運動與訓練的謬誤

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怎樣可以得到健康呢？

運動訓練：科學與迷思

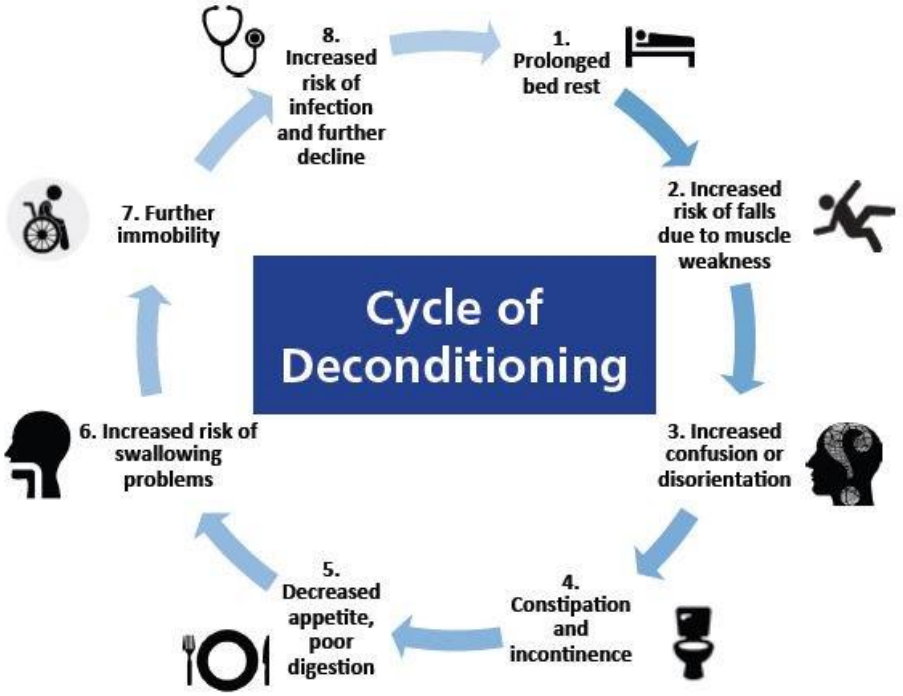
What is Deconditioning Pandemic ?

Deconditioning/Detraining Effect

- 停止訓練可分為短期和長期，少於四星期沒有運動稱為短期停訓，八星期或以上則是長期停訓。
- 停止訓練八星期後，心肺耐力下降可高達三成，差不多所有以往從訓練中獲得的生理優勢皆跌至與普通人一樣。
- 停止訓練六天肌肉力量開始減退，奧運賽艇的選手中斷訓練兩個月後，需要重新訓練二十星期，體能素質才可以返回奧運比賽的水平。
- 一般市民也同樣受停訓影響，疫情期間長時間逗留在家中，久坐不動影響正常的新陳代謝，免疫力易下降，不利身體健康。
- 長者入住醫院六天後，由於臥床及缺乏大肌肉活動，約有三份一人的功能性體適能明顯下降，增加跌倒受傷的風險。

James Paget University Hospitals NHS
NHS Foundation Trust

Preventing Deconditioning and Encouraging Independence



Facts about Deconditioning

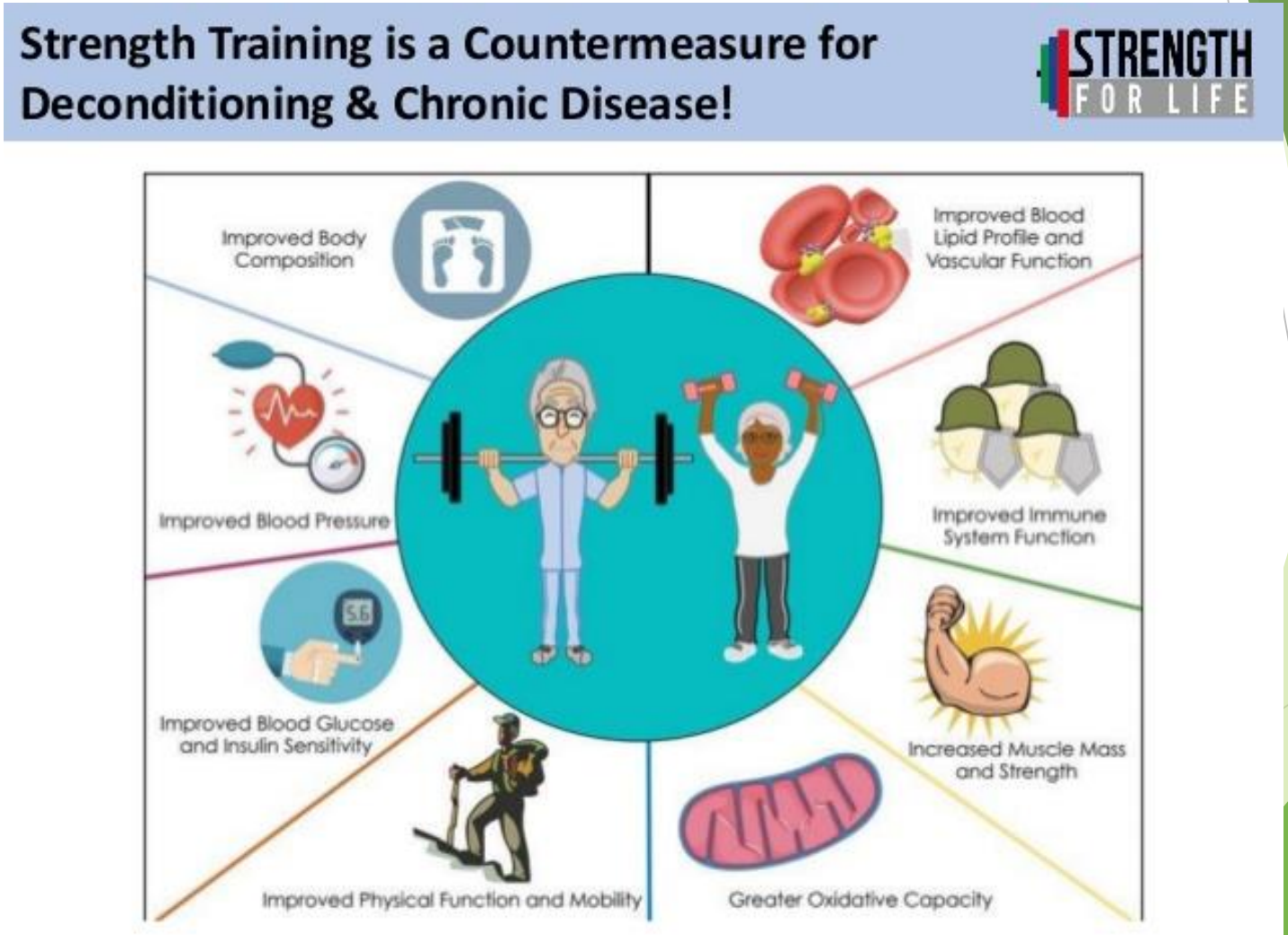
10 days of bed rest for a person over 80 ages muscles by 10 years

One week of bed rest results in 10% loss of muscle strength

Up to 50% of older patients will become incontinent within 24 hours of admission

Together we can #endpjparalysis

Tackle the Deconditioning Problems



Reopening Your Facility

Resources for administrators, staff and clients to prepare for reopening, protecting themselves and others and steps to take if exposed. Consult with your local health department for all decisions on implementing your reopening plans. Find your local health officials.

