

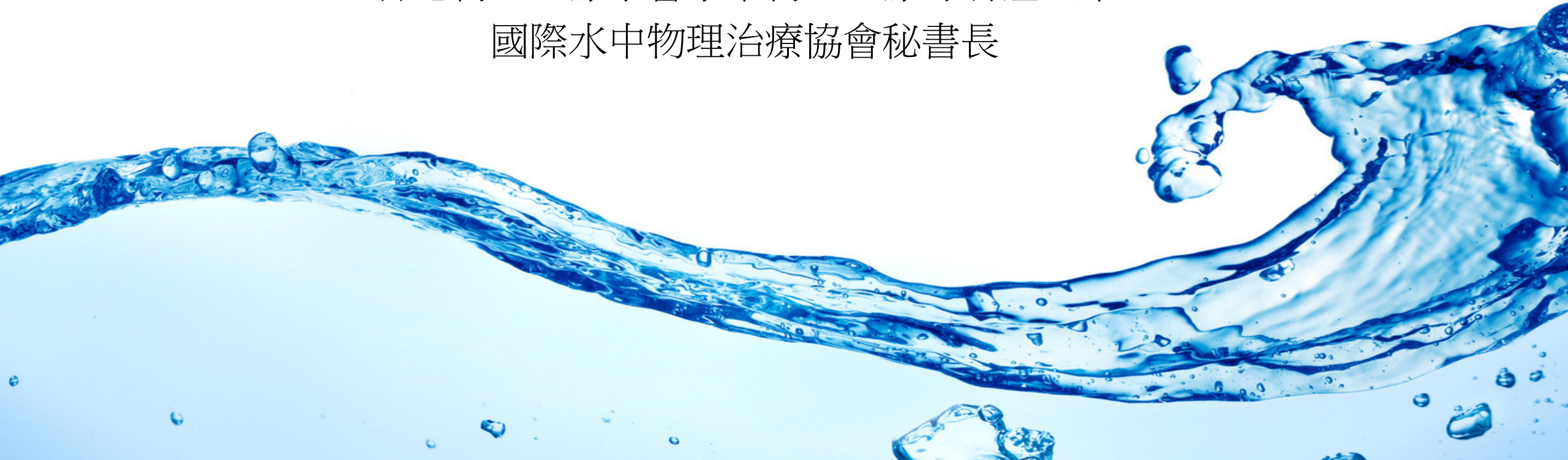
水中物理治療

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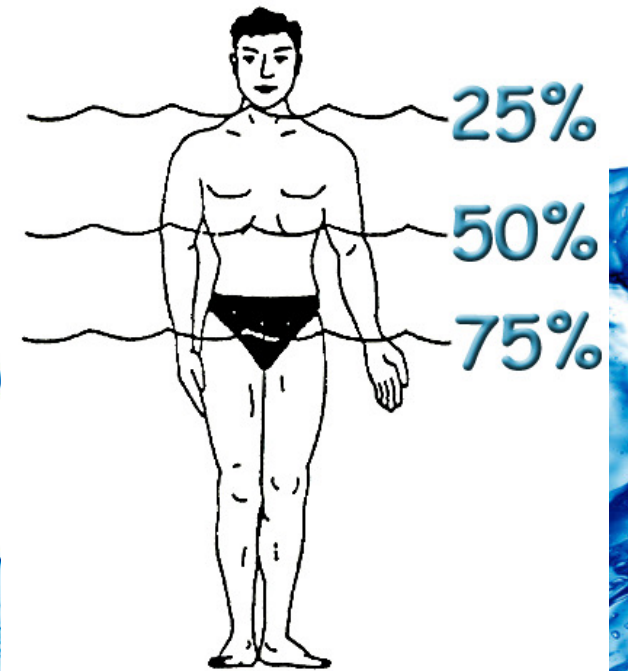
國際水中物理治療協會秘書長



水的特性

浮力 (Buoyancy)

- 取決於人體浸在水中的高度 (Depth of Body)
- 令體重減輕 (Reduce Body Weight)
- 關節的受壓減小 (Reduce Joint Loading)
- 不同情況的病人怎樣選取適當的水深?
(Choice of Body Immersion)



水的特性

阻力 (Water resistance)

