



如何運用「加得小勇士」應用程式 改善ADHD兒童的專注力及執行功能

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內容

- * 簡介專注力失調過度活躍症(ADHD) 與執行功能(Executive functions)
- * 加得小勇士在訓練上的特質
- * 善用加得小勇士有辦法

簡介ADHD 與執行功能



What Is ADHD?

執行功能與ADHD徵狀

“小小火山”

- * 較弱的反應抑制能力 (Prepotent response inhibition)
- * 較弱的自我情緒調節能力 (Self-regulation of emotion)
- * 較難進行自我對話 (Self-talk)



Video from “ADHD and me”(ADHD Voice)

執行功能與ADHD徵狀

“發夢者”

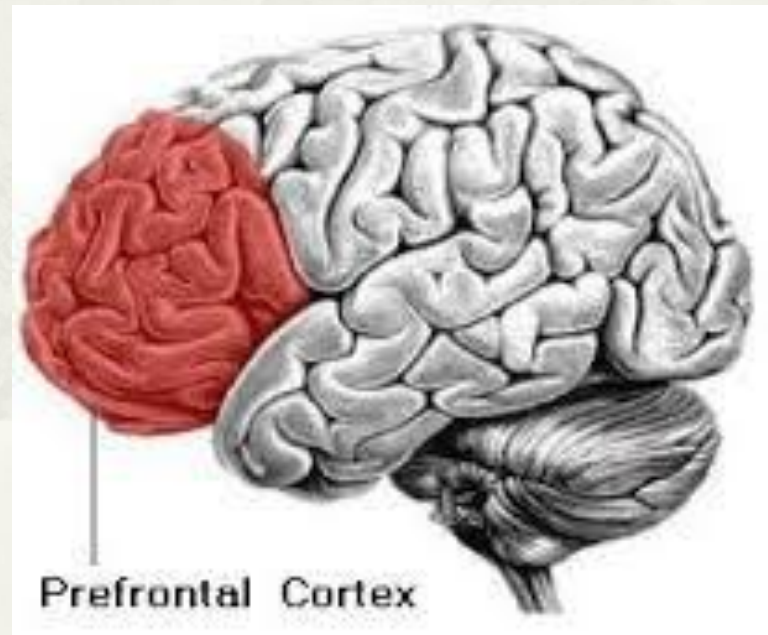
- * 抑制外來騷擾能力較弱
(Interference control)
- * 自我意識較弱(Self-awareness)
- * 時間觸覺較弱(Sense of Time)
- * 自我調節意慾較弱
(Self-regulation of motivation)
- * 較難組織自己於不同時段中的行為
(Cross-temporal organization of behaviour)



Video from “ADHD and me”(ADHD Voice)

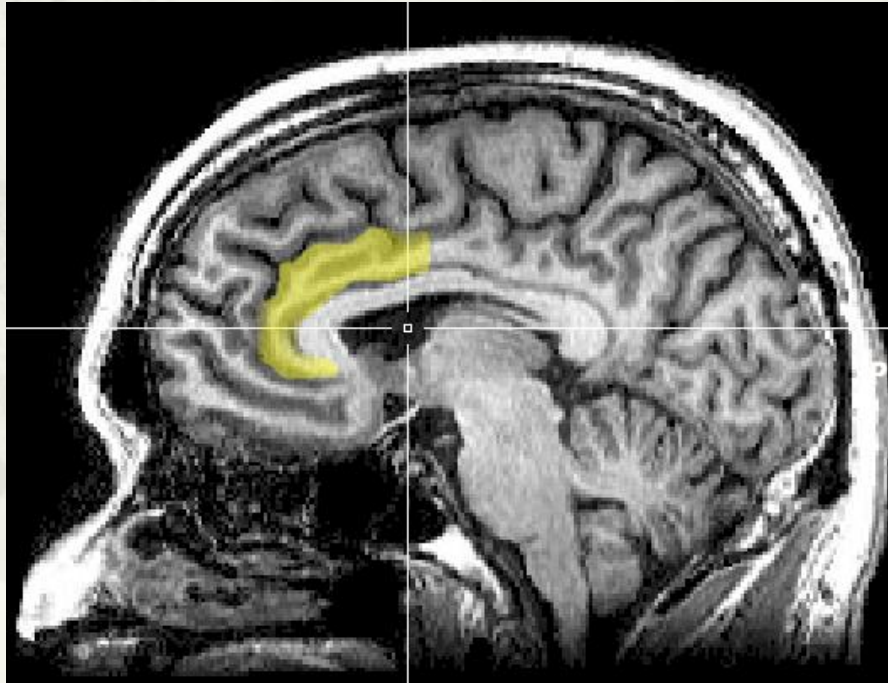
Neurological basis of ADHD

- * Prefrontal cortex - coordination of thoughts and actions in accordance with internal goals (involving different EF processes such as working memory)



