



# TROOM

TRAINING TESTING & THERAPY ROOM

**TOTAL INTERACTIVE  
IMMERSIVE ENVIRONMENT**







**"TROOM"**

## MODULES SUMMARY OF CONTENTS

Neurodevelopment

Autism spectrum

Stimulation for children with visual deficiency

Language disorders

Special education

Elderly patients

Sports training and evaluation



# MODULE NEURODEVELOPMENT

## INTRODUCTION

The neurodevelopment module is aimed at providing rehabilitative medical care for the pediatric population at high risk of generating neurological damage, from the first day of birth to 18 months of age.

With this new therapeutic modality applied to neurodevelopment, newborns and infants can be treated with a comprehensive and innovative approach with the use of visual, auditory, tactile, olfactory and taste stimuli, with the support of technological innovations applied in the medical area.

The therapies proposed in this module will complement the effectiveness of traditional physical and occupational therapy that is taught in the areas of Rehabilitation and thereby improve the quality of life of infants and, in many cases, curb the presentation of some type of disability.

In order to systematize specific neurostimulation for the pediatric population at risk of generating neurological damage, therapies were designed based on neurological age and considering the main factors generating neurological disability in the pediatric population such as:

- HYPOXIA
- PREMATURETY
- HYPOTROPHY
- INFECTIONS IN THE PERINATAL STAGE

The relevant symptoms that highlight the need to enter an early multiple stimulation program such as:

- *changes of functional states*
- *muscle tone alterations*
- *posture and/or movement changes*
- *persistence of primitive reflexes*
- *delay in the acquisition of behaviors adjusted to age*



The therapy sessions designed in this module are focused on improving the acquisition of behaviors and reaching the levels of neurological integration that generate normal patterns in the following areas of evolution and development of the human being:

- *perceptual fine motor skills*
- *gross motor skills*
- *cognition*
- *social and emotional*
- *language*
- *diet*



### GENERAL OBJECTIVE:

Attend to newborns and young infants with a comprehensive and innovative approach with the use of visual, auditory, tactile, olfactory and taste stimuli, with the support of technological innovations applied in the medical area and thereby limiting the occurrence of Neurological Damage or its sequels.

### SPECIFIC OBJECTIVES:

- Acquisition of behaviors and reaching the levels of neurological integration that generate normal patterns in areas of evolution and development of the human being.
- Complementing the effectiveness of traditional physical and occupational therapy
- Improve the quality of life of infants and in many cases, stop the presentation of some types of disability.
- Systematizing neurostimulation specific to the pediatric population at risk of generating neurological damage





# MODULE AUTISM SPECTRUM

## INTRODUCTION

The module is designed to encourage sensory stimulation and promote the development of social communication and learning in children with Autism Spectrum Disorder from 2 years to 6 years of age. This therapeutic modality innovatively complements the psychoeducational, social and/or medical care that the patient receives.

With this module we can provide a conscious and guided stimulation that positively impacts a) spontaneous communication, b) shared attention, c) social enjoyment and d) the pre-academic skills of the child.

The module has 3 assistance levels.



### GENERAL OBJECTIVE

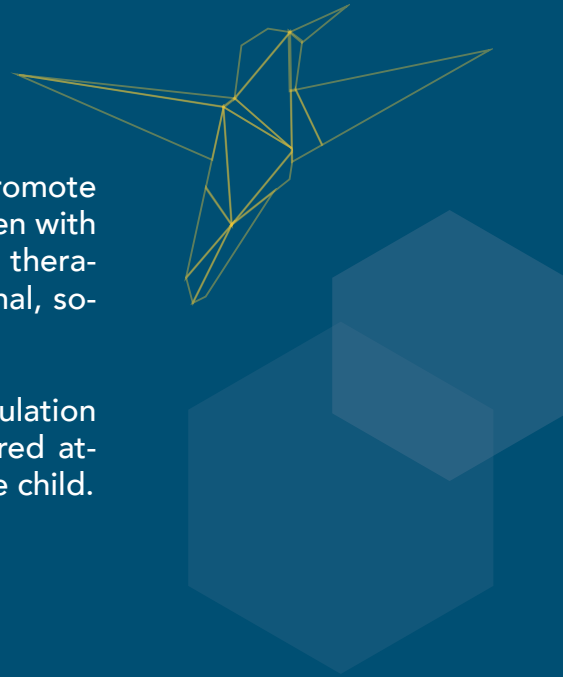
Provide a conscious and guided stimulation that positively impacts spontaneous communication, shared attention, social enjoyment and the pre-academic skills of the child.