For more see https://bit.ly/COVID19_Reopening

Planning to Reopen

- Resources for Parks and Recreational Facilities
- Guidance for Administrators in Parks and Recreational Facilities
- Guidance for Building Water Systems
- Cleaning and Disinfection for Community Facilities
- Disinfectants for Use Against SARS-CoV-2, as approved by the U.S. Environmental Protection Agency
- Additional Considerations for Employers
- Planning a Return to Work from the Coalition for the Registration of Exercise Professionals®
- Proper Pool Maintenance Key to a Safe Reopening for Clubs
- Considerations for Public Pools, Hot Tubs, and Water Playgrounds During COVID-19

Protecting the Public's Health

- How to Protect Yourself and Others from COVID-19
- Protect Yourself and Others When Visiting Parks and Recreational Facilities
- Social Distancing, Quarantine and Isolation: Keep your distance to slow the spread
- Cloth Face Coverings: Questions and Answers
- Use of Cloth Face Coverings to Help Slow the Spread of COVID-19
- Social Distancing in Your Health Club

Handling Potential Exposure to COVID-19

- Cleaning and Disinfection After Persons Suspected/ Confirmed to Have COVID-19 Have Been in the Facility
- EMERGENCY – Every Second Counts & You Must Know What To Do

AMERICAN COLLEGE of SPORTS MEDICINE. LEADING THE WAY

Author: Lauren Korzan, MA, ACSM-EP, ACSM-GEI; 2020

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Original Article

Impact of the COVID-19 pandemic on sports and exercise

Ashley Ying-Ying Wong [a], Samuel Ka-Kin Ling [a, *], Lobo Hung-Tak Louie [b], George Ying-Kan Law [c], Raymond Chi-Hung So [d], Daniel Chi-Wo Lee [d], Forrest Chung-Fai Yau [d], Patrick Shu-Hang Yung [a]

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[b] *Department of Sport and Physical Education, Dr. Stephen Hui Research Centre for Physical Recreation and Wellness, Hong Kong Baptist University, Hong Kong SAR*
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Methods: A small sample of video footage of professional football players were analysed to track each players' time of close body contact and frequency of infection-risky behaviours to investigate the risk of virus transmission during football games.

To investigate the physiological effect of wearing a facemask during exercise, we conducted a controlled laboratory, within-subject, repeated measures study of 23 healthy volunteers of various sporting backgrounds. They underwent graded treadmill walking at 4 km per hour for 6 min with and without wearing a surgical mask in a randomized order with sufficient resting time in between trials. The heart rate and the rate of perceived exertion (RPE) were recorded.

身體接觸的風險

Results: In a 90 min match, the average duration of close contact between professional football players was 19 min and each player performed an average of 52 episodes of infection-risky behaviours. The heart rate and RPE of subjects wearing a facemask was 128 beats per minute and 12.7 respectively. In those without a facemask, the results were a heart rate of 124 beats per minute and a RPE of 10.8.

Table 2
Results of experiment on the risk of virus transmission during football games.

	Player 1	Player 2	Player 3	Player 4	Mean
Position	Forward	Mid-fielder	Forward	Forward	–
Close contact (Minutes per 90 min)	5.9	35.5	18.4	17.5	19.3
Touching mouth (Episode per 90 min)	37	2	6	8	13
Touching eyes (Episode per 90 min)	8	0	0	6	4
Touching nose (Episode per 90 min)	37	0	11	8	14
Spitting (Episode per 90 min)	27	2	42	15	22

Exercise with and without wearing masks

Table 4
Repeated measure *t*-test showed the heart rate responses (HR) and rate of perceived exertion (RPE) during 6-min graded (10%) treadmill walking between wearing masks and without masks.

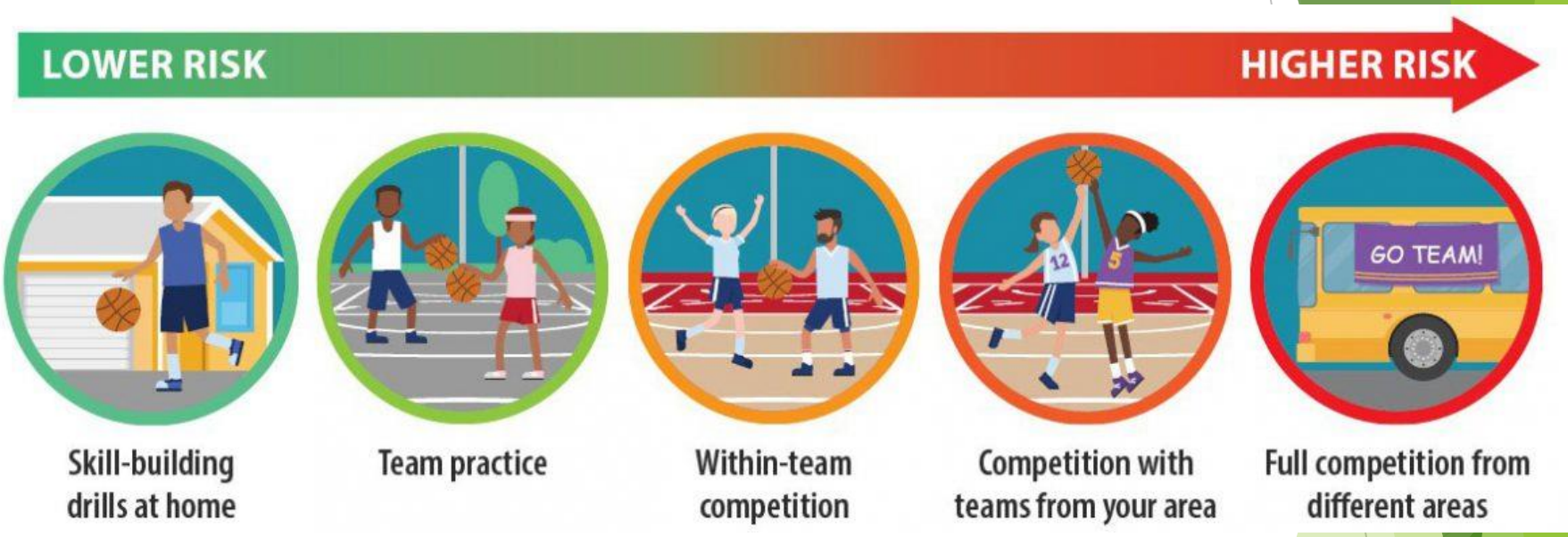
Time	Heart rates		Rate of perceived exertions	
	Without Masks	With Masks	Without Masks	With Masks
At rest	73.9 ± 9.8	74.5 ± 10.0	6.6 ± 1.0	6.9 ± 1.2
1 min	113.0 ± 10.2*	115.9 ± 8.9*	8.4 ± 1.7	9.0 ± 1.8
2 min	120.1 ± 11.0*	123.1 ± 11.4*	9.3 ± 2.0	10.4 ± 2.1
3 min	120.3 ± 11.0*	124.5 ± 11.8*	9.8 ± 2.0*	11.4 ± 2.0*
4 min	122.0 ± 12.2*	125.8 ± 13.2*	10.2 ± 2.0*	12.2 ± 2.0*
5 min	123.4 ± 12.3*	127.6 ± 12.6*	10.7 ± 2.0*	12.5 ± 2.1*
6 min	124.4 ± 12.8*	128.4 ± 13.2*	10.8 ± 2.2*	12.7 ± 2.1*

*significant differences at 0.01 level.

