

Overview

International rowing events are held at 2000 meters and typically take 6 – 8 minutes to complete. Rowing competitions include lightweight and open categories. Crews are distinguished by the number of members in the boat (singles, doubles, fours, and eights). Most Hong Kong rowers are in the lightweight category. In the lightweight division, male rowers are not permitted to exceed 72.5 kg with a crew average of 70 kg. For female rowers, the maximum individual weight is 59 kg with a crew average of 57 kg. Rowing places great demands on both the aerobic and anaerobic energy systems and requires great power and strength.

Rowing training involves skill, power, and endurance. Even though the competition only lasts 6 – 8 minutes, rowers need to train 4 – 6 hours each day. Rowing competition may last from few days to a week. Lightweight rowers must pass weigh-in two hours before competition.

Physical Characteristics

Rowers are muscular, tall and have long limbs. Lightweight rowers aim to keep low body fat level to maintain a good power-weight ratio.

Common Nutrition Issues

Training Nutrition

Rowers have high energy and carbohydrate requirements to support training loads. Since rowers are required to train 2 – 3 sessions each day, recovery between sessions is crucial to maximize training gains. Rowers need to plan their training and eating schedules. The elite rowers of Hong Kong usually have a regular meal following each training session. The meal should be rich in carbohydrate, moderate in protein, and low fat in order to meet the requirement of recovery and weight control.

Common Concerns with Weight Control

Most rowers who need to control weight have the following concerns:

1. Worries that weight reduction will lead to a decline in power.
2. Worries that weight reduction will lead to loss of muscle mass.
3. Rather lose weight in a short period of time.
4. Worries that weight reduction will lead to feeling hungry all the time.
5. Tempted by foods...



Rowers will not encounter the above problems if they lose weight at a suitable rate (0.5 – 1 kg/week). However, if rowers have too little energy intake in order to make weight for competition, they will lose power and muscle. Therefore, rowers' diets should include carbohydrate-rich, moderate protein and low fat foods. Rowers should aim to consume 1.2 – 1.7g protein/kg body weight/day in order to preserve lean body mass. Rowers who need to make weight should consume small frequent meals to avoid feeling hungry. They should also aim to lose body fat primarily and preserve lean body mass. Generally, male rowers need about 3000 – 3500 kcal each day and female rowers need about 2000 – 2500kcal each day. The following example is a dietary plan for rowers:

	Male Rowers		Female Rowers	
	Foods	Portion size	Foods	Portion size
Breakfast	Bread	2 slices (small)	Bread	2 slices (small)
	Jam	2 tsp	Jam	2 tsp
	Cereal	30g	Cereal	30g
	Skimmed milk	2 cups	Skimmed milk	2 cups
Lunch	Rice	2 bowls	Rice	2 bowls
	Green vegetable	1 bowl	Green vegetable	1 bowl
	Fish	4 oz	Fish	2 oz
	Soy milk	1 cup	Orange juice	1 cup
Post training	Banana	1 item	Apple	1 item
	Bread	2 slices (small)	Bread	1 slice (small)
	Jam	2 tsp	Jam	1 tsp
	Orange	1 item	Sport drinks	1 cup
Dinner	Sport drinks	1 cup		
	Rice	2 bowls	Rice	1 bowl
	Green vegetable	100g	Green vegetable	100g
	Beef	4 oz	Beef	2 oz
Evening snack	Orange	1 item	Orange	1 item
	Banana	1 item	Low fat yogurt	1 cup (150g)
	Plain cracker	3 pieces	Plain cracker	3 pieces

簡介

賽艇項目的國際賽事距離通常是2000米，一般需時六至八分鐘。賽艇比賽有輕量組和公開組級別，並分單人、雙人、四人和八人艇。香港運動員大多屬輕量組級別。輕量組比賽中，男賽艇運動員的個人體重最高不得超過72.5公斤，隊員的平均體重亦不得超過70公斤。而女賽艇運動員的個人體重最高不得超過59公斤，隊員的平均體重亦不得超過57公斤。賽艇需要運動員帶氧與缺氧系統產生能量，同時亦極之講求力量。

賽艇需要技巧、力量和耐力訓練。雖然比賽只有短短六至八分鐘，但賽艇運動員也需接受每天4-6小時的訓練。賽艇比賽通常分佈在幾天至一星期內進行。輕量組賽艇運動員需在比賽前兩小時通過體重測試，方可作賽。

