style in terms of dietary and health practices, facing obesity and associated secondary conditions, such as cardiovascular diseases, type II diabetes, etc. Bad quality of life is also connected and interrelated with psychological discomfort. Recent research gives evidence on how improving education and awareness on good quality-of-life practices is crucial for human enhancement and improvement of physical and psychological conditions for people with acquired disability. It is clear that general knowledge and awareness on these aspects are not diffuse and equal among those professionals and caregivers that have daily contact with people with acquired disabilities. The specific objective of the ENNEADI project is therefore the design of new educational paths aimed at transferring to professionals those contents that are crucial for improving quality-of-life practices, in particular through correct dietary choices aimed at improving quality of life and preventing the aggravation of health conditions. New educational methodologies and tools presented in Lectures and E-Learning-based modules can be included in personal curricula for a large span of professionals ordinarily working with people with acquired disability.

## 1.5. Situation on Training of Professionals in Partner Countries

The situation on the preparation of professionals who are going to work with people with acquired disability in project partner's countries was analysed.

- 779 universities were analysed in Spain (399), Italy (317), and Lithuania (63).



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42% of them offer subjects related to nutrition in their curricula, 31% include training on disabilities, and **only 1%** include training about nutrition in people with disabilities. Thus, this analysis evidences the lack of training about nutritional needs of people with disabilities in the official curricula of professionals working with this target group.



## 2. Policy Recommendations

### 2.1. Target Audience

- **Policy makers** at Institutional, Municipal, Governmental and EU levels. Institutional referents, Local stakeholders.
- **Professionals:** Physiotherapists, Speech Therapists, Occupational therapists, Nurses, Dieticians, Nutritionists, Specialists in preventive and adapted physical activities, Psychologists, Social assistants, Social educators, Social workers, and other professionals working with people with acquired disabilities.
- **Family members, Caregivers, People with acquired disabilities** improving life quality of people with acquired disability.

### 2.2. Training Benefit for Professionals

- **Improved knowledge of professionals:** Lectures and e-learning courses (<https://elearning.enneadi.eu/>) prepared by project partners are flexible and free of charge, so professionals will only require the time individually allocated. In this way, opportunities to increase the professional qualification are created.
- **Improved competences of professionals:** Professionals who have attended free online lectures and completed e-learning courses will update specific nutrition knowledge that is required working with persons with acquired disabilities.
- **Improved dialogue between professionals of different disciplines:** After completing the e-learning course professionals will expand, develop specific nutrition knowledge that is required working with persons with acquired disabilities with other professionals, or working in the interdisciplinary teams.

### 2.3. Training Benefit for People with Disability and their Communities

- **Improved quality of life of the patients:** If managing nutrition of patients with acquired disability improves, the need of taking certain drugs/medicines or re-hospitalized patients should be avoided. If we prevent the worsening symptoms with proper nutrition and recognize the benefits of certain foods, patients will save money. Thanks to better management of problems related to the digestive system and an overall counteraction of fragility, in the medium-long term will lead to economic savings due to lower treatment costs for secondary pathologies.



- **Improved quality of life of the family:** Preventing the worsening symptoms with proper nutrition and recognizing the benefits of certain foods, family members should save money, they will be protected from unforeseen situations related to improper feeding of patients, and have more time to satisfy their own needs.
- **Reduced risk factors for chronic diseases:** Proper nutrition and recognition of the benefits of certain foods can reduce the risk of occurrence of chronic diseases as well as of additional drugs/medicines.
- **Reduced risk of re-hospitalization:** New knowledge about mechanisms on how to regulate nutrition could reduce the symptoms associated with worsening of a patient's health condition, thus reducing the risk for rehospitalization.
- **Reduced costs for health care systems and social insurance:** Opportunity to better manage nutrition of the patients with acquired disability, will create the conditions to avoid the need of additional measures stabilising or slowing down the occurrence of chronic diseases, and the usage of supplementary drugs/medicines. All mentioned above, create the opportunity to decrease expenses of social insurance, social/medical care or certain social benefits.

## 2.4. Training Benefit for the Society, Public and Private Organization

- **Greater social inclusion of people with disabilities:** Because of decreasing problems in nutrition, persons with acquired disability should be more involved and active into societal life (attendance of day centres, education units, leisure activities, etc.).
- **Reduced costs for health care systems and social insurance by investing in training and prevention:** The presented e-learning courses do not require large financial investments, as they can be implemented using existing human and IT resources. Another benefit for health and social care systems is that by applying new knowledge in the practice, the money could be saved for rehabilitation, treatment and development of additional services in the improvement of life quality of people with acquired disability.

## 2.5. Set of recommendations

We concretely ask policy makers to become aware of:

- Only 1% of the Universities analysed in the three participant project countries include training about nutrition in people with disabilities.
- There is a lack of training about nutrition in professionals working with people with disabilities.



