

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、運動營養監控中心、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。

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3,108人次。

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. There are six centres in the Elite Training Science & Technology Division: the Scientific Conditioning Centre, Sport Biomechanics & Technology Centre, Sport Nutrition Monitoring Centre, Sport Psychology 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. It also produces a number of publications to educate and promote exchange between the HKSI and other elite sport professionals in 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 to enable 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 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 3,108 times per month throughout the year.



體能訓練中心是體適能教練協助運動員提升潛力的重要基地。

The Fitness Training Centre is an important base for strength and conditioning coaches to help athletes maximise their physical performance potential.

年度內有多項專業證書課程及考試於體院舉行，為本地體適能訓練員及專項運動教練提供考取國際認可證書的機會。

美國國家體能協會體適能專家認證證書考試分別於二零一四年六月二十八日及十二月六日在體院舉行，共有61名考生應考，並由美國國家體能協會（上海）派員監考。考試由香港大學與香港運動醫學及科學學會合辦。

另外，由體院主辦、美國舉重協會認可的美國舉重協會第一級及第二級教練證書課程及考試分別於二零一四年十一月一至二日及十月二十五至二十六日舉行。課程由來自美國舉重協會國際教練Patrick Cullen-Carroll先生執教，共有26名學員參加。

運動選材服務

體能科學訓練中心不斷優化選材工作，將重點從優材的甄選伸延至優材的發展。於過去一年，體院除了進行常規的運動選材計劃外，亦加強了與體育總會和海外體育機構的合作。

年度內，體院為來自羽毛球、空手道、賽艇、欖球、帆船、滑浪風帆及武術的628名具潛質青少年運動員舉辦了運動選材計劃，當中11名運動員獲挑選在體院接受更高水平的訓練。體院亦協助體育總會進行優材評核工作，合辦為期三個月訓練計劃。

於二零一四年八月十日至二十三日，體院與日本體育振興中心合辦為期14天的聯合運動優材發展營，參加者包括八位來自日本及13位香港的劍擊運動員。活動不單讓具潛質運動員為過渡至青少年精英運動員作出更佳的準備，還提供平台讓兩地運動員參與跨文化和運動教育活動。

A number of professional certification courses and examinations were held at the HKSI during the year to help local physical fitness trainers and sports performance coaches obtain internationally recognised certificates in their profession.

The National Strength & Conditional Association (NSCA) Certified Strength and Conditioning Specialist examinations were held at the HKSI on 28 June and 6 December 2014. A total of 61 candidates sat for the examinations, which were proctored by officials from the NSCA-Shanghai. The events were jointly organised by the University of Hong Kong and the Hong Kong Association of Sports Medicine and Sport Science.

The USA Weightlifting Level 1 and Level 2 Sports Performance Coach Certification courses and examinations, organised by the HKSI and accredited by USA Weightlifting, were held at the HKSI respectively on 1 and 2 November 2014, and on 25 and 26 October 2014. A total of 26 candidates participated. Mr Patrick Cullen-Carroll, an international coach from USA Weightlifting, was invited to give the course.

Talent Identification Service

The Scientific Conditioning Centre aims to improve talent identification by focusing on both talent development and talent identification. During the past year, in addition to the regular Talent Identification Programmes, the HKSI strengthened collaboration with NSAs and overseas sports institutes.

This year, Talent Identification Programmes were organised for 628 potential young athletes in badminton, karatedo, rowing, rugby, sailing, windsurfing and wushu, of whom 11 were selected for further training at the HKSI. The HKSI also supported NSAs in talent verification by working in partnership with them to conduct three-month training programmes.

The HKSI jointly organised a 14-day Joint Talent Development Camp with the Japan Sports Council from 10 to 23 August 2014. Eight athletes from Japan and 13 from the Hong Kong fencing team participated. The camp served as preparation for their transition from potential to junior elite athletes, and included various cross-cultural and sports education activities.



體能科學訓練中心利用科學測試來量化和監控運動員的訓練。
Scientific testing is used to quantify and monitor athletes' training in the Scientific Conditioning Centre.



體院與體育總會合作，透過運動選材計劃甄選具潛質的年青運動員。
The HKSI works in partnership with the National Sports Associations to verify potential talent through Talent Identification Programmes.

