

科研支援 Scientific Support

體院採用生物、心理、社會學三者結合的跨學科模式來制訂支援策略，提供以科學為本、運動員為中心的精英培訓支援服務。精英訓練科技科設有六個中心，包括體能科學訓練中心、運動生物力學及科技中心、運動營養中心、運動心理中心、運動醫學中心及體育資訊中心。各中心的團隊緊密合作，識別不同的訓練問題，然後與教練研究以數據為本的解決方案，並透過持續監控、討論和以最新研究數據作基準分析，定期修訂各項科研支援服務的程序。精英訓練科技科每年亦為運動員、教練、體育總會、本港及海外專上學院及體育機構，以及合作夥伴舉辦不同主題的研討會、講座及工作坊，並製作刊物作教育用途，藉此促進體院與其他精英體育專才互相交流運動科學及醫學應用的經驗。

體能科學訓練中心

• 體能科學訓練服務

體能科學訓練中心與運動醫學中心及其他中心緊密合作，制訂和執行以科學為基礎的體適能訓練計劃，透過改善運動員的心血管系統、爆發力、肌肉力量、速度、靈敏性、耐力及機動能力，充份發揮他們的潛能。中心利用科學測試（包括實驗室及臨場）來量化和監控訓練，確保教練能更準確地判斷有效的負荷量度及強度周期訓練計劃，從而調整訓練計劃，達至最佳預期效果。



體院以科學為基礎的體適能訓練計劃協助運動員發揮潛能。
Science-based strength and conditioning programmes are designed to optimise athletes' performance.

In order to provide science-based, athlete-centred support for elite training, the HKSI uses the multi-disciplinary biopsychosocial model to formulate its support strategy. The six centres in the Elite Training Science & Technology Division comprise the Scientific Conditioning Centre, Sport Biomechanics & Technology Centre, Sport Nutrition & Monitoring Centre, Sport Psychology & Monitoring Centre, Sports Medicine Centre and Sports Information Centre. They work as a team to identify the various training problems and concerns, and develop evidence-based solutions with the coaches. The support procedures are regularly updated through continuous monitoring, discussion and benchmarking against the latest research data. Each year, the Division organises various seminars, lectures and workshops for athletes and coaches, NSAs, local and overseas tertiary and sports institutes, and collaborative partners; and produces a number of publications to educate and promote exchange between the HKSI and other elite sport professionals on applied sports science and medicine.

Scientific Conditioning Centre

• Scientific Conditioning Services

The Scientific Conditioning Centre works closely with the Sports Medicine Centre and other centres to develop and implement science-based strength and conditioning programmes designed to optimise athletes' performance by improving their cardiovascular system, power, strength, speed, agility, endurance and mobility, thus enabling them to perform to their fullest potential. This is done through the use of scientific testing (both laboratory-based and field-based) to quantify and monitor training. This ensures a more precise determination of



體能科學訓練中心為運動員進行各項科學測試。
The Scientific Conditioning Centre conducts various scientific tests for athletes.



位於火炭的體能訓練中心總面積逾1萬1,000平方呎，劃分為五大區域，分別設置可鍛練力量和爆發力的器械、還有氣壓式、機械式、自由力量訓練設備和心肺能力的器材。年度內，中心的平均每月使用次數為2,894人次。

另外，美國國家體能協會私人教練員和註冊體適能專家證書課程考試於二零一二年十一月十日假體院舉行。考試由香港大學與香港運動醫學及科學學會合辦，為體適能教練提供考取國際認可證書的機會。

• 運動選材服務

體院與精英體育項目的體育總會一直緊密合作，協助他們透過運動選材計劃發掘具潛質的青少年，計劃分「優材甄選」與「優材篩選」兩部份。

優材篩選計劃的對象是正在參加體育總會推廣或發展計劃的青少年運動員，為他們進行一系列的科學測試及專項測試，以便決定是否適合晉升至更高水平的體育總會發展計劃及/或體院的精英培訓計劃。

年度內，共有434名來自單車、劍擊、空手道、滑浪風帆及武術的潛質及青少年運動員參加優材發展計劃，當中39名運動員獲挑選接受更高水平的訓練。

為進一步提升運動選材計劃，體院著力與世界各地的體育同業在有關領域加強合作。在二零一三年三月，兩名日本著名運動選材專家蒞臨體院出席研討會，分享日本在選材計劃方面的發展，以及其教育體制的配合。詳情請參閱第61頁。



effective periodisation programmes on training load and intensity, which enables coaches to adapt training programmes to maximise their desired outcomes.

The Fitness Training Centre in Fo Tan has a total floor area of over 11,000 square feet, arranged in five major zones: strength and power, air power, machine circuit, free weights and cardio. On average, the Fitness Training Centre was used 2,894 times per month throughout the year.