How to Be Physically Active While Social Distancing

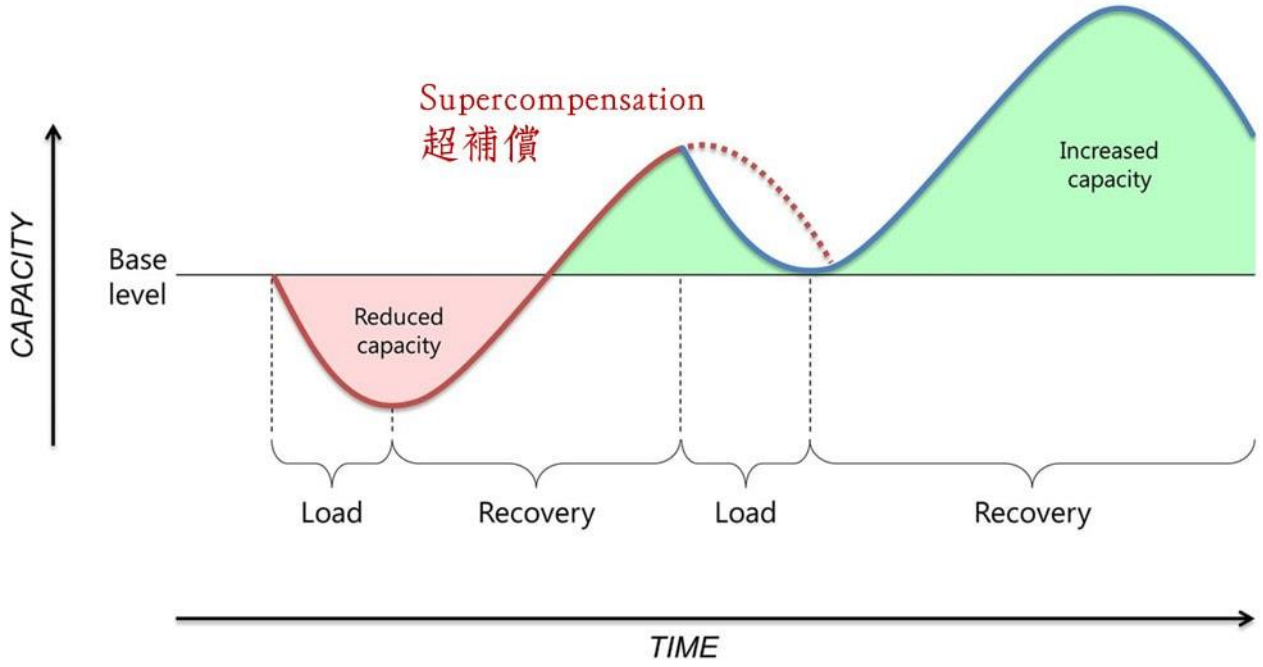
- Children aged 3 to 5 years need physical activity throughout the day, every day for growth and development.
- Children and adolescents aged 6 to 17 years need at least 60 minutes of moderate-to-vigorous intensity physical activity daily.
- Adults need 150 minutes a week of moderate intensity activity such as brisk walking for health benefits.
- Regardless of your age, some physical activity is better than none.

Understand the Risks in Sports



訓練與恢復同樣重要

超負荷原則 Principle of Overload



How much is too much? (Part 1) International Olympic Committee consensus statement on load in sport and risk of injury

肌肉訓練後的痠痛

- 痠痛分為急性和慢性
- (持續性肌肉疲勞,延遲性肌肉疲勞Delayed Onset Muscle Soreness)
- 體內的乳酸水平約在劇烈運動後約90分鐘便回落到運動前的水平
- 翌日痠痛與乳酸無關
- 持續性肌肉疲勞發生在運動後24 至 72小時
- 運動後的靜態伸展有助促進肌肉恢復，減少痠痛
- 伸展動作維持介乎15秒至30秒
- 運動訓練適應期約4 至6 星期

Is Exercise Target Heart Rate accurate ???

運動目標心率準確嗎？

Why “220 - Age” = Max HR ???

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Commentary

THE SURPRISING HISTORY OF THE “HRmax=220-age” EQUATION

ROBERT A. ROBERGS AND ROBERTO LANDWEHR

Exercise Physiology Laboratories, The University of New Mexico, Albuquerque, NM

ABSTRACT

THE SURPRISING HISTORY OF THE “HRmax=220-age” EQUATION. **Robert A. Robergs, Roberto Landwehr**. **JEPonline**. 2002;5(2):1-10. The estimation of maximal heart rate (HRmax) has been a feature of exercise physiology and related applied sciences since the late 1930’s. The estimation of HRmax has been largely based on the formula; HRmax=220-age. This equation is often presented in textbooks without explanation or citation to original research. In addition, the formula and related concepts are included in most certification exams within sports medicine, exercise physiology, and fitness. Despite the acceptance of this formula, research spanning more than two decades reveals the large error inherent in the estimation of HRmax (Sxy=7-11 b/min). Ironically, inquiry into the history of this formula reveals that it was not developed from original research, but resulted from observation based on data from approximately 11 references consisting of published research or unpublished scientific compilations. Consequently, the formula HRmax=220-age has no scientific merit for use in exercise physiology and related fields. A brief review of alternate HRmax prediction formula reveals that the majority of age-based univariate prediction equations also have large prediction errors (>10 b/min). Clearly, more research of HRmax needs to be done using a multivariate model, and equations may need to be developed that are population (fitness, health status, age, exercise mode) specific.

Maximal Heart Rate (mhr) Formula:

220 - age X % intensity

Example: 45 year old

60% intensity -

175 mhr (220 - age)
X .60 (percent intensity)
105 (target heart rate)

80% intensity -

175 mhr (220 - age)
X .80 (percent intensity)

The Formula: "HRmax=220-Age"

Within textbooks, failure to cite the original research regarding the formula HRmax=220-age indirectly affirms a connection to Karvonen. This association exists due to the textbook presentation of HRmax prediction with the concept of a heart rate reserve, which was devised by Karvonen (3). Ironically, the study of Karvonen was not of maximal heart rate. To clarify, Dr. Karvonen was contacted in August of 2000 and subsequent discussion indicated that he never published original research of this formula, and he recommended that we research the work of Dr. Åstrand to find the original research.

