



Prof. Nicola Marcello Agostino Portinaro, MD MSc FRCS

Curriculum vitae

Born in Milan on August 28th 1963

MAIN WORK EXPERIENCES

- From November 2022: Senior Consultant Pediatric Neuro-Orthopaedics, **FONDAZIONE IRCCS CA' GRANDA OSPEDALE MAGGIORE POLICLINICO**, Milan, Italy
- From September 2022: Consultant in Pediatric Orthopedics and Neuro-Orthopedics, **Humanitas Research Hospital**, Rozzano (MI), Italy
- From October 2020: Guest speaker for **Saudi German Hospitals Group**
- From 2010: Director of the Gait Analysis Laboratory, **Humanitas Research Hospital**, Rozzano (MI), Italy
- From 2005: Member of the **American Academy for Cerebral Palsy and Developmental Medicine**
- From 2003: Founder and Scientific Director of "**Fondazione Ariel**", non-profit foundation for paediatric neurological disabilities
- From 2002: Professor at **Università degli Studi di Milano**, Medical Faculty (See Attachment A)
- From 2001 to August 2022: Orthopaedic surgeon and Director of the pediatric and neuro Orthopaedic Department, **Humanitas research Hospital**, Rozzano (MI), Italy
- 2006: Vice President of **SINOP**, Italian Paediatric Neuro-Orthopaedic Society
- 2004-2009: Adjunct Assistant Professor, **Texas Tech University**, Health Sciences Centre, School of Medicine, Lubbock – TX (USA)
- 1999-2000: Honorary Special Senior Lecturer Orthopaedic Department, **University of Bristol Royal Infirmary**, Bristol, UK
- 1998-2004: Advanced Trauma Life Support, **American College of Surgeons**
- 1998-2000: Head of the Orthopaedic Paediatric and Traumatology Department, **Bristol Royal Hospital for Sick Children**, Bristol, UK
- 1996-1998 : Junior doctor - Orthopaedic Department at **IRCSS San Raffaele**, Milan, Italy
- 1995-1996 Attending physician, **IRCSS San Raffaele**, Milan, Italy
- 1991-1994: Research Fellow - Orthopaedic Paediatric Department at Nuffield Orthopaedic Centre, **University of Oxford**, Oxford, UK
- 1989-1991 Attending physician, **IRCSS San Raffaele**, Milan, Italy

EDUCATION

- 1989: Graduation in Medical school (MD) (110/100 *cum laude*) at University of Milan, Italy
- 1994: Specialization in Orthopaedics and Traumatology (70/70) at University of Milan, Italy
- 1996: Master of Science by Research (MScR) at University of Oxford, UK.
- 2000: Honorary Fellow of the Royal College of Surgeons (FRCS Ed), Edinburgh, UK.

LANGUAGES

Native language: Italian

Other languages: English (reading skills: C2; writing skills: C1; verbal skills: C1)

OTHER QUALIFICATIONS

Certificate in **Basic Resuscitation And Early Defibrillation In Paediatric Age (PBLSD)** for healthcare professionals, issued by the Italian Resuscitation Council Certificate n° 330135 - 16-01-2018

Certificate in **Immediate life support (ILS)** issued by the Italian Resuscitation Council, Certificate n° 255764 - 01-12-2017; Certificate n° 2905 - 20-01-2012

Certificate in **European Pediatric Advanced life support (EPALS)** issued by the Italian Resuscitation Council Certificate n° 1677 - 10-11-2012

ATTACHMENT A - LECTURING AT THE UNIVERSITY OF MILAN

From 2019	Professor Degree Course in Medicine and Surgery
From 2010	Adjunct Professor Director of the module "DISEASES OF THE LOCOMOTOR SYSTEM". Degree Course in Medicine and Surgery, Polo San Paolo
From 2009	Adjunct Professor Lecturer of the module "DISEASES OF THE LOCOMOTOR SYSTEM". Degree course in Nursing
From 2009	Adjunct Professor Lecturer of the module "DISEASES OF THE LOCOMOTOR SYSTEM". Degree course in Orthopedic Techniques
From 2007	Adjunct Professor Lecturer of the module "DISEASES OF THE LOCOMOTOR SYSTEM". Degree course in Neuro-Psychomotor Therapy of Developmental Medicine Istituto Don Gnocchi e Medea, Bosisio Parini (LC)
From 2006	Adjunct Professor Lecturer of the module "DISEASES OF THE LOCOMOTOR SYSTEM". Degree course in Nursing and Obstetrics
From 2005	Researcher with Adjunct Professor status Lecturer in the module "DISEASES OF THE LOCOMOTOR SYSTEM IN PAEDIATRIC AGE". Orthopedics and Traumatology Specialization Course
From 2004	Lecturer in the elective courses "Paediatric Neurorthopaedics" and "Multidisciplinarity in Orthopaedics". Degree Course in Medicine and Surgery
2002 – 2009	Researcher with Adjunct Professor status Lecturer of the module "DISEASES OF THE LOCOMOTOR SYSTEM" Degree Course in Medicine and Surgery
2002 – 2005	Researcher SSD MED/33 (module "DISEASES OF THE LOCOMOTOR SYSTEM")