Neurological basis of ADHD

- * Anterior Cingulate Cortex (ACC) – error detection and conflict monitoring

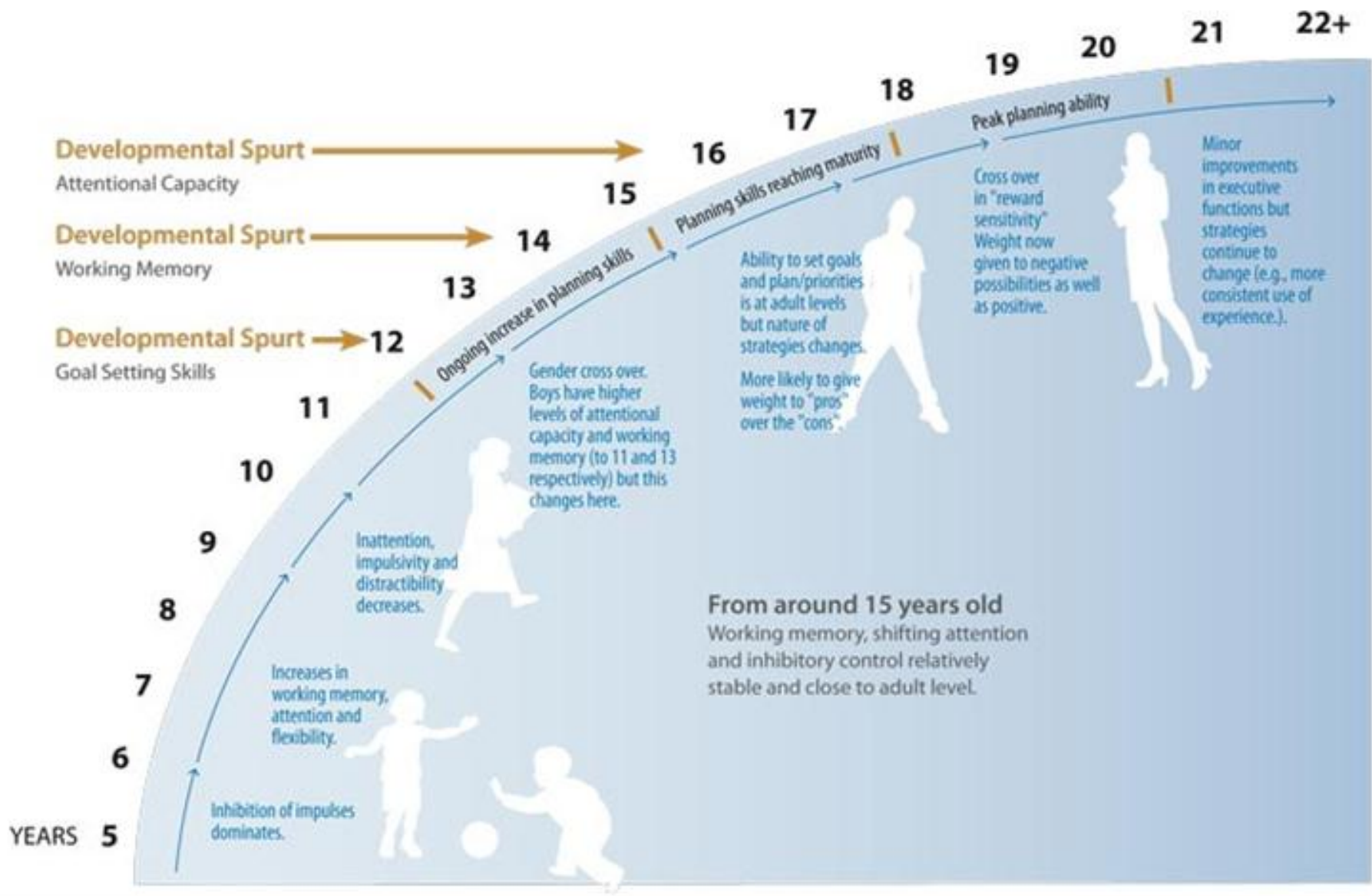


Basic EF abilities

- * Inhibitory control – to control one’s attention, behaviour, thoughts and emotions to override a strong predisposition and instead do what is most appropriate
- * Interference control – selectively attend, focusing on what we choose and suppressing attention to stimuli

