

Dr. ssa Sara Imparato

Responsabile dell'Unità di Imaging

Medico Radiologo

ATTIVITA' di RICERCA

La ricerca in Radiologia è estesa a tutti gli ambiti oncologici in studio presso CNAO, qualsiasi distretto anatomico e/o patologia.

Area di maggior interesse personale in ambito Head and Neck, Ginecologia Oncologica e Sarcomi di qualsiasi distretto

PUBBLICAZIONI

Evaluating the technical feasibility of biology-guided dose painting in proton therapy.

Brighi C, Parrella G, Morelli L, Molinelli S, Magro G, Lillo S, Iannalfi A, Ciocca M, Imparato S, Waddington DEJ, Keall P, Paganelli C, Orlandi E, Baroni

G.Phys Imaging Radiat Oncol. 2025 Aug 27;35:100832. doi: 10.1016/j.phro.2025.100832. eCollection 2025 Jul.PMID: 40926802

Deep-learning synthesized 4DCT from 4DMRI of the abdominal site in carbon-ion radiotherapy.

Nakas A, Hladchuk M, Parrella G, Vai A, Molinelli S, Camagni F, Vitolo V, Barcellini A, Imparato S, Pella A, Ciocca M, Orlandi E, Paganelli C, Baroni

G.Phys Med. 2025 May;133:104963. doi: 10.1016/j.ejmp.2025.104963. Epub 2025 Apr 4.PMID: 40187129

Generation of multimodal realistic computational phantoms as a test-bed for validating deep learning-based cross-modality synthesis techniques.

Camagni F, Nakas A, Parrella G, Vai A, Molinelli S, Vitolo V, Barcellini A, Chalaszczyk A, Imparato S, Pella A, Orlandi E, Baroni G, Riboldi M, Paganelli

C.Med Biol Eng Comput. 2025 Sep 27. doi: 10.1007/s11517-025-03437-4. Online ahead of print.PMID: 41015634

Tumor control probability in large sacral chordomas treated with carbon ions radiotherapy integrating advanced microstructural modelling.

Parrella G, Morelli L, Molinelli S, Magro G, Glimelius L, Ödén J, Ciocca M, Imparato S, Rotondi M, Fiore MR, Orlandi E, Baroni G, Paganelli

C.Phys Med. 2025 Aug;136:105038. doi: 10.1016/j.ejmp.2025.105038. Epub 2025 Jul 1.PMID: 40602227

Long-Term Tumor Control After Carbon Ion Radiation Therapy Boost in Locally Advanced Cervical Clear Cell Adenocarcinoma.

Barcellini A, Vai A, Arbustini E, Carnelli M, Imparato S, Delishaj D, Soatti CP, Tinelli C, Vitali E, Vitolo V, Orlandi

E.Int J Part Ther. 2025 Aug 14;17:101200. doi: 10.1016/j.ijpt.2025.101200. eCollection 2025 Sep.PMID: 40978282

Predicting sacral insufficiency fractures in carbon ion therapy for sacral chordoma: The role of RBE-weighted dose, dose-averaged LET, and volume.

Molinelli S, Bagnalasta M, Magro G, Rotondi M, Russo S, Chalaszczyk A, Ferrari E, Imparato S, Ciocca M, Orlandi E, Fiore MR.

Med Phys. 2025 Aug;52(8):e18045. doi: 10.1002/mp.18045.PMID: 40804777

Prognostic factors and clinical outcomes in a large cohort of head and neck adenoid cystic carcinoma patients treated with proton beam therapy: Insights from an Italian referral center.

Vischioni B, Bonora M, Fontana G, Scardo S, Brighenti L, D'Ambrosio L, Ronchi S, Ingargiola R, Camarda AM, Imperato S, Facchinetti N, Vai A, Ciocca M, Molinelli S, Orlandi E. *Radiother Oncol*. 2025 Sep 14;213:111143. doi: 10.1016/j.radonc.2025.111143. Online ahead of print. PMID: 40957490

Evaluation of motion mitigation strategies for carbon ion therapy of abdominal tumors based on non-periodic imaging data.