體質特點

賽艇運動員結實的肌肉，身材高大且四肢較長，而輕量組賽艇運動員需要保持低體脂的水平來維持優良的功率重量比例。

常見的營養問題

訓練期的營養

要應付訓練的需求，賽艇運動員對能量和碳水化合物的要求甚高。由於賽艇運動員每天接受2-3節訓練，訓練與訓練之間的恢復有助確保訓練的質素。運動員需編好訓練與進食時間表。香港的精英賽艇運動員通常每節訓練後進食一份正餐，正餐必需包含豐富的碳水化合物、適量的蛋白質及低脂肪食物才符合恢復及控制體重的需求。

常見的控制體重問題

許多需要減體重的賽艇運動員會有以下的憂慮:

1. 擔心減體重會減力量
2. 擔心減體重會減肌肉
3. 寧可在短時間內減大量體重
4. 擔心減重時會時常感到肚餓
5. 食物的引誘太大



其實只要減重的速度適中(大概每星期減0.5-1公斤)，賽艇運動員都不會遇到上述問題。如果賽艇運動員在比賽前過節節食以達到體重目標，他們將會出現力量下降及減去肌肉的情況。賽艇運動員必須在日常飲食中包含高碳水化合物、適量的蛋白質及低脂肪的食物。為保存瘦組織的質量，賽艇運動員需每天進食按體重計每公斤1.2-1.7克蛋白質。減體重賽艇運動員必需少食多餐來避免感到肚餓。他們亦應盡量減脂肪及保存瘦組織。一般而言，男賽艇運動員每天可攝取約3000-3500千卡的熱量，女賽艇運動員每天可攝取約2000-2500千卡的熱量。以下是賽艇運動員的一天食量示例:

	男賽艇運動員		女賽艇運動員	
	食物	分量	食物	分量
早餐	麵包	2塊(細)	麵包	2塊(細)
	果醬	2茶匙	果醬	2茶匙
	五穀麥片	30克	五穀麥片	30克
午餐	脫脂奶	2杯	脫脂奶	2杯
	白飯	2碗	白飯	2碗
	芥蘭	1碗	菜心	1碗
	蒸魚	4安士	蒸魚	2安士
訓練後	豆漿	1杯	橙汁	1杯
	香蕉	1隻	蘋果	1個
	麵包	2塊(細)	麵包	1塊(細)
晚餐	果醬	2茶匙	果醬	1茶匙
	橙	1個	運動飲品	1杯
	運動飲品	2杯		
	白飯	2碗	白飯	1碗
宵夜	菜心	100克	西蘭花	100克
	牛肉	4安士	牛肉	2安士
	橙	1個	橙	1個
	香蕉	1隻	乳酪(低脂)	1杯(150克)
	克力架餅乾	3塊	克力架餅乾	3塊

	Male Rowers		Female Rowers	
	Foods	Portion size	Foods	Portion size
Energy	3074 kcal		2108 kcal	
Carbohydrate	458g (60%)		333g (63%)	
Protein	117g (15%)		77g (15%)	
Fat	86g (25%)		52g (22%)	

Those who need to control weight, will need adjustments to the above according to individual characteristics, like body size, age, training intensity and duration etc.

Pre-race Eating

Rowers should meet the target body weight as early as possible before competition. Rowers should not be still fighting to lose weight before competition. Once the rower passes the weigh-in, he/she should immediately replenish nutrients for the competition.

After weigh-in, rowers should consume:

- Carbohydrate/electrolyte drinks
 - Easily digested and familiar foods.
 - Avoid consuming unclear and unfamiliar foods on the race day
 - Foods should be eaten within first hour after weigh-in
- The following foods or drinks are suitable for rowers to consume after weigh-in:
- 1 – 2 L of sport drink and other foods (provide 2g of carbohydrate per kg body weight)
 - Female rowers: 57kg x 2g/kgBW = 114g of carbohydrate (456kcal)
 - Energy replacement drinks
 - Pecari Sweat 1L → 60g of carbohydrate
 - 2 scoops Polycal → 10g of carbohydrate
 - 1 Powerbar → 45g of carbohydrate
 - Male rowers: 70kg x 2g/kgBW = 140g of carbohydrate (540kcal)
 - Energy replacement drinks
 - Pecari Sweat 1L → 60g of carbohydrate
 - 7 scoops Polycal → 35g of carbohydrate
 - 1 Powerbar → 45g of carbohydrate



