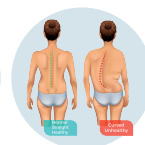


# ORTHOPEDICS

## Clinical and surgical activity

- Surgical and conservative management of musculoskeletal diseases and disabilities requiring a multidisciplinary approach (severe idiopathic deformities in muscular diseases, brain diseases, bone dysplasias, complex dysmorphic syndromes, rare diseases, etc.)
- Treatment of congenital deformities (e.g. hip dysplasia, clubfoot, syndactyly, clubhand, bifid thumb, Poland syndrome, Apert syndrome, congenital pseudoarthrosis of the tibia, pubic diastasis due to vesical extrophy, congenital kyphosis and scoliosis, etc.)
- Spinal surgery for complex deformities: idiopathic (scoliosis, kyphosis, spondylolisthesis, etc.), congenital spinal deformities, neuromuscular scoliosis (child cerebral palsy, spinal muscular atrophy, spina bifida, etc.), other. Anterior, posterior or combined approaches for surgical treatment of severe scoliosis and kyphosis; growth friendly surgical techniques for early onset idiopathic and neuropathic infantile scoliosis (temporary vertebral implants); early surgery of congenital scoliosis and kyphosis
- Surgical limb lengthening in congenital and acquired limb length discrepancies and in disharmonic short stature; surgical treatment of complex axial deviations (osteochondrodysplasia, bone arthritis sequelae, post-traumatic deformities, congenital deformities, etc.)
- Hand surgery and orthopedic microsurgery (surgery of complex hand malformations, pollicization, brachial plexus repair in obstetric palsies, nerve grafts, vascularized fibular graft, reimplantations, vascular and nerve flaps, etc.) and post-traumatic reconstructive surgery
- Surgical and conservative treatment in neuro-orthopedics (infantile cerebral palsies, neuromuscular diseases, multiple arthrogryposis, spina bifida, post-traumatic palsies, etc.); treatment of spastic palsies with botulin toxin
- Foot surgery (conservative and surgical treatment of clubfoot and flatfoot, treatment of hallux valgus in adolescence, etc.)
- Orthopaedic care for rheumatologic conditions of the musculoskeletal system and endocrine-metabolic diseases (rheumatoid arthritis, mucopolysaccharidosis, osteochondromatosis, Marfan syndrome, Larsen syndrome, neurofibromatosis, etc.)
- Conservative and surgical treatment of growth disorders (vertebral osteochondrosis, Perthes disease and other osteochondronecroses, femur head epiphysiolysis, functional over-weight bearing syndromes, etc.)
- Minimally-invasive surgery and open surgery for fractures and dislocations (diagnostic and therapeutic arthroscopy, fracture percutaneous treatment, etc.)
- Radiofrequency thermoablation in benign bone tumors
- Prevention and treatment of sports-related orthopedic lesions (the unit is member of the multidisciplinary group "Sport in the child: how orthopedics can nurture psychophysical health – International Working Group")
- Conservative treatment of vertebral deformities (use of Maguelone, MMG and EDF-Lyonnaise techniques; treatment of malignant scolioses in the first years of life with casts under general anesthesia, etc.)



## MAIN COLLABORATIONS

- ■ ■ Service de Chirurgie Infantile et Orthopédie, Hôpital d'Enfants de la Timone, Marseille
- ■ ■ Laboratoire de Biomécanique-Centre National de la Recherche Scientifique, Paris (scoliosis, sports orthopedics)
- ■ ■ Orthopedic Clinic, University of Genoa (prosthetic surgery)
- ■ ■ Orthopedic Clinic, Biomedical Campus University of Rome
- ■ ■ Department of Mechanics and Machine Construction, Faculty of Engineering, University of Genoa

## PROJECTS

- Development of minimally invasive approaches for anterior spinal surgery in pediatric patients (thoracoscopic procedures to thoracic spine anterior release, minimally invasive approached to the lumbar spine, etc.)
- 3D model printing for pre-operative planning in complex lower limb deformities and tumor surgery
- Bisphosphonate adjuvant therapy for congenital tibial pseudoarthrosis (CPT)
- Prospective database to assess and monitor quality of life changes in patients with severe neuromuscular scoliosis / spinal deformities

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