Another citation for the formula is Åstrand (7). Once again, this study was not concerned with HRmax prediction. We were able to discuss this topic with Dr. Åstrand in September 2000 while he was in Albuquerque to receive his Lifetime Achievement Award in Exercise Physiology from the American Society of Exercise Physiologists. Dr. Åstrand stated that he did not publish any data that derived this formula. However,

MHR = 220 - YOUR AGE

Table 3. The known univariate prediction equations for maximal heart rate.

Study	*N*	*Population*	*Mean Age (range)*	*Regression (HRmax=)*	r^2	*Sxy*
Univariate Equations						
Astrand, in Froelicher (2)	100	Healthy Men – cycle ergometer	50 (20 - 69)	211-0.922a	N/A	N/A
Brick, in Froelicher (2)	?	Women	N/A	226-age	N/A	N/A
Bruce (12)	1295	CHD	52±8	204-1.07a	0.13	22
Bruce (12)	2091	Healthy Men	44±8	210-0.662a	0.19	10
Bruce (12)	1295	Hypertension	52±8	204-1.07a	0.24	16
Bruce (12)	2091	Hypertension + CHD	44±8	210-0.662a	0.10	21
Cooper in Froelicher (2)	2535	Healthy Men	43(11 - 79)	217-0.845a	N/A	N/A
Ellestad in Froelicher (2)	2583	Healthy Men	42(10-60)	197-0.556a	N/A	N/A
Fernhall (13)	276	Mental Retardation	9-46	189-0.56a	0.09	13.8
Fernhall (13)	296	Healthy W & M	N/A	205-0.64a	0.27	9.9
Froelicher (2)	1317	Healthy Men	38.8(28-54)	207-0.64a	0.18	10
Graettinger (14)	114	Healthy Men	(19-73)	199-0.63a	0.22	N/A
Hammond (15)	156	Heart Disease	53.9	209-age	0.09	19
Hossack (16)	104	Healthy Women	(20-70)	206-0.597a	0.21	N/A
Hossack (16)	98	Healthy Men	(20-73)	227-1.067a	0.40	N/A
Inbar (17)	1424	Healthy W & M	46.7(20-70)	205.8-.685a	0.45	6.4
Jones (18)	100	Healthy W & M cycle ergometer	(15 – 71)	202-0.72a	0.52	10.3

Jones N/A	? Healthy W &M		210-0.65a	0.04	N/A
Jones (18)	60 Healthy Women	(20-49)	201-0.63a		N/A
Lester (19)	48 W & M Trained		205-0.41a	0.34	N/A
Lester (19)	148 W & M Untrained	43(15 – 75)	198-0.41a	N/A	N/A
Londeree (20)	? National Level Athletes	N/A	206.3-0.711a	0.72	N/A
Miller (21)	89 W & M Obese	42	200-0.48a	0.12	12
Morris, in Froelicher (2)	1388 Heart Disease	57(21 – 89)	196-0.9a	0.00	N/A
Morris, in Froelicher (2)	244 Healthy Men	45(20 – 72)	200 -0.72a	0.30	15
Ricard (22)	193 Treadmill W&M		209 -0.587a	0.38	9.5
Ricard (22)	193 W & M - cycle ergometer		200 -0.687a	0.44	9.5
Robinson 1938 in Froelicher (2)	92 Healthy Men	30(6 - 76)	212 -0.775a	0.00	N/A
Rodeheffer (23)	61 Healthy Men	25 - 79	214-1.02a	0.45	N/A
Schiller 24)	53 Women Hispanic	46(20-75)	213.7-0.75a	0.56	N/A
Schiller (24)	93 Women Caucasian	42(20-75)	207 -0.62a	0.44	N/A
Sheffield (25)	95 Women	39(19 - 69)	216 -0.88a	0.58	N/A
Tanaka (11)	? Sedentary W&M		211 -0.8a	0.81	N/A
Tanaka (11)	? Active W&M		207 -0.7a	0.81	N/A
Tanaka (11)	? Endurance trained W&M		206 -0.7a	0.81	N/A

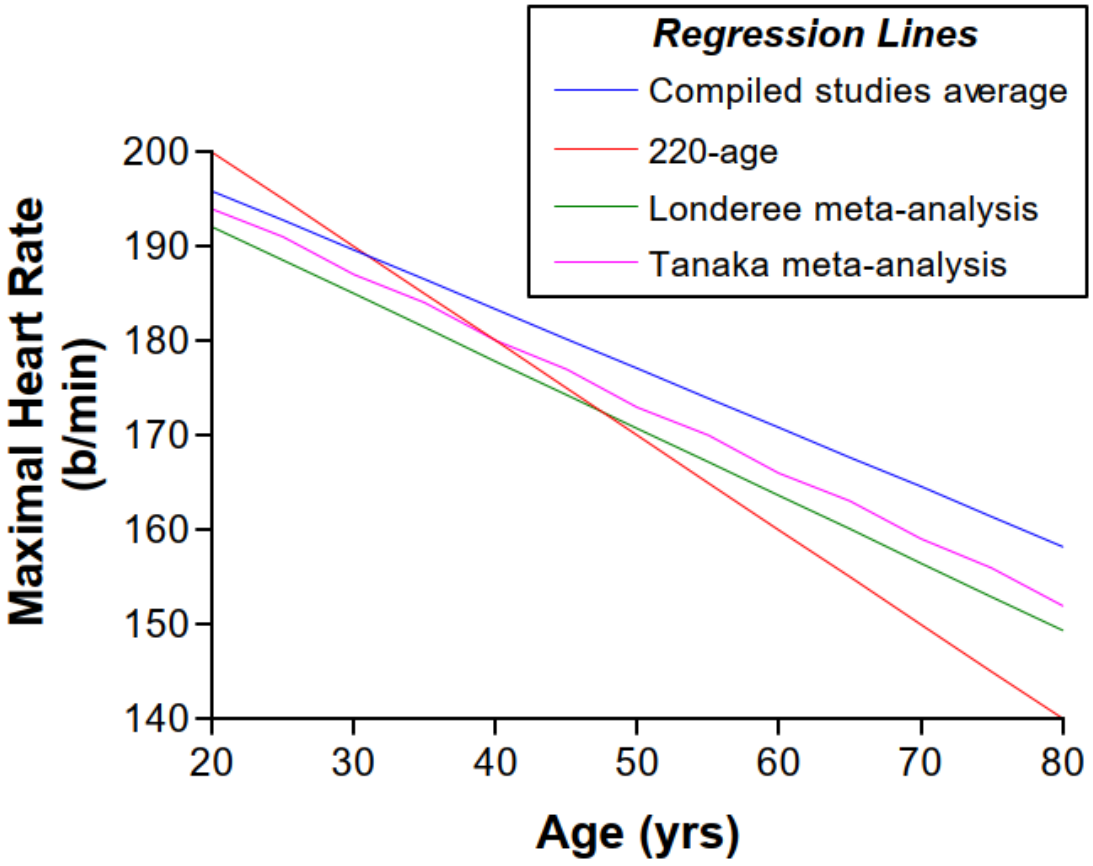


Figure 3. Regression lines from data obtained from 220-age, the mean of 30 studies from Table 3, and the meta analyses of Londeree (28) and Tanaka (47).

