

# RNP

## Residency in Pediatric Neurology

(Edition 2013)

**First Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME4140	Clinical Ethics	1.5	0	6	1.5	6	1.8
ME4142	Quality Health Care	1.5	0	6	1.5	6	1.8
ME4260	Pediatric Neurology I	3	0	12	3	12	3.5
ME4261	Medical Care in Pediatric Neurology I	0	60	12	3	60	3.5
		6	60	36	9	84	10.6

**Second Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME4141	Health Sciences Education	1.5	0	6	1.5	6	1.8
ME4143	Research and Innovation Methods	1.5	0	6	1.5	6	1.8
ME4262	Pediatric Neurology II	3	0	12	3	12	3.5
ME4263	Medical Care in Pediatric Neurology II	0	60	12	3	60	3.5
		6	60	36	9	84	10.6

**Third Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME4144	Thesis Project I	3	0	12	3	12	0
ME4264	Pediatric Neurology III	3	0	12	3	12	3.5
ME4265	Medical Care in Pediatric Neurology III	0	60	12	3	60	3.5
		6	60	36	9	84	7

**Fourth Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME5190	Thesis Project II	3	0	12	3	12	
ME5312	Pediatric Neurology IV	3	0	12	3	12	3.5
ME5313	Medical Care in Pediatric Neurology IV	0	60	12	3	60	
		6	60	36	9	84	3.5

**Fifth Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME5191	Elective Specialty I	0	30	6	1.5	30	
ME5314	Pediatric Neurology V	3	0	12	3	12	3.5
ME5315	Medical Care in Pediatric Neurology V	0	30	6	1.5	30	
		3	60	24	6	72	3.5

**Sixth Semester**

<b>Code</b>	<b>Name</b>	<b>CL</b>	<b>L</b>	<b>U</b>	<b>CA</b>	<b>HT</b>	<b>UDC</b>
ME5192	Elective Specialty II	0	30	6	1.5	30	
ME5266	Thesis Defense	0	0	1	.3	0	
ME5316	Pediatric Neurology VI	3	0	12	3	12	3.5
ME5317	Medical Care in Pediatric Neurology VI	0	30	6	1.5	30	
		3	60	25	6.3	72	3.5

### Academic credits

- CL** The letter "CL" indicates the number of class-hours per week.
- L** The letter "L" indicates the number of laboratory-hours per week.
- U** The letter "U" represents the equivalent time in courses lasting 15 weeks (semester) and 12 weeks (trimester), of weekly work that the student dedicates to the course to meet its objectives. They include the "class hours", as well as the time dedicated to the student's independent work.
- CA** The letters "CA" represents the number of semester credit hour of the course.
- HT** Total hours
- UDC** Load Units

## **Program and Learning Outcomes**

### **General Program Objectives**

The principal aim of the Residency in Pediatric Neurology of Tecnológico de Monterrey is to train exceptional Pediatric Neurologists, who meet the healthcare needs of children and adolescents with neurological disorders, according to the highest quality and safety standards, in public and private healthcare institutions. It also seeks to prepare individuals with integrity and a humanistic outlook in their clinical, teaching and research practice, while strictly adhering to ethical principles and the standards of professional practice. Pediatric Neurologists who graduate from this institution are outstanding leaders in both local and international settings; they contribute to the development and transfer of knowledge in their specialty, through publications and active participation in academic and professional forums; and they collaborate with the training of specialists in this discipline through teaching and continuing education activities.

### **Learning Outcomes**

On completing the program, students will be able to:

- Plan, coordinate and execute, based on science and with a humanistic orientation, the comprehensive care of children and adolescents with neurological disorders;
- Act as a consultant to other specialists or general practitioners and, after a full, appropriate evaluation of their patient, immediately request the collaboration of other specialists if necessary;
- Design, implement or collaborate in educational programs aimed at their own professional development, the healthcare team to which they belong, and the patients and their family members;
- Apply the scientific method when researching problems in their professional practice and use the findings obtained to solve them.

