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「脈磁激法」助中風患者恢復自理能力

PMS Helps Stroke Patients Regain Upper Limb Mobility



「最」 令中風病人恐懼的不是死亡，而是因中風所導致的傷殘，甚至癱瘓。」

莫慶堯醫學講座教授、醫學院內科及藥物治療學系腦神經科主任黃家星教授指出：「然而，約一半至四分之三的中風案例會導致不同程度的傷殘，嚴重影響患者的自理能力。」

針對最常見的缺血性中風——因腦部供血不足、腦細胞死亡——所引起的殘疾，黃教授推出三合一「脈磁激」治療法，藉着增加腦部供血、刺激腦細胞活動，再配合物理治療，讓中風患者逐漸恢復上肢的活動能力。

體外反搏法

「脈磁激」治療的第一步是「體外反搏」。「反搏」就是將脈搏「逆轉」——脈搏是由心臟的收縮和舒張所形成，心臟舒張時會充血，收縮時，血液就會從心臟「泵」到腦部和四肢。

接受體外反搏時，患者的大小腿和臀部會繫上氣囊，在一個多小時內，每當心臟舒張，氣囊就會充氣，向下肢施壓。

「原理就像『擠牙膏』一樣，將血液從下肢『擠』回心臟，從而增加腦部供血。」

研究證明此療法可令中風患者的腦部血流量增加百分之九，若在中風後首三個星期內接受治療，療效會更為顯著。

爆發式電磁激

改善了腦部供血的問題後，病人會接受第二步「爆發式電磁激」(iTBS)，此療法乃針對中風患者腦細胞缺血、腦神經元活躍性下降，影響身體的活動能力而設。

醫生會將如乒乓球拍大小的磁刺激器（見頁三上圖），輕觸患者頭部。磁場穿過頭骨產生信號，強烈地刺激缺血但未完全壞死的腦細胞，讓腦神經元活躍起來，加強腦神經功能的修復。

現在通用的「爆發式」電磁激療法，強度比起傳統的更大，短短三分鐘即可完成。

臨床研究更證實此療法具抗抑鬱作用，黃教授補充：「若中風病人擁有積極正面的態度，對康復治療也有很大幫助。」

配合物理治療

過往普遍將上述兩種療法分開應用於中風患者身上，但黃

教授的團隊卻將兩者結合，再配合物理治療，鍛煉肌肉與關節的靈活性。

首名參加研究的謝先生，於2014年中風後右邊身體完全癱瘓，在發病三周內連續接受十天「脈磁激」治療後，右手不但能刷牙洗臉，更恢復了百分之九十的寫字能力。

「中風通常由大腦中動脈閉塞所致，對上肢的影響較大，加上負責手部活動的腦細胞位置較接近頭殼，接受電磁激治療時會較為方便容易。」

無創無輻射

「脈磁激」治療法現在仍處於臨床階段，將來會加入多國、多中心的隨機測試。團隊亦努力培育更多年輕醫生參與研究，最終目標是讓每四位接受「脈磁激」治療的病人中，至少有一人能恢復上肢活動能力並獨立生活。

黃教授指：「一般中風患者都可即時感覺到療效，加上這項治療無創、無輻射，病人都很樂意嘗試。」

對於這位去年剛獲「世界中風組織主席中風貢獻獎」的腦神經科專家來說，最重要的是讓中風患者不再被傷殘所困，並在嶄新的療法中找到康復的希望。

‘For many stroke survivors, their greatest fear is not death, but the physical impairments or even paralysis caused by the damage to the brain,’ remarked Prof. Lawrence Ka-sing Wong, Mok Hing Yiu Professor of Medicine and Head of Division of Neurology at CUHK.

‘However, around 50% to 75% of stroke patients suffer from various degrees of physical disability, which to a large extent hinder their abilities to lead an independent life.’

To tackle the problem of physical impairment caused by the most common type of stroke—the ischemic stroke caused by the loss of blood flow to certain parts of the brain, Professor Wong and his team devised what is known as ‘Pulse-Magnetic-Stimulation’ (PMS), a three-in-one treatment that combines External Counterpulsation which enhances blood flow augmentation to the brain, the iTBS which stimulates surviving brain cells, and physiotherapy to enhance upper limb motor recovery among stroke patients.

External Counterpulsation (ECP)

The first step of PMS is ‘external counterpulsation’. Pulses are formed by the relaxation and contraction of the heart. The heart is infused with blood as it relaxes. When it contracts, blood is pumped out of the heart towards the brain and the limbs.