- There is a lack of national guidelines and disability specific guidance for nutrition programming.
- There is a lack of nutritional data in people with disabilities, so it is not possible to quantify the problem. Standardised data collection batteries should be generated so that information could be collected from hospitals and centres in the different phases of acquired disabilities. With this data we would have a starting point.
- There is a lack of age, gender and impairment disaggregated data on access to nutrition programming.
- There is a lack of technical expertise around nutrition programming from a disability perspective.
- There is a lack of training and awareness in early identification and intervention.
- There is suboptimal care and lack of follow up.

Thus, policy makers should be aware of some important points:

- The importance of prevention: Relationship between *Gut - Brain - Behavior* as a decisive factor in rehabilitation.
- The importance of improving multidisciplinary competences of professionals involved in managing disability and increasing professional competences.
- The need of incorporating the dietician profile in the rehabilitation team.
- The need to incorporate nutritional assessment and monitoring into the health follow-up of the subject with AD.
- The importance of incorporating mandatory basic training on nutrition and more specific training according to the professional profile.
- The importance of recommending NGO's, municipal institutions, and any entity whose activities are related to the quality of life of persons with acquired disabilities, to initiate changes in the enlargement of services for people with acquired disability in social areas (catering establishments, accessibility to suitable feeding and eating facilities).



- The importance of setting the ground for disseminating of e-training platform in different professional's educational contexts; to offer for the health and social care institutions, educational units to include the e-learning program in the process of:
  - o Advance training courses,
  - o Refreshment courses for professionals,
  - o As **elective**/compulsory e-learning course to include into certain College/University study programs.
- Support concretely the created e-learning platform to reach the above mentioned benefits. (<https://elearning.enneadi.eu/>).

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## 4. Legal Basis of Partners' Countries in Preparation of Recommendations

Policy recommendations closely correspond to the **European Union Law** such as:

- “Nutrition, overweight and obesity – EU strategy” (Date of last review: 13/03/2017)  
(<https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=CELEX%3A52007DC0279>)
- “European Disability Strategy for 2021-2030”  
(<https://www.inclusion-europe.eu/european-disability-strategy>), containing three main areas: the rights of people with disabilities, Independent living and autonomy and Non-discrimination and equal opportunities.
- European Food and Nutrition Action Plan 2015–2020  
([https://www.euro.who.int/\\_data/assets/pdf\\_file/0003/294474/European-Food-Nutrition-Action-Plan-20152020-en.pdf](https://www.euro.who.int/_data/assets/pdf_file/0003/294474/European-Food-Nutrition-Action-Plan-20152020-en.pdf));
- European Association for the Study of Obesity (<https://easo.org/>)
- WHO World report on disability (2011)  
(<https://www.who.int/teams/noncommunicable-diseases/sensory-functions-disability-and-rehabilitation/world-report-on-disability>)

**Italian laws** on disability and Inclusion: the “Italian Federation for overcoming handicap” (FISH) in its website has a section with the entire list of normative regarding disabilities: (<https://www.handylex.org/category/norme/>). The right to adequate food is recognized in the food security guidelines of the UN Food and Agriculture Organization (FAO Council, 2004); Article 28 of the UN Convention on the Rights of Persons with Disabilities (UN CRPD). Law 68/1999 provides for the assessment of the work skills of persons with disabilities. The law that regulates the elimination of architectural barriers in private structures is Law 104/92 art. 24 refers to DM236/89.

The main Laws in **Lithuania** according to which the life of persons with disability is organized are Law of the Republic of Lithuania on Social Integration of People with Disability (<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.2319/asr>); Food Law of the Republic of Lithuania. 14-12-2019. Nr. Viii-1608 Vilnius (<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.98953?jfwid=32wf6ru0>); The Law of Public Health of Republic of Lithuania 01-04-2016 Nr. Ix-886 Vilnius (<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.412532>).

In **Spain** such Law providing support for persons with disability are actual: Royal Legislative Decree 1/2013, of November 29, which approves the Consolidated Text of the General Law on the



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rights of people with disabilities and their social inclusion ; Law 51/2003, of December 2, on equal opportunities, non-discrimination and universal accessibility for people with disabilities; Law 39/2006, of December 14, for the Promotion of Personal Autonomy and Care for people in a situation of dependency; Royal Decree 173/2010, of February 19, which modifies the Technical Building Code, approved by Royal Decree 314/2006, of March 17, on accessibility and non-discrimination of people with disabilities; Law 6/2022, of March 31, amending the Consolidated Text of the General Law on the rights of persons with disabilities and their social inclusion, approved by Royal Legislative Decree 1/2013, of November 29, to establish and regulate cognitive accessibility and its conditions of demand and application; Royal Decree 888/2022, of October 18, which establishes the procedure for the recognition, declaration and qualification of the degree of disability.

#### Lead Partner



#### Partners



#### Associated partners