### **Target Audience**

The Residency in Pediatric Neurology of Tecnológico de Monterrey is aimed at graduates from the residency in pediatrics, whose academic performance is outstanding and who have a vocation for and interest in the discipline, research and teaching, and who are committed to lifelong learning.

In order to be admitted to the Residency in Pediatric Neurology of Tecnológico de Monterrey, applicants must satisfactorily meet the graduate admission requirements stipulated by ITESM and the Mexican Ministry of Health

## **Program Outcomes**

### **Justification**

The Residency in Neurological Pediatrics is a clinical specialty focused on preventing, diagnosing, treating, rehabilitating and studying neurological disorders in children and adolescents in their different stages of growth and development, such as metabolic problems, malformations of the central nervous system, convulsive crises, and neuromuscular, motor, language, learning and other problems related to neurodevelopment.

The training of specialists in Pediatric Neurology is particularly relevant for the community because the neurological, pathological processes that are most prevalent in the population begin in infancy and adolescence or are characteristic of these phases, such as epilepsy (1.5%), learning and communication disorders (5 to 10%), infantile cerebral paralysis (5/1000), mental retardation, pervasive developmental disorders (autism) (1/125), congenital malformations, infections of the central nervous system, cráneo-encephalic trauma and other disorders. Approximately 33% of the population of Mexico is under 15 years old (INEGI 2003), but there are currently fewer than 200 pediatric neurologists in the nation. In fact, certain states have only one pediatric neurologist and others none at all.

Training as a pediatric neurologist in the School of Medicine and Health Sciences of Tecnológico de Monterrey offers the resident and future specialist many advantages: an academic program based on competencies, which emphasizes the knowledge, skills and techno-scientific abilities of the specialty, such as training people to act as agents of change and transformation in their communities and in their area of specialty; multidisciplinary formation based on neurology, pediatrics, neurodevelopment, neuropsychology and the basic neurosciences, such as neuroanatomy, neurophysiology, molecular genetics, neurochemistry, neuropathology and neuroimaging; a multicentered operating model, that has primary and secondary bases in different public and private hospitals; leading-edge, internationally competitive infrastructure and technology in the Zambrano Hellion Medical Center for training in the areas of neurorehabilitation, neuropsychology, neurophysiology, neurosurgery and psychiatry, and interaction with neurological pathologies from the newborn to the adult stage; an innovative teaching-learning model, centered on the student and the patient and incorporating well-structured programs of research, medical education and ethics; and opportunities to experience other national and international academic models and medical attention within the field of specialty.

### **Program objectives**

The principal aim of the Residency in Pediatric Neurology of Tecnológico de Monterrey is to train exceptional Pediatric Neurologists, who meet the healthcare needs of children and adolescents with neurological disorders, according to the highest quality and safety standards, in public and private healthcare institutions. It also seeks to prepare individuals with integrity and a humanistic outlook in their clinical, teaching and research practice, while strictly adhering to ethical principles and the standards of professional practice. Pediatric Neurologists who graduate from this institution are outstanding leaders in both local and international settings; they contribute to the development and transfer of knowledge in their specialty, through publications and active participation in academic and professional forums; and they collaborate with the training of specialists in this discipline through teaching and continuing education activities.

### **Learning outcomes**

On completing the Residency in Pediatric Neurology, participants will be able to:

- Plan, coordinate and execute, based on science and with a humanistic orientation, the comprehensive care of children and adolescents with neurological disorders;
- Act as a consultant to other specialists or general practitioners and, after a full, appropriate evaluation of their patient, immediately request the collaboration of other specialists if necessary;
- Design, implement or collaborate in educational programs aimed at their own professional development, the healthcare team to which they belong, and the patients and their family members;
- Apply the scientific method when researching problems in their professional practice and use the findings obtained to solve them.