ATTACHMENT B - PUBLICATIONS

- 1 - Garavaglia ML, Giustarini D, Colombo G, Reggiani F, Finazzi S, Calatroni M, Landoni L, **Portinaro** NM, Milzani A, Badalamenti S, Rossi R, Dalle-Donne I.
Blood Thiol Redox State in Chronic Kidney Disease
(2022) *International Journal of Molecular Sciences*, 23(5): 2853.
- 2 - Astori E, Garavaglia ML, Colombo G, Landoni L, **Portinaro** NM, Milzani A, Dalle-Donne I.
Antioxidants in smokers.
(2021) *Nutrition Research Rev*; pp 1-28.
- 3 - Colombo G, Reggiani F, Angelini C, Finazzi S, Astori E, Garavaglia ML, Landoni L, **Portinaro** NM, Giustarini D, Rossi R, Santucci A, Milzani A, Badalamenti S, Dalle-Donne I.
Plasma Protein Carbonyls as Biomarkers of Oxidative Stress in Chronic Kidney Disease, Dialysis, and Transplantation
(2020) *Oxidative Medicine and Cellular Longevity* Volume, Article ID 2975256, 20 pages
- 4 - **Portinaro** N, Turati M, Cometto M, Bigoni M, Davids JR, Panou A
Guided Growth of the Proximal Femur for the Management of Hip Dysplasia in Children With Cerebral Palsy
(2019) *Journal of Pediatric Orthopaedics*, 39 (8), pp. 622-628.
- 5 - Panou A, Testa G, Peccati A, Tsibidakis H, **Portinaro**, N
Soft tissue, varus derotation femoral and pelvic surgery in cerebral palsy children: A mid-term outcome study
(2019) *Minerva Ortopedica e Traumatologica*, 70 (1), pp. 4-10.
- 6 - Caravaggi P, Sforza C, Leardini A, **Portinaro** N, Panou A
Effect of plano-valgus foot posture on midfoot kinematics during barefoot walking in an adolescent population
(2018) *Journal of Foot and Ankle Research*, 11 (1), art. no. 55.
- 7 - Tsibidakis H, Panou A, Angoules A, Sakellariou V, **Portinaro** N, Krumov J, Kanellopoulos A
The Role of Taylor Spatial Frame in the Treatment of Blount Disease
(2018) *Folia medica*, 60 (2), pp. 208-215.
- 8 - Colombo G, Reggiani F, Cucchiari D, Astori E, Garavaglia M, **Portinaro** N, Saino N, Finazzi S, Milzani A, Badalamenti S, Dalle Donne I
Plasma protein carbonylation in haemodialysed patients: Focus on diabetes and gender
(2018) *Oxidative Medicine and Cellular Longevity*, 2018, art. no. 4149681.
- 9 - Bigoni M, Turati M, Zatti G, Gandolla M, Sacerdote P, Piatti M, Castelnuovo A, Rigamonti L, Munegato D, Franchi S, **Portinaro** N, Pedrocchi A, Omeljaniuk R, Locatelli V, Torsello A
Intra-Articular Cytokine Levels in Adolescent Patients after Anterior Cruciate Ligament Tear
(2018) *Mediators of Inflammation*, 2018, art. no. 4210593.
- 10 - Dagnino A, Ursino N, Ripamonti C, Fiorentini C, Scelsi M, D'Ambrosi R, **Portinaro** N
Total hip arthroplasty in an inveterate femoral neck fracture in a patient with congenital insensitivity to pain with anhidrosis
(2017) *Joints*, 5 (4), pp. 249-252.
- 11 - Giustarini D, Colombo G, Garavaglia M, Astori E, **Portinaro** N, Reggiani F, Badalamenti S, Aloisi A, Santucci A, Rossi R, Milzani A, Dalle Donne I
Assessment of glutathione/glutathione disulphide ratio and S-glutathionylated proteins in human blood, solid tissues, and cultured cells
(2017) *Free Radical Biology and Medicine*, 112, pp. 360-375.
- 12 - Colombo G, Reggiani F, Cucchiari D, **Portinaro** N, Giustarini D, Rossi R, Garavaglia M, Saino N, Milzani A, Badalamenti S, Dalle Donne I
Plasma protein-bound di-tyrosines as biomarkers of oxidative stress in end stage renal disease patients on maintenance haemodialysis
(2017) *BBA Clinical*, 7, pp. 55-63.
- 13 - Dalle Donne I, Colombo G, Gornati R, Garavaglia M, **Portinaro** N, Giustarini D, Bernardini G, Rossi R, Milzani, A
Protein Carbonylation in Human Smokers and Mammalian Models of Exposure to Cigarette Smoke: Focus on Redox Proteomic Studies
(2017) *Antioxidants and Redox Signaling*, 26 (8), pp. 406-426.