Steinsberger T, Nakas A, Vai A, Molinelli S, Donetti M, Pullia M, Martire MC, Galeone C, Ciocca M, Pella A, Vitolo V, Barcellini A, Orlandi E, *Imperato S*, Volz L, Baroni G, Paganelli C, Durante M, Graeff C. *Phys Med Biol*. 2025 Mar 3;70(6). doi: 10.1088/1361-6560/adb89b. PMID: 39978068.

Stability of radiomic features in magnetic resonance imaging of the female pelvis: A multicentre phantom study.

Sghedoni R, Origgi D, Cucurachi N, Minischetti GC, Alio D, Savini G, Botta F, Marzi S, Aiello M, Rancati T, Cusumano D, Politi LS, Didonna V, Massafra R, Petrillo A, Esposito A, *Imperato S*, Anemoni L, Bortolotto C, Preda L, Boldrini L. *Phys Med*. 2025 Feb;130:104895. doi: 10.1016/j.ejmp.2025.104895. Epub 2025 Jan 9. Erratum in: *Phys Med*. 2025 Apr;132:104948. doi: 10.1016/j.ejmp.2025.104948. PMID: 39793255.

Investigating the Local Effectiveness of Carbon Ion Radiotherapy for Unresectable Female Genital Tract Melanomas: A Preliminary Real-World Study.

Barcellini A, Fontana G, Vai A, Aletti GD, Charalampopoulou A, Chiellino S, Ditto A, Landoni F, Locati LD, Mangili G, Martinelli F, Piccolo F, Franzetti J, *Imperato S*, Raspagliesi F, Orlandi E. *Cancers (Basel)*. 2024 Dec 12;16(24):4147. doi: 10.3390/cancers16244147. PMID: 39766046; PMCID: PMC11674411.

Proton therapy for intracranial meningioma: a single-institution retrospective analysis of efficacy, survival and toxicity outcomes.

Iannalfi A, Riva G, Lillo S, Ciccone L, Fontana G, Molinelli S, Trombetta L, Ciocca M, *Imperato S*, Pecorilla M, Orlandi E. *J Neurooncol*. 2024 Sep;169(3):683-692. doi: 10.1007/s11060-024-04751-x. Epub 2024 Jun 25. PMID: 38918319.

Curative carbon ion radiotherapy in a head and neck mucosal melanoma series: Facing the future within multidisciplinary.

Ronchi S, Cicchetti A, Bonora M, Ingargiola R, Camarda AM, Russo S, *Imperato S*, Castelnuovo P, Pasquini E, Nicolai P, Ansarin M, Del Vecchio M, Benazzo M, Orlandi E, Vischioni B. *Radiother Oncol*. 2024 Jan;190:110003. doi: 10.1016/j.radonc.2023.110003. Epub 2023 Nov 11. PMID: 37956889.

Virtual 4DCT generated from 4DMRI in gated particle therapy: phantom validation and application to lung cancer patients.

Annunziata S, Rabe M, Vai A, Molinelli S, Nakas A, Meschini G, Pella A, Vitolo V, Barcellini A, *Imperato S*, Ciocca M, Orlandi E, Landry G, Kamp F, Kurz C, Baroni G, Riboldi M, Paganelli C. *Phys Med Biol*. 2023 Jul 5;68(14). doi: 10.1088/1361-6560/acdec5. PMID: 37321258.

Optimizing b-values schemes for diffusion MRI of the brain with segmented Intravoxel Incoherent Motion (IVIM) model.

Paganelli C, Zampini MA, Morelli L, Buizza G, Fontana G, Anemoni L, *Imperato S*, Riva G, Iannalfi A, Orlandi E, Baroni G. *J Appl Clin Med Phys*. 2023;24(6):e13986. doi:10.1002/acm2.13986

Microstructural parameters from DW-MRI for tumour characterization and local recurrence prediction in particle therapy of skull-base chordoma.