1. Currently, there is no acceptable method to estimate HRmax.

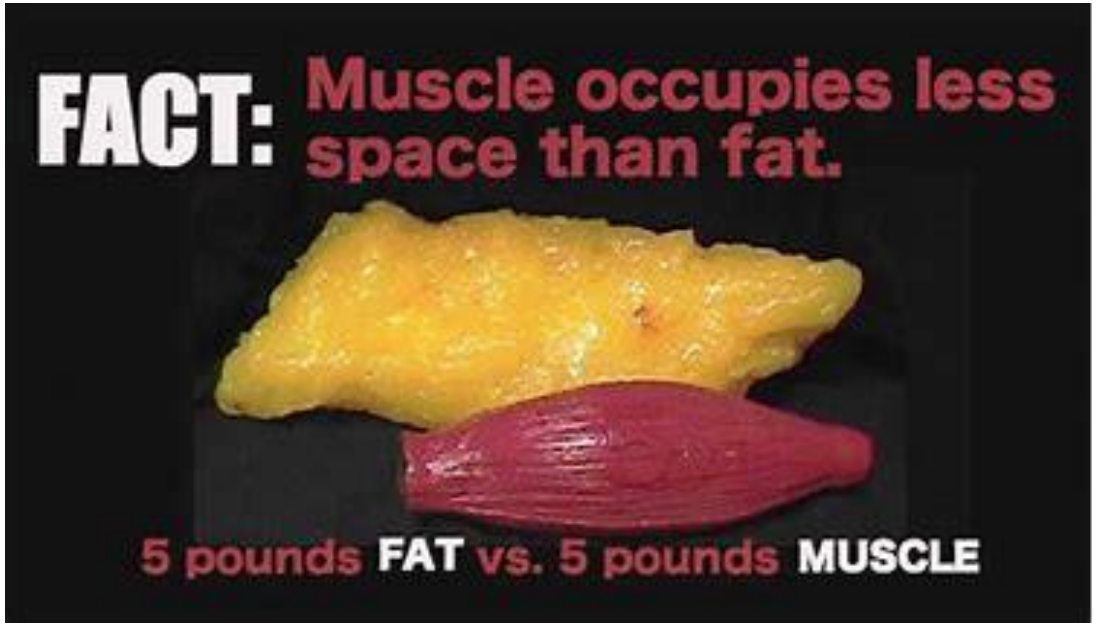
2. If HRmax needs to be estimated, then population specific formulae should be used. However, the most accurate general equation is that of Inbar: HRmax=205.8 - 0.685(age). Nevertheless, the error (Sxy=6.4 b/min) is still unacceptably large.

3. An acceptable prediction error for HRmax for application to estimation of VO2max is <±3 b/min. Thus, for a person with a HRmax of 200 b/min, error equals ±1.5%.

做Sit-up 減到肚腩?

- 拆解：1 磅脂肪 = 3500 千卡(Kcal)
- 步行30分鐘約消耗150千卡
- 做sit-up 能量消耗? 除非做到30分鐘嗎?
- Sit-ups只幫助強化腹部肌肉 !!
- 減到肚腩必須控制飲食

