

Moving Minds Empowering Bodies

HABIT-ILE

Hand-Arm Bimanual Intensive Therapy Including Lower Extremities | a motor-learning framework for paediatric rehabilitation

1 Definitions

HABIT-ILE

An evidence-based, intensive intervention coupling bimanual upper-limb training with postural control and lower-extremity activation.

Shaping

Progressively adapting task difficulty so the child works at the “just-right” challenge level.

Hands-off

The therapist structures affordances and feedback; the child generates the movement strategy without physical guidance.

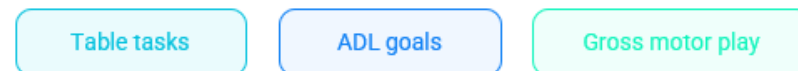
Clinical definition

Not “exercise dose” alone: HABIT-ILE is intensive, goal-directed motor learning embedded in play and daily-life tasks.

2 Components & approaches



Practice contexts



Each activity should combine hand use, posture and lower-limb demands whenever clinically relevant.

3 Implementation method

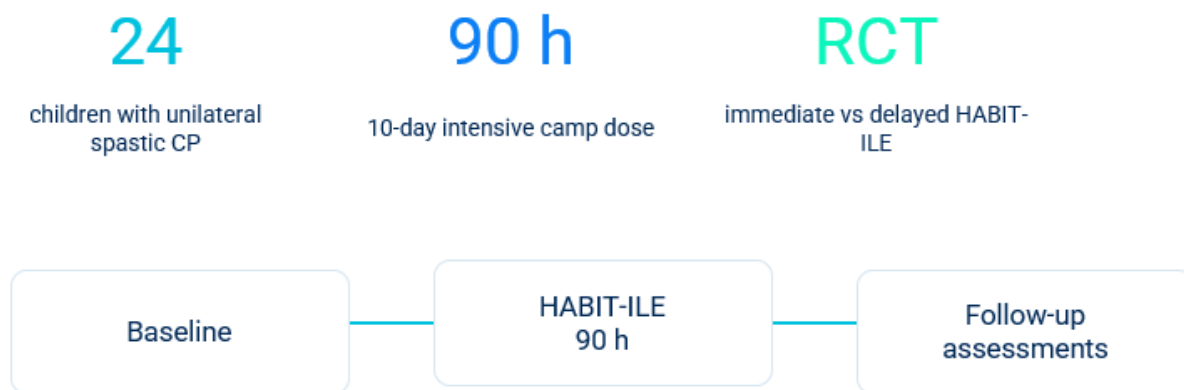
- 1 **Set functional goals**
Child/family goals; define target ADL and participation situations.
- 2 **Choose task context**
Table, ADL or gross motor play; keep tasks meaningful and fun.
- 3 **Couple systems**
Bimanual hand use + trunk/posture + lower-limb stimulation.
- 4 **Grade constraints**
Object, reach space, timing, posture, balance and task rules.
- 5 **Repeat → reinforce → transfer**
High active time, feedback, progression, then daily-life carryover.

Rule of thumb: the child solves the task; the therapist designs the environment.

Landmark HABIT-ILE randomized trial

Bleyenheuft et al. tested whether adding lower extremities to intensive bimanual therapy improves both upper and lower extremity function

Design



Key findings

- Significant improvement in AHA (primary upper-limb outcome).
- Significant improvement in 6MWT (primary lower-limb outcome).
- Secondary outcomes improved except BBT, step length and bodyweight distribution.

Why this study is still central

It established HABIT-ILE as a structured, motor-learning-based protocol combining upper-limb skill, postural control and locomotor demands at high intensity.

Clinical signal

HABIT-ILE is not “upper limb therapy plus exercises”: it is intensive functional training where UE, trunk and LE demands are intentionally coupled.

Hand-Arm Bimanual Intensive Therapy Including Lower Extremities

An intensive, goal-directed, play-based motor-learning framework that integrates bimanual upper-limb training, postural control, and lower-limb engagement to promote functional gains and transfer to daily life.