- 14 - Colombo G, Clerici M, Altomare A, Rusconi F, Giustarini D, **Portinaro** N, Garavaglia M, Rossi R, Dalle Donne I, Milzani A
Thiol oxidation and di-tyrosine formation in human plasma proteins induced by inflammatory concentrations of hypochlorous acid
(2017) *Journal of Proteomics*, 152, pp. 22-32.
- 15 - Tesio L, Malloggi C, **Portinaro** N, Catino L, Lovecchio N, Rota V
Gait analysis on force treadmill in children: Comparison with results from ground-based force platforms
(2017) *International Journal of Rehabilitation Research*, 40 (4), pp. 315-324.
- 16 - Bruno A, Kirienko A, Peccati A, Duplicato P, De Donato M, Arnaldi E, **Portinaro** N
Knee arthrodesis by the Ilizarov method in the treatment of total knee arthroplasty failure
(2017) *Knee*, 24 (1), pp. 91-99.
- 17 - Clerici M, Colombo G, Secundo F, Gagliano N, Colombo R, **Portinaro** N, Giustarini D, Milzani A, Rossi R, Dalle Donne I
Erratum to "Cigarette smoke induces alterations in the drug-binding properties of human serum albumin" (*Blood Cells, Molecules and Diseases* (2014) 53(3) (149–156)
(2016) *Blood Cells, Molecules, and Diseases*, 62, p. 68.
- 18 - Picciolini, O., Le Métayer, M., Consonni, D., Cozzaglio, M., Porro, M., Gasparroni, V., Panou, A., Mosca, F., **Portinaro**, N.M.
Can we prevent hip dislocation in children with cerebral palsy? Effects of postural management
(2016) *European Journal of Physical and Rehabilitation Medicine*, 52 (5), pp. 682-690.
- 19 - Pavone, V., Testa, G., Restivo, D.A., Cannavò, L., Condorelli, G., **Portinaro**, N.M., Sessa, G.
Botulinum toxin treatment for limb spasticity in childhood cerebral palsy
(2016) *Frontiers in Pharmacology*, 7 (FEB), art. no. 29.
- 20 - Panou, A., Stanitski, D.F., Stanitski, C., Peccati, A., **Portinaro**, N.M.
Intra-observer and inter-observer errors in CT measurement of torsional profiles of lower limbs: A retrospective comparative study
(2015) *Journal of Orthopaedic Surgery and Research*, 10 (1), art. no. 67.
- 21 - Colombo, G., Reggiani, F., Podestà, M.A., Garavaglia, M.L., **Portinaro**, N.M., Milzani, A., Badalamenti, S., Dalle-Donne, I.
Plasma protein thiolation index (PTI) as a biomarker of thiol-specific oxidative stress in haemodialyzed patients
(2015) *Free Radical Biology and Medicine*, 89, pp. 443-451.
- 22 - Brambilla, L., Pulici, L., Carimati, G., Quaglia, A., Prospero, E., Bait, C., Morengi, E., **Portinaro**, N., Denti, M., Volpi, P.
Prevalence of associated lesions in anterior cruciate ligament reconstruction
(2015) *American Journal of Sports Medicine*, 43 (12), pp. 2966-2973.
- 23 - Oliva, F., Piccirilli, E., Bossa, M., Giai Via, A., Colombo, A., Chillemi, C., Gasparre, G., Pellicciari, L., Franceschetti, E., Rugiero, C., Scialdoni, A., Vittadini, F., Brancaccio, P., Creta, D., del Buono, A., Garofalo, R., Franceschi, F., Frizziero, A., Mahmoud, A., Merolla, G., Nicoletti, S., Spoliti, M., Osti, L., Padulo, J., **Portinaro**, N., Tajana, G., Castagna, A., Foti, C., Masiero, S., Porcellini, G., Tarantino, U., Maffulli, N.
I.S.Mu.L.T - Rotator cuff tears guidelines
(2015) *Muscles, Ligaments and Tendons Journal*, 5 (4), pp. 227-263.
- 24 - Colombo, G., Clerici, M., Giustarini, D., **Portinaro**, N., Badalamenti, S., Rossi, R., Milzani, A., Dalle-Donne, I.
A central role for intermolecular dityrosine cross-linking of fibrinogen in high molecular weight advanced oxidation protein product (AOPP) formation
(2015) *Biochimica et Biophysica Acta - General Subjects*, 1850 (1), pp. 1-12.
- 25 - Berlusconi, M., Busnelli, L., Chiodini, F., **Portinaro**, N.
To fix or not to fix? the role of fibular fixation in distal shaft fractures of the leg
(2014) *Injury*, 45 (2), pp. 408-411.
- 26 - **Portinaro**, N., Leardini, A., Panou, A., Monzani, V., Caravaggi, P.
Modifying the Rizzoli foot model to improve the diagnosis of pes-planus: Application to kinematics of feet in teenagers
(2014) *Journal of Foot and Ankle Research*, 7 (1), art. no. 57.
- 27 - Colombo, G., Clerici, M., Giustarini, D., **Portinaro**, N.M., Aldini, G., Rossi, R., Milzani, A., Dalle-Donne, I.
Pathophysiology of tobacco smoke exposure: Recent insights from comparative and redox proteomics
(2014) *Mass Spectrometry Reviews*, 33 (3), pp. 183-218.
- 28 - Clerici, M., Colombo, G., Secundo, F., Gagliano, N., Colombo, R., **Portinaro**, N., Giustarini, D., Milzani, A., Rossi, R., Dalle-Donne, I.

