



**UNIVERSITÀ
DI SIENA**
1240

DIPARTIMENTO DI
**MEDICINA MOLECOLARE
E DELLO SVILUPPO**
— DMMS

Università degli Studi di Siena Dottorato di Ricerca in Medicina Molecolare

Scheda Relazione Annuale Dottorando

Siena, 30/09/2025

Al Collegio Docenti del Dottorato in Medicina Molecolare

Dott.ssa Chiara Narducci

ciclo XL Tutor Prof. Andrea Fagiolini

Attività scientifica svolta nel 1° anno di Dottorato, Anno Accademico **2024-2025**

Over the first year, my research focused on psychiatric disorders in children and adolescents, with particular attention to attention-deficit/hyperactivity disorder (ADHD).

Introduction

ADHD is a common neurodevelopmental disorder, affecting approximately 7.1% of children and adolescents. Methylphenidate (MPH) is its first-line pharmacological treatment. Although MPH is safe and effective, individual response varies widely, and no reliable predictors of treatment outcome are available. Evidence on clinical and neuropsychological profiles of responders is inconsistent, and the mechanisms by which MPH alleviates core symptoms and comorbidities remain unclear. Additionally, while multiple MPH formulations are used in clinical practice, it is unknown which patient characteristics best predict response to each. This project aims to identify predictors and/or moderators of MPH response in children and adolescents with ADHD, both with and without comorbidities.

Materials and methods

During the first year, patients diagnosed with ADHD (6-17 years), with and without comorbidities, who were admitted to our unit were evaluated. Biological samples were collected, and neuropsychiatric assessments were conducted at baseline and at specific timepoints following the initiation of MPH treatment, outlining a pilot study.

Results

I designed both a retrospective and a naturalistic prospective observational study, including neuropsychiatric assessments at a minimum of three timepoints during MPH



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treatment. Additionally, I identified a subgroup of patients classified as “non-responders” or “partial responders,” who may be the focus of specific analyses.

Additionally, I contributed to a study involving adolescents (14–18 years) diagnosed with major depressive disorder (MDD). This work aimed to better characterize the clinical, neuropsychological, and inflammatory profiles of these patients, exploring potential mediators and biomarkers before and after treatment with selective serotonin reuptake inhibitors (SSRIs).

- Elencare eventuali Pubblicazioni scientifiche: autori, titolo della pubblicazione, nome e numero della rivista, anno di pubblicazione

- **Narducci C., Donno F., Milone A., Placini, F., Glennon, J.C., Masi G., Coghill D., Zuddas A., Carucci S., Balia C. (2025).** Emotional dysregulation, executive functions and callous-unemotional traits in children and adolescents with Oppositional Defiant Disorder/Conduct Disorder and Autism Spectrum Disorder: a direct comparison”. *Journal of Psychiatric Research*. Accepted for publication

- Altro

Editorial activity

June 2025: Reviewer of an article for the journal “*Journal of Neuropsychology*”.

September 2025: Reviewer of an article for the journal “*Translational Pediatrics*”.

Attività didattica

- CFU **totali** conseguiti per le frequenze di didattica frontale: **15**
- Seminari (indicare relatore e data del/i seminario/i. Aggiungere righe se necessario)
 1. PhD Day. February 10, 2025.
 2. Seminar: “Wechsler Intelligence Scale for Children V edizione (WISC V): uno sguardo pratico”. September 16, 2025. AOU Senese. Speaker. In person. Talk title: “Profili neurocognitivi nei disturbi del neurosviluppo”

CFU conseguiti per questa attività: 2



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- Soft Skills (indicare nome e data del/i corso/i. Aggiungere righe se necessario)
 1. "From a PhD project to Impacting the World". March 20, 2025. Speaker: Dr. Mathis Wackernagel. In person
 2. "Come massimizzare l'impatto di una proposta collaborativa in Horizon Europe". March 27, 2025. Speaker: Alessio Livio Spera. Online
 3. "Project Management: come gestire un progetto Horizon Europe-Dalla Grant Agreement Preparation alla chiusura del progetto, passando per le rendicontazioni tecnico-finanziarie e la gestione del Consorzio". April 2, 2025. Speaker: Riccardo Coletta. Online
 4. "Marie-Sklodowska Curie actions: come scrivere una proposta msca - postdoctoral fellowships" April 9, 2025. Speaker: Angelo D'Agostino. Online
 5. "HORIZON EUROPE - Focus su Cluster 1 HEALTH". May 19, 2025. Speaker: Bruno Mourenza. Online
 6. "Rischi naturali conoscere, prevenire, difendersi". May, 23, 2025. Speakers: Nicola Casagli, Massimiliano Nocentini, Luca Tanteri, Elisa Bandecchi, Elisa Gargini, Chiara Arrighi. Online
 7. "European Research Council (ERC): come scrivere una proposta ERC Starting Grant". June 11, 2025. Speaker: Federica Tanghetti. Online
 8. "Maria Sklodowska Curie Actions: come scrivere una proposta di successo doctoral networks". June 25, 2025. Speaker: Serena Cheren. Online
 9. "Open science e data management in Horizon Europe". September 11, 2025. Speaker: Diego Coglitore. Online
 10. "Consortium agreement e proprieta' intellettuale in Horizon Europe". October 14, 2025. Online

CFU conseguiti per questa attività: 5

- Partecipazione a congressi (indicare nome e data del/i congressi/i, titolo della/e presentazione-i/poster/abstract, autori)
 1. Congress/Workshop: "Autismo: esplorando la complessità- Profili neuropsicologici, co-occorrenza e ricerca partecipativa". November 15-16, 2024. Participant. Online
 2. Congress: "ADHD: profili clinici, traiettorie evolutive e implicazioni di trattamento". February 28, 2025. AOU Senese. Speaker. In person. Talk title: "ADHD e tratti calloso-anemozionali"
 3. Congress: 10th World Congress on ADHD. May 8-11, 2025-Prague. Presenter of the poster "Assessment of social functioning and callous-unemotional traits in children and adolescents with ADHD being treated with methylphenidate: an observational study" (V.Scandurra, C.Narducci & A.Fagiolini). In person



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4. Congress: "International Conference on Pediatric Acute-Onset Neuropsychiatric Syndrome: from neuroinflammation to clinical practice". June 13-14, 2025. Participant. Online

CFU conseguiti per questa attività: 3

- Eventuali soggiorni in altri laboratori italiani o esteri

Tabella Riepilogativa CFU primo anno

Didattica	Seminari Webinar	Soft Skills	Congressi	PhD Day	TOTALE I ANNO (Inclusi 35 CFU per la ricerca)
15 CFU	1 CFU	5 CFU	3 CFU	1 CFU	60 CFU

Tabella Riepilogativa CFU secondo anno (lasciare in bianco se del primo anno)

Didattica	Seminari Webinar	Soft Skills	Congressi	PhD Day	TOTALE II ANNO (Inclusi 35 CFU per la ricerca)