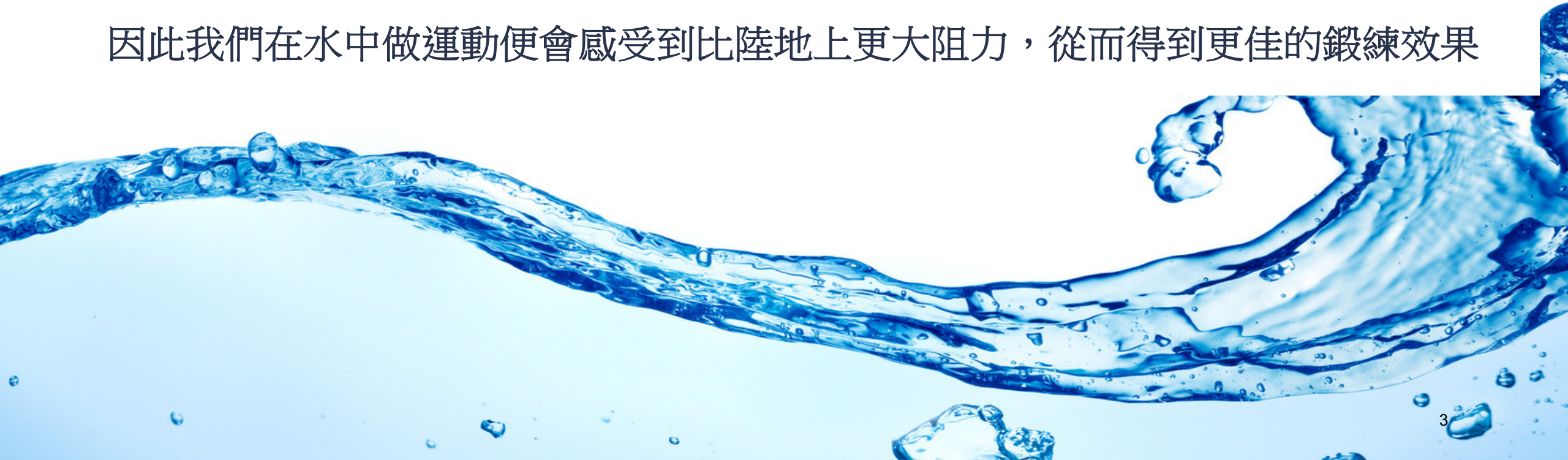
- ◎空氣的阻力 < 水的阻力
- ◎水的阻力 < 油的阻力
- ◎熱水的阻力 < 冷水的阻力

Air < Water

Water < Oil

Warm < Cold

因此我們在水中做運動便會感受到比陸地上更大阻力，從而得到更佳的鍛練效果



水的特性

水流 / 擾流 (Turbulent)

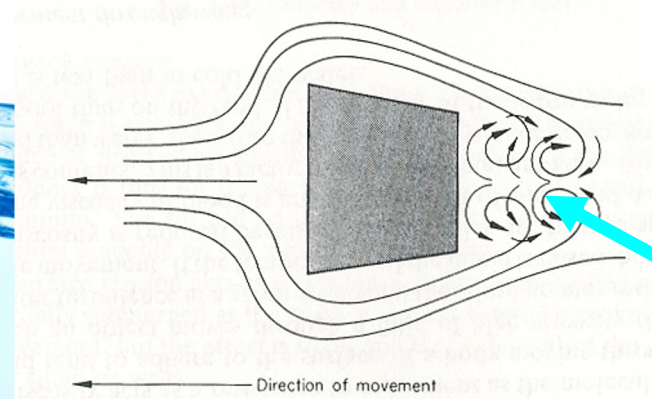
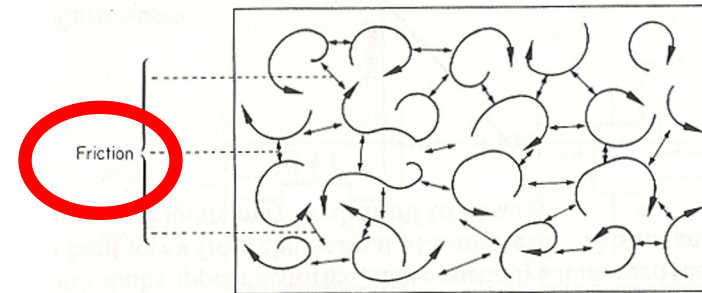
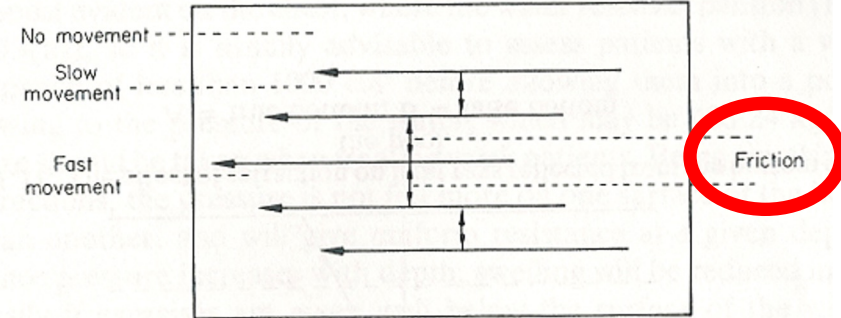
● 水的阻力增加