Fluid Needs

Rowers need to train 2 – 3 sessions daily, therefore sweat losses can be high. Rowers should pay attention to fluid loss during exercise. Each kilogram of weight lost is equivalent to 1L of fluid. To fully rehydrate, rowers should consume 150% of fluid loss over the next few hours in order to reach fluid balance. For example, if a rower lost 1kg after training session, the rower should consume 1.5L of fluid over the next two hours so that fluid balance is reached in preparation for the next training session.

Tips for Hydration

- Bring sufficient fluid to training. Water bottles can be kept on the boat or the dock for top-ups.
- Sport drinks are recommended during exercise especially in hot weather.
- Being at a fluid balance state during training and competition is important because it can maintain endurance and prevent muscle cramping. Therefore, do not dehydrate to make weight for competition. Dehydration also affects the quality of training.
- Please refer to Sport Nutrition Education Series IV "Water – The Fountain of Life" for details about hydration.



The above information is provided by the Sport Nutrition Unit of the Athlete & Scientific Services Division. All information is for reference only.

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	男賽艇運動員		女賽艇運動員	
	食物	分量	食物	分量
熱量	3074千卡		2108千卡	
碳水化合物	458克 (60%)		333克 (63%)	
蛋白質	117克 (15%)		77克 (15%)	
脂肪	86克 (25%)		52克 (22%)	

要減體重的賽艇運動員可根據他們的個人特點(如: 身型、年齡、訓練強度及時間)在餐單上作適當的調整。

賽前的飲食

賽艇運動員應在賽前盡早達到體重要求，不要在比賽前一天仍在減重階段。當賽艇運動員通過體重測試後必須盡快補充營養來應付比賽。

通過體重測試後，賽艇運動員應進食:

- 碳水化合物/電解質飲品
- 進食易消化及習慣食用的食物
- 避免在比賽日進食不衛生或從未嚼過的食物
- 應在通過體重測試後1小時內完成進食

以下食物或飲品適合賽艇運動員通過體重測試後進食:

- 1-2公升運動飲品及其它食物 (每公斤體重能提供2克碳水化合物)
- 女賽艇運動員: 57公斤 x 2克/公斤 = 114克碳水化合物 (456千卡)
 - 能量補充飲品
 - 寶礦力水特1L → 60克碳水化合物
 - 2穀補能素(Polycal) → 10克碳水化合物
 - 1條Powerbar → 45克碳水化合物

- 男賽艇運動員: 70公斤 x 2克/公斤 = 140克碳水化合物 (560千卡)
 - 能量補充飲品
 - 寶礦力水特1L → 60克碳水化合物
 - 7穀補能素(Polycal) → 35克碳水化合物
 - 1條Powerbar → 45克 碳水化合物

水份的需要

賽艇運動員需每日進行2-3節訓練，因此汗液的流失也是非常之高。賽艇運動員應注意在運動前後身體所流失的水份。體重每減輕1公斤便需要補充最少1公升的水。運動後要達至水份平衡，賽艇運動員應在運動後數小時內補充150%的水份流失量。例如：一名賽艇運動員在訓練後輕了1公斤便需在兩小時慢慢地補充1.5公升水份。這樣，賽艇運動員才可達至水份平衡來迎接下一節訓練。

補充水份贴士:

- 在運動期間，帶備足夠的水，可預設水壺/樽在艇上或岸上，以便補充。
- 在運動期間，特別在炎熱天氣下，建議飲用運動飲品。
- 訓練及比賽時身體處於水份平衡是十分重要，不但可保持耐力亦可預防抽筋，所以在比賽前不要以脫水方式來達至目標體重。訓練期間脫水亦會影響訓練的質素。
- 有關補充水份的其他資料，請參看運動營養教育系列IV "生命之泉—水"。



運動營養教育系列手冊 SPORT NUTRITION EDUCATION SERIES XII

賽艇 ROWING



以上資料由運動員及科研事務科轄下的運動營養組提供，只供參考。

如有查詢，請致電26816277
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