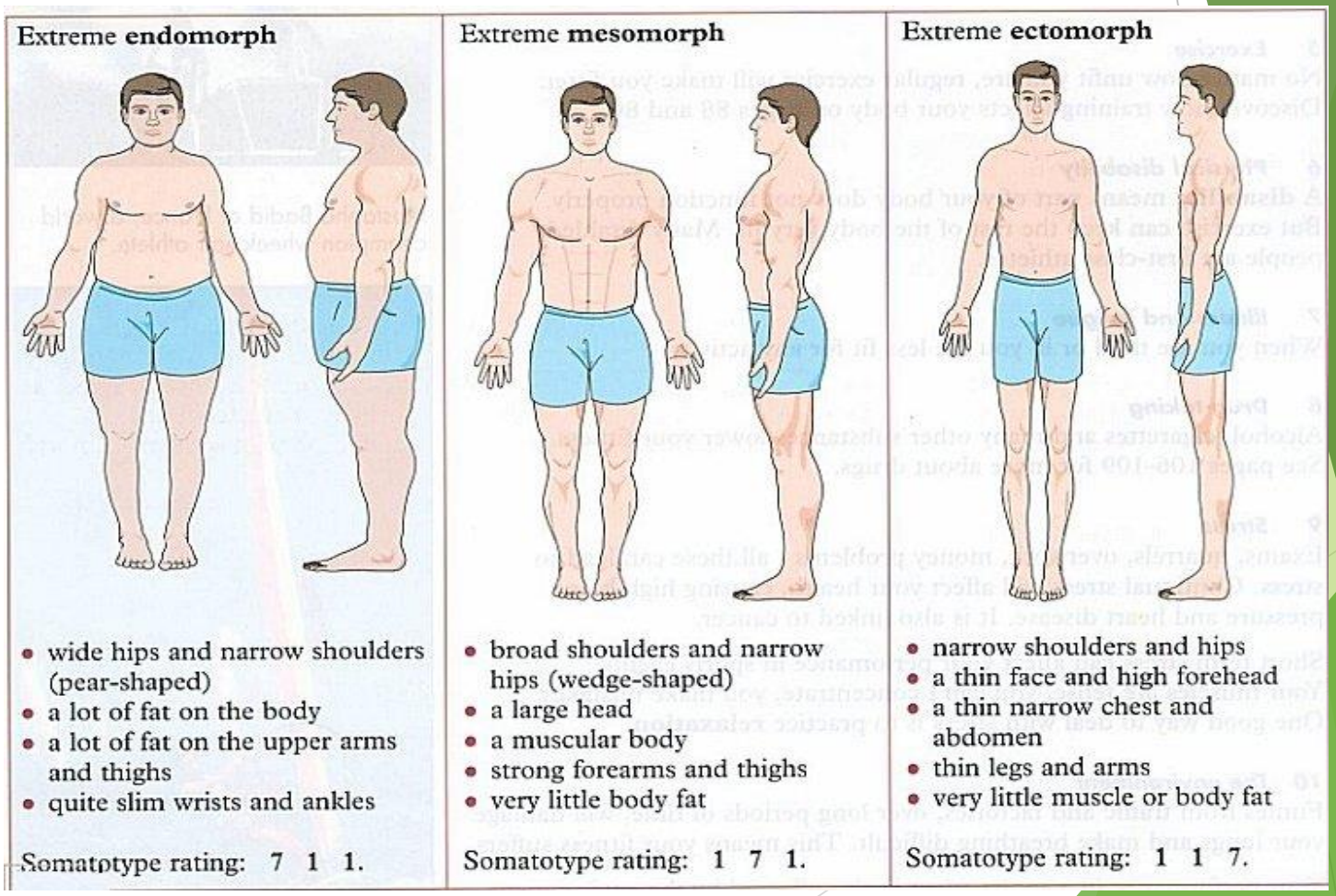
- 如果您不做運動，您的肌肉就會變成脂肪？ NO



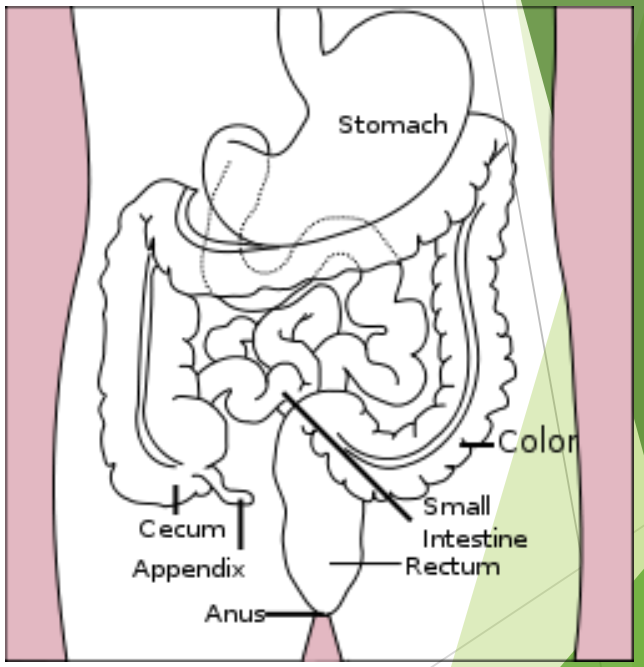
- 您可以減去想要減部位的脂肪？ NO ！
- 局部減肥存在嗎？ NO ！
- 瘦身不瘦胸？NO ！

人體測量學

人體測量學是用測量和觀察的方法描述人類體質特徵狀況的人類學分支學科。



飯後跑步引致盲腸炎? NO

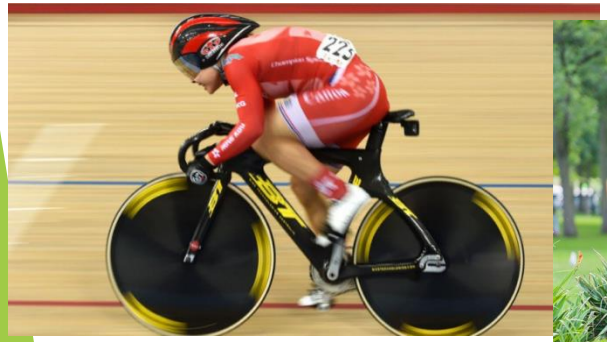


拉筋等於熱身?? NO

- 熱身運動的四部曲：
- 提升體溫
- 伸展運動(動態vs靜態)
- 技術練習、
- 心理熱身。

如何分別有氧和無氧運動?

- 拆解：運動強度約~80%是分界線;
- 最大心跳率/ 攝氧量
- >~80% =>無氧代謝
- <~80% =>有氧代謝



按摩幫到你嗎 ？

「運動按摩」是應用於運動爲目的之按摩手法與技術，根據文獻的回顧，運動按摩在生理上可幫助紓解肌肉張力、緩解疼痛；但在提升局部血流量、促進運動後恢復與運動後乳酸排除速率的效果則並不顯著，因此針對這些部份，建議應以低強度的動態活動爲主。此外，在減低延遲性肌肉酸痛程度方面，運動按摩可減低肌肉運動後產生的延遲性肌肉酸痛程度，但仍建議搭配運動前預防性的熱身運動、伸展，運動後低強度的緩和運動與伸展等方式，以幫助延遲性肌肉酸痛症狀的減輕並加速復原時程。

- 按摩對即時肌肉力量沒有影響

Cold Water Immersion

Sports Medicine

The effects of regular cold-water immersion use on training-induced changes in strength and endurance performance: a systematic review with meta-analysis

Malta, E S; Dutra, Y M; Broatch, J R; Bishop, D J; Zagatto, A M

Can the regular use of cold-water immersion (CWI) after resistance or endurance training sessions alter performance development?

Article search and selection process

Two authors

697 articles

8 articles

Inclusion criteria

- Controlled investigation with healthy humans;
- Cold-water immersion (temperature ≤ 15°C) after sessions of a regular training program;
- Pre and post-training evaluations of strength or aerobic exercise performance.

Resistance training

Endurance training

Effect size

1RM	-.50	-.12	Time-trial mean power
Isometric strength	-.65	-.01	Maximal Aerobic Power
Strength endurance	-.73	.00	Time-trial performance
Ballistic efforts	-.61		

(-) (+) (-) (+)

Conclusions

The regular use of cold-water immersion associated with exercise programs has a deleterious effect on resistance-training adaptations but does not appear to affect aerobic exercise performance.

每次訓練都要飲運動飲品嚟補充?

- 答案:不一定
- 如果訓練多於一小時以上
- 出汗?
- 天氣?
- 運動強度?
- 體重變化?
- 運動時補充水份：冷飲？熱飲？
- 運動飲品含糖份較高,無運動不宜飲用,否則容易致肥

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碳水化合物：能量來源

運動員每日應攝取60-65%能量來自碳水化合物
運動營養師指定有特別需要的運動員除外

優質碳水化合物的食物來源

- 紅米、糙米、意粉、藜麥、小扁豆
- 全麥和黑麥麵包
- 麥片和含有較低糖分的穀類早餐
- 根莖類蔬菜，例如：薯仔、粟米、甘筍等
- 水果，例如：香蕉、藍莓、紅莓等

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蛋白質: 成長與修補

運動員每日應攝取10-15%能量來自蛋白質
運動營養師指定有特別需要的運動員除外

瘦蛋白質

- 瘦肉、無皮家禽、魚類
- 豆類、豆腐
- 有機或走地雞雞蛋
- 低脂奶類製品，例如：乳酪、芝士、牛奶

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優質脂肪：奧米加３及維生素E
可減少肌肉炎症反應

運動員每日應攝取20-25%能量來自脂肪
運動營養師指定有特別需要的運動員除外

優質脂肪：芥花籽油、橄欖油、牛油果、高油脂含量的魚、果仁、種子

不良脂肪：肉類可見的脂肪、全脂奶類製品、油炸食物、棕櫚油

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維生素，礦物質，纖維素：水果和蔬菜

- 含有豐富的抗氧化物，保持健康的免疫系統，以致運動員能夠有良好的練習和比賽表現
- 含有豐富的纖維素，可幫助消化及增加飽肚感
- 由於大部份均是低熱量，可作為每天的小食

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鐵質

- 鐵質對紅血球的形成非常重要，可幫助增強耐力
- 汗液、月經或足部衝擊引起的紅血球破裂症會增加鐵質的流失
- 食物來源：瘦肉類、蛋類、豆腐、添加了鐵質的穀類早餐、菠菜、茄汁焗豆、南瓜籽和芝麻
- 在含鐵質的食物中加入維生素C可幫助鐵質吸收，例如：吃穀類早餐時加一杯橙汁、在菠菜上加檸檬汁

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鈣質和維生素D

- 對於運動員維持骨骼健康非常重要，特別是於高強度的訓練和比賽時期
- 鈣質食物來源：低脂奶類製品、硬豆腐、沙甸魚、添加鈣質的豆奶
- 維生素D食物來源：高油脂含量的魚、蛋黃
- 適當安全的日照也可以幫助我們身體製造維生素D