- Cigarette smoke induces alterations in the drug binding properties of human serum albumin
(2014) *Blood Cells, Molecules, and Diseases*, 53 (3), pp. 149-156.
- 29 - Clerici, M., Colombo, G., Secundo, F., Gagliano, N., Colombo, R., **Portinaro**, N., Giustarini, D., Milzani, A., Rossi, R., Dalle-Donne, I.
Cigarette smoke induces alterations in the drug-binding properties of human serum albumin
(2014) *Blood Cells, Molecules, and Diseases*, 52 (4), pp. 166-174.
- 30 - Gagliano, N., **Portinaro**, N.
6701720160;6602567355;
Insight in spastic musculoskeletal structures in cerebral palsy: Impaired or compensatory structural changes?
(2013) *Muscles, Ligaments and Tendons Journal*, 3 (4), pp. 357-358.
- 31 - Menon, A., Pettinari, L., Martinelli, C., Colombo, G., **Portinaro**, N., Dalle-Donne, I., D'Agostino, M.C., Gagliano, N.
New insights in extracellular matrix remodeling and collagen turnover related pathways in cultured human tenocytes after ciprofloxacin administration
(2013) *Muscles, Ligaments and Tendons Journal*, 3 (3), pp. 122-131.
- 32 - Gagliano, N., Menon, A., Martinelli, C., Pettinari, L., Panou, A., Milzani, A., Dalle-Donne, I., **Portinaro**, N.M.
Tendon structure and extracellular matrix components are affected by spasticity in cerebral palsy patients
(2013) *Muscles, Ligaments and Tendons Journal*, 3 (1), pp. 42-50.
- 33 - Gagliano, N., Volpari, T., Clerici, M., Pettinari, L., Barajon, I., **Portinaro**, N., Colombo, G., Milzani, A., Dalle-Donne, I., Martinelli, C.
Pancreatic cancer cells retain the epithelial-related phenotype and modify mitotic spindle microtubules after the administration of ukraine in vitro
(2012) *Anti-Cancer Drugs*, 23 (9), pp. 935-946.
- 34 - Dagnino, A., Grappiolo, G., Benazzo, F.M., Learmonth, I.D., **Portinaro**, N., Spotorno, L.
Medium-term outcome in patients treated with total hip arthroplasty using a modular femoral stem
(2012) *HIP International*, 22 (3), pp. 274-279.
- 35 - Castagna, A., Delle Rose, G., Borroni, M., De Cillis, B., Conti, M., Garofalo, R., Ferguson, D., **Portinaro**, N.
Arthroscopic stabilization of the shoulder in adolescent athletes participating in overhead or contact sports
(2012) *Arthroscopy - Journal of Arthroscopic and Related Surgery*, 28 (3), pp. 309-315.
- 36 - Colombo, G., Rossi, R., Gagliano, N., **Portinaro**, N., Clerici, M., Annibal, A., Giustarini, D., Colombo, R., Milzani, A., Dalle-Donne, I.
Red blood cells protect albumin from cigarette smoke-induced oxidation
(2012) *PLoS ONE*, 7 (1), art. no. e29930, .
- 37 - Cimolin, V., Piccinini, L., **Portinaro**, N., Turconi, A.C., Albonico, S., Crivellini, M., Galli, M.
The effects of femoral derotation osteotomy in cerebral palsy: A kinematic and kinetic study
(2011) *HIP International*, 21 (6), pp. 657-664.
- 38 - **Portinaro**, N.M.A., Porteous, A., Parafioriti, A., Panou, A., Benson, M.K.D.
Growth of the acetabular lateral cartilage in relation to congenital and developmental dysplasia of the hip. An histological study
(2011) *HIP International*, 21 (1), pp. 9-13.
- 39 - Picciolini, O., Gasparroni, V., Cozzaglio, M., Messina, L., **Portinaro**, N., Mosca, F.
Hip centering by postural management - Trials and outcomes [Le centrage des hanches au moyen de sigès moulés - Études et résultats]
(2010) *Motricite Cerebrale*, 31 (2), pp. 75-80.
- 40 - Colombo, G., Dalle-Donne, I., Giustarini, D., Gagliano, N., **Portinaro**, N., Colombo, R., Rossi, R., Milzani, A.
Cellular redox potential and hemoglobin S-glutathionylation in human and rat erythrocytes: A comparative study
(2010) *Blood Cells, Molecules, and Diseases*, 44 (3), pp. 133-139.
- 41 - **Portinaro**, N.
Hip International: Foreword
(2009) *HIP International*, 19 (1 suppl. 6), 1 p.
- 42 - **Portinaro**, N., Panou, A., Gagliano, N., Pelillo, F.
D.D.S.H.: Developmental dysplasia of the spastic hip: Strategies of management in cerebral palsy. A new suggestive algorithm
(2009) *HIP International*, 19 (1 suppl. 6), pp. S69-S74.