During the ECP treatment, a set of air-puffs is attached to the lower part of a stroke patient’s body. Within an hour’s time, the puffs are timed to inflate during each relaxation period of the patient’s cardiac cycle, applying an external ‘counterpulse’ pressure to the patients’ lower extremities.

‘It is like when someone is squeezing a tube of toothpaste. When the puffs are inflated, blood from the patient’s lower extremities is “squeezed” up towards the heart, which in turn improves cerebral blood flow.’

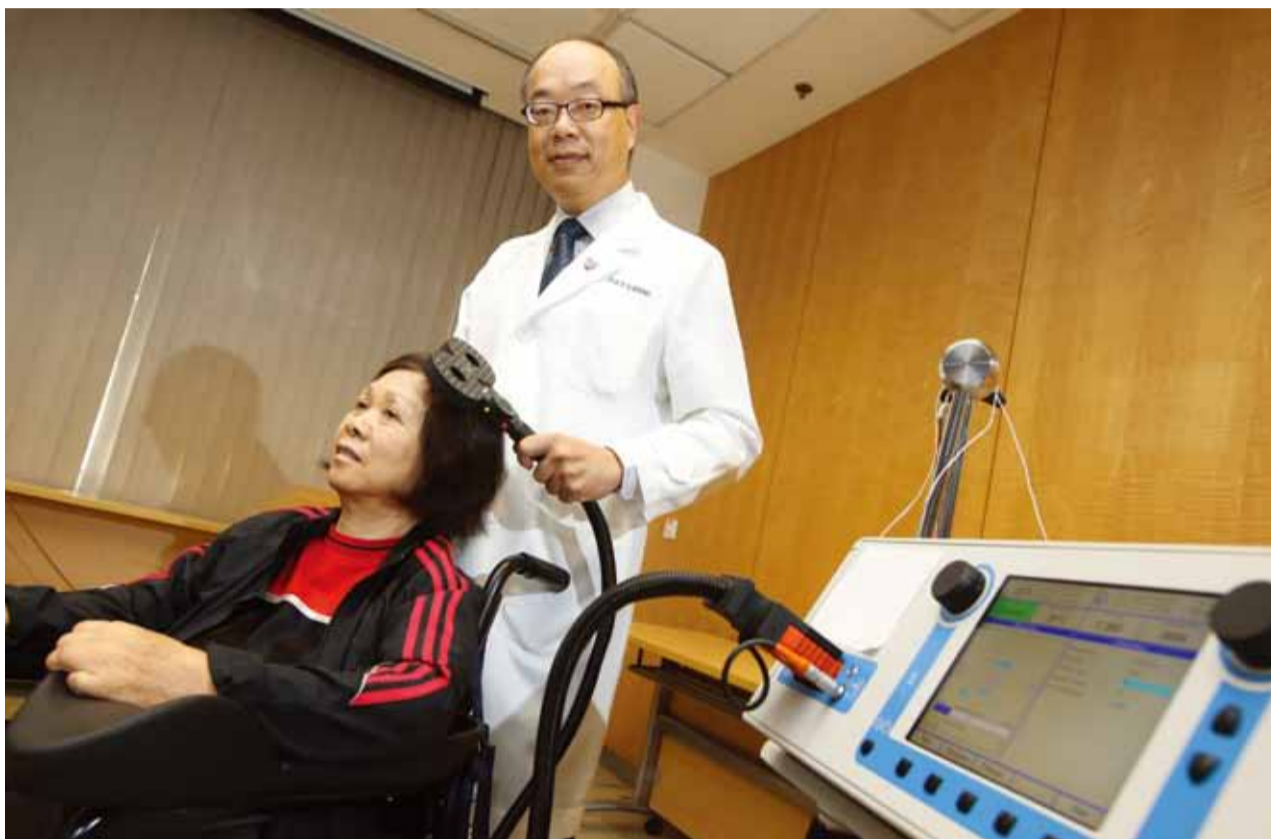
It has been proven that ECP can augment cerebral perfusion of stroke patients by 9%. The effect will be even more noticeable if the treatment is initiated within three weeks of the stroke.

Intermittent Theta Burst Magnetic Stimulation (iTBS)

In addition to enhancing cerebral blood supply, PMS also features the re-activation of surviving brain cells through iTBS.

During the treatment, a magnetic stimulator the size of a table-tennis racket is placed over the patient’s head (top picture). Electric currents generated by the stimulator will penetrate through the skull, producing signals which are strong enough to stimulate the surviving brain cells, activate the neurons, and restore some of the lost brain functions. It only takes three minutes to complete the iTBS.