Basic EF abilities

- * Working memory – retrieval of information, substitution and transformation
- * Cognitive flexibility – changing perspective, flexibly adjusting to new demands, rules, or priorities
- * All these basic EF abilities support high level executive functioning such as reasoning, problem solving and planning



From around 15 years old
 Working memory, shifting attention and inhibitory control relatively stable and close to adult level.

執行功能訓練上所遇到的挑戰

- * 成本效益 (Cost effectiveness)
- * 治療的果效 (Treatment effectiveness)
- * 治療人員提供訓練所遇到的挑戰
 - * 需有系統及明確目標的執行功能訓練工具
 - * 需要較長時間準備教具、工具
 - * 需提供實証為本的訓練 (Evidence-based training)
 - * 需有效監控兒童的表現及進展 (Monitoring of progress)
- * 家庭參與 (Family participation)

腦袋需要訓練

- * 執行功能軟件能給予腦袋做“EF運動”的機會
- * 大腦的可塑性
 - * Increased activation in the parietal and prefrontal cortices following memory training (Olesen et al 2004; Westerberg & Klingberg, 2007)
 - * Brain areas where training task-related was seen increased in size following training (Westerberg & Klingberg, 2007)



加得小勇士在訓練上的特質



加得小勇士

加得小勇士

- * 共有六十個活動，適合8至10歲左右兒童使用
- * 先以IPAD版面世，稍後會提供Android版
- * IPAD版分為試玩版及完整版
- * 由協康會心理學家及職業治療師在過去兩年合力設計及研發
- * 香港大學計算機科學系劉文健博士作為程式編寫顧問



執行功能軟件在訓練上的特質

- * 含有多個訓練活動、多個執行功能元素
- * 每個活動設有主題的執行功能元素
- * 鼓勵兒童重覆練習
- * 自動調節難度
- * 採用不同種類的感覺訊息輸入
- * 給予獎勵及成功感
- * 可監察兒童的學習進度