The unique characteristic of this program is its emphasis on ambulatory Pediatric Neurology, Neuropsychology and Neurorehabilitation. The pediatric neurologist who graduates from the program will be able to practice in ambulatory neurology and in diverse hospitals with their own patients or as a consultant in emergency, inpatient or intensive care services; in prepaid service or medical insurance organizations; in pediatric departments of teaching institutions or universities and in the government healthcare system; in neurorehabilitation institutions, etc. They will be trained to attend all sectors of the population in every type of ecological environment.

### **Target audience**

The Residency in Neurological Pediatrics of Tecnológico de Monterrey is directed to doctors who have finished their specialty of Pediatrics, with excellent academic results, with a vocation for, and interest in, the discipline, research and teaching, and committed to continuous learning. For admission to the Residency in Pediatric Neurology of the School of Medicine and Health Sciences of Tecnológico de Monterrey, candidates must satisfactorily meet all the graduate admissions requirements of Tecnológico de Monterrey and of the Ministry of Health.

### **Research areas**

**Epilepsy**

Epilepsy is the most common chronic neurological disorder; it has great implications in terms of costs in health systems and quality of life of patients. The objective of this LGAC is to seek to optimize the treatment of these patients to improve their quality of life, as well as direct our investigations to this condition, on epileptic seizures their comorbidities and their assessment through anxiety and depression scales, sleep quality, and video electroencephalography and imaging studies.

**Pervasive Developmental Disorders (PDD) and Neuromotor**

The increase in the frequency of autism spectrum disorders, which has a great impact on the quality of life of the patient and the family, for the costs of treatment in addition to the time spent. For this reason, we consider it extremely important to implement study protocols for the early identification and investigation of evaluation instruments, therapeutic and pharmacological treatments of patients who suffer from it. On the other hand, attention deficit disorder with or without hyperactivity can negatively impact the quality of life, work and social capacity of patients who suffer from it, for which, through this line of research, we seek to identify the disorder and its comorbidities in a timely manner, impacting our patients for their better performance and integration in the academic and social spheres. In addition, it seeks to focus part of the LGAC studies on issues related to pathologies such as myopathies, neuropathies, and problems related to weakness in acute or chronic flaccid limbs as well as increased muscle tone "spasticity" that present a motor unit disorder.

Campus that offer this program

<b>Campus</b>	<b>Number of periods offered</b>	<b>From</b>	<b>Closed for new students</b>
<b>Monterrey</b>	Complete	Resid Espec Mar-Aug 2013	

**Last update:** 04/December/2012

## Graduate Requirements

To obtain a specialty degree, a master's degree or Ph. D. degree at Tecnológico de Monterrey, students are required to:

1. Have completely finished the undergraduate cycle prior to passing the first course in the curriculum of the specialty, master program, medical residency, or doctoral program.
2. Have fulfilled, in compliance with existing standards, the academic prerequisites of the corresponding program, through proficiency tests or the corresponding remedial courses.
3. Have obtained a bachelor degree—with the antecedent of high school or its equivalent—that is equivalent to those offered by Tecnológico de Monterrey.
4. Have covered all the courses in the given curriculum, either by passing the courses at Tecnológico de Monterrey or by obtaining revalidation or equivalence agreements—in compliance with the standards—corresponding to part of the courses taken at other institutions, and passed the remaining courses at Tecnológico de Monterrey. Courses taken at foreign universities with which there are agreements are considered, for the effects of this article, as courses taken at Tecnológico de Monterrey, as long as they do not exceed a set percentage of the curriculum established by each graduate program.
5. In those curricula that so specify, to have prepared a research project or thesis that, having been defended before an academic committee, has been approved by said committee.
6. Have taken at least the equivalent of the second half of the corresponding curriculum at Tecnológico de Monterrey, in the case of students with revalidation or equivalence agreements at this level. Flexibility may be exercised in this standard in graduate programs that, under agreement, may be established jointly with other universities.