It has also been proven to be an effective treatment for depression. ‘A positive attitude is definitely helpful for the rehabilitation process,’ Professor Wong added.



▲黃家星教授示範為中風患者施行「爆發式電磁激」
Prof. Lawrence Wong demonstrating iTBS treatment on a stroke patient

◀病人正接受「體外反搏」治療
A patient receiving external counterpulsation

Three-in-One Treatment

In the past, the above-mentioned treatments were applied separately to stroke patients. But Professor Wong’s team combined their uses in concert with physiotherapy, in order to enhance the flexibility of the patients’ muscles and joints.

Mr. Tse had a stroke in 2014 resulting in right-sided paresis. He was the first patient joining the PMS research and, after receiving a 10-day PMS treatment within three weeks of the stroke, Mr. Tse had regained mobility on his once-paralyzed right upper extremity. He now manages to use his right hand to wash his face and brush his teeth. Almost 90% of his writing ability have also been restored.

‘Most of the stroke cases are caused by the blockage of the middle cerebral artery (MCA), which affects the patients’ upper extremities more severely than their lower limbs. Moreover, the parts of the brain responsible for hand-movements are located closer to the surface of the skull, making it easier to be stimulated by iTBS.’

Non-invasive and Non-radioactive

The PMS treatment is currently undergoing clinical trials. More multi-national and multi-centred randomized studies will be performed in the future. The team has also been training young medical doctors to participate in the research. Their ultimate objective is to have at least one out of four stroke patients who receive the PMS treatment to restore upper limb mobility and be able to live independently.

‘Results of the treatment can be felt by stroke patients almost immediately. Moreover, the treatment is non-invasive and non-radioactive. Many patients are willing to come and try,’ said Professor Wong.

As the winner of the ‘WSO [World Stroke Organization] President’s Award for Services to Stroke’ in 2016, Professor Wong thought that the major goal of his research would be to relieve the sufferings of stroke patients, help them to regain as much motor ability as possible and to offer them hope during their journey of recovery. 📷

報告顯示香港體力活動不足

Physical Inactivity Pandemic in Hong Kong

體育運動科學系教授及系主任王香生(右二)領導的跨學科研究團隊於2016年10月發表了全港首個「兒童及青少年體力活動報告卡」。這是加拿大首創的國際項目，今屆共有美國、日本、芬蘭、肯尼亞等三十八個國家和地區參與，各分析當地兒童及青少年十年內的活動數據後，按照報告卡所訂的九項國際指標評級。

不少文獻均指出高度的靜態生活模式會增加患上心臟代謝疾病的風險，現存的公共衛生指引亦建議兒童及青少年每天最少有一小時中等強度至劇烈體力活動。香港在「整體體力活動水平」評分為D級，即少於半數兒童及青少年達到這項國際標準。雖然評分與全球水平相若，但王教授認為情況仍然令人關注。

王教授表示：「家庭、學校、社區以至政府措施都是影響兒童及青少年體力活動量的重要因素。『家庭支持』在香港報告卡中的九項指標中評級最低(D級)，只有約三成的父母能夠每週最少一次與子女一起參與體力活動，遠遠落後西方國家。」這方面荷蘭以B級居首，即便與中國、泰國(B)和阿聯酋(C-)相比，香港亦見遜色。王教授說：「這跟香港家庭普遍為父母雙職，早出晚歸，與孩子活動時間不多有莫大關係。」

研究團隊建議家長多鼓勵孩子參加動態活動，減少子女進行靜態活動如使用電子設備的時間。報告卡援引的衛生署《使用互聯網及電子屏幕產品對健康的影響諮詢小組報告》(2014)指出，有五分之一的受訪中小學生每日花超過三小時使用互聯網，37%受訪學生表示因使用互聯網及電子屏幕產品，曾經常或間中放棄戶外活動。王教授強調家長須以身作則，實踐多步行多運動的生活模式，才能令孩子從小建立多活動的習慣。

在「學校體育」一項，香港的評級是C，在亞洲與泰國同級，惟落後於中國(B+)、日本和馬來西亞(B)。王教授指出：「部分學校為了讓學生有更多時間準備公開考試而削減高年級體育課堂，做法極不健康。學校管理層應提高體育課的重要性，讓學生於在學期間無論在知識或身心健康的層面上都得以提升。體育老師亦可在課堂上安排更多帶氧運動，確保學生有足夠時間進行一定強度的體力活動，同時增加體育活動的趣味性，提高學生對運動的興趣。」