- 43 - Pelillo, F., De Sanctis, N., Benazzo, F., **Portinaro, N.**
Slipped Upper Femoral Epiphysis (SUFE): To do or not to do in sufe
(2009) *HIP International*, 19 (1 suppl. 6), pp. S13-S17.
- 44 - Gagliano, N., Pelillo, F., Chiriva-Internati, M., Picciolini, O., Costa, F., Schutt Jr., R.C., Gioia, M., **Portinaro, N.**
Expression profiling of genes involved in collagen turnover in tendons from cerebral palsy patients
(2009) *Connective Tissue Research*, 50 (3), pp. 203-208.
- 45 - Chiriva-Internati, M., Ferraro, R., Prabhakar, M., Yu, Y., Baggoni, L., Moreno, J., Gagliano, N., **Portinaro, N.**, Jenkins, M.R., Frezza, E.E., Hardwicke, F., D'Cunha, N., Kast, W.M., Cobos, E.
The pituitary tumor transforming gene 1 (PTTG-1): An immunological target for multiple myeloma
(2008) *Journal of Translational Medicine*, 6, art. no. 15, .
- 46 - Gagliano, N., Pelillo, F., Gasparroni, V., Picciolini, O., Gioia, M., **Portinaro, N.**
Erratum: 'Tendon collagen turnover-related genes in cerebral palsy' (*Developmental Medicine and Child Neurology* vol. 49 (13-14))
(2007) *Developmental Medicine and Child Neurology*, 49 (12), p. 948.
- 47 - Gagliano, N., Pelillo, F., Grizzi, F., Picciolini, O., Gioia, M., **Portinaro, N.**
'Gene expression profile of extracellular matrix of tendons in cerebral palsy' [1]
(2007) *Developmental Medicine and Child Neurology*, 49 (7), pp. 557-558.
- 48 - **Portinaro, N.M.**, Pelillo, F., Cerutti, P.
The role of ultrasonography in the diagnosis of developmental dysplasia of the hip
(2007) *Journal of Pediatric Orthopaedics*, 27 (2), pp. 247-250.
- 49 - **Portinaro, N.M.A.**, Polo, R.M., Pelillo, F., Gargan, M.F.
Ultrasound evaluation of the hips and histological correlations in Ellis van Crevelde Syndrome
(2004) *HIP International*, 14 (1), pp. 39-43.
- 50 - Grizzi, F., Russo, C., **Portinaro, N.**, Hermonat, P.L., Chiriva-Internati, M., Real, F.X.
Complexity and Cancer [8] (multiple letters)
(2004) *Gastroenterology*, 126 (2), pp. 630-631.
- 51 - Umarji, S.I.M., Lee, M.B., Gargan, M.F., **Portinaro, N.M.A.**, Learmonth, I.D.
Total hip arthroplasty in skeletal dysplasia
(2003) *HIP International*, 13 (3), pp. 177-183.
- 52 - **Portinaro, N.M.**, Murray, D.W., Benson, M.K.D.
Microanatomy of the acetabular cavity and its relation to growth
(2001) *Journal of Bone and Joint Surgery - Series B*, 83 (3), pp. 377-383.
- 53 - Owers, K.L., Pyman, J., Gargan, M.F., Witherow, P.J., **Portinaro, N.M.A.**
Bilateral hip surgery in severe cerebral palsy
(2001) *Journal of Bone and Joint Surgery - Series B*, 83 (8), pp. 1161-1167.
- 54 - Hand, C.J., **Portinaro, N.M.**, Richards, R.H.
DDH treatment with Pavlik harness: Weekly ultrasound monitoring for stability
(2000) *HIP International*, 10 (1), pp. 57-61.
- 55 - Case, R.D., Gargan, M.F., Grier, D., **Portinaro, N.M.A.**
Confirmation of the reduction and containment of the femoral head with CT or MRI scans in DDH: The need for repeated scans
(2000) *HIP International*, 10 (2), pp. 118-122.
- 56 - **Portinaro, N.M.A.**, Owers, K., Pyman, J., Gargan, M.F.
The Windsweep Index: A method of evaluating pelvic asymmetry and monitoring the efficacy of treatment in cerebral palsy
(2000) *HIP International*, 10 (3), pp. 170-173.
- 57 - **Portinaro, N.M.A.**, Case, R.D., Gargan, M.F.
Pathological anatomy of developmental dysplasia of the hip joint
(1999) *HIP International*, 9 (3), pp. 158-162.
- 58 - **Portinaro, N.M.A.**, Boniforti, F.G., Hubble, M.J., Gargan, M.F.
Normal anatomy of the hip joint at birth
(1999) *HIP International*, 9 (2), pp. 99-103.