ASSESS

Understand strengths, goals, and context



PLAN

Select meaningful tasks and set targets



PRACTICE

High-intensity, play-based training



FEEDBACK

Provide knowledge of performance

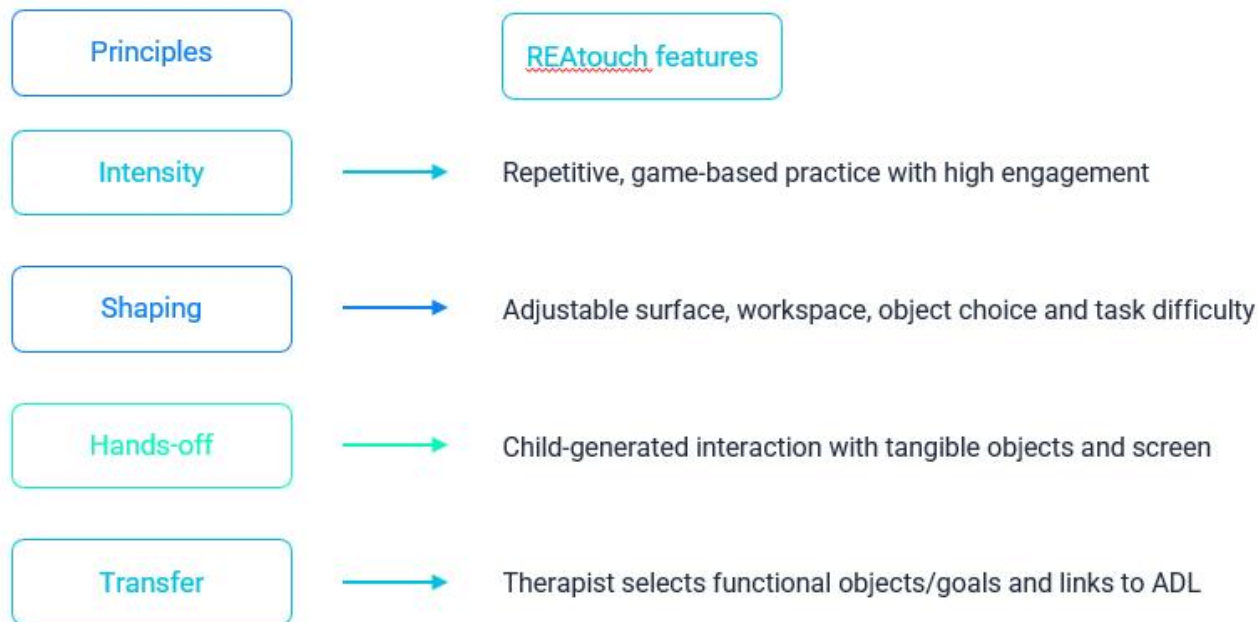


TRANSFER

Carry over skills to daily life

Combining REAtouch & Habit ile

A structured interactive environment to operationalise HABIT-ILE motor-learning principles



Key message: REAtouch is not “therapy by itself”; it is a therapist-shaped environment that helps preserve HABIT-ILE principles.

REAtouch was developed to enhance cerebral plasticity and achieve optimal functional outcomes. The use of therapeutic gamification enables a very high level of stimulation of patients’ motor and cognitive abilities through continuous motivational engagement.

The diversity of cognitive and play-based activities, combined with the possibility of interacting with everyday objects, makes it possible to define specific goals to be achieved, thereby encouraging patients’ active participation and supporting their progress.



REAtouch and Intensive Motor Rehabilitation

**Hôpital Raymond Poincaré
Garches
France**

1st june 2026





The purpose of using this tool with children of different ages

M. 16 years old : degenerative disease

- Working on stamina and standing tolerance
- Weight shifting from one foot to the other

Patients

S. 6 years old : hemiplegia

- **Adaptation of the interface to the hand (customized handles/plugs)**
- **Integration of the upper limb into the body schema**



Games used according to therapeutic goals

The key feature is the infrared screen, which enables many adaptations.

Game : Labyrinth

- **Screen exploration : visual screening and arm extension**

Games

Game : Insect

- **A pointing task to improve speed and accuracy**
- **This activity can be transferred to feeding by using an adapted fork**



Games used according to therapeutic goals

Game : Coloring

- **Hand endurance (maintaining a pressure on the surface)**
- **Working on hand opening**
- **Practicing hand closing around a fork to simulate holding food during cutting**

Games

Game : Color matching link this picture

- **Developing an appropriate grasp**
- **Working on grasp release**
- **Cognitive task integration**





The advantages with REAtouch:

Strong motivation and engagement in rehabilitation

Adaptable to different patients 'heights and positions

Adjustable inclination to modify task difficulty

Possibility of adapting the equipment (handles, supports, etc.)

Dual-task training: combining motor and cognitive activities

Advantages



END

Thanks for your attention