另一方面，本港在「步行/踏單車往返學校」和「社區及環境設施」兩項指標中評分獲B級。報告顯示香港有超過六成兒童及青少年每週最少一次步行或踏單車返校。王教授解釋：「香港交通四通八達，不少住宅鄰近地鐵站或其他公共交通工具，擁有地利。另外，香港犯罪率偏低，亦是令家長放心讓孩子步行上學的原因之一。」

兒童及青少年體力活動不足的問題牽連甚廣，並非一朝一夕能夠解決，實有賴各界合作。王教授及其研究團隊希望是次研究能夠提高大眾對這個現象的關注，促進各界攜手向下一代灌輸積極健康的生活模式，並推動政府在投放資源及制定政策上能加入更多相關方面的考量，讓香港成為一個更有活力及朝氣的城市。

中大的研究團隊獲大學的知識轉移項目基金支持，主要成員還包括公共衛生及基層醫療學院教授黃至生(左二)、體育運動科學系副教授薛慧萍(右一)和助理教授沈劍威(左一)。



An interdisciplinary research team led by Prof. Wong Heung-sang (2nd right), Chairman and Professor, Department of Sports Science and Physical Education, handed out the first report card last October on the physical activity of Hong Kong's children and youths. 38 countries including the US, Japan, Finland and Kenya participated in the project pioneered in Canada. The research teams graded the local children and youths' level of physical activity in the last 10 years according to nine core indicators in the card.

Many studies have found that a sedentary lifestyle could increase the risk of developing cardiometabolic diseases. Children and youths are suggested to participate in moderate-to-vigorous physical activity for at least an hour a day. Hong Kong scores D in 'Overall Physical Activity Levels', meaning that less than half of the children and youths could meet this international benchmark. Although Hong Kong's score is about the global average, Professor Wong is still deeply concerned.

'Families, schools, local communities and government measures have significant influence on children and youths' level of physical activity. Hong Kong performs the worst (D) in "Family Support", one of the nine indicators. Results show that less than 30% of Hong Kong parents engage in physical activities with their children at least once a week, which falls far behind many Western countries,' said Professor Wong. While the Netherlands tops the chart (B) in terms of 'Family Support', Hong Kong lags behind when compared to countries such as Mainland China, Thailand (B) and the United Arab Emirates (C-). 'The main reason stems from the busy schedules of working parents, which prevent them from finding time to do anything together with their children.'

The research team suggests parents to encourage their children to participate in more physical activities and less in sedentary ones. According to the 'Report of Advisory Group on Health Effects of Use of Internet and Electronic Screen Products', published by the Department of Health of the HKSAR government in 2014, one fifth of the secondary and primary school students interviewed spent more than three hours on the Internet each day. 37% of them frequently or occasionally gave up outdoor activities due to the use of Internet or electronic screen products. Professor Wong

stressed that parents should set an example of walking more and exercising more so as to induce their children to live a more active life.

Hong Kong scores D in 'School-Physical Exercise (PE), Physical-Activities-Related Policy, and Programmes', same as Thailand but behind Mainland China (B+), Japan, and Malaysia (B). Professor Wong explained, 'Many schools would slash PE lessons in senior forms to give students more time to prepare for their public examinations. This is not a preferable practice; the school's management should emphasize the importance of PE classes so that students can grow in knowledge as well as mental and physical well-being. I would suggest PE teachers to incorporate more aerobic exercises in their lessons. They could also cultivate their students' interest in sports by making the lessons more interesting.'

On the other hand, Hong Kong outperforms many Asian or even Western countries in both 'Active Transportation' (B) and 'Community and the Built Environment' (B). The Report shows that more than 60% of the children and youths in Hong Kong travelled to school on foot or by bicycle at least once a week. Professor Wong explained, 'Hong Kong has a well-connected transportation system, with MTR stations or other means of public transport available in many residential areas. The city also has a relatively low crime rate and parents find the local community safe enough for children to travel to school on foot.'

The low level of physical activity among children and youth is not a problem that could be easily or quickly tackled. It requires cooperative efforts from different parties in society to address it. Professor Wong and his research team hope that the Report could arouse public awareness, connect different parties in promoting the benefits of adopting an active lifestyle to the next generations, and cause the government to support more physical-activities-related policies and investments. All these actions would facilitate Hong Kong in becoming a more energetic and dynamic city.