Morelli L, Palombo M, Buizza G, Riva G, Pella A, Fontana G, *Imperato S*, Iannalfi A, Orlandi E, Paganelli C, Baroni G. *Med Phys*. 2023;50(5):2900-2913. doi:10.1002/mp.16202

Role of diffusion-weighted MRI in recurrent rectal cancer treated with carbon ion radiotherapy.

Fontana G, Barcellini A, Boccuzzi D, Pecorilla M, Loap P, Cobianchi L, Vitolo V, Fiore MR, Vai A, Baroni G, Preda L, [Imparato S](#), Orlandi E.

Future Oncol. 2022;18(22):2403-2412. doi:10.2217/fon-2021-1554

Dosimetric and Clinical Risk Factors for the Development of Maxillary Osteoradionecrosis in Adenoid Cystic Carcinoma (ACC) Patients Treated With Carbon Ion Radiotherapy.

Vischioni B, Russo S, Meuli M, Bonora M, Ronchi S, Ingargiola R, Camarda AM, [Imparato S](#), Preda L, Ciocca M, Molinelli S, Orlandi E.

Front Oncol. 2022;12:829502. Published 2022 Mar 2. doi:10.3389/fonc.2022.829502

Time-resolved MRI for off-line treatment robustness evaluation in carbon-ion radiotherapy of pancreatic cancer.

Meschini G, Vai A, Barcellini A, Fontana G, Molinelli S, Mastella E, Pella A, Vitolo V, [Imparato S](#), Orlandi E, Ciocca M, Baroni G, Paganelli C.

Med Phys. 2022;49(4):2386-2395. doi:10.1002/mp.15510

Analysis of tumour microstructure estimation from conventional diffusion MRI and application to skull-base chordoma.

Morelli L, Buizza G, Palombo M, Riva G, Fontana G, [Imparato S](#), Iannalfi A, Orlandi E, Paganelli C, Baroni G.

Annu Int Conf IEEE Eng Med Biol Soc. 2021 Nov;2021:3761-3764. doi: 10.1109/EMBC46164.2021.9630129. PMID: 34892054.

Potential role of functional imaging in predicting outcome for patients treated with carbon ion therapy: a review.

Riva G, [Imparato S](#), Savietto G, Pecorilla M, Iannalfi A, Barcellini A, Ronchi S, Fiore MR, Paganelli C, Buizza G, Ciocca M, Baroni G, Preda L, Orlandi E.

Br J Radiol. 2021;94(1128):20210524. doi:10.1259/bjr.20210524

How LEM-based RBE and dose-averaged LET affected clinical outcomes of sacral chordoma patients treated with carbon ion radiotherapy.

Molinelli S, Magro G, Mairani A, Allajbej A, Mirandola A, Chalaszczyk A, [Imparato S](#), Ciocca M, Fiore MR, Orlandi E.

Radiother Oncol. 2021;163:209-214. doi:10.1016/j.radonc.2021.08.024

Particle Radiotherapy for Skull Base Chondrosarcoma: A Clinical Series from Italian National Center for Oncological Hadrontherapy.

Riva G, Cavallo I, Gandini S, Ingargiola R, Pecorilla M, [Imparato S](#), Rossi E, Mirandola A, Ciocca M, Orlandi E, Iannalfi A.

Cancers(Basel).2021;13(17):4423. Published 2021 Sep 2. doi:10.3390/cancers13174423

Intravoxel incoherent motion as a tool to detect early microstructural changes in meningiomas treated with proton therapy

Franconeri A, Sacco S, Raciti M.V, Maggi A, Muzic S.I, [Imparato S](#), Farina L., Bacila A, Paganelli C, Buizza G, Baroni G, Iannalfi A, Orlandi E, Preda L

Neuroradiology. 2021 Jul;63(7):1053-1060. doi: 10.1007/s00234-020-02630-6. Epub 2021 Jan 3. PMID: 33392736

Investigating DWI changes in white matter of meningioma patients treated with proton therapy.