The National Strength & Conditioning Association (NSCA) Certified Personal Trainer and Certified Strength and Conditioning Specialist examinations were held at the HKSI on 10 November 2012. Jointly organised by the University of Hong Kong and the Hong Kong Association of Sports Medicine and Sports Science, this event provided physical fitness trainers with the opportunity to obtain internationally-recognised certificates in their profession.

• Talent Identification Service

The HKSI works in partnership with Elite Sport NSAs to assist them in the identification of talented youngsters through the Talent Identification Programme, which includes “Talent Search” and “Talent Screen” programmes which identify and refer athletes with potential to the respective NSAs.

The Talent Screen programme targets junior athletes who are currently in NSA promotion or development programmes, putting them through a series of scientific and sport-specific tests for consideration of promotion to higher-level training under the NSA development programmes, and/or the HKSI elite training programmes, as appropriate.

During the year, Talent Identification Programmes were held for 434 potential and junior athletes in cycling, fencing, karatedo, windsurfing and wushu, of which 39 were selected for further training.

To further enhance the Talent Identification Programme, the HKSI has strengthened its collaboration with its international counterparts in this area. In March 2013, two renowned speakers from Japan delivered a symposium on the development of the Talent Identification Programme in Japan, with an emphasis on its education regime. For details, please refer to page 61.

體院透過運動選材計劃協助體育總會發掘具潛質的青少年運動員。
The HKSI assists NSAs in identifying talented young athletes through the Talent Identification Programme.

運動生物力學及科技中心

運動生物力學及科技中心負責測量和分析運動技術表現，向教練和運動員提供技術改善建議，並就建立訓練輔助反饋系統提供諮詢服務和建議，以提升運動員掌握和發展技術的進度。

年度內，中心於海外訓練和賽事期間，為教練及運動員提供合共210天的臨場支援服務，以備戰大型運動會及國際比賽。

另外，運動生物力學及科技中心與其他中心緊密合作，透過臨場錄像分析，找出個別運動項目所要求的生理特質，為體適能教練提供具體數據，用以設計體能訓練計劃。年度內中心職員亦進行了兩個研究項目，以及提供實習機會，訓練和培育本港運動科研人才。

運動營養中心

運動營養中心負責與運動生化及營養有關的事宜，為運動員提供訓練監控，以及營養評估、諮詢和教育服務。運動營養師與飲食組緊密合作，為運動員設計餐單和提供營養分析。此外，該團隊亦有參與研究，例如運動員鐵缺乏和貧血問題的盛行率，以及穿著壓力衣對運動恢復的效用。年度內，中心為運動員提供了1,927次營養諮詢及31天臨場支援。

Sport Biomechanics & Technology Centre

The Sport Biomechanics & Technology Centre is responsible for providing measurement and analysis of sporting skills. Feedback is then given to coaches and athletes on technique improvement. The Centre also provides consultation to coaches and athletes on setting up video feedback systems in training venues to accelerate the acquisition and development of skills.

In this fiscal year, the Centre provided 210 days of overseas on-field support services in preparation for Major Games and international competitions.

The Sport Biomechanics & Technology Centre works closely with the other centres to identify the physiological requirements of individual sports by means of on-field video analysis. The results are shared with strength and conditioning coaches when preparing fitness training plans. Two research projects were conducted by Centre staff throughout the year. The Centre also provided internships to train and develop local sports science experts.

Sport Nutrition & Monitoring Centre

The Sport Nutrition & Monitoring Centre is responsible for matters related to sports biochemistry and nutrition, providing training monitoring, nutritional assessment, consultation and education for athletes. In addition, the dietitian works closely with the Catering Section and devises menus with nutrient analysis for the athletes. This team is also involved in research, such as the prevalence of iron depletion and anemia in athletes, and the use of compression garments in recovery. During this fiscal year, the Centre provided 1,927 nutrition consultations for athletes and 31 days of on-field support.



運動生物力學及科技中心負責測量和分析運動員的運動技術表現。
The Sport Biomechanics & Technology Centre is responsible for measuring and analysing athletes' sporting skills.



運動心理中心

運動心理中心在以生物心理社會模式為基礎的跨學科團隊中扮演重要角色。中心從心理學角度協助教練和運動員提升訓練和比賽表現，向小組及個人提供的服務包括心理技巧訓練和評估、個人輔導、心理教育、臨場支援和應用研究等。臨場服務是中心的重要工作之一，以為運動員提供適時和直接的支援。年度內，中心提供了258天的海外臨場服務，包括在倫敦奧運會期間的支援。

運動醫學中心

運動醫學中心為運動員提供醫療支援，包括體格檢查、西醫門診、骨科門診、物理治療、中國手法治療、康復訓練、運動療法及運動按摩服務。

中心並會定期向運動員提供肌肉骨骼檢定、運動姿勢及活動障礙評估，以及舉辦柔韌性、肩部及腰背穩定運動訓練班。年度內的主要工作包括：

- 於海外賽事期間，為教練及運動員提供合共1,251天的臨場支援服務，以及於本地集訓和比賽提供41天的臨場支援服務，以備戰大型運動會及國際比賽。
- 為本地運動員、教練及體育總會舉辦了11次研討會。