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含豐富碳水化合物的小食

- 當進食後與訓練之間有一段較長的時間，例如：午餐和傍晚訓練之間，運動員應在訓練前1-2小時進食一份含豐富碳水化合物的小食，幫助增加體內的能量和預防肚餓

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比賽時的飲食

比賽前

- 於3-4小時前進食1份包含全麥穀類和瘦蛋白質營養豐富的正餐
- 於1-2小時前進食小食增加能量供應
- 定時飲水確保充足水分

比賽時

- 補充水分和進食容易消化的碳水化合物食物，例如：運動飲品和運動糖漿

比賽後

- 運動後30-60分鐘應進食一份含有50-100克碳水化合物及蛋白質的小食，例如：低脂朱古力奶及香蕉
- 進食均衡晚餐，應含有優質碳水化合物和瘦蛋白質

根據比賽期間汗液的流失而補充水分

水分

- 人體含有約 55-60% 水分
- 每失去1公升水分，體溫升高攝氏0.3度
- 脫水的影響包括：
  - 身體不能調節體溫
  - 頭痛、抽筋和中暑
  - 心跳加速和疲倦感覺增加
  - 影響心理機能、運動控制、決策力和集中能力下降

水分補充貼士

- 整天少量而頻密地飲水
- 無論正餐或小食都要同時配飲品
- 於訓練時隨身携帶水樽
- 如果訓練時間超過一小時，建議飲用運動飲品
- 缺水時應避免飲用咖啡、有氣飲品、濃茶和含有酒精飲品

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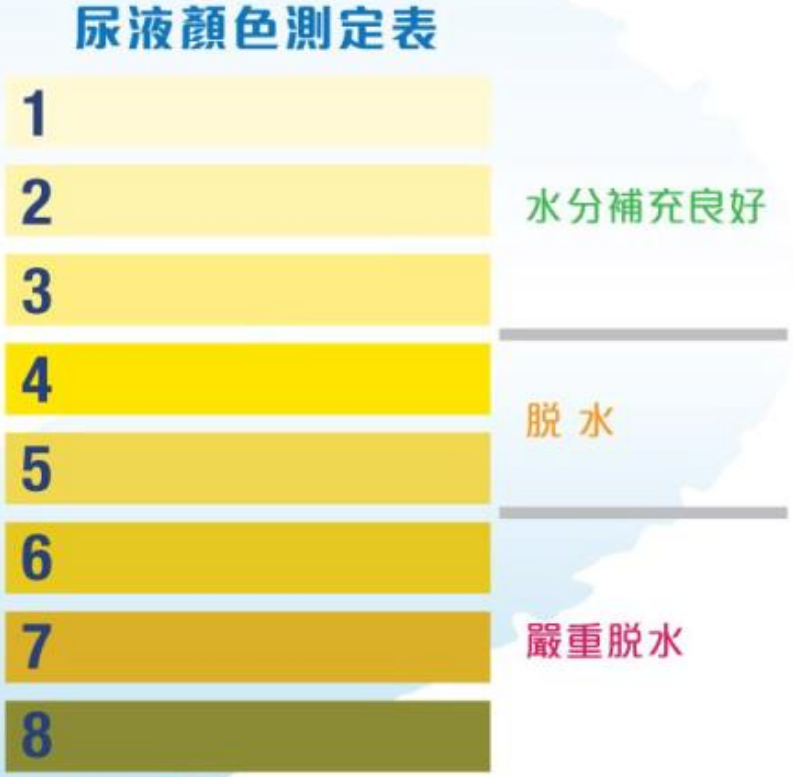
身體水分評估

- 運動後每失去0.5公斤(1磅)的體重便要在4-6小時內補充750毫升 (3杯) 水分
- 觀察尿液顏色補充水分或進食含有大量水分的食物達致尿液顏色測定表中的1、2或3



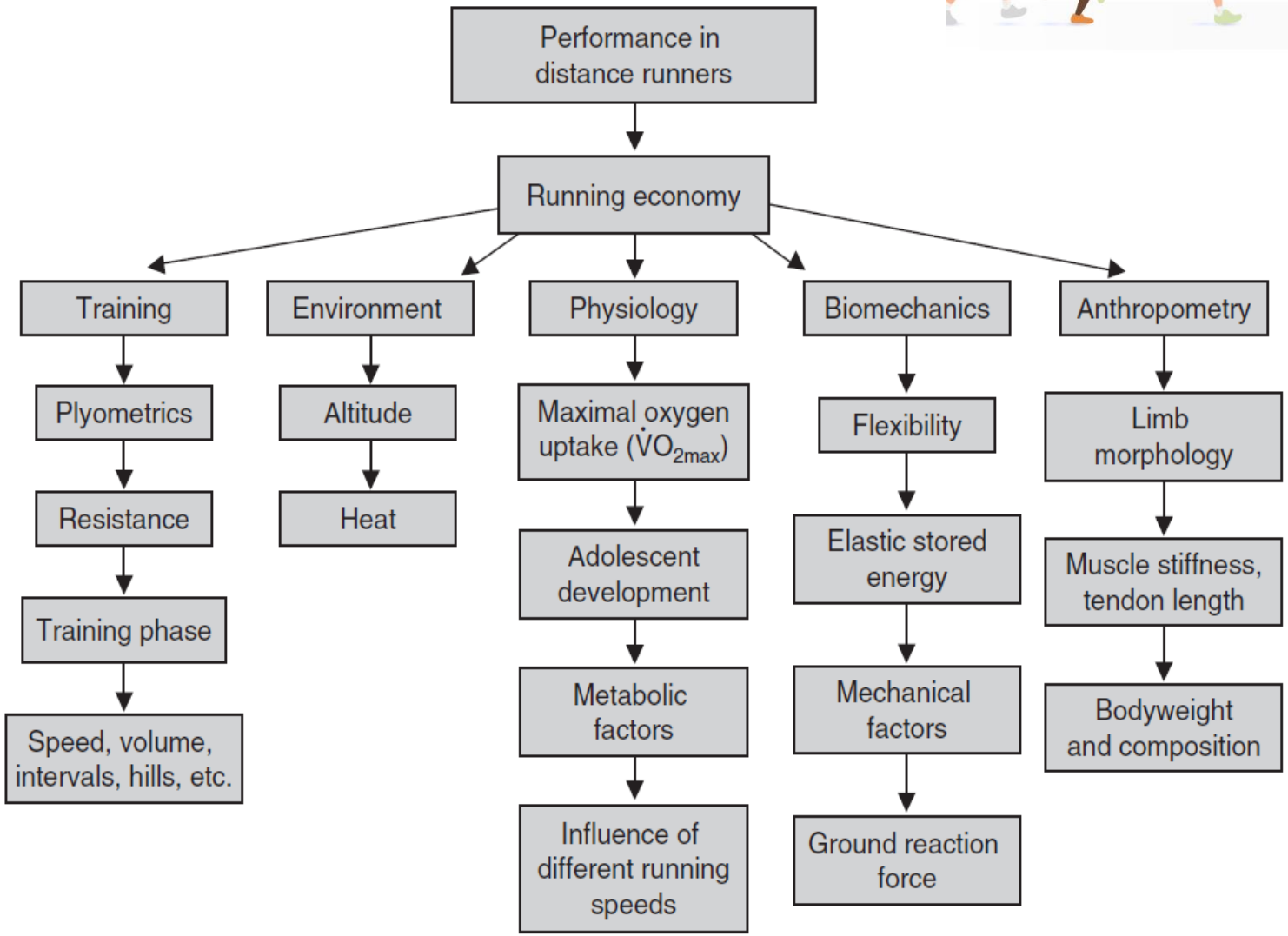
傷風感冒去做運動出身汗快啲好?