Buizza G, Zampini MA, Riva G, Molinelli S, Fontana G, [Imparato S](#), Ciocca M, Iannalfi A, Orlandi E, Baroni G, Paganelli C. Phys Med. 2021 Apr;84:72-79.

Doi:10.1016/j.ejmp.2021.03.027. Epub 2021 Apr 16. PMID: 33872972

Is a tailored strategy using proton beam radiotherapy for reirradiation advantageous for elderly women? A case report.

Barcellini A, Ditto A, Mirandola A, Roccio M, [Imparato S](#), Raspagliesi F, Orlandi E. Tumori. 2021 Apr 25:3008916211007930. doi: 10.1177/03008916211007930. Online ahead of print. PMID: 33896256

Multi-parametric qualitative and quantitative MRI assessment as predictor of histological grading in previously treated meningiomas

Sacco S, Ballati F, Gaetani C, Lomoro P, Farina L. M, Bacila A, [Imparato S](#), Paganelli C, Buizza G, Iannalfi A, Baroni G, Valvo F, Bastianello S, Preda L

Neuroradiology 2020; 62 (11): 1441-1449. Doi 10.1007/s00234-020-02476-y. Epub 2020 Jun 24. PMID: 32583368

Adenoid cystic carcinoma of Bartholin gland: what is the best approach?

Barcellini A, Gadducci A, Laliscia C, Imparato S, Preda L, Valvo F
Oncology 2020 98(8): 513-519. Doi: 10.1159/000506485. Epub 2020 May 14. PMID: 32408297

The multiplanar analysis of the retromandibular vein in surgical planning for parotid gland tumors

Poletti AM, Imparato S, Signorelli GC, Cugini G, Colombo G.
Eur Arch Otorhinolaryngol. 2018 Jun;275(6):1587-1593. Doi: 10.1007/s00405-018-4953-0. Epub 2018 Mar 27. PMID: 29589143

Long-Term Follow-up Results of the DANTE Trial, a Randomized Study of Lung Cancer Screening with Spiral Computed Tomography.

Am J Respir Crit Care Med. 2015 May 15;191(10):1166-75. doi: 10.1164/rccm.201408-1475OC
Infante M, Cavuto S, Lutman FR, Passera E, Chiarenza M, Chiesa G, Brambilla G, Angeli E, Aranzulla G, Chiti A, Scorsetti M, Navarria P, Cavina R, Ciccarelli M, Roncalli M, Destro A, Bottoni E, Voulaz E, Errico V, Ferraroli G, Finocchiaro G, Toschi L, Santoro A, Alloisio M; DANTE Study Group.

A randomized study of lung cancer screening with spiral computed tomography: three-year results from the DANTE trial.

Infante M, Cavuto S, Lutman FR, Brambilla G, Chiesa G, Ceresoli G, Passera E, Angeli E, Chiarenza M, Aranzulla G, Cariboni U, Errico V, Inzirillo F, Bottoni E, Voulaz E, Alloisio M, Destro A, Roncalli M, Santoro A, Ravasi G; DANTE Study Group.
Am J Respir Crit Care Med. 2009 Sep 1;180(5):445-53. doi:10.1164/rccm.200901-0076OC. Epub 2009 Jun 11.

Differential diagnosis and management of focal ground-glass opacities.

Infante M, Lutman RF, Imparato S, Di Rocco M, Ceresoli GL, Torri V, Morengi E, Minuti F, Cavuto S, Bottoni E, Inzirillo F, Cariboni U, Errico V, Incarbone MA, Ferraroli G, Brambilla G, Alloisio M, Ravasi G
Eur Respir J. 2009 Apr;33(4):821-7. doi: 10.183/09031936.00047908. Epub 2008 Dec 1.

Visceral leishmaniasis in a patient with Wegener's granulomatosis.

Sollima S, Corbellino M, Piolini R, Calattini S, Imparato S, Antinori S.
Rheumatology (Oxford). 2004 Jul;43(7):935-7.