For immediate release

Be a SmartFit Golfer
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Professional Physical Training is Essential for Better Performance and Injury Prevention
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A Joint Golf Research Study by HKSH, PolyU & HKGA

(20 August 2015 – Hong Kong) Regular exercise is good for health, but sometimes it can result in injuries due to improper warm-up exercise and insufficient muscle training, in golf, for instance. Golfers may easily suffer from chronic/repetitive injuries such as muscle strain and tendinopathy.

To better understand golf swing performance and its relationship to the physique of the golfer, a study on the Effects of Physical Factors on Handicap Index of Golfer was jointly conducted by **Hong Kong Sanatorium & Hospital (HKSH)**, **The Hong Kong Polytechnic University (PolyU)** and **The Hong Kong Golf Association (HKGA).** The study reveals that the joint mobility, muscle flexibility and strength are the crucial factors for stability, accuracy and swing performance in both young and mature golfers. Over 53% of mature golfers suffering from different degrees of discomfort may have wrong swing posture/dysfunctional movement patterns due to joint stiffness or soft tissue tightness.

Dr. CHOW Chi Ping, Alex, Director of Department of Physical Medicine and Rehabilitation of HKSH said, "Overuse injuries occur over a period of time, usually due to repetitive loading of the tissue, with symptoms presented gradually. Players may not realise the problems in the initial stage and usually delay seeking medical care. If they continue playing golf with repetitive injuries and loading of the tissues, their condition will become worse, and may affect their daily life in future."

Every golfer, whether he or she is a professional athlete or recreational player, performing high-speed swings in the same direction for over a hundred times during competition may easily overload the spine and its surrounding soft tissues. Especially for the golfers who lack strong muscles and flexible spine and go without appropriate warm-up exercises,

may easily hurt their low back, elbow, wrist, hand, shoulder and hip, leading to long-term problems.

The study was conducted from 2011 to 2015 and consisted of two projects: 14 elite young golfers aged 14 to 22 from The Hong Kong Golf Association were recruited in the first project; and 34 mature amateur golfers aged 41 to 66 who had been playing golf for 5 to 25 years were recruited in the second project. The research method of the study included measuring 1) the rotation range of the spine and hip joints, 2) the strength of the hip rotators and abductors, 3) the strength of the shoulder rotators, 4) the flexibility of hip flexor, and 5) the chop, lift and throwing performance, in order to examine how physical factors affect handicaps and golf performance.

Dr. Amy FU, Associate Professor of Department of Rehabilitation Sciences of The Hong Kong Polytechnic University stated, "The findings of the research indicate that lumbar and hip rotation range can best predict Handicap Index[1] in young golfers. After a personalised training programme, significant improvement was shown in the hip internal rotation range, as well as the hip flexor tightness, trunk strength and throwing distance. Throwing distance is shown by the research to be highly correlated with club head speed and lead to a better driving distance."

From the project on mature amateur golfers, 18 of 34 target subjects (around 53%) had various degrees of musculoskeletal-related pain, which were most commonly found in the low back (26% of all target subjects), while others were in the shoulders, knees and elbows. Those golfers suffering from low back discomfort had significantly tighter hip flexors than those players without low back pain. Our results also indicate that the Handicap Index of mature golfers is negatively correlated with the thoracic and hip rotation and left hip external rotators strength. The greater in these joint ranges or stronger in these muscles, the lower the Handicap Index and the better performance of the players.

As an example, one of the amateur golfers with low back pain has very limited rotation of the low back and stiff hip, especially on the right side before physiotherapy intervention. These physical limitations might cause the low back pain and affect his golf swing.

[1] Handicap Index is a number that represents the potential ability of a player on a standard course. If the player has a lower index, his or her performance is better.

Mr. Sunny CHAU, Team Leader of the Sports Physiotherapy Team and Physiotherapist of HKSH explained, "The highlights of the "SmartFit for Golfers" programme included the adoption of team approach emphasizing communication between the golfer, coach, physiotherapist and university expert, applying scientific data to developing customised programme for individual golfers. The programme can help golfers enhance their stability and accuracy of the hit, improve techniques and reduce the risk of injury. In addition to golf, the same approach is expected to apply to other sports, enabling professional and leisure players to enjoy sports with better performance."

Sport physiotherapy service in HKSH is comprised of four main areas: injury prevention, prehabilitation, rehabilitation and return to sports. As part of sport physiotherapy service in HKSH, "SmartFit for Golfers" is a comprehensive assessment and training programme for golf lovers to enhance their techniques and performance. With state-of-the-art equipment, experienced sports physiotherapists, systematic data analysis by university experts as well as professional golf coaches, the programme will provide participants with effective and professional advice on injury prevention, performance enhancement and pain management associated with golfing.

