

MASTER THESIS:

Breathing and the Developing Brain: Exploring Self-Regulation in Children

Background: Breathing is a unique bodily signal as it can be both automatically regulated and consciously controlled. Research in adults has shown that paying attention to one's breathing and practicing slow-paced breathing can reduce stress, improve emotion regulation, and influence brain activity. However, little is known about these breathing-related mechanisms in childhood.

Our project: Here, we will examine how children attend to and actively control their breathing, and how this relates to neural dynamics and physiological regulation. We will further test whether repeated slow-paced breathing training can induce changes in brain activity and improve children's ability to regulate stress-related physiological responses.

Why does it matter: The ability to regulate internal bodily states is thought to play a crucial role in children's emotional and cognitive development. Adult research suggests that breathing can modulate brain networks linked to cognitive control, stress regulation, and emotional processing. Thus, it is crucial to understand how breathing-related brain-body interactions develop during childhood and whether breathing-based interventions can support healthy neurocognitive and emotional development.

Join us in the laboratory of the Wiener Kinderstudien at the University of Vienna to write your **Master thesis** (start: WS 2026) with us!

We offer:

- Gain experience in modern cognitive neuroscientific research and methods (e.g., EEG, ECG, respiration measures)
- Training and supervision

Requirements:

- Experience/interest in neuroscientific methods (desirable)
- Experience working with children (desirable)
- Proactive, organized, active, and responsible working style, alone and within a team

In case you are interested or have questions please contact nina.besser@univie.ac.at (in English) with a short letter of motivation and your CV!