This research project was supported by the University's Knowledge Transfer Project Fund. Its core members include Prof. **Wong Chi-sang** (2nd left) of The Jockey Club School of Public Health and Primary Care, Prof. **Sit Hui-ping** (1st right) and Prof. **Sum Kim-wai** (1st left) of the Department of Sports Science and Physical Education. 📷

兒童及青少年體力活動報告卡 Report Card on Physical Activity for Children and Youth

地區 Region: Hong Kong

年齡 Age: 6 - 17

指標 Indicators	評級 Grades
整體體力活動水平 Overall Physical Activity Levels 基準 Benchmark: <ul style="list-style-type: none"> • 能達到體力活動標準的兒童和青少年之百分比 (每天不少於六十分鐘中等強度至劇烈體力活動) • 能達到體力活動標準的學前兒童之百分比 (每天不少於一百八十分鐘體力活動) 	D 少於半數可以達標 Less than 50% meet the predefined benchmark.
組織性運動參與 Organized Sport Participation 基準 Benchmark: <ul style="list-style-type: none"> • 能達到至少每週一次參與集體運動的兒童和青少年之百分比 	C- 四至五成青少年達標；男生顯著比女生活躍 40% to 50% of youths meet the predefined standard; significantly higher participation in boys than girls.
動態遊戲 Active Play 基準 Benchmark: <ul style="list-style-type: none"> • 能達到至少每週一次參與非組織性運動的兒童和青少年之百分比 	INC 兒童和青少年的自由活躍時間很少受到家長、學校和學者關注 Lack of data as parents, schools and scholars do not pay much attention to children and youths' non-organized sports.
步行/踏單車往返學校 Active Transportation 基準 Benchmark: <ul style="list-style-type: none"> • 能達到至少每週一次步行/踏單車往返學校的兒童和青少年之百分比 	B 約八成達標 Around 80% could meet the predefined benchmark.
靜態行為 Sedentary Behaviors 基準 Benchmark: <ul style="list-style-type: none"> • 能達到每天少於兩小時使用電子屏幕產品標準的兒童和青少年之百分比 	C 約半數可達此國際標準 Around 50% meet the international standard.
家庭支持 Family 基準 Benchmark: <ul style="list-style-type: none"> • 支持子女體力活動的父母之百分比 	D 約三成父母每週最少一次同子女一起參與體力活動 Around 30% of parents participate in physical activities with children at least once a week.
學校體育 School—Physical Exercise, Physical-Activities-Related Policy, and Programmes 基準 Benchmark: <ul style="list-style-type: none"> • 能達到每週提供大部分學生不少於七十分鐘體育課的學校之百分比 • 執行與體力活動相關政策的學校之百分比 • 提供機會讓大部分學生進行體力活動 (不包括體育課) 的學校之百分比 	C 近八成學校每週有兩節體育課，但實際課時比預設課時少兩成；只有三成學校制定體力活動政策文件；校運會及校際比賽普遍，然實際參與人數未能評估 Almost 80% of schools have two sessions of PE classes per week, with the actual time of the lessons 20% shorter than scheduled; Only 30% of schools had a documented physical activity policy. Most schools have sports day or inter-school sports competition events, but the actual number of participants is unknown.
社區及環境設施 Community and the Built Environment 基準 Benchmark: <ul style="list-style-type: none"> • 感到周邊環境安全的兒童或家長之百分比 • 曾使用社區運動設施的兒童或家長之百分比 • 對休憩場所及社區運動設施感到滿意的兒童或家長之百分比 	B 近八成父母認為社區環境安全，大部分青少年對政府提供的社區運動設施滿意 Almost 80% of the parents feel that the community is safe; A majority of youths are satisfied with the sport facilities in the local communities provided by the government.
政府策略和資源投放 Government Strategies and Investments 基準 Benchmark: <ul style="list-style-type: none"> • 有領導和承諾提供兒童和青少年體力活動機會的證據 • 有分配資金和資源來推廣兒童和青少年體力活動 	INC 因缺少預設標準，暫時無法立定等級 Unable to be measured due to lack of a preset benchmark.

評分級別 Levels of Grading

A 81%-100%達標 81%-100% meeting predefined benchmark	B 61%-80%達標 61%-80% meeting predefined benchmark	C 41%-60%達標 41%-60% meeting predefined benchmark	D 21%-40%達標 21%-40% meeting predefined benchmark
E 0%-20%達標 0%-20% meeting predefined benchmark	INC 未能評級 Incomplete data		



逸夫書院三十一周年院慶 Shaw College Celebrates 31st Anniversary

逸夫書院於1月13日在書院大講堂舉行三十一周年院慶典禮，並頒發學業獎和長期服務獎狀。書院更邀得香港特別行政區政府懲教署署長邱子昭先生（左八）擔任主禮嘉賓，向大家分享同時擔任「懲」與「教」兩個角色——維護社會安全和推展更生工作——所面對的挑戰。

Shaw College's 31st Founder's Day Celebration Ceremony was held at the College Lecture Theatre on 13 January. Academic scholarships and certificates of long service were awarded to students and staff members, respectively. The College also invited Mr. Yau Chi-chiu (8th left), Commissioner of Correctional Services of the HKSAR Government, as the guest of honour, who shared his experiences of the challenges he faces as both the society's guardian and rehabilitation facilitator.

首屆「李達三葉耀珍伉儷李本俊獎學金」頒獎典禮

The First Presentation Ceremony of the Li Dak Sum Yip Yio Chin Kenneth Li Scholarship

李達三博士於2015年捐款港幣三億元成立「李達三葉耀珍伉儷李本俊獎學金」，首屆頒獎典禮於2月27日舉行，主禮嘉賓為新加坡卡爾登城市酒店董事總經理李本俊先生（右四）及校長沈祖堯教授（右五）。該筆獎學金每年頒發予品學兼優、有經濟援助需要，並入讀香港中文大學及另外兩所本地大學的寧波公學及寧波第二中學畢業生，是日兩校的鄧敬池校長及黃景鴻校長亦親臨觀禮。

The first presentation ceremony of the Li Dak Sum Yip Yio Chin Kenneth Li Scholarship, established in 2015 with a donation of HK\$300 million from Dr. Li Dak-sum, was held on 27 February. It was officiated by Mr. Kenneth Li (4th right), Managing Director of Carlton City Hotel Singapore, and Prof. Joseph J.Y. Sung (5th right), Vice-Chancellor and President of CUHK. The scholarship aims to award outstanding students with financial needs from Ning Po College and Ning Po No. 2 College to pursue tertiary education in the the Chinese University of Hong Kong and two other local universities. Mr. Tang King-chi and Mr. Wong King-hung, principals of the two colleges, also attended the ceremony.



▲ 李本俊先生頒發獎狀予中大得獎學生石采旋同學（左四）、林丹淇同學（左五）及李雅穎同學（右三）
Mr. Kenneth Li presents certificates to CUHK scholarship recipients Shek Tsoi-shuen (4th left), Lam Daan-kei (5th left) and Lee Nga-wing (3rd right)

中大紀律部隊職工子弟獎助學金頒獎典禮

Presentation Ceremony of CUHK Scholarship for Children of the Disciplined Services



中大於2月24日舉行第二屆「紀律部隊職工子弟獎助學金頒獎典禮」，主禮嘉賓包括香港特別行政區政府保安局局長黎棟國先生、獎學金捐贈人黃宜弘博士（右三）和梁鳳儀校董（左三），以及副校長霍泰輝教授。典禮亦邀請到各紀律部隊及其職員協會代表，以及得獎同學的親友出席。霍教授感謝黃博士及梁校董多年來對父母為在職或已退休紀律部隊職員的中大生的支持。獎學金委員會每年選出五名品學兼優的得獎生。聯合書院醫學院三年級生陳萱欣同學代表所有得獎同學在典禮上致謝辭。

The second 'Presentation Ceremony of CUHK Scholarship for Children of the Disciplined Services' was held on 24 February. It was officiated by The Honourable Lai Tung-kwok, Secretary for Security of the Government of the HKSAR, Dr. Wong Yu-hong (3rd right) and Dr. Leung Fung-ye (3rd left), donors of the scholarship, and Prof. Fok Tai-fai, Pro-Vice-Chancellor and Vice-President of CUHK. Representatives from various disciplined services and respective staff associations, as well as family members of the scholarship recipients, also attended the ceremony. Professor Fok expressed his gratitude to Dr. Wong and Dr. Leung for their continued support to CUHK students whose parents are current or retired employees of disciplinary forces in Hong Kong. A committee will select five outstanding students to receive this award each year. On behalf of the recipients, Chan Huen-yan, a Year 3 medical student from United College, delivered a vote of thanks.

幹細胞與再生醫學合作研究

Research Partnership on Stem Cell & Regenerative Medicine

中大及英國南安普頓大學於2016年成立「香港中文大學—南安普頓大學幹細胞及再生醫學