

# Interactive Metronome Training for Adolescents: A Systematic Review

Mia Collins OTS, Kyla Genenbacher OTS, Rachel Santiago OTS  
Hawai'i Pacific University, Doctor of Occupational Therapy Program, Honolulu, Hawai'i

## Research Question

**Does interactive metronome training (IMT) improve attention and coordination in children with ADHD?**

## Introduction

- **Interactive Metronome Training (IMT)** is a computer-based program designed to **improve timing, attention, coordination, and regulation** in individuals.
- Synchronized movements and exercises to a computer-generated beat provide visual and auditory feedback.
- **IMT addresses cognitive and motor functions** which are areas often impacted in those diagnosed with ADHD.
- **ADHD** is one of the most common neurodevelopmental disorders in children (CDC, 2024).
- In many cases ADHD is treated with medication, but IMT is a **non-pharmacological intervention** to consider that does not pose any side effect.
- There is a **lack of high-quality research** on the effective use of IMT specifically with pediatric populations diagnosed with ADHD.

## Method

- **Guidelines:** Followed PRISMA guidelines
- **Search conducted:** May 4, 2025 to May 9, 2025
- **Additional search:** May 19, 2025
- **Inclusion criteria:** Peer-reviewed, published in English, and dated between 2001-2023
- **Exclusion criteria:** Systematic reviews, scoping reviews, dissertations, and presentations
- **Databases:** Medline, Academic Search Complete, and CINAHL Complete through Hawai'i Pacific University's online library database
- **Search terms:** *Interactive metronome training, attention deficit-hyperactivity disorder (ADHD), and children*, as well as combinations of these terms.
- **Reviewers:** Three independent reviewers

Figure 1. Demonstration of IMT Training Session



Source: Photo from Adobe Stock Photos

Figure 2. Common Equipment used in IMT



Source: Photo generated by ChatGPT

Figure 3. Therapist Guided IMT Session



Source: Photo from Adobe Stock Photos

## Results

This review analyzed six articles and found that IMT is a safe, non-pharmacological, and potentially effective treatment for children with ADHD. Three themes emerged from the studies.

### Systematic review themes:

1. Positive Changes in Attention and Focus
2. Need for Further Research
3. Impact on Speed, Coordination, and Motor Control

## Discussion

IMT may improve behavior, speed, coordination, and motor control in children with neurodevelopmental challenges, especially ADHD. Studies used assessments including the 9-Hole Peg Test to measure progress, showing improvement from baseline. IMT is an intervention that can complement other therapies. However, more research with larger, more diverse groups is needed to confirm its effectiveness

## Conclusion

Studies in this review show that IMT can be effective to improve motor skills in children with ADHD. IMT may help children with different neurodevelopmental challenges by enhancing their timing, rhythm, and coordination, which are foundational skills for tasks such as handwriting, balance, and fine motor control. Additionally, IMT may support improvements in attention, working memory, and impulse control by strengthening neural timing and connectivity across brain regions involved in executive functioning. More research is needed to confirm and expand on these positive findings.

## References