主題的執行功能元素

- * 不同星球涵蓋不同執行功能元素
- * 每一活動集中單一元素進行訓練

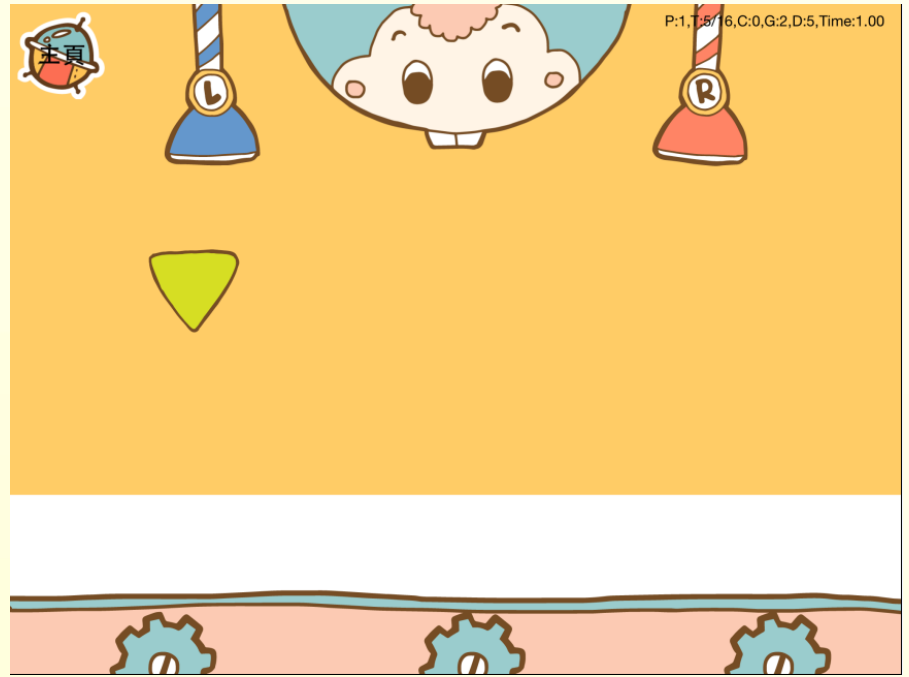




抑制第一反應



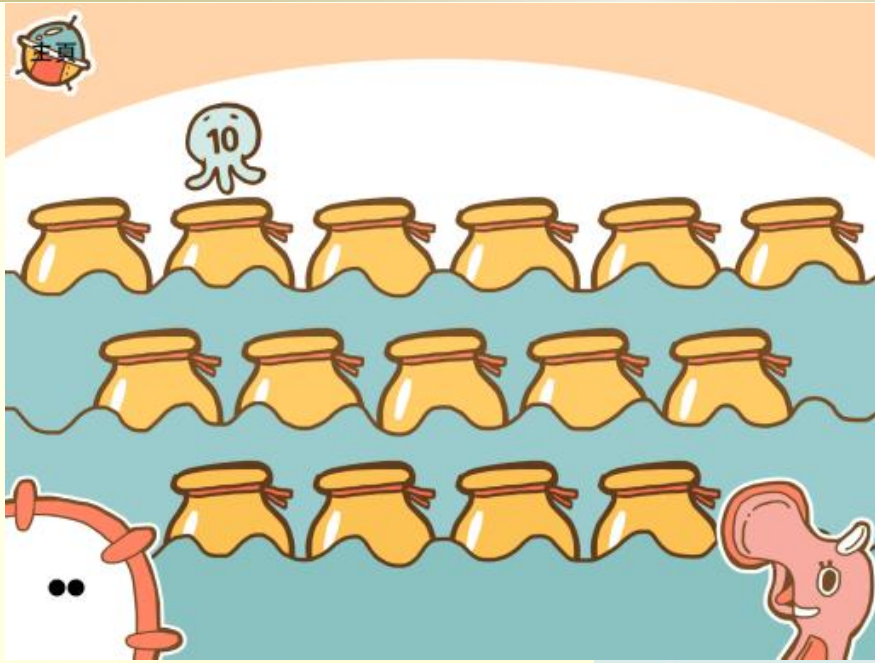
抑制慣性的反應



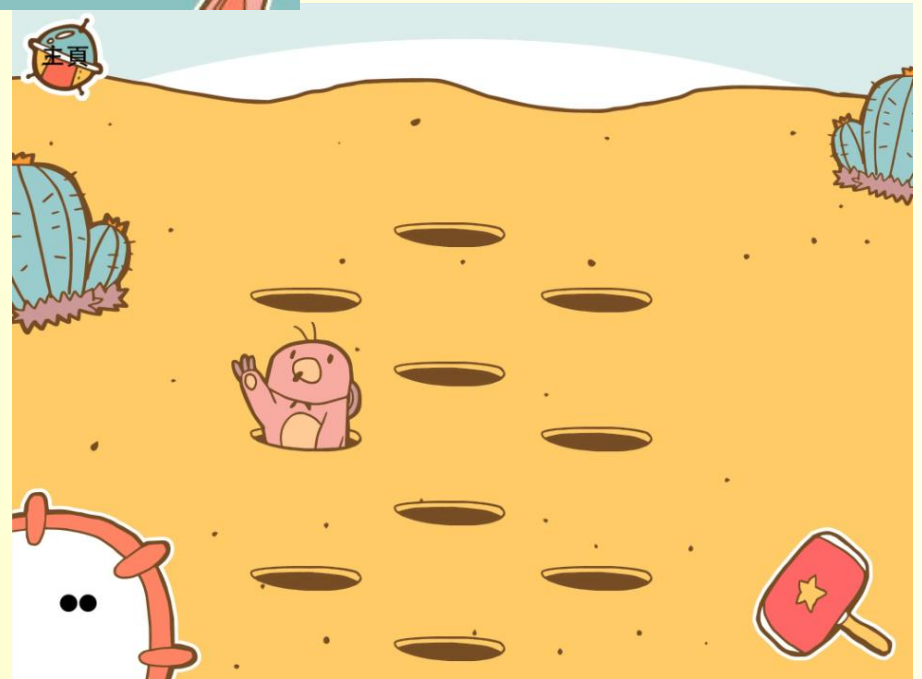
短暫記憶 (視覺)