- 傷風情況較為常見，但很多時被人誤會為『感冒』。
- 感冒是一種較為嚴重的疾病，病徵除了咳嗽、咽喉腫痛及流鼻涕外，還通常會出現發高燒及發冷情況；周身無力。
- 生理學上，一般傷風可在約一星期便復元而無需藥物治療。舒緩傷風徵狀的方法，大致有多喝開水和休息。
- 傷風: OK ！美國運動醫學學會認為，一般中等強度的運動，例如步行，仍然可以進行，不會對身體造成負面影響。但高強度的劇烈運動或長跑訓練，則建議暫時停止，身體復元後兩星期才可進行。
- 感冒: NO ！必須休息！

打籃球會令小孩長高? NO!

- 綜合的科研顯示：人體的身高，受基因遺傳影響的因素約佔60至90%不等。
- 打籃球是一種非常劇烈的運動，而「劇烈運動」本身是可以令小孩子的身陳代謝得以良好運作，促使身體產生足夠的生長激素，使身高得以到達遺傳高度的上限。

怎樣可以跑快d？



Factors affecting running economy.

揭開運動疲勞抽筋的謎團

- 相信不少熱愛運動的朋友，在球場上疲勞時曾經出現局部肌肉抽筋，尤其是小腿肌肉，這類因肌肉疲勞產生的抽筋，稱為運動相關的肌肉痙攣(Exercise-associated Muscle Cramping)。
- 生理學上，抽筋是指非自主性的痛楚肌肉收縮，是保護身體的防火牆。坊間很多人以為劇烈運動後出現疲勞、脫水或電解質不足就會發生抽筋，其實這些說法仍未得到科學確認。早前美國運動醫學學會就大眾對運動相關抽筋的誤解，提出客觀資料讓大家了解其原因。
- 誤解一: 持續運動後身體出現脫水或電解質不足會導致肌肉抽筋，雖然很多人以為這個說法是抽筋原因，不過美國運動醫學學會卻指出，當抽筋時進行靜態伸展可舒緩痙攣痛楚的情況，但為何在脫水或電解質不足沒有改善下抽筋得以舒緩？研究也指出抽筋者與非抽筋者體內的電解質濃度和血漿體積十分相近，如果真的是脫水引致抽筋，為什麼只發生在局部肌肉而不是全身呢？

- 誤解二: 運動飲品可以補充運動時身體流失的電解質，這是不對的。例如一位抽筋者出汗每小時體內納質流失二點七克，持續運動一百五十分鐘後，身體便流失六點七五克納質，以一般運動飲料計算，便需要飲用約十五公斤才可補充足夠，這做法遠遠超過補充液體的安全上限，甚至出現中水毒而死亡。
- 誤解三: 進行靜態伸展可預防運動相關肌肉抽筋，但目前未有臨床數據支持這個假設。
- 誤解四: 抽筋不能估計或預測，但事實上，數據顯示家族遺傳因素卻是一個可預測的指標。
- 誤解五: 運動時進食香蕉補充鉀質可以解決抽筋情況，可是香蕉從進食至消化吸收的過程起碼要三十分鐘，難以及時作出補充。
- 總括而言，運動相關肌肉抽筋的原因眾多，目前臨床實證數據指出，估計與神經肌肉傳遞系統有關。如果運動人士經常出現肌肉抽筋，便需要收集訓練數據作出統計分析，包括訓練強度、持續時間、飲水份量、營養攝取、睡眠質量、天氣環境等各種因素，並提升整體運動的狀態，避免過度疲勞。如果情況沒有改善，必須求醫診斷。

睡眠的誤區

- 睡眠是身體恢復的方法。
- 長期缺睡更可增加早死的風險。睡眠不足不但影響身體恢復，更損害免疫系統。缺乏睡眠促使產生較少量的細胞因子，它是刺激體內組織製造提升免疫力的化學物質，以及活化和促進細胞生長的功能。

誤解一：睡眠是讓腦袋休息

科學上已經肯定了人體在睡眠時腦部仍處於活躍狀態，就好像電腦處於「離線狀態」，睡眠給予腦部重新整理，疲勞的肌肉得以恢復過來。記憶和新近學習的技能會在睡眠時移動至大腦的永久區域，幫助增強記憶力。清除整日新陳代謝所產生的堆積物，冲洗可能對身體有害的毒素，保護身體免受病毒入侵。

誤解二：晚上做運動影響睡眠

事實上，運動與睡眠兩者均對身體有裨益的，恆常運動更有助提升睡眠質量，促進健康。有大型研究分析顯示，夜間做運動與入睡其實找不到負面的關係。或許少數個別人士真的受影響，則需要作適當調節，而且晚上更不宜飲含咖啡因飲料。

誤解三：睡前飲酒幫助入睡

綜合研究睡眠與酒精關係的文獻指出，睡前飲酒會影響入睡時間，隨後更干擾睡眠的後半周期，延遲快速動眼期，酒精也會加劇睡眠窒息症的惡化。

誤解四：睡得多，身體好

成年人每天平均睡七至九小時，少於五小時睡眠會造成負面影響，包括心血管疾病、代謝疾病、免疫系統疾病和精神疾病等。睡眠多於十小時以上，同樣容易出現缺睡的疾病風險，嚴重者甚至可以引致中風或癡肥等。

誤解五：隨時隨地睡得著就是健康

如果晚上有充足的睡眠，身體得到足夠的恢復，那麼日間就不應該出現疲勞狀態。隨時隨地睡得著顯示身體仍然處於持續缺乏睡眠的狀態，可能是生理時鐘受到干擾而影響正常的睡眠。

誤解六：缺乏睡眠身體自動會調整來適應

短暫缺乏睡眠二十四至三十六小時，足以使身體協調及反應能力下降，缺睡兩天心肺耐力減退可達一成，記憶力也受到障礙，長期缺乏睡眠更增加患病風險。由於夜班工作人士的正常睡眠時間容易長期受到影響，死亡風險明顯高於相同工作崗位的日間工作者。

受傷了！要冰敷還熱敷？？？

原則時機	冰療	熱療
1受傷時間	急性期12or72小時內	超過12or72小時
2紅腫發熱	冰療勝	熱療會加重腫脹
3熱敷後痛	尚在發炎，冰療勝	
4慢性酸痛	熱療勝	
治療機制	抑制發炎 降低神經傳遞	放鬆肌肉、放鬆心情 增加血液循環
再次受傷	回到 1.受傷時間 評估	
綜合評估	冰療、熱療需視情況改變。判斷錯誤可能使病情加重！	

目前有部分醫學證據支持6-12小時後之超早期熱療
需視受傷狀況而定。 若有疑問請諮詢醫療人員!!!

The Right Time to Stay Fit