



CREST 童步復康及培訓服務
CHILD REHABILITATION AND EDUCATION SERVICE TEAM

SI 感覺統合與學習

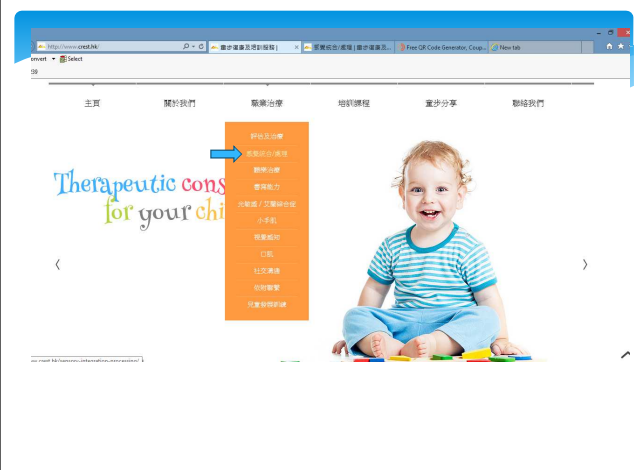
講者：陳子文先生
一級職業治療師

感覺統合理論？

感覺統合失調？

感覺統合治療？

<http://www.crest.hk/sensory-integration-processing/>



主頁 關於我們 職業治療 培訓課程 童步分享 聯絡我們

Therapeutic cons
for your chi

職業治療
 個別化處理
 團隊治療
 溝通能力
 感覺統合
 小遊戲
 職業培訓
 口語
 社交溝通
 情緒管理
 兒童學習障礙



Nothing is impossible!
Impossible is nothing!

4. 我要挑戰自己！

恰到好處的挑戰 (Out Right Challenge)：
 恰到好處的挑戰是讓孩子在挑戰中成功的關鍵。難度太低的就不是挑戰，難度太高就會挫敗，或會令孩子覺得煩躁。孩子是成功的經驗中或受到自己的感覺可以怎樣協助他們成功，而所謂的恰到好處，就是從孩子的能力出發，亦從孩子的心願出發，相信你的感覺及對自己能力的估計。挑戰可以是多方面，亦可以是單一方面，如：姿勢控制、動作計劃、眼球控制、聽覺處理等等。一般的小組遊戲或自由玩耍，並不能隨時因應孩子的表現調整難度，因應孩子的情緒反應而給予自我調整的策略，故此這些活動較難做到艾以麗博士的感覺統合理論所談及的恰到好處的挑戰。

下載更新
Macau Special Education Forum powerpoint notes updated

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感覺統合理論？

感覺統合失調？

感覺統合治療？

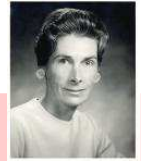
今堂內容 - 感覺統合簡介

- 感覺統合的歷史及基礎理論
- 認識各感覺系統的功能
- 簡介不同感覺系統的相互關係的例子
- 辨識不同的感統特質/感覺處理特質
- 感覺統合失調 (或稱感覺處理障礙) 的分類及行為表現

感覺統合訓練的歷史

- 源自美國南加州大學 (USC)
- 職業治療師艾爾絲博士 (Dr. Jean Ayres)

感覺統合訓練



- * Dr. A. Jean Ayres 艾爾絲博士 (1920-1988)
- * BS & MA in Occupational Therapy
- * PhD in Educational Psychology
- * Registered Psychologist in California
- * Faculty position in O.T. and /or Psychology in Southern California University from 1955 to 1984

感覺統合訓練的歷史

- 六十年代開始提倡
- 當時主要集中對**不專心**、**動作笨拙**及寫讀有困難的兒童進行研究
- 艾爾絲博士的**作品(文獻/書籍)**:
 - 1970. *Sensory Integration and the Child.*
 - 1973. *Sensory Integration and Learning Disorders.*
 - 1974. *The Development of Sensory Integrative Theory and Practice: A Collection of the Works of A. Jean Ayres.* Kendall/Hunt Pub Co.
 - *Sensory Integration and Praxis Test (SIPT)*

Sensory Integration and Praxis Test S.I.P.T.


感覺統合及動作計劃測驗




感覺統合訓練的基礎理論

感覺統合的定義

- * 感覺訊息(Sensory Information)經
- * 神經整合(Neural Organization)後以呈現出來的
- * 功能性行為(Functional Behavior)

 **2015 to 2016**
Sensory Integration Certification Program
Coming to HONG KONG

 CREST 進歩發展及培訓服務
OCCUPATIONAL THERAPIST AND EDUCATOR SERVICE TEAM

COURSE 1: The Sensory Integration (SI) Perspective
Date: 14th - 18th May, 2015, by Dr. Susanne Smith Roley

COURSE 2 - The Specialized Techniques for Measuring Sensory Integration
Date: 4th - 8th Nov, 2015, by Ms. Shay McAtee

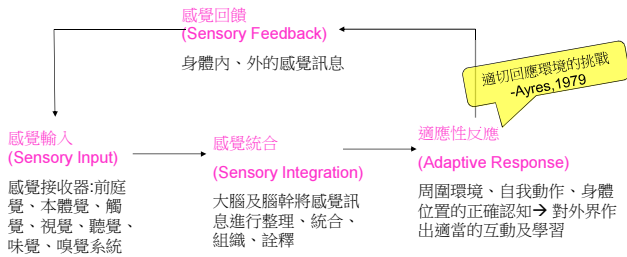
COURSE 3 - From Interpretation to Intervention
Date: 14th - 18th May, 2016, by Dr. Zoe Mallioux

COURSE 4 - Sensory Integration Intervention
Date: 4th - 8th Nov, 2016, by Dr. Susanne Smith Roley

Stay Tuned with us!
Early-bird fee and Combo fee is coming up soon!

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Email: info@crest.hk

感覺統合訓練的基礎理論 - 感覺處理的運作



腦部如何整理感覺以至能應用在日常生活中(與生俱來的神經功能)

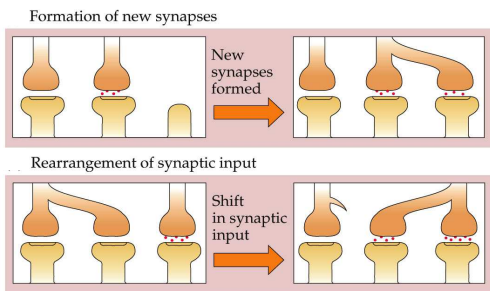
感覺統合訓練的基礎理論

- 神經可塑性 (Neural Plasticity)
- 適應性反應 (Adaptive Response)
- 內在的動力 (Inner drive)
- 有層次地組織 (Hierarchically Organized)
- 發展性的 (Developmental Sequence)

Bundy, Lane and Murray, 2002

感覺統合訓練的基礎理論

* 神經可塑性 (Neural Plasticity)



Biological Psychology 6e, Figure 17.16 (Part 2)

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感覺統合訓練的基礎理論

* 適應性反應 (Adaptive Response)

- * 適應甚麼?
- * 如何適應?

Bundy, Lane and Murray, 2002

感覺統合訓練的基礎理論

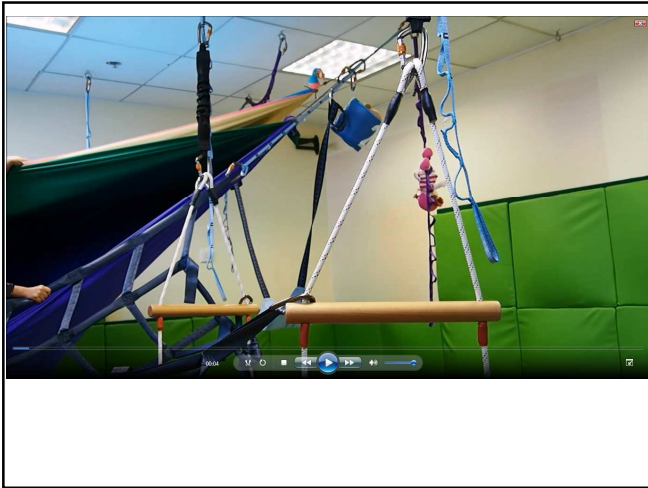
* 內在的動力 (Inner drive)

- * Vs 外界壓力

Bundy, Lane and Murray, 2002

內在的動力 (Inner drive)





感覺統合訓練的基礎理論

- * 適應性反應 (Adaptive Response)
- * 內在的動力 (Inner drive)

→ 腦部自我調整
(Self-organizing tendency of the brain)

→ 神經可塑性 (Neural Plasticity)

Bundy, Lane and Murray, 2002

感覺統合訓練的基礎理論 - 感覺處理的運作

感覺輸入
(Sensory Input)

感覺接收器:前庭覺、本體覺、觸覺、視覺、聽覺、味覺、嗅覺系統

感覺統合
(Sensory Integration)

大腦及腦幹將感覺訊息進行整理、統合、組織、詮釋

適應性反應
(Adaptive Response)

周圍環境、自我動作、身體位置的正確認知 → 對外界作出適當的互動及學習

感覺回饋 (Sensory Feedback)
身體內、外的感覺訊息

適切回應環境的挑戰 -Ayres, 1979

腦部如何整理感覺以至能應用在日常生活中(與生俱來的神經功能)

感覺統合訓練的基礎理論

Bundy, Lane and Murray, 2002

* 有層次地組織 (Hierarchically Organized)

The diagram illustrates the flow from sensory input through processing stages to various daily life skills. It is organized into three main columns: Sensory Processing, Sensorimotor Processing, and Daily Life Performance. Key components include:

- Sensory Processing:** Sensory Input, Sensory Discrimination, Vestibular System, Somatosensory System, Auditory System, and Tactile System.
- Sensorimotor Processing:** Postural Control, Bilateral Coordination, Body Awareness, Motor Planning, and Visual-Motor Integration.
- Daily Life Performance:** Attention, Activity Level, Fine Motor Skills, Social Interaction, Behavior Organization, and Language Skills.

This diagram provides a more detailed view of the sensory processing hierarchy, showing the specific sub-processes within each stage and their corresponding daily life applications. It includes sub-steps like 'Body Position Awareness' and 'Body Image' leading to 'Social Interaction' and 'Behavior Organization'.

感覺統合訓練的基礎理論

Bundy, Lane and Murray, 2002

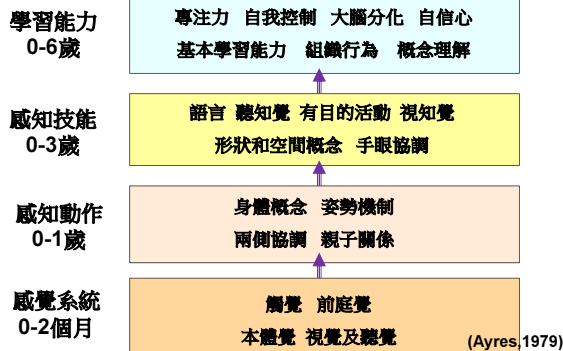
* 發展性的 (Developmental Sequence)

The developmental sequence chart shows the progression of skills over time:

- 0-2個月 (0-2 months):** 觸覺, 前庭覺, 本體覺, 視覺及聽覺
- 0-1歲 (0-1 year):** 身體概念, 姿勢機制, 兩側協調, 親子關係
- 0-3歲 (0-3 years):** 語言, 聽知覺, 有目的活動, 視知覺, 形狀和空間概念, 手眼協調
- 0-6歲 (0-6 years):** 專注力, 自我控制, 大腦分化, 自信心, 基本學習能力, 組織行為, 概念理解

(Ayres, 1979)

正常感覺統合發展的四個階段

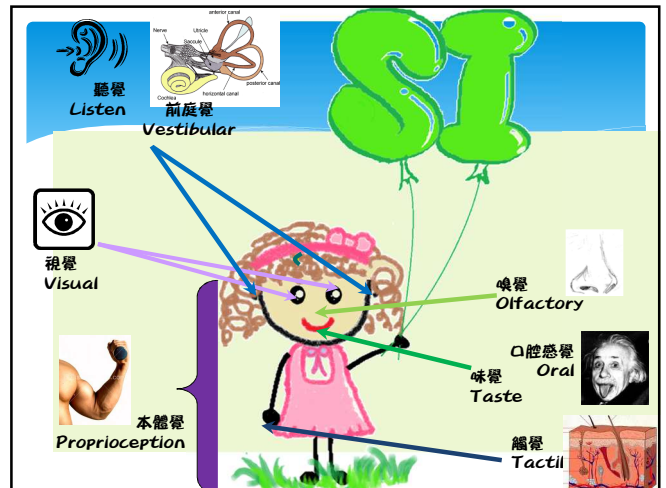


"It is believed to be either omnipotent (萬能) or no good at all, and knowledge simply does not develop that way."



內容 - 感覺統合簡介

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- 辨識不同的感統特質
- 認識各感覺系統的功能及特質
- 簡介不同感覺系統的相互關係的例子
- 自主神經系統



感覺統合訓練的基礎概念

1. 觸覺
2. 聽覺
3. 視覺
4. 前庭覺
5. 本體覺
6. 口腔感覺
7. 嗅覺

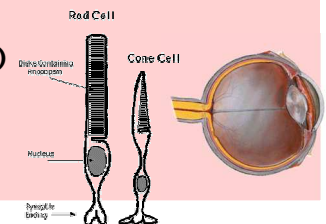
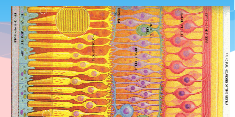


視覺 Visual/ Seeing

接收器：視網膜上的感光細胞

• 桿狀細胞 (rod cell)

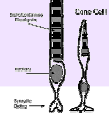
• 錐狀細胞 (cone cell)



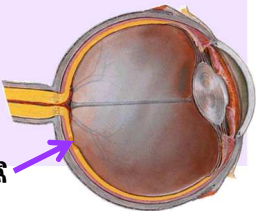
視覺 Visual/ Seeing

接收器：視網膜上的感光細胞

- 桿狀細胞 (rod cell)
 - 光暗、移動、粗略
- 錐狀細胞 (cone cell)
 - 顏色、穩定、細緻



視網膜中央窩



視覺 Visual/ Seeing

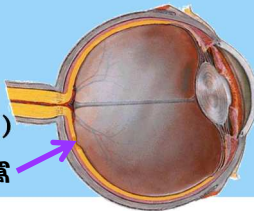
視網膜中央窩：

- 影像的位置
- 清晰、細緻的影像



影響影像的位置及穩定：

- 眼球肌肉控制
- 自主及反射的眼球移動
- 前庭系統
- 視覺系統（結構、神經系統）



視網膜中央窩

視覺過敏 Irlen® Syndrome



www.Irlen.com
www.crest.hk

What They See

A very general phenomenon, in which some humans, some babies and some animals, respond to certain visual stimuli with unusual, often distressing, reactions. These reactions are not due to any abnormality of the visual system, but rather to a form of perceptual processing that is highly individual and specific to each person. It is a form of perceptual processing that is highly individual and specific to each person. It is a form of perceptual processing that is highly individual and specific to each person. It is a form of perceptual processing that is highly individual and specific to each person.

Individuals who have very specific visual sensitivities and people in the same family generally have quite similar sensitivities. Thus, we assume that the MAC levels found in the blood of black and biologically close relatives may vary slightly. The National Multiple Sclerosis Research Institute in the US states that their research suggests that a form of slight perceptual processing differences in some people may be related to the presence of their major histocompatibility complex (MHC) genes. It is not clear, for example, the extent to which these genes are related to the ability to process visual information. The research of the National Multiple Sclerosis Research Institute in the US suggests that the MHC genes may be related to the ability to process visual information. The research of the National Multiple Sclerosis Research Institute in the US suggests that the MHC genes may be related to the ability to process visual information.

Blurry Effect

What They See

However, by the end of the day, the child who had been told that this was not a test, but rather a game, had a different reaction. He had a more relaxed and playful attitude, and he was able to complete the task with a sense of accomplishment. This suggests that the child's perception of the task as a game rather than a test significantly influenced his performance. The child's perception of the task as a game rather than a test significantly influenced his performance. The child's perception of the task as a game rather than a test significantly influenced his performance.

Rivers Effect

What They See

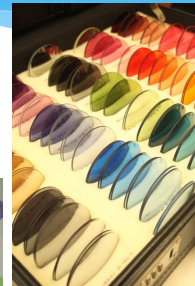
Robinson and Goway (1988) used a similar procedure to that used by Winans (1987) to investigate the effects of a perceptual processing intervention on reading performance. The results of their study showed that the intervention had a significant positive effect on reading performance. The results of their study showed that the intervention had a significant positive effect on reading performance. The results of their study showed that the intervention had a significant positive effect on reading performance.

Swirl Effect

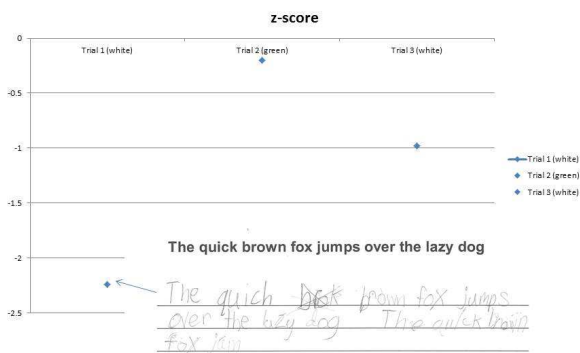
治療方法：顏色膠片



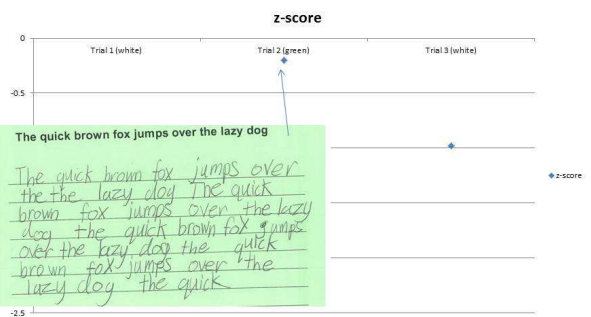
治療方法：顏色眼鏡



Trial 1 (white)



Trial 2 (Green)



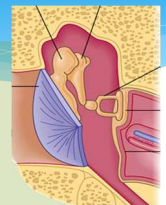
環境因素：使不適加劇的 4S：

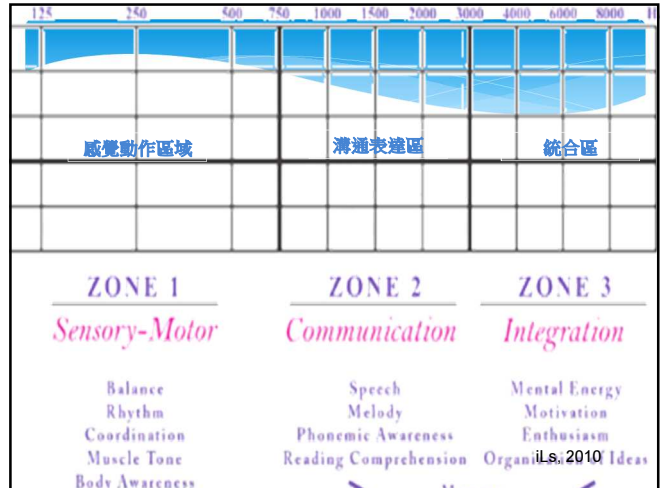
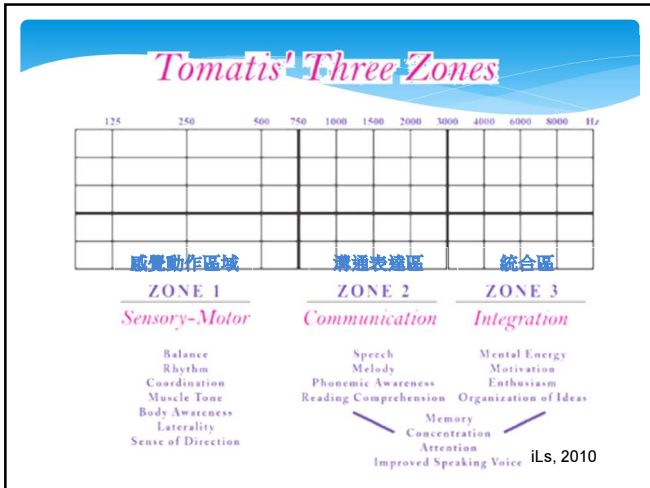
- **Shine** - 閱讀環境由「強光」照著
- **Size** - 文字字體小
- **Space** - 字距，行距窄
- **Surface**
 - 光面紙(粉紙)
 - 紙張經過過膠
 - 白底光面紙黑字

聽覺 Auditory/ Listening

接收器：耳蝸內的感受細胞

- 音頻：高低音
- 音量：大細聲
- 位置：聲音來源





Tomatis's 法則

The voice only contains that which the ear can hear.
能聽到的才能說/發出

- * If one brings to the damaged ear the possibility of hearing the lost or compromised frequencies correctly, these are instantly and unconsciously restored in the vocal emission.
若使耳朵能聽到缺失了的音頻, 語音會立刻在不自覺的情況下得到改善
- * Sufficient auditory stimulation will provide a lasting improvement of the ability to listen and consequently better reproduction of sound.
足夠的聽覺刺激能持久地改善接收缺損了的音頻的能力, 而語音亦隨之而得到改善

iLS, 2010

◎ 感統聽樂治療 Therapeutic Listening

Therapeutic Listening

- 聽樂統合治療 integrated Listening system (iLS)

特性：

- ◎ 音樂的頻率和其他原素會被特殊儀器調整過濾
- ◎ 建議配合動態活動
- ◎ 因應需要選配音樂

感官與功能

前庭覺 Vestibular

* 前庭接收器:
內耳的**三半規管**及半規管相通之**耳石器(橢圓囊及球狀囊)**內

The Structure of the Vestibular Organs. Figure 8.11

<http://vimeo.com/4235596>

感官與功能

前庭覺 Vestibular

* 前庭接收器:
內耳的**三半規管**及半規管相通之**耳石器(橢圓囊及球狀囊)**內

➢ 偵察頭部於三個平面 (垂直面、橫面、直面) 的空間動作

➢ 接收加速的直線及旋轉感覺

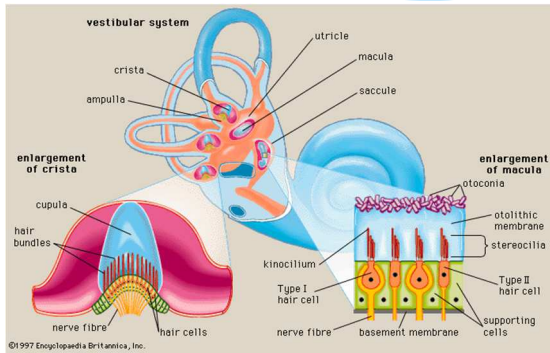
The Structure of the Vestibular Organs. Figure 8.11

➢ 動態感應器: 接收前後、左右、上下之移動(包括地心吸力)的感覺

感官與功能



前庭覺
Vestibular

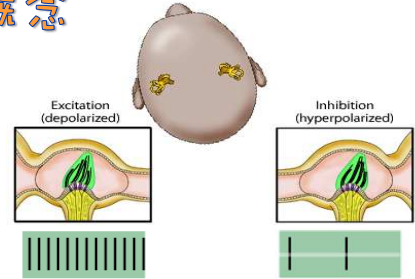


感官與功能



前庭覺
Vestibular

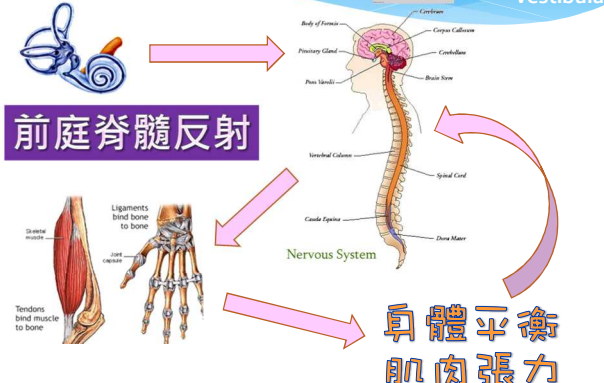
中線概念



感官與功能



前庭覺
Vestibular



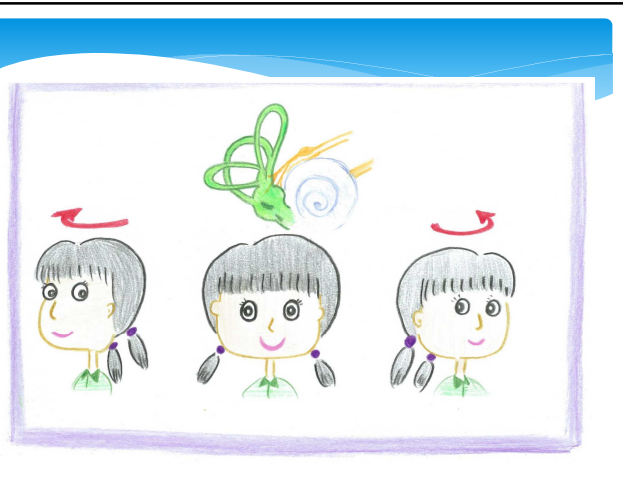
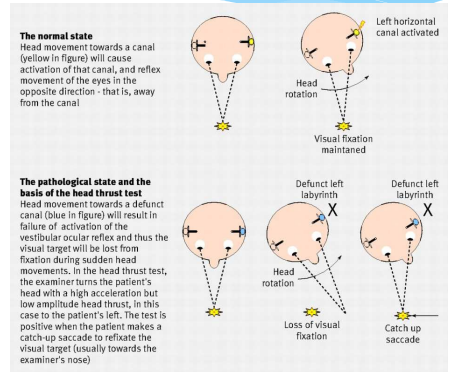
感官與功能



前庭覺
Vestibular

穩定視野

Vestibulo Ocular Reflex (VOR)

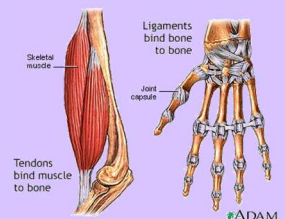



感官與功能



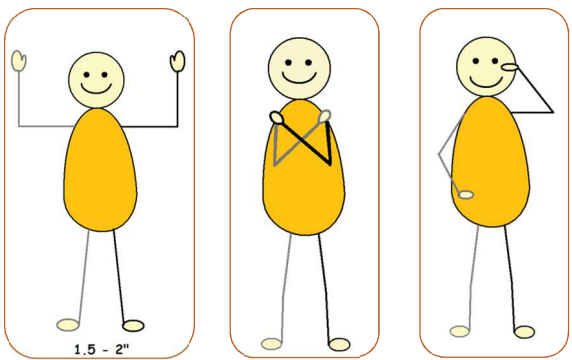
本體覺
Proprioception

- * 關節活動感覺 / 深層感覺
- * 接收器位於: 肌肉、肌腱、關節、韌帶
- * 功用:
 - * 控制肌肉拉緊及放鬆時的張力, 以及調節四肢力度的運用
 - * 控制關節位置的狀態, 關節活動的方向和速度



感官與功能  **本體覺**
Proprioception

模仿動作 (5歲)



1.5 - 2"

感官與功能  **本體覺**
Proprioception

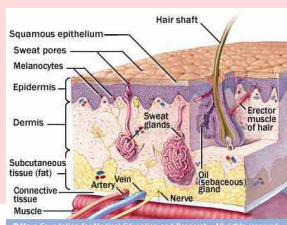
辨別肢體位置 ▶

動作計劃及協調


****感覺調節**** ↑ ↓

觸覺
Tactile/ Touch Sensation

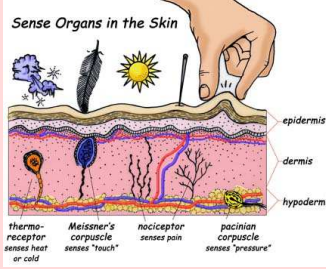
- * 皮膚：由最外面一層細胞發展而成
- * 觸覺神經系統
- * 接收不同種類/層面的觸覺訊息：
 - * 輕觸
 - * 震動
 - * 溫度 (冷/熱)
 - * 痛楚
 - * 深層壓力
 - * 對觸覺位置的辨認



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感官與功能  **觸覺**
Tactile/ Touch Sensation

- * 皮膚：由最外面一層細胞發展而成
- * 觸覺神經系統
- * 接收不同種類/層面的觸覺訊息：
 - * 輕觸
 - * 震動
 - * 溫度 (冷/熱)
 - * 痛楚
 - * 深層壓力
 - * 對觸覺位置的辨認



感覺統合與情緒行為的關係

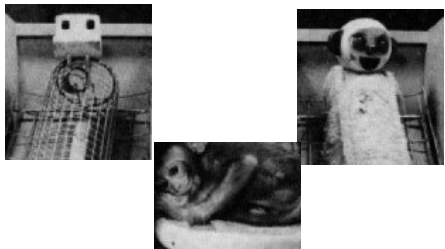


感官與功能  **觸覺**
Tactile/ Touch Sensation

建立安全感



CREST 重步復康及培訓服務
CHILD REHABILITATION AND EDUCATION SERVICES TEAM



Harlow HF, Dodsworth RO, Harlow MK.
"Total social isolation in monkeys." *Proc Natl Acad Sci U S A*. 1965.

感覺統合與情緒行為的關係



感官與功能

觸覺
Tactile/ Touch Sensation




辨別 保護

建立安全感



感官與功能

嗅覺
Olfactory



* 接收器位於：鼻腔內的嗅感受器

* 功用：
* 察覺及辨別氣味
* 情緒有很直接的關係



感官與功能

口腔感覺
Oral Sense






Sweet
Salty
Sour
Bitter

感官與功能

口腔感覺
Oral Sense




分辨食物



感官與功能



食物的 3T

- Taste** 味道 — 如：酸、鹹、甜
- Texture** 質地 — 如：硬、軟、脆、嚼
- Temperature** 溫度 — 如：凍、暖、溫

內容 - 感覺統合簡介

- 感覺統合的歷史及基礎理論
- 認識各感覺系統的功能
- 辨識不同的感統特質
- 簡介不同感覺系統的相互關係的例子
- 自主神經系統

感統失調

感覺調節	感覺辨別	動作計劃
過敏反應 SOR	視覺	兩側協調 及順暢
緩慢反應 SUR	聽覺	身體感覺 動作計劃
尋求刺激 SS/C	觸覺	視覺 動作計劃
	嗅覺/味覺	口頭指示 動作計劃
	位置/動作	

感統失調

感覺調節	感覺辨別	動作計劃
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	嗅覺/味覺	口頭指示 動作計劃
	位置/動作	

感覺處理的特質

* 尋求刺激型 Seeking
 * 緩慢反應型 Registration
 * 逃避刺激型 Avoidance



Winnie Dunn, 1999

感覺處理的特質

* 尋求刺激型 Seeking
 Sensory Seeking/ Craving
 SSIC
 聚焦性反應



感覺處理的特質

✳ 尋求刺激型 Seeking

Sensory Seeking/ Craving

SSIC

- + 低敏、主動
- + 主動尋找及享受環境中可提供的刺激
- + 提出不同玩法
- + 常忽略安全



感覺處理的特質

✳ 尋求刺激型 Seeking

Sensory Seeking/ Craving

SSIC



感統統合 感覺處理的特質 **尋**


3. 喜歡不斷地說話或發出各種不同的聲音 (如：哼唧啾啾、常常沖廁、刮黑板) **○ 喜歡製造某些聲音**

12. 喜歡嚐試、嗅或舔人或物件的味道 **○ 常常咀嚼玩具、衣服或物件**

4. 有強烈的意願及享受推擠、拉扯、舉起的動作

20. 喜歡觸摸別人或物件 (如：頭髮、衣物質地、不光滑的表面) **○ 藉著觸摸窗戶或其他物體表面，尋求熱或冷的溫度**

尋求刺激型 Sensory Seeking/ Craving **SS**



感統統合 感覺處理的特質 **尋**

14. 較一般小朋友喜歡多跳躍 **○ 喜歡旋轉自己的身體**

○ 持續地尋求各種不同動作活動 (如：要求大人幫忙旋轉、玩遊樂場中會動的設施)

○ 時常坐在椅子上搖動身體

19. 喜歡看鏡子或旋轉電視，以作光暗的轉變 **○ 喜歡看物體旋轉**

尋求刺激型 Sensory Seeking/ Craving **SS**



感覺處理的特質

✳ 尋求刺激型 Seeking **✳ 緩慢反應型 Registration**

✳ 逃避刺激型 Avoiding **✳ 感覺敏銳型 Sensitivity**

尋 **慢**

避 **銳**

Winnie Dunn, 1999

感覺處理的特質

✳ 緩慢反應型 Low Registration

Sensory Under-Responsive

SUR

聚焦鏡反應



感覺處理的特質

★ 緩慢反應型
Low Registration

Sensory Under-Responsive

SUR

- + 低敏、被動
- + 不容易受外界影響
- + 需給予較多刺激及視覺提示




感覺處理的特質

★ 緩慢反應型
Low Registration

Sensory Under-Responsive


SUR



感統統合 感覺處理的特質 

2. 不察覺臉上的口水或食物


- ◎ 被觸摸時，似乎欠缺正常的察覺能力

9. 聽力正常，但好像聽不到別人呼叫其名字 

- ◎ 不知道正在進食什麼食物

緩慢反應型
Low Registration

Sensory Under-Responsive
SUR



感統統合 感覺處理的特質 

17. 未能肯定要移動身體的距離/方向


- ◎ 常常失去平衡/ 跌倒

◎ 當一般人都感到頭昏眼花時 (如：玩迷迷轉、香港舞員等)，他也察覺不到

緩慢反應型
Low Registration

Sensory Under-Responsive
SUR



感統統合 感覺處理的特質 

6. 容易不自覺地碰撞到
其他小朋友或物件


10. 進行活動時似乎過度用力 (如：大力步行、猛力擊門、
用筆時過度用力)

13. 握著物件不夠牢固 (如：握鉛筆或
匙羹)，以致難以靈活運用

- ◎ 觸摸物件時，過於用力 (如：觸摸寶物)
- ◎ 過分按壓或推擠而弄破物件 (如：擠牙膏)

緩慢反應型
Low Registration

Sensory Under-Responsive
SUR



感覺處理的特質

★ 尋求刺激型 Seeking **★ 緩慢反應型 Registration**

★ 逃避刺激型 Avoiding **★ 感覺敏銳型 Sensitivity**

尋 **慢**

避 **銳**

Winnie Dunn, 1999

感覺處理的特質

✳️ 避刺激型 Avoiding ✳️ 感覺敏銳型 Sensitivity

↓

Sensory Over-Responsive

SOR

過敏型

Winnie Dunn, 1999

感覺處理的特質

✳️ 避刺激型 Avoiding ✳️ 感覺敏銳型 Sensitivity

Sensory Over-Responsive

SOR

+ 過敏、主動
+ 享受有規律生活
+ 依賴特定模式

避

Winnie Dunn, 1999

感覺處理的特質

✳️ 感覺敏銳型 Sensitivity

Sensory Over-Responsive

SOR

+ 過敏、被動
+ 對事情/物的細節很執著
+ 常投訴
+ 易分心

銳

Winnie Dunn, 1999

感覺處理的特質

✳️ 避刺激型 Avoiding ✳️ 感覺敏銳型 Sensitivity

Sensory Over-Responsive

SOR

放大鏡效應

Winnie Dunn, 1999

感覺處理的特質

✳️ 避刺激型 Avoiding ✳️ 感覺敏銳型 Sensitivity

Sensory Over-Responsive

SOR

過敏型

Winnie Dunn, 1999

感覺處理的特質

✳️ 避刺激型 Avoiding ✳️ 感覺敏銳型 Sensitivity

↓

Sensory Over-Responsive

SOR

過敏型

Winnie Dunn, 1999

感統統合 感覺處理的特質 過敏

7. 似乎容易被背景聲音 (如: 空調、電櫃或光管) 所分心



- ◎ 對日常環境的聲音 (如: 冷氣機、吸塵機、風扇、沖廁) 感到困擾
- ◎ 對某些別人難以察覺的聲音, 似乎會受到騷擾, 或對這些聲音非常感到興趣

感統統合 感覺處理的特質 過敏

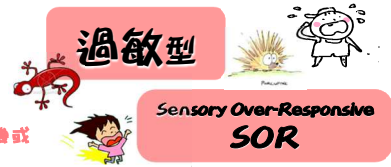
5. 似乎害怕移動 (如: 上落樓梯、盥洗、玩搖搖板或使用其他遊樂場設施)

8. 當頭部傾仰而面部直立或垂直的姿勢時, 表現困倦

◎ 乘搭交通工具時容易感不適 (如: 電車/船浪)

◎ 害怕乘搭升降機或扶手電梯

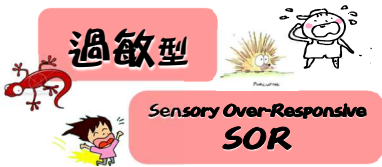
◎ 當頭部傾仰而面部直立或垂直的姿勢時, 表現困倦



感統統合 感覺處理的特質 過敏

7. 對光線 (特別是光暗轉變) 感到困擾 (如: 眯眼、閉眼、哭叫)

◎ 不喜歡某些光線, 如: 頻閃燈、閃動的光或光管



18. 易煩於進食某種食物

◎ 抗拒刷牙

感統統合失調 (障礙) (或稱感覺處理障礙)



今堂內容 - 感覺統合簡介

- ◎ 感覺統合的歷史及基礎理論
- ◎ 認識各感覺系統的功能
- ◎ 簡介不同感覺系統的相互關係的例子
- ◎ 辨識不同的感統特質/感覺處理特質
- ◎ 感覺統合失調 (或稱感覺處理障礙) 的分類及行為表現

簡介不同感覺系統的相互關係的例子

- * 身體平衡
* 感覺: _____, _____, _____
- * 空間判別
* 感覺: _____, _____, _____
- * 曠眼判別形狀
* 感覺: _____, _____, _____
- * 閱讀
* 感覺: _____, _____, _____

內容 - 感覺統合簡介

- 感覺統合的歷史及基礎理論
- 認識各感覺系統的功能
- 簡介不同感覺系統的相互關係的例子
- 辨識不同的感統特質
- 自主神經系統

基礎神經科學 (Basic Neuroscience)

涉及的神經系統 (例子如下)

- **自主神經系統 (Autonomic Nervous System)**
- 網狀起動系統 (Reticular Activating System)
- 邊緣系統 (Limbic System)
- 小腦
- 大腦前額葉

自主神經系統

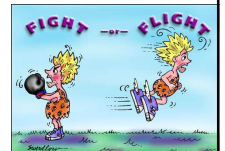
(Autonomic Nervous System - ANS)

- **交感神經 (Sympathetic)**
→ Flight (逃)/fight (打)/fright (驚)
- **副交感神經 (Parasympathetic)**
→ 放鬆

自主神經系統

(Autonomic Nervous System - ANS)

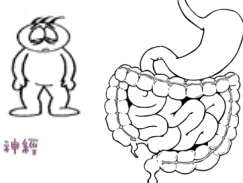
- **交感神經 (Sympathetic)**
→ 緊張 (心跳, 呼吸, 瞳孔...)
→ Flight (逃)/fight (打)/fright (驚)



自主神經系統

(Autonomic Nervous System - ANS)

- **副交感神經 (Parasympathetic)**
→ 放鬆 (心跳, 呼吸, 瞳孔...)
→ 消化



自主神經系統

(Autonomic Nervous System - ANS)

交感神經

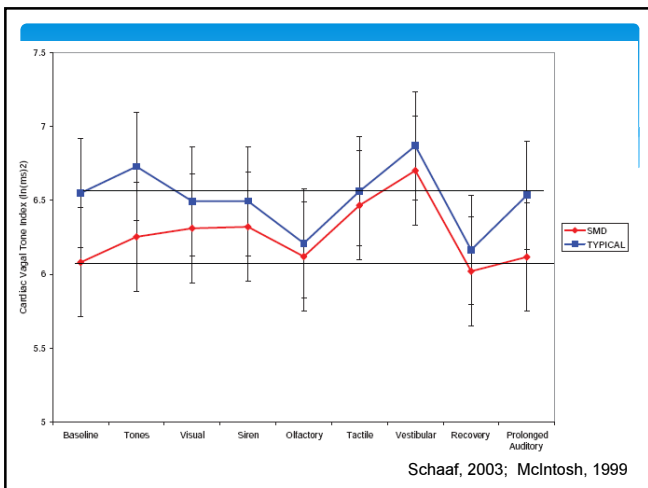
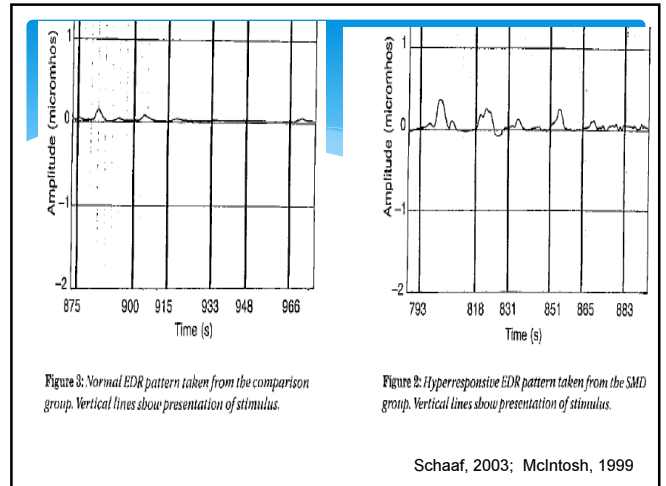
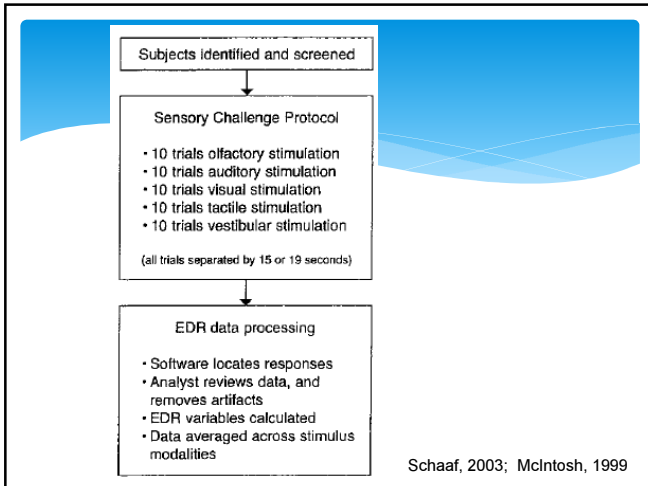
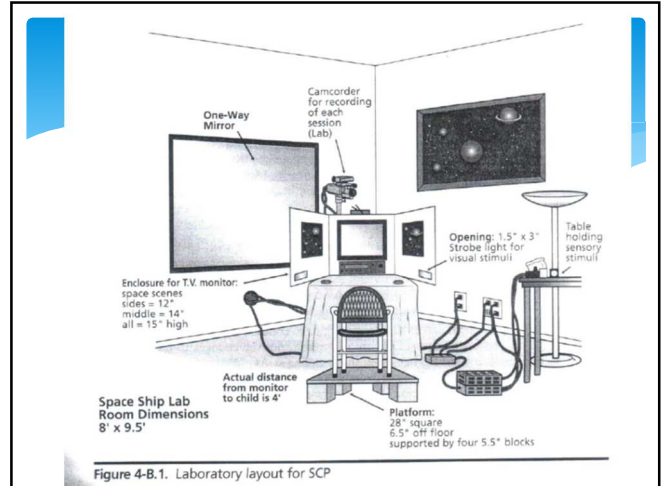


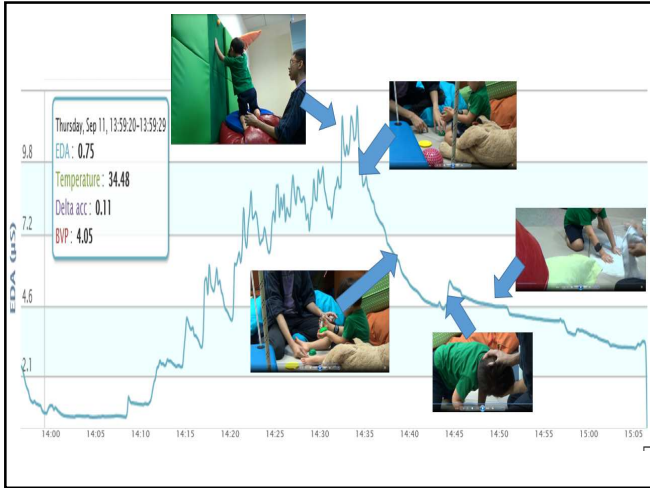
副交感神經

自主神經系統 (Autonomic Nervous System)

Vs

感覺調節障礙 (Sensory Modulation Disorder)





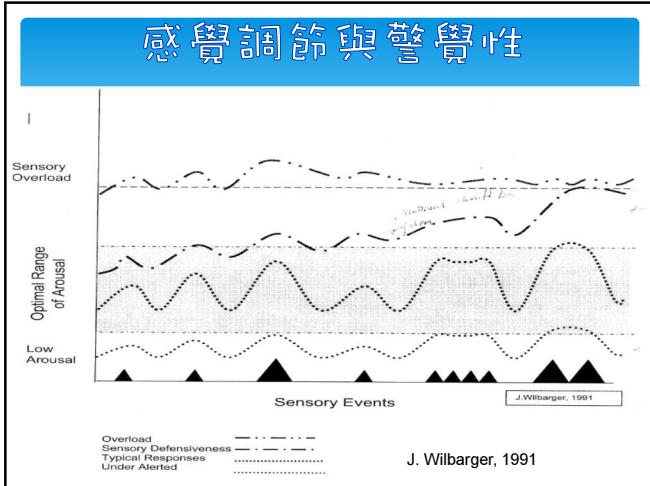
自主神經系統 (Autonomic Nervous System - ANS)

- 交感神經 (Sympathetic)
→ Flight (逃)/fight (打)/fright (驚) ↑
- 副交感神經 (Parasympathetic)
→ 放鬆 ↓

過敏反應
SOR

緩慢反應
SUR

尋求刺激
SS/C



4 Days Course Decoding the Autistic Brain

From
Understanding Inside **N**eurobiology
To
Choosing **I**ntervention Strategies

By Kim Barthel

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COURSE 1 - The Sensory Integration (SI) Perspective
Date: 14th - 18th May, 2015, by Dr. Susanne Smith Roley

COURSE 2 - The Specialized Techniques for Measuring Sensory Integration
Date: 4th - 8th Nov, 2015, by Ms. Shay McAtee

COURSE 3 - From Interpretation to Intervention
Date: 14th - 18th May, 2016, by Dr. Zoe Mallioux

COURSE 4 - Sensory Integration Intervention
Date: 4th - 8th Nov, 2016, by Dr. Susanne Smith Roley

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Q & A

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References

- * Ayres, A. J. (1979) *Sensory Integration and the Child*, CA: Western Psychological Services.
- * Dunn, W. (1999). *Sensory Profile*. San Antonio, TX: The Psychological Corporation.
- * Miller, L. J. (2006). *Sensational Kids*. New York: G. P. Putnam' s Sons.
- * Bundy A. Lane, S.J, Murray, EA editor. (2002) *Sensory integration: Theory and practice*, 2nd edition. Philadelphia: FA Davis Company.
- * Case-Smith J. (2005) *Occupational Therapy for children*. 5th ed. Elsevier Inc
- * *What is Sensory Processing Disorder?*
<http://www.youtube.com/watch?v=606cm0WxEZA>
- * <http://youtu.be/UDjKksEvGC4>
- * <http://youtu.be/jQotbZR-WXY>

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