Increase Resistance

● 物體移動速度 Speed \uparrow

↳ 擾流 Turbulent flow \uparrow

↳ 移動的阻力 Resistance \uparrow



Turbulent

水的特性

◎熱力 / 溫暖 (Warmth)

- ◎一般正常人體體溫 Normal Body Temp = 36.8°C
- ◎一般正常人的皮膚表面溫度 Normal Skin Temp = 34°C
- ◎一般水療池的池水溫度 Pool Temp = $35^{\circ}\text{C} - 37^{\circ}\text{C}$

◎生理反應 (Physiological Response)

- ◎體溫微微上升 Slightly Increase Core Temp
- ◎令血管慢慢擴張 Vasodilatation \Rightarrow 血壓 Blood Pressure \downarrow
- ◎新陳代謝率 Increase Metabolic Rate \uparrow
- ◎令肌肉放鬆 Muscle Relaxation \Rightarrow 疼痛 Pain \downarrow

水的特性

壓力 (Hydrostatic pressure)

●水深 Depth \uparrow \Rightarrow 水壓 Pressure \uparrow

●說明控制水腫的情況 (壓力平均地散佈) Reduce Edema



水疗的康复机理 及适应症

► 苏俊龙



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水疗属于物理治疗的一种, 主要是利用水不同的物理特性为不同患者进行治疗性的运动训练。物理治疗师除根据运动原则替患者设计肌肉力量及心肺功能方案外, 亦会利用不同辅助器材增加治疗运动的效果。水中运动在物理治疗及水疗的领域中被广泛应用, 主要原因是它能促进肌肉治疗的功能。透过在水中活动, 利用了水的密度、压力、浮力和流动力量等特性, 提供了一股稳定而温和的阻力, 令身体活动于水中变成较为流畅。水疗可运用于患者不同康复阶段, 配合不同的物理治疗方法协助患者。以下就水疗的康复机理及其相关之适应症作

一 温度效应

水疗一般于温水中进行(33.5-35.5℃), 温水可使患者松弛身体并有助减轻疼痛, 舒缓精神紧张。温水使身体表面血管扩张, 增加供应皮肤的血液, 使皮肤营养状况有所改善, 此情况在周边血液循环不良的患者身上尤其显著。水疗有别于其他热疗, 因为其热度可在整个治疗过程中持续不变, 有助减低肌肉痛楚及肌肉紧张, 而且肌肉比较不易出现疲劳, 可维持较长的锻炼。

二 压力效应

热点论坛

摘要: 水是用作提升运动水平一个非常好的媒介, 水具备不同的物理特性, 其中包括浮力、水压、阻力等; 为骨关节康复, 心肺康复以及神经康复等不同需要的患者提供一个很好选择。水疗提供了一个既有用而安全的环境并适用于急性及慢性的情况, 配合患者不同的康复需要, 达到比陆上运动更佳康复效果。

关键词: 水疗 水中运动 水中物理治疗 适应症

Clinical Indications for the Use of Aquatic Therapy

ABSTRACT: Water is an excellent medium for achieving maximal exercise levels. Water has several unique qualities, such as buoyancy, hydrostatic pressure and fluid resistance that make aquatic therapy an ideal choice for individuals with musculoskeletal, cardiopulmonary as well as individuals with neurological impairments. Aquatic therapy provides a useful and safe environment for initiating an exercise program and can complement all phases of the rehabilitation process. The physical properties of water provide certain benefits to patients that land-based programs do not offer, making aquatic therapy the ideal rehabilitation environment for many individuals and conditions.