Sport Psychology & Monitoring Centre

As part of the multi-disciplinary team employing the biopsychosocial model, the Sport Psychology & Monitoring Centre is responsible for assisting coaches and athletes in both training and competition from a psychological perspective. Services include psychological skills training, assessment, personal counselling, psycho-education, on-field support and applied research. Both group and individual services are provided. In order to deliver timely and direct support, on-field service is an important part of the Centre's work. During this fiscal year, the Centre provided 258 days of on-field services overseas, including support during the London Olympics.

Sports Medicine Centre

The Sports Medicine Centre provides athletes with medical support services, including physical examinations, general clinic services, orthopaedic consultations, physiotherapy, Chinese manual therapy, rehabilitative training, therapeutic exercise, and sports massage.

The Centre also provides athletes with regular musculo-skeletal evaluations, postural and movement impairment assessment for sports activities, and training sessions for enhanced flexibility, and shoulder and core stability. Major tasks in this fiscal year included the following:

- Providing 1,251 days of on-site support services to coaches and athletes for overseas sporting events, and 41 days for local training sessions and competitions, in preparation for participation in Major Games and international competitions.
- Organising 11 seminars for local athletes, coaches and NSAs.



運動醫學中心為運動員提供多元化的醫療支援服務和康復訓練。
The Sports Medicine Centre provides athletes with a wide range of medical support services and rehabilitative training.

體育資訊中心

體育資訊中心收集、整理和分析本地及海外最新的體育趨勢與發展，在策劃與推行精英培訓計劃的過程中提供支援。由中心管理的圖書館為本地運動科學及運動醫學專家、教練、運動員、體育總會、學術機構及體育專業人士提供最新的體育資訊服務，配合訓練和研究需要。

圖書館收藏了超過1萬4,600冊中英文書籍、2,550項視聽資料、500份期刊及1,240份由SPORTDiscus收錄的電子期刊，內容涵蓋運動科學及運動醫學、教練學、體育及康樂。此外，圖書館又提供網上資源，包括網上目錄、研究報告、研究摘要及其他互聯網資源。為幫助使用者充份利用這些資源，圖書館亦提供諮詢服務、館際互借服務、視聽器材設備及閱覽區。現時，圖書館提供兩個電子數據資料庫，分別是EBSCOhost的SPORTDiscus及萬方數據資料庫。SPORTDiscus全文數據庫備有索引，可查閱超過530份編入索引並可追溯至一九八五年的期刊，內容涵蓋各種有關運動的題材。萬方數據資料庫內設有兩個數據庫可供檢索，分別是「中國學位論文全文數據庫」及「中國數字化期刊」，提供摘要及PDF格式的中文全文。

體育資訊中心亦為精英訓練科技科負責的國際關係及特別項目提供重點支援，如統籌和安排各項探訪及交流活動、籌備體院每年一度的國際科學研討會（詳情請參閱第59頁），以及為體院的科研及出版工作提供行政及技術支援等。

Sports Information Centre

The Sports Information Centre collects, collates and analyses current trends and developments, both local and overseas, to support planning and implementation of elite training programmes and initiatives; and manages a library to support the training and research needs of sports science and sports medicine professionals, coaches, athletes, NSAs, academic institutions and physical education specialists in Hong Kong.

The library houses over 14,600 Chinese and English books, 2,550 audio-visual items, 500 printed journals and 1,240 e-journals from SPORTDiscus, covering sports science and sports medicine, coaching, physical education and recreation. A host of online resources are also available, including online catalogues, research reports, research highlights and other Internet resources. To help users fully benefit from this breadth of information, the library provides reference services, Interlibrary Loan Services, audio-visual viewing facilities and reading areas. The library also provides two electronic databases, namely EBSCOhost's SPORTDiscus, with Full Text and Wanfang Data. EBSCOhost's SPORTDiscus with Full Text provides indexed, full-text access to more than 530 indexed journals dating back to 1985, covering all aspects of sports. Wanfang Data comprises two databases, entitled "China Academic Dissertations Full-Text Database" and "China Digitised Journals", both of which provide both abstracts and full-text Chinese articles in PDF format.

The Sports Information Centre also plays a key role in the coordination and management of a broad range of international relations initiatives and special projects within the Elite Training Science & Technology Division, such as visits and exchanges, organising the HKSI's annual International Scientific Symposium (see page 59 for details), and providing administrative and technical support for the HKSI's scientific research and publications.



體育資訊中心是本港唯一的體育專項圖書館。
The Sports Information Centre manages the only specialised sports library in Hong Kong.