- 59 - **Portinaro, N.M.A.**
Developmental dysplasia of the hip
(1999) *HIP International*, 9 (1), pp. 32-35.
- 60 - **Portinaro, N.M.A.**
Orthopaedic surgery and the developing hip joint
(1999) *HIP International*, 9 (1), p. 31.
- 61 - **Portinaro, N.M.A., Boniforti, F.G., Gargan, M.F.**
Embryology of the human hip
(1999) *HIP International*, 9 (1), pp. 36-40.
- 62 - **Portinaro, N.M.A., Murray, D., Benson, M.K.D.**
Acetabular notch
(1997) *Journal of Pediatric Orthopaedics Part B*, 6 (1), pp. 48-51.
- 63 - **Minio Paluello, G.B., De Pellegrin, M., Tacchini, S., Portinaro, N., Del Maschio, M., De Gaspari, A., Del Maschio, A.**
Persistent coxalgia in the child. The value of magnetic resonance
(1995) *Radiologia Medica*, 89 (4), pp. 402-408.
- 64 - **Bhullar, T.P.S., Portinaro, N.M.A., Benson, M.K.D.**
The measurement of angular deformity: An extended role for the 'Cobbometer'
(1995) *Journal of Bone and Joint Surgery - Series B*, 77 (3), pp. 506-507.
- 65 - **Portinaro, N.M.A., Murray, D.W., Bhullar, T.P.S., Benson, M.K.D.**
Errors in measurement of acetabular index
(1995) *Journal of Pediatric Orthopaedics*, 15 (6), pp. 780-784.
- 66 - **Portinaro, N.M.A., Matthews, S.J.E., Benson, M.K.D.**
The acetabular notch in hip dysplasia
(1994) *Journal of Bone and Joint Surgery - Series B*, 76 (2), pp. 271-273.
- 67 - **De Pellegrin, M., Grispigni, C., Portinaro, N., Dal Conte, G.**
The Crawford's incision for surgical treatment of congenital club foot
(1993) *Chirurgia del Piede*, 17 (1), pp. 31-37.
- 68 - **Samaja, M., Rubinacci, A., Motterlini, R., De Ponti, A., Portinaro, N.**
Red cell aging and active calcium transport
(1990) *Experimental Gerontology*, 25 (3-4), pp. 279-286.
- 69 - **Samaja, M., Rubinacci, A., De Ponti, A., Portinaro, N.**
The effect of in, vitro and in, vivo cellular aging on the active calcium transport in human inside-out red cell membrane vesicles
(1989) *Biochemical and Biophysical Research Communications*, 159 (2), pp. 432-438.

ATTACHMENT C - DEGREE THESIS AND DISSERTATION

The differences in muscle synergies in adolescents during fast and slow locomotion: an experimental study.

Degree thesis in Medicine and Surgery by G. Beltrame

Supervisor: N. Portinaro

Academic year 2020-2021

A mathematical model for the correction of Reimer's index as a function of femoral diaphysis position. Pilot study and adaptation to paediatric and neurological patients.

Specialist degree thesis in Orthopaedics and Traumatology by C. Martocchi

Co-examiner: N. Portinaro

Academic year 2019-2020

Muscle synergies in normal children: an EMG-based experimental study using gait analysis

Doctoral thesis in Medicine by B. Lepore

Supervisor: N. Portinaro

Academic year 2019-2020, Rozzano

Experimental study on muscle synergies: gait analysis and EMGs of normal child.

Specialist degree thesis in Orthopaedics and Traumatology by F. De Rosa

Co-examiner: N. Portinaro

Academic year 2018-2019

3d kinematic data as an indicator for surgery in asymptomatic pes plano-valgus in children

Doctoral thesis in Medicine and Surgery by E. Poirè

Supervisor: N. Portinaro

Academic year 2018-2019, Milan

The pediatric flatfoot: correlation between static radiographic and intersegmental measurements using the Rizzoli foot model before and after surgery

P. Bonamini's degree thesis in Medicine and Surgery

Supervisor: N. Portinaro

Academic year 2017-2018, Rozzano

Validation of a mathematical model for the correction of Reimer's index as a function of femoral diaphysis position. Pilot study.