KEYWORDS: Aquatic Therapy, Aquatic Exercise, Aquatic Physiotherapy, Indication

水中物理治療對強直性脊椎炎之療效

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DOI 10.1007/s00296-014-2980-8

ORIGINAL ARTICLE

Effect of aquatic exercise on ankylosing spondylitis: a randomized controlled trial

U. Dunder · O. Solak · H. Toktas · U. S. Demirdal ·
V. Subasi · V. Kavuncu · D. Evcik

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水療的效果

- ↓ 痛
- ↓ 關節機能障礙
- ↑ 生活品質



Original Article

The effect of Ai Chi aquatic therapy on individuals with knee osteoarthritis: a pilot study

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Abstract. [Purpose] To examine the efficacy of Ai Chi in relieving the pain and stiffness of knee osteoarthritis and improving, physical functioning, proprioception and quality of life. [Subjects and Methods] Twenty-five persons with knee osteoarthritis completed 5 weeks Ai Chi practice (60 minutes per session, twice per week, 10 sessions in total). Knee pain and stiffness were measured before and after the intervention program. [Results] Significant improvements in pain, self-perceived physical functioning and self-perceived stiffness were observed after the Ai-Chi intervention. On average, no significant change in knee range of motion, 6-minute walk test distances or proprioception was observed. [Conclusion] A five-week Ai Chi intervention can improve the pain and stiffness of knee osteoarthritis and self-perceived physical functions and quality of life improvement. Ai Chi may be another treatment choice for people with knee OA to practice in the community.

Key words: Aquatic exercise, Knee osteoarthritis, Tai Chi

(This article was submitted Dec. 1, 2016, and was accepted Feb. 16, 2017)

水中太極對膝骨關節炎患者的療效



A 4-week community aquatic physiotherapy program with Ai Chi or Bad Ragaz Ring Method improves disability and trunk muscle endurance in adults with chronic low back pain: A pilot study

水療對腰背痛患者的療效

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Abstract.

OBJECTIVE: To investigate the efficacy of a 4-week community aquatic physiotherapy program with Ai Chi or the Bad Ragaz Ring Method (BRRM) on pain and disability in adults with chronic low back pain (CLBP).

METHODS: Adults with CLBP ($n = 44$; mean \pm SD age, 52.6 ± 5.5 y; 37 women) were assigned to either an Ai Chi ($n = 23$) or BRRM ($n = 21$) program (4 weeks, twice weekly).

RESULTS: Both the Ai Chi (-1.4 ; 95% CI -2.6 to -0.2 ; $p = .025$) and BRRM (-2.0 , 95% CI -3.1 to -0.8 ; $p = 0.003$) groups demonstrated significant pre- to post-treatment decreases in Roland-Morris Disability Questionnaire scores and improvements in prone bridge duration (Ai Chi: 11.7 s; 95% CI 1.6 to 21.8; $p = 0.025$; BRRM: 19.0 s; 95% CI 6.1 to 31.8; $p = 0.006$). The Ai Chi group revealed a significant improvement in single-leg stand test duration (2.9 s; 95% CI 0.1 to 5.7; $p = 0.045$) and the BRRM group reported significant decrease in pain intensity (-11.6 ; 95% CI -19.1 to -4.2 ; $p = 0.004$).

CONCLUSIONS: A 4-week aquatic physiotherapy program with Ai Chi or BRRM resulted in significant pre- to post-treatment improvements in disability and global core muscle endurance. Ai Chi appeared to have an additional benefit of improving single-leg standing balance and BRRM an additional benefit of reducing pain.

