

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、以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，以及透過持續監控、討論並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、本港與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，並編製刊物作教育用途，藉此促進體院與其他精英體育專才在運動科學及醫學應用經驗上的交流。

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1萬,000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4,067人次。



運動員於體能科學訓練中心的环境倉進行模擬高原訓練。
An athlete undergoes simulated altitude training in the Scientific Conditioning Centre's environmental chamber.

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 the 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 4,067 times per month throughout the year.



體能訓練中心劃分為不同區域，包括力量和爆發力、氣壓式、機械式、自由力量和心肺能力訓練區。
The Fitness Training Centre is divided into different training zones, including strength and power, air power, machine circuit, free weights and cardio.

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，體院為來自田徑、羽毛球、單車、空手道、賽艇、壁球、游泳、保齡球、滑浪風帆及武術的545名具潛質的青少年運動員舉辦了運動選材計劃，亦協助體育總會進行優材評核工作，合辦為期三個月的訓練計劃。

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330天的海外訓練臨場支援服務及318工作天的本地訓練臨場支援服務，並完成了四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。



體院協助不同體育項目舉辦運動選材計劃，發掘具潛質的青少年運動員。

Talent Identification Programmes were organised for various sports to identify talented athletes.

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 545 potential young athletes in athletics, badminton, cycling, karatedo, rowing, squash, swimming, tenpin bowling, windsurfing and wushu. The HKSI also supported NSAs in talent verification by working in partnership with them to conduct three-month training programmes.

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 330 days of overseas and 318 working days of local on-field support services during training, and completed four 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-site video analysis. The results are shared with scientific 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量度和分析運動員的技術，協助教練訂立訓練和比賽時的基準。

The Sport Biomechanics & Technology Centre provides measurement and analysis of athletes' sporting skills to help coaches set benchmarks for training and competitions.

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。年度內，中心為運動員提供了5,532次營養諮詢、1萬9,039次生化測試及35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，運動心理中心擔當著重要的角色。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。臨場支援服務亦是中心的重要工作之一，為運動員提供適時和直接的支援。年度內，中心提供了284天海外臨場支援服務及3,411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1,196天的臨場支援服務，以及於本地集訓和比賽提供31天的臨場支援服務，以備戰大型運動會及國際比賽。



運動營養專家會為個別運動員提供營養諮詢。
Athletes receive individual dietary consultation with a sport nutritionist.

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. During this fiscal year, the Centre provided 5,532 nutrition consultations, 19,039 biochemical tests for athletes, and 35 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 284 days of on-field support overseas and 3,411 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 1,196 days of on-field support services for coaches and athletes for overseas sporting events, and 31 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。
The Sports Medicine Centre offers a comprehensive range of medical support services.

體育資訊中心

體育資訊中心提供體育資訊服務，支援精英培訓計劃的策劃、推行及研究需要，服務對象包括運動科學及運動醫學專家、教練、運動員、體育總會、學術機構、體育專業人士及社區人士。中心藏有超過1萬6,000冊中英文書籍、2,300項影音資料及1,800份印刷或電子期刊。此外，中心又提SPORTDiscus數據資料庫供讀者瀏覽。SPORTDiscus涵蓋運動及運動醫學之文獻，亦包含知名期刊內的全文篇章。

體育資訊中心亦協助統籌和管理精英訓練科技科轄下的國際關係及特別項目，如安排各項參觀及交流活動；籌備「2016巴西里約奧運會備戰策略國際論壇，由劉鳴煒先生贊助」（詳情請參閱第55頁）及每年一度的香港體育學院國際運動科學研討會，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 (SIC) provides sports information services to support the planning and implementation of elite training programmes and initiatives, as well as research needs. It serves sports science and sports medicine professionals, coaches, athletes, NSAs, academic institutions, physical education specialists, and communities. The SIC houses over 16,000 monographs, 2,300 audio-visual materials and 1,800 journals in print or electronic format, and provides access to the SPORTDiscus database, which is a premier source of literature for sports and sports medicine journals, and contains full-text content from well-known and respected sources.

The SIC 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 arranging visits and exchanges, organising the International Exchange Forum on Preparing Athletes for the 2016 Rio Olympics, sponsored by Mr Ming Wai Lau (see page 55) and the annual HKSI International Sports Science Symposium, and providing administrative and technical support for the HKSI's scientific research and publications.



體育資訊中心提供體育資訊服務，支援精英培訓計劃的策劃、推行及研究需要。

The Sports Information Centre provides sports information services to support the planning and implementation of elite training programmes and initiatives, as well as research needs.