Doctoral thesis in Medicine and Surgery by P. Di Palma

Supervisor: N. Portinaro

Academic year 2016-2017, Milan

Posterior cruciate ligament reconstruction with all inside technique: follow up up to seven years

Doctoral thesis in Medicine and Surgery by F. A. Bertelle

Supervisor: N. Portinaro

Academic year 2016-2017, Milan

Complications and predictors of perioperative morbidity and mortality in simultaneous bilateral versus unilateral total hip arthroplasty.

Degree thesis in Medicine and Surgery by C. E. Gandolfi

Supervisor: N. Portinaro

Academic year 2016-2017, Milan

Temporary epiphysodesis of the medial proximal femur for hip subluxation in Cerebral Palsy: results at 5 years of follow-up

Degree thesis in Medicine and Surgery by M. Turati

Co-examiner: N. Portinaro
Academic year 2015-2016, Milan

Kinematic and kinetic assessment of static and dynamic compensations in subjects with lower limb heterometry. Pilot study
Specialist degree thesis in Orthopaedics and Traumatology by A. Peccati
Co-examiner: N. Portinaro
Academic year 2015-2016, Milan

Patellar instability: clinical evaluation of medial patellofemoral ligament (MPFL) reconstruction
Doctoral thesis in Medicine by F. Calanna
Supervisor: N. Portinaro
Academic year 2014-2015, Milan

Spina bifida occulta: early and multidisciplinary diagnostic and therapeutic approach
Doctoral thesis in Medicine and Surgery by L. Manganiello
Supervisor: N. Portinaro
Academic year 2014-2015, Milan

Comparison of the kinematics of normal foot and pediatric pronated valgus foot before and after surgical correction with arthrorisis of the sub-atragalic spine: an experimental study
Degree thesis in Medicine and Surgery by L. Ballini
Supervisor: N. Portinaro
Academic year 2014-2015, Milan

Correlation between timing of anterior cruciate ligament reconstruction and prevalence of associated injuries
Doctoral thesis in Medicine and Surgery by L. Brambilla
Supervisor: N. Portinaro
Academic year 2013-2014, Milan

Reverse prosthesis in the treatment of multifragmentary fractures of the proximal third of humerus: a preliminary study
D. Coccino's degree thesis in Medicine and Surgery
Supervisor: N. Portinaro
Academic year 2012-2013, Milan

Determination of pediatric foot normality parameters with step kinematics data: an experimental study
Degree thesis in Medicine and Surgery by V. M. Monzani
Supervisor: N. Portinaro
Academic year 2012-2013, Milan

Outcomes of cerebral palsy (CP) at foot level
Postgraduate thesis in Orthopaedics and Traumatology by G. Caruso
Co-examiner: N. Portinaro
Academic year 2012-2013, Messina

Correction of the flexed knee in cerebral palsy with early minimally invasive approach
Doctoral thesis in Medicine and Surgery by M. Rodenghi
Supervisor: N. Portinaro
Academic year 2012-2013, Milan

Reconstruction of the medial patellofemoral ligament in patellar instability: from literature to our experience
Doctoral thesis in Medicine and Surgery by J. Tamini

Supervisor: N. Portinaro
Academic year 2011-2012, Milan

Functional results of anterior cruciate ligament reconstruction in adolescents

Degree thesis in Medicine and Surgery by C. Ferrari
Supervisor: N. Portinaro
Academic year 2011-2012, Milan

The surgical treatment of diaphyseal fractures of humerus: a critical evaluation

Degree thesis in Medicine and Surgery by P. Capitani
Supervisor: N. Portinaro
Academic year 2011-2012, Milan

Treatment of exposed fractures of the distal femur: retrospective evaluation with internal osteosynthesis

Degree thesis in Medicine and Surgery by L. Staletti
Supervisor: N. Portinaro
Academic year 2011-2012, Milan

Role of fibula stabilisation in diaphyseal leg fractures

L. Busnelli's degree thesis in Medicine and Surgery
Supervisor: N. Portinaro
Academic year 2011-2012, Milan

Experimental biomechanical model for the evaluation of osteosynthesis stability of articular fractures of the distal epiphysis of the radius

A. M. Querenghi's degree thesis in Medicine and Surgery
Supervisor: N. Portinaro
Academic year 2011-2012, Milan

Functional outcome at 6 months after hip surgery with EMMA protocol in cerebral palsy

M. Valoti's graduation thesis in Neuro and Psychomotricity Therapy for Children and Adolescents
Supervisor: N. Portinaro
Academic year 2010-2011, Milan

Treatment of spastic hypertone of the upper limb in post-stroke patients with extracorporeal shock waves

Valentina Vanessa Re's degree thesis in Medicine and Surgery
Supervisor: N. Portinaro
Academic year 2010-2011, Milan

Multifactorial analysis of gait on treadmill sense rizzato and on fixed platforms comparison of results in pediatric age

A. Tesi thesis
Supervisor: N. Portinaro
Academic year 2009-2010, Milan

The tensioning of transosseous wires as a mechanical factor influencing the fracture healing process. Pilot study on the Orthofix Truelok system.