短暫記憶 (聽覺)



運作記憶刷新功能



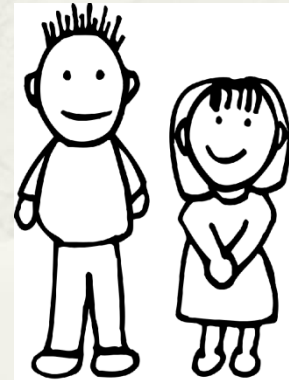
對訓練者的幫助

* 提供即時使用的教材 (Ready made tool)

- * 有明確的訓練目標
- * 有系統地進行訓練
- * 鼓勵兒童重覆練習
- * 根據文獻及較近期的研究製作而成

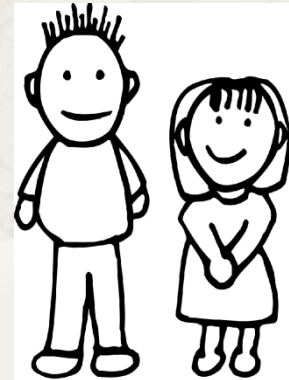
* 好處

- * ↓時間
- * ↓人力資源



對訓練者的幫助

- * 監控訓練數據及調節訓練內容
(Keep track of data & feedback)
 - * 訓練軟件能自動記錄兒童的訓練表現
 - * 訓練者能因應情況，遙距調節訓練活動



HHTG Record Panel

[Clients](#) [Trainers](#) [Games](#) [Panel Settings](#) [Logout](#)
[catalogue](#) [manage settings](#) [record](#)

Show records of 3. 蘋果迷路了1 ▾ for 42 _____ under all trainers ▾ from 2013-11-14 to all time _____
in performance across the days ▾ **Show**
filter by 01: Phase 1 ▾ 01: Red VS Green ▾ 01: Easiest (7 short: 2 medium:1 long) ▾

Number of entry processed 3 << page 1 of 1 >>

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[View Activity Setting](#)

[View Chart](#) Correct Rate ▾



HHTG Record Panel

[Clients](#) [Trainers](#) [Games](#) [Panel Settings](#) [Logout](#)
[catalogue](#) [manage settings](#) [record](#)

Show records of 1. 提子小姐跌倒了 for 42 under all trainers from 2014-03-12 to all time
in performance of each trial [Show](#)

Number of entry processed 1 << page 1 of 1 >>

[Download CSV](#)

[View Activity Setting](#)

| Uid | Client Name | Record Date | Record Time | Trial | Activity Setting | Correct | Commission Error | Omission Error |
|-----|-------------|-------------|-------------|-------|-------------------|---------|------------------|----------------|
| 42 | wc035 | 2014-03-17 | 13:08:54 | 1 | 01 01 03 01 05 01 | 6 | 0 | 0 |
| | | | | 2 | 01 01 03 01 05 01 | 6 | 0 | 0 |
| | | | | 3 | 01 01 03 01 01 01 | 2 | 0 | 0 |
| | | | | 4 | 01 01 03 01 04 01 | 5 | 0 | 0 |
| | | | | 5 | 01 01 03 01 01 01 | 2 | 0 | 0 |
| | | | | 6 | 01 01 03 01 02 01 | 3 | 0 | 0 |
| | | | | 7 | 01 01 03 01 05 01 | 6 | 0 | 0 |
| | | | | 8 | 01 01 03 01 01 01 | 1 | 0 | 1 |
| | | | | 9 | 01 01 03 01 01 01 | 2 | 0 | 0 |
| | | | | 10 | 01 01 03 01 05 01 | 5 | 1 | 0 |
| | | | | 11 | 01 01 03 01 04 01 | 5 | 0 | 0 |
| | | | | 12 | 01 01 03 01 05 01 | 6 | 0 | 0 |

未來動向...



未來動向...

- * 就本執行功能軟件進行成效研究
- * 家長工作坊
- * 訓練者工作坊



下載試用版

- * 在App Store頁面的右上方“店內搜索”中，輸入“加得小勇士”





Thank You!