### SPECIFIC OBJECTIVES:

**Objective Level I:** The minor points, shows, turns to see the adult and looks for them to continue or share leisure activities.

**Objective Level II:** The child actively participates in the activities at all times being motivated to use social communication, either by denying, requesting or sharing through words, looks and/or gestures with the adult.

**Objective Level III:** Offering the opportunity for the child to participate actively in the activities, always motivating the use of social communication, either by denying, requesting or sharing through words, looks and/or gestures with the adult, also providing context for learning colors, numbers, figures and spatial orientation and body image awareness.



# MODULE STIMULATION FOR CHILDREN WITH VISUAL DEFICIENCY

## INTRODUCTION

The presence of Visual Deficiencies in humans and mainly in children reduces the globalizing aspect of vision. The perception of objects occurs in an analytical way, which produces a slower pace of learning. The complexity of the changes in the vision present a great diversity of difficulties to imitate behaviors, gestures and games that are observed visually, and self-image can be altered as a result of the frustrations that are generated when realizing that you do not react like the others.

The presence of visual alterations causes fatigue when performing activities due to the greater effort that must be made in order to carry out any visual task, there is less information about the surrounding environment, both in quality and quantity.

The presence of hyperactivity is very common, if the child has not been taught, from early stages, to fix and maintain their attention in games and toys from their habitual environment or in the activities that we carry out with them.



### GENERAL OBJECTIVE

The objective of visual stimulation is improving the visual functioning of children with poor vision, that is, «those who have a reduction in their visual acuity or a loss of visual field, due to congenital or acquired ocular or cerebral pathology and who, even with optical corrections cannot achieve normal vision».

This intervention will be carried out considering the development of the child in a globalized way, ensuring that the intervention is done as early as possible — due to the cerebral plasticity of these ages — and for it to be carried out by an interdisciplinary team of professionals who work with the child, their family and environment, to prevent that the risks involved in visual impairment have as little influence as possible in their development.



## STIMULATION FOR CHILDREN WITH VISUAL DEFICIENCY



### SPECIFIC OBJECTIVES

- Developing the remaining visual field, however small it may be and improving visual functioning.
- Providing visual information through the use of specific techniques in order to improve decreased visual-perceptual functions.
- Promoting or enhancing visual attention
- Providing doctors and therapists with elements so that they can apply state-of-the-art technology for visual stimulation.

## MODULE LINGUISTIC THERAPY IN CHILDREN

Language is a very important part for the development of children, because it provides the tools to communicate the needs, desires, thoughts or emotions, but not only that, but also allows to develop the cognitive abilities that favor adequate learning and reasoning, which allows an adaptation to the environment, as well as development of social skills that permit comprehensive and favorable development of the child.

### GENERAL OBJECTIVE.

Stimulate the linguistic development of children.

### SPECIFIC OBJECTIVES.

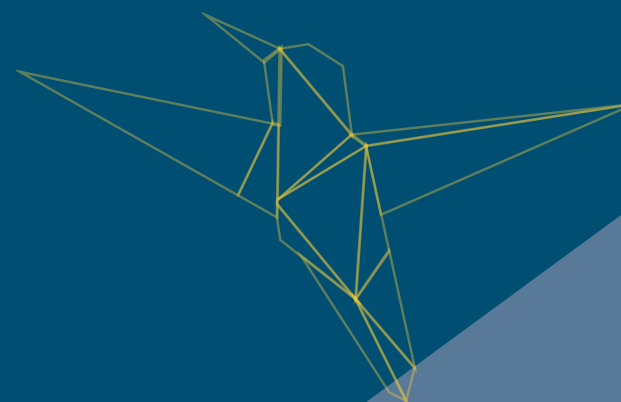
- Stimulating the phonological development of children
- Stimulating the semantic development of children
- Stimulating the morphosyntactic development of children



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# MODULE SPECIAL EDUCATION

## INTRODUCTION

The contemporary conception of special education emerged in the twentieth century and has come to replace other concepts still in force in certain countries.