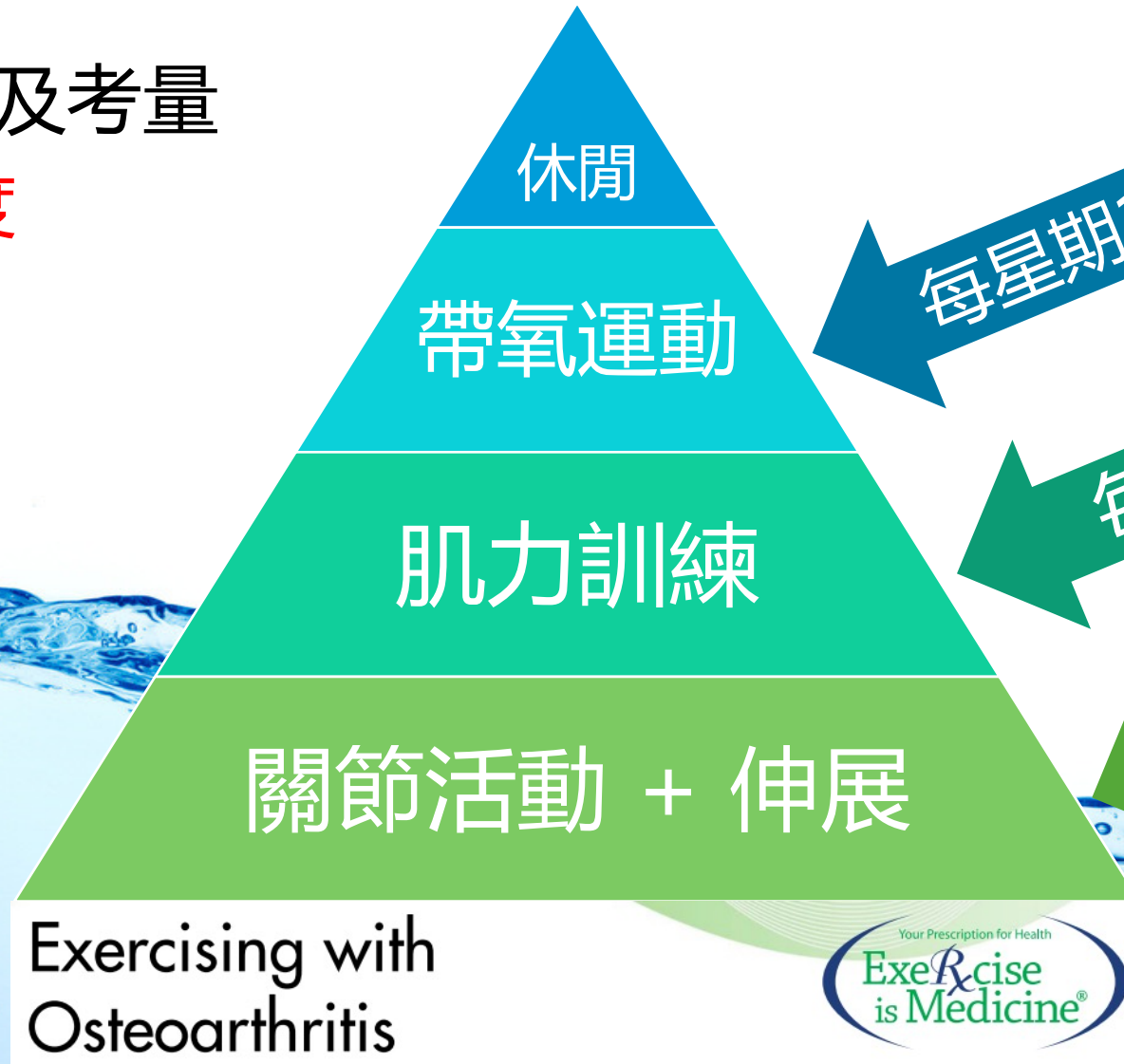
Keywords: Chronic low back pain, disability, Ai Chi, Bad Ragaz Ring Method, aquatic physiotherapy, water exercise