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，並跟進和評估其他國家高水平運動員的技術和戰略，為體院運動員的訓練及比賽制訂基準，從而向教練和運動員提供技術改善建議。中心亦會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，中心分別提供了432天的海外訓練臨場支援服務及198工作天的本地訓練臨場支援服務，並完成了五項有關訓練回饋系統的計劃，以備戰大型運動會及其他國際比賽。

此外，運動生物力學及科技中心亦與其他中心緊密合作，透過臨場錄像分析，找出個別項目運動員所要求的生理特質，為體適能教練提供具體數據，用以設計體能訓練計劃。年度內中心職員亦提供實習機會，訓練和培育本港運動科研人才。

Sport Biomechanics & Technology Centre

The Sport Biomechanics & Technology Centre is responsible for providing measurement and analysis of sporting skills, as well as tracking and evaluating the technical and tactical patterns of other national high-performance athletes in order to set benchmarks for training and competitions. 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 432 days of overseas and 198 working days of local on-field support services during training and completed five other training feedback system projects in preparation for Major Games and other international competitions.

The Sport Biomechanics & Technology Centre works closely with the other centres to identify the physiological requirements of athletes in individual sports by means of on-field video analysis. The results are shared with strength and conditioning coaches for the preparation of fitness training plans. The Centre also provided internships to train and develop local sports science experts during the year.



運動生物力學及科技中心分析運動員的技術，並提供數據反饋，用以提升技術水平。

The Sport Biomechanics & Technology Centre analyses athletes' sporting skills and provides feedback for improving technique.



運動營養監控中心

運動營養監控中心由運動營養和生化專業人員組成，為運動員提供訓練監控、營養評估、諮詢、恢復策略及教育服務，並與飲食組緊密合作，為運動員設計餐單和提供營養分析。此外，團隊亦參與不同的研究，例如香港運動員的維他命D狀況，以及香港運動員哮喘及過敏症的患病率等。年度內，中心為運動員提供了4,396次營養諮詢、1萬4,295次生化測試及103天臨場支援。

運動心理中心

在整個以生物心理社會模式為基礎的跨學科團隊中，運動心理中心擔當重要的角色。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。臨場服務亦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245天海外臨場服務及2,869節諮詢。

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、中醫、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1,255天的臨場支援服務，以及於本地集訓和比賽提供55天的臨場支援服務，以備戰大型運動會及國際比賽。



運動營養監控中心監察運動員的生理狀況和對訓練的反應，協助教練設計有效的訓練計劃。

The Sport Nutrition Monitoring Centre monitors athletes' physical condition and response to training to help coaches design more effective training programmes.

Sport Nutrition Monitoring Centre

The Sport Nutrition Monitoring Centre includes professionals in the disciplines of nutrition and biochemistry. It is responsible for training, monitoring, nutritional assessment, consultation, recovery strategies and education for athletes. In addition, the team collaborates closely with the Catering Section to devise menus with nutrient analysis for the athletes. The team is also involved in research in areas such as vitamin D status of Hong Kong athletes, and prevalence of asthma and allergy in Hong Kong athletes. During this fiscal year, the Centre provided 4,396 nutrition consultations, 14,295 biochemical tests for athletes, and 103 days of on-field support.

Sport Psychology Centre

As part of the multi-disciplinary team employing the biopsychosocial model, the Sport Psychology 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. The Centre provides both group and individual services. In order to deliver timely and direct support, on-field services are an important part of the Centre's work. During this fiscal year, the Centre provided 245 days of on-field support overseas and 2,869 consultation sessions.

Sports Medicine Centre

The Sports Medicine Centre provides athletes with medical support services, including physical examinations, general clinic services, orthopaedic consultations, physiotherapy, Chinese medicine, 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 this fiscal year included providing 1,255 days of on-field support services for coaches and athletes for overseas sporting events, and 55 days for local training sessions and competitions in preparation for participation in Major Games and international competitions.



運動醫學中心為運動員提供全面的醫療支援服務。

The Sports Medicine Centre provides athletes with a comprehensive range of medical support services.

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，在策劃和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1萬5,000冊中英文書籍、2,580項視聽資料、508份期刊及1,315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660份編入索引並可追溯至一九七零年的期刊，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運動科學研討會（詳情請參閱第58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 the planning and implementation of elite training programmes and initiatives. It 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 15,000 Chinese and English books, 2,580 audio-visual items, 508 printed journals and 1,315 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 provides two electronic databases: EBSCOhost's SPORTDiscus with Full Text, and Wanfang Data. SPORTDiscus provides indexed, full-text access to more than 660 journals dating back to 1970, covering all aspects of sports. Wanfang Data comprises two databases, the "China Academic Dissertations Full-Text Database" and "China Digitised Journals", both of which provide 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 Sports Science Symposium (see page 58 for details), and providing administrative and technical support for the HKSI's scientific research and publications.



體育資訊中心管理香港唯一的體育專項圖書館。

The Sports Information Centre manages the only library in Hong Kong specialising in sports.