In Mexico, the proposal for schooling in special education centers is accepted for students with special educational needs associated with psychological, sensory or motor disabilities, serious developmental disorders or multiple deficiencies that require the presence of significant adaptations throughout their schooling curricula.

### GENERAL OBJECTIVE

Present strategies that allow teaching, favoring learning and boosting the development of basic, sensory, affective and social skills, as well as favoring cognitive and social skills using the instruments that make up the Multisensory Classroom, based on psychomotor activities during early childhood in order to promote aspects of sensory-motor, perceptive-motor and spatial location development.

### SPECIFIC OBJECTIVES

- Identifying the characteristics of the students who will access support from the Multisensory Classroom.
- Determining the elements that will encourage student interaction within the Multisensory Classroom.
- Developing recreational activities that allow teachers to facilitate the interaction of students with the elements that make up the Multisensory Classroom to promote their sensory-motor, perceptive-motor and social development.

# MODULE ELDERLY PATIENTS

## INTRODUCTION

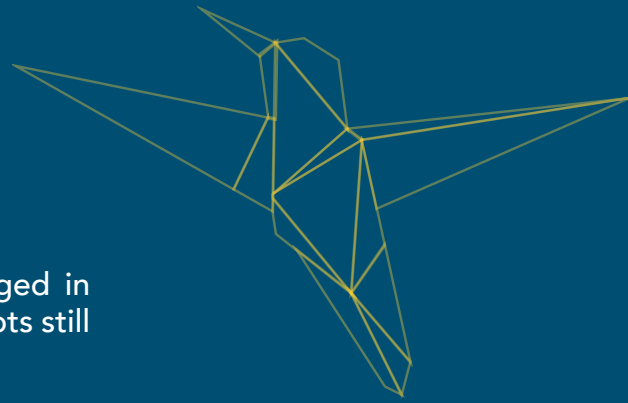
We are currently seeing rapid population aging, and the understanding of the physiological changes associated with aging is an important tool to address the biomedical and social needs of that age group.

Between 1970 and 1990, the percentage of elderly adults with respect to the total population increased from 5.6 to 6.2%; for 2017 this percentage is 10.5% and according to the United Nations, its expected trend in the coming years places it as one of the most important social transformations of the 21st century.

Some interesting facts about aging: the global population is aging at an accelerated pace. Between 2000 and 2050, the percentage of the inhabitants of the planet over 60 will double, from 11% to 22%.

In this century we are seeing an unprecedented trend in history, whereas most people of a mature age and even older have living parents, as is the case today. The fact that we can age well depends on several factors.

The functional capacity of a person increases in the first years of life, reaching their cusp at the beginning of adulthood and, naturally, thereafter begins to decline. The rate of decline is determined, in part, by our behavior and the things we are exposed to throughout life. Among them what we eat, the physical activity that we perform and our exposure to risks such as smoking, harmful alcohol consumption or exposure to toxic substances.





## GENERAL OBJECTIVES

Favoring integration and integral inclusion of the elderly in family, work, recreational, social and/or sports dynamics, through:

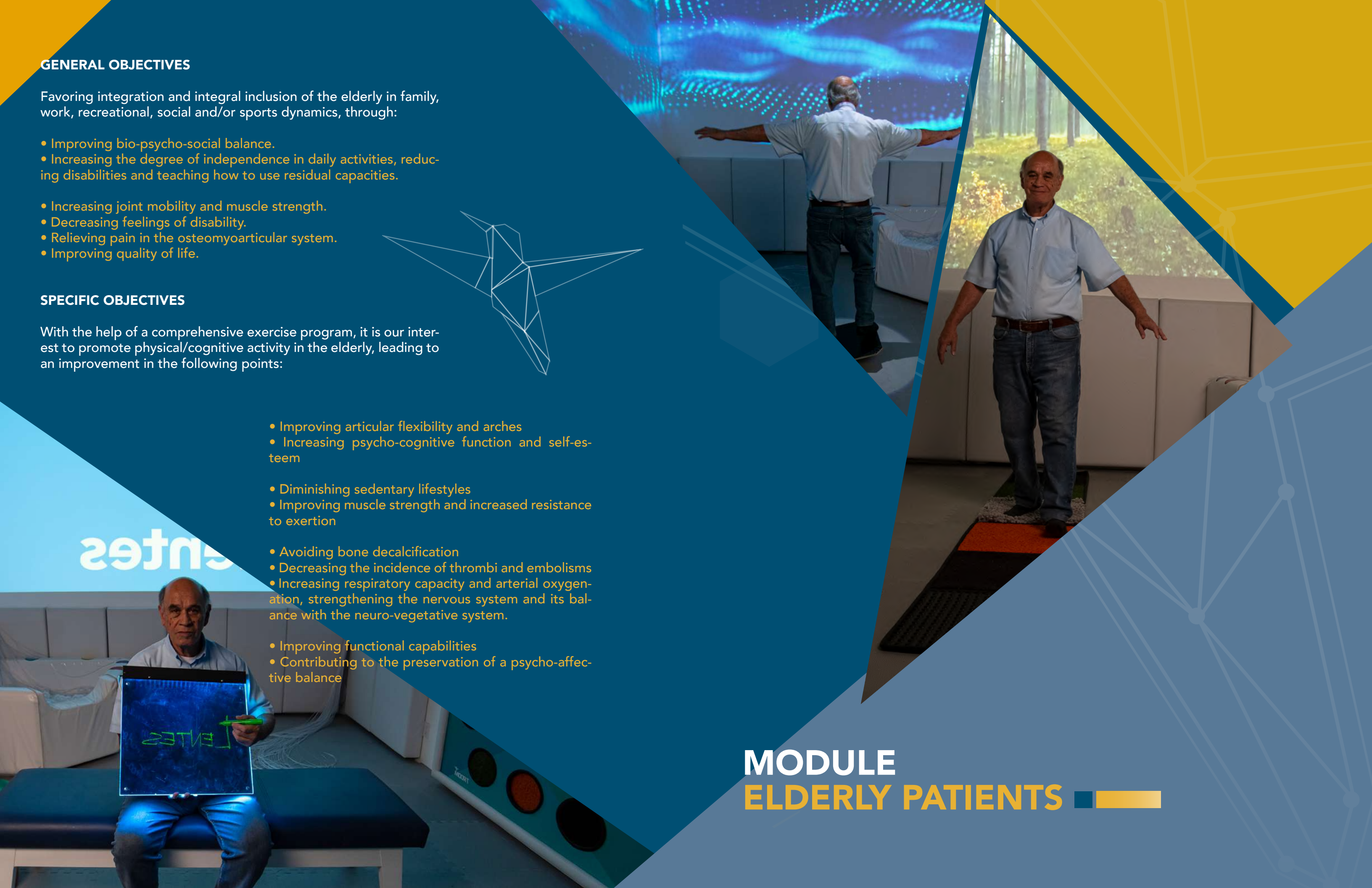
- Improving bio-psycho-social balance.
- Increasing the degree of independence in daily activities, reducing disabilities and teaching how to use residual capacities.
- Increasing joint mobility and muscle strength.
- Decreasing feelings of disability.
- Relieving pain in the osteomyoarticular system.
- Improving quality of life.



## SPECIFIC OBJECTIVES

With the help of a comprehensive exercise program, it is our interest to promote physical/cognitive activity in the elderly, leading to an improvement in the following points:

- Improving articular flexibility and arches
- Increasing psycho-cognitive function and self-esteem
- Diminishing sedentary lifestyles
- Improving muscle strength and increased resistance to exertion
- Avoiding bone decalcification
- Decreasing the incidence of thrombi and embolisms
- Increasing respiratory capacity and arterial oxygenation, strengthening the nervous system and its balance with the neuro-vegetative system.
- Improving functional capabilities
- Contributing to the preservation of a psycho-affective balance



# MODULE ELDERLY PATIENTS



# MODULE SPORTS TRAINING AND EVALUATION

## INTRODUCTION

Aimed to improve the performance of high rate athletes by measuring reaction times, speed and range of movement.

It can also be used with amateur and low rate athletes, children, and any kind of person who want to train for a specific sport or to improve the quality and results of their trainings.

This module has several sessions to evaluate the different capacities of each patient. These sessions give us objective, measurable and comparable results to be able to choose the necessary training sessions for each athlete







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