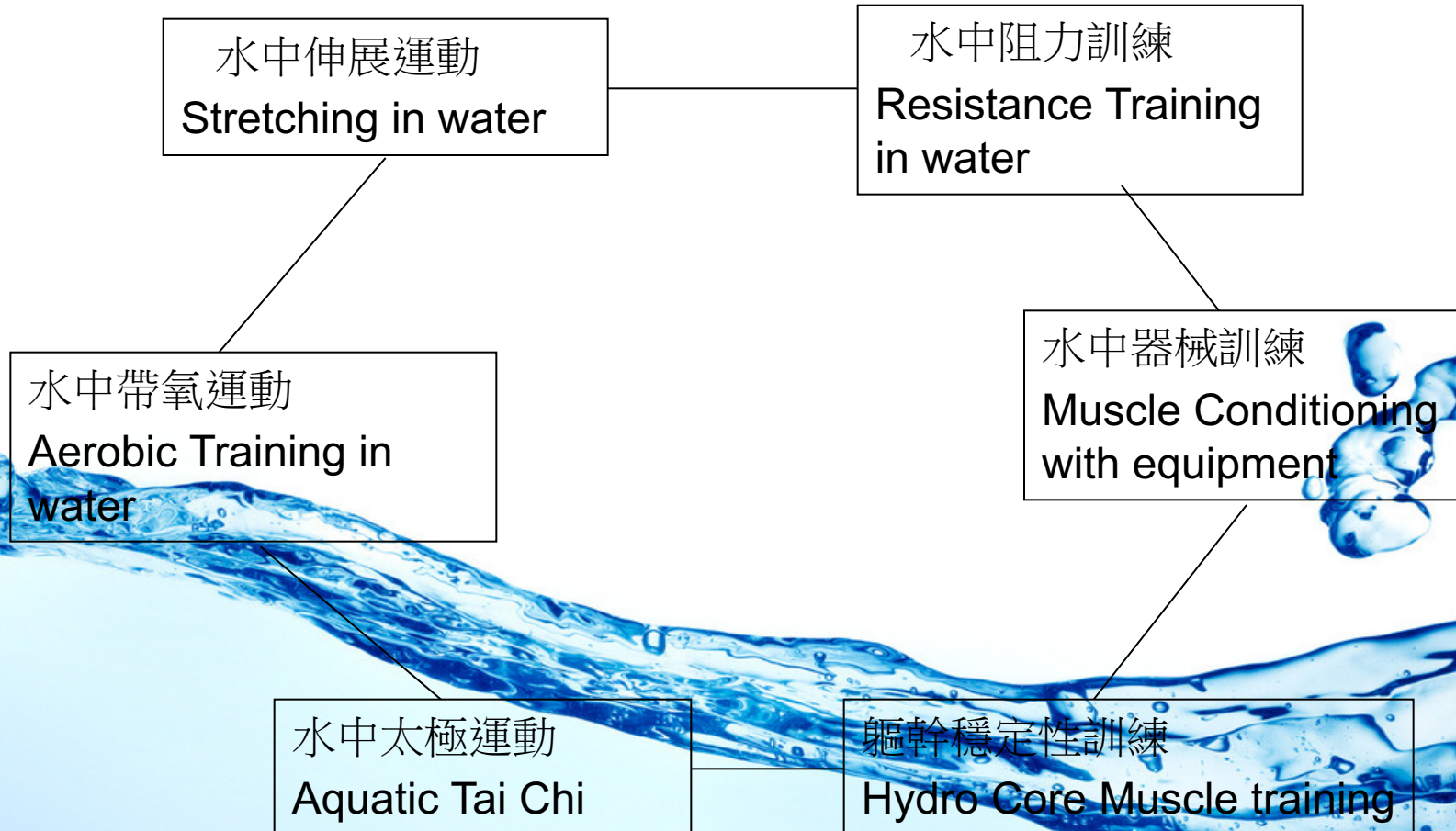
強直性脊椎炎患者

活動需要及考量

- 痛楚程度
- 能力

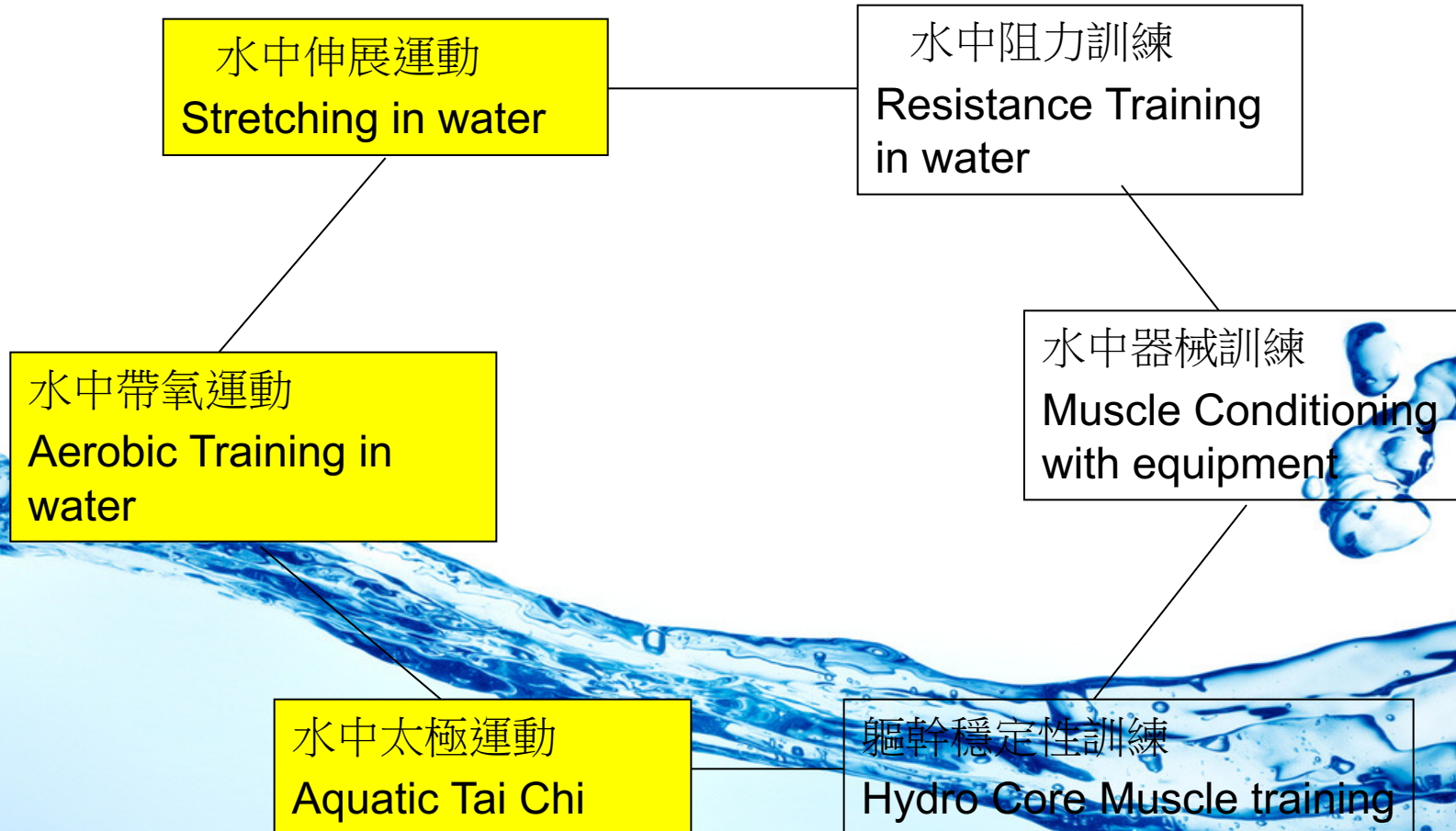


不同人士之訓練需要



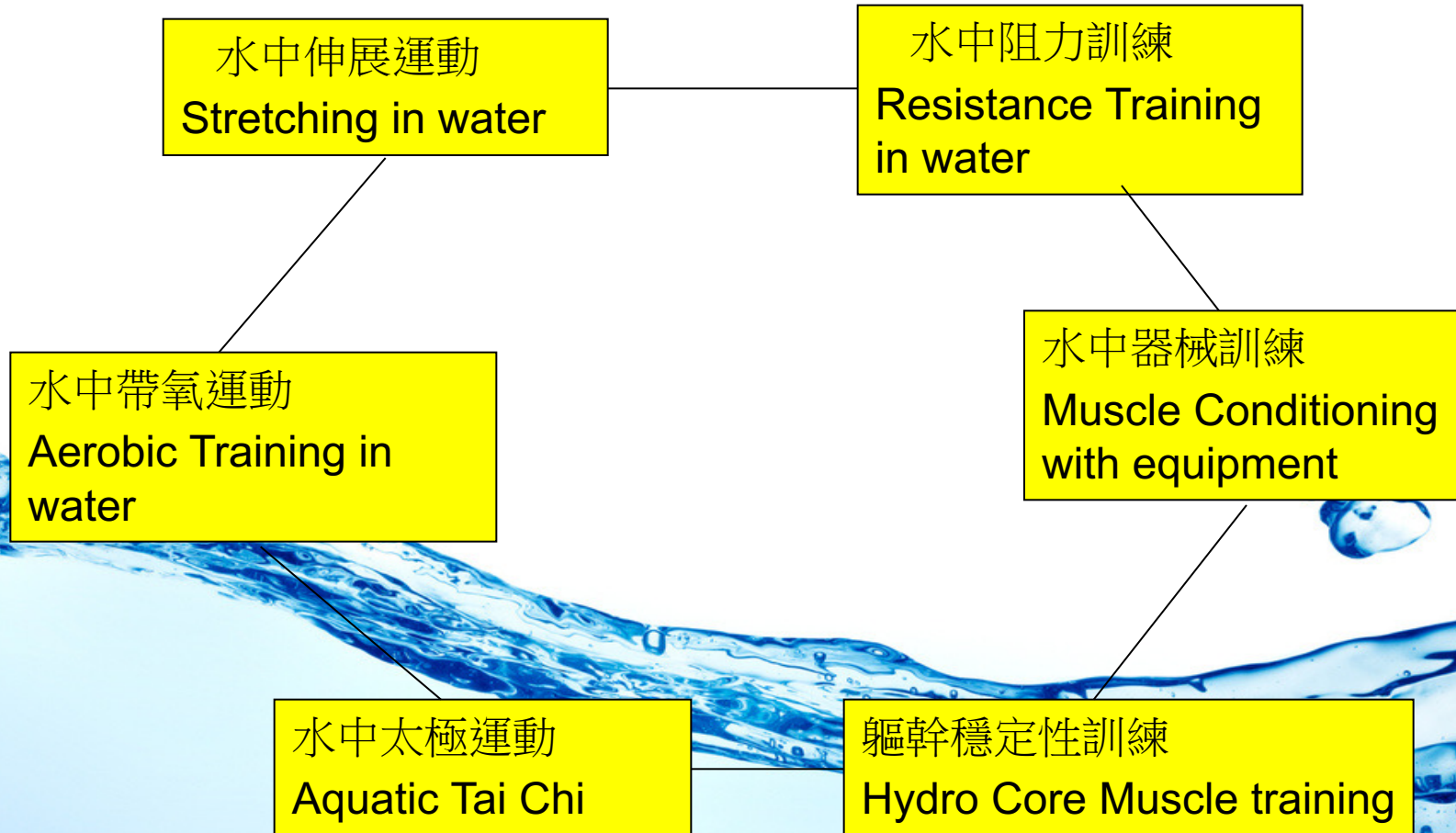