Mr. Ning LI, the Honorary Chairman of The Hong Kong Golf Association, is delighted for the association's participation in the programme. "Golf will be played at the 2016 Olympic Games while more young people will also play golf through school programmes. The SmartFit programme will help minimise the risk of injury while also improving the performance of golfers in international games."

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Additional Information:

1) **Coach Sharing: Mr. Brad SCHADEWITZ, National Coach of Hong Kong Golf Association**

Ms. CHAN Tsz-ching, Tiffany, Hong Kong local young amateur golfer, the champion of the World University Championship 2014 and currently a world amateur golfer ranking nineteenth (highest ranked tenth), recently defeated other professional golfers and won

the championship of a professional Taiwan LPGA competition in August 2015.

Her coach, **Mr. Brad SCHADEWITZ, National Coach of The Hong Kong Golf Association** revealed that Tiffany has unstable swing performance. In order to enhance her performance, Mr. SCHADEWITZ recommended Tiffany to join the study. With comprehensive physical assessment and quantitative motion analysis, it was found that Tiffany's unsteady performance was related to her insufficient external hip rotation angle and weak muscles. Therefore, it affected her swing performance.

After understanding Tiffany's physical condition and her weaknesses, sports physiotherapists worked closely with the coach and jointly customised a training programme to improve Tiffany's muscle strength and swing techniques.

Mr. SCHADEWITZ said, "After joining the training programme with team efforts, Tiffany can understand more about her weaknesses and problems. Her pains and injuries are completely resolved and her muscle strengths have improved, hence her swing is much more stable now, making her excel in her performance in most of the golf games."

2) Programme Participant Sharing - Dr. INGE Shing Kon, Kelvin

Dr. INGE Shing Kon, Kelvin, an amateur golf lover plays golf for 20 years in once/twice a week.

One year ago, Dr. INGE had low back pain while playing golf. The pain not only affected his golf performance and emotion, but also his work. The discomfort drove Dr. INGE to seek professional help from HKSH. After physical assessment, it was found that the rotation angle of his waist and hips (the muscles and joints) were inadequate and this had injured his lower back.

With the rehabilitation treatments, appropriate warm-up exercise and muscle training by sports physiotherapists, Dr. INGE has recovered from his injuries and he now can play golf with better swing performance.

Dr. INGE stated, "With benefit from sport physiotherapy treatment, I have improved golf performance by having better swing posture and stronger muscle, which prevents me from

being injured in the golf game."

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Photos:

1. Group photo of speakers and guests (From left) Mr Sunny CHAU, Physiotherapist of HKSH; Mr. Brad SCHADEWITZ, National Coach of HKGA; Dr. INGE Shing Kon, Kelvin, amateur golfer; Dr. CHOW Chi Ping, Alex, Director of Department of Physical Medicine and Rehabilitation of HKSH; Dr. Amy FU, Associate Professor of Department of Rehabilitation Sciences of PolyU; Mr. Ning LI, the Honorary Chairman of the HKGA and Ms Rainbow LAW, Department in-charge, Department of Physiotherapy of HKSH.

2. (From left) Mr Sunny CHAU, Physiotherapist of HKSH; Mr. Brad SCHADEWITZ, National Coach of HKGA and Dr. INGE Shing Kon, Kelvin, amateur golfer share their experience in the "SmartFit for Golfer" Programme.

3. (From right) Mr. Brad SCHADEWITZ performs a golf swing as Miss Sammy TSUI, Physiotherapist of HKSH looks on.

4. PRIMUS RS dynamometer is used to measure muscle strength of golfers.

5. Warm-up exercise for golfers:
(The number of times and duration of pauses for each exercise will differ, depending on the ability and health condition of individual golfer.)

1) <u>Trunk rotation: To enhance trunk rotation range</u>

Hold 5 seconds for each movement and repeat 10 times on each side.

2) Arm raise: To strengthen shoulder muscles

Hold 5 seconds for each movement and repeat 10 times.

3) Knee to chest stretch: To enhance hip internal rotation and lumbar rotation

Repeat 10 times on each side.

4) Hip turn control: To enhance hip external rotation and muscle strength

Repeat 10 times on each side.

5) Hip Flexor Stretch: To enhance the flexibility of hip flexor

Hold 5 seconds for each movement and repeat 10 times on each side.

Please click the link below for the video of warm-up exercise for golfers:

http://web.hksh.com/clinical_services/physio/en/multimedia.php