Degree thesis in Medicine and Surgery by A. Peccati
Supervisor: N. Portinaro
Academic year 2009-2010, Milan

Evaluation of the degree of functional improvement after early intensive rehabilitation in children with PCI undergoing surgery with EMMA2 or EMMA3 hip protocols

Degree thesis in Neuro and Psychomotricity Therapy for Children by A. Ceriani
Supervisor: N. Portinaro
Academic year 2009-2010, Milan

Current orientations in foot surgery in cerebral palsy
Postgraduate thesis in Orthopaedics and Traumatology by R. Lentini
Co-examiner: N. Portinaro
Academic year 2009-2010, Palermo

ATTACHMENT D - SCIENTIFIC PAPERS

"WHEN AND HOW TO INTERVENE SURGICALLY ON MUSCULOSKELETAL DEFORMITIES".

Portinaro N. Panou A. Peccati A.

Madella Noja A. "Cerebral palsy in children: the associated pathologies".

Carocci Faber publisher, 2020

"ORTHOPAEDICS"

Cabitz P. Mineo G. Portinaro N. Randelli P. Sansone V. Verdoia C.

Società editrice Esculapio, 2012, 1st edition

"MANAGEMENT OF HIP DYSPLASIA IN THE FIRST YEAR"

Portinaro N. Panou A. Camurri S.

EFFORT textbook of Orthopaedic surgery, 2012

"DEVELOPMENTAL PATHOLOGIES"

Portinaro N. Mori N. Bellomo S.

In Dionigi R. "Treatise on general surgery".

Publisher Elsevier Masson, 2011, 5th edition

"OTHER ORTHOPAEDIC PROBLEMS".

Portinaro N. Panou A.

In "From diagnosis to therapy" (monograph)

Publishers Vesselli - Pintaudi, 2010

AIR - Italian Rett Association

ATTACHMENT E - RESEARCH ACTIVITIES AND GRANTS

From 2001, as Project Manager has obtained and managed **grants for an amount of € 4,300,000.00**.

From 2019, **scientific collaboration with the National Research Council** (Dr. Ing. Lorenzo Molinari Tosatti - Director of the Institute of Intelligent Industrial Systems and Technologies for Advanced Manufacturing, STIMA), aimed at the research project called "Electromyographic study of muscle synergies during walking in healthy children and in patients affected by cerebral palsy (CP)".

From 2016, **cooperation between Humanitas Clinical and Research Center (IRCCS) and Institute of Genetic and Biomedical Research, UOS Milan, National Research Council** (Dr.ssa Marie Louise Bang) within the following projects:

- Study of gene expression of tendon proteins in healthy children and in patients with cerebral palsy (CP);
- Study of the gene expression of muscle proteins in healthy children and in patients with cerebral palsy (CP).

From 2010, cooperation with the **Department of Biosciences of the University of Milan** (Department of Excellence 2018-2022, Prof. Aldo Milzani and Prof. Isabella Dalle Donne) within the following projects:

- Study of oxidative stress in tendons of patients affected by cerebral palsy (CP)
- Study of oxidative stress in plasma and intraerythrocytic proteins of patients affected by cerebral palsy (CP).

From 2003, **Founder and Medical Director of "Fondazione Ariel"**, a non-profit foundation that helps the families of patients with neuro-motor disorders and perform basic scientific research about these disorders (see Attachment F).

Since 2003, member of the editorial board of the indexed international scientific journal Hip international - Pediatric session (editor in chief from 2003 to 2018).

In 1991, prof Portinaro won **two scholarships from the Italian Ministry of Education** for "young doctors training abroad" for a total amount of ITL 40,000,000, with attendance at the University of Oxford (United Kingdom) as a research fellow.

Active membership in scientific societies of recognised national and international prestige (SIOT, SITOP, EPOS, EHS, AACPDM).

Founder and Vice President of the National Society of Paediatric Neuro-Orthopaedics (SINOP).

Achievement of the following national and international prizes and awards:

- Arienti Prize in Orthopaedics and Traumatology (1996);
- Honorary fellowship with honorary degree, awarded by the Royal College of Surgeons of Edinburgh (2000);
- Paul Harris Fellow, awarded by the Rotary International Foundation (2004).

Research activity is documented in papers published in international journals (see Attachment B).

ATTACHMENT F - CHARITY WORK

Since 2003 Medical Scientific Director of the Ariel Foundation

Childhood neuromotor disabilities include a variety of diseases that are primary or secondary to perinatal lesions of the central and peripheral nervous systems. Children with this type of pathology require multiple treatments involving several specialists throughout their lives. Because of the diversity and multiplicity of interventions required, the patient and his family are often involved in complex and obstacle-ridden treatment pathways that force children and families to travel from one centre to another, and often even to go abroad in search of excellent care.

ARIEL was created with the aim of putting an end to these journeys of hope.

For more information: www.fondazioneariel.it