不同人士之訓練需要

強直性脊椎炎 (初階訓練)



不同人士之訓練需要

強直性脊椎炎 (進階訓練)

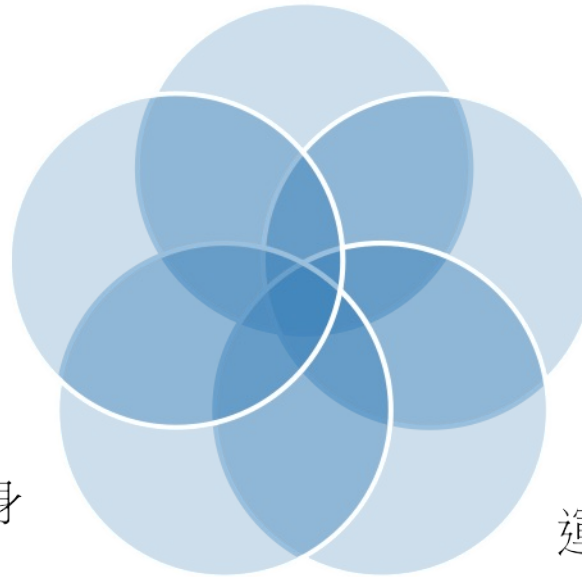


有效的水療

瞭解病人的訓練
需要
Understand the
patient need

合適的評估
Evaluation

利用不同的身
體位置
Posture



配合各種水的
物理特性
Water
Properties

運用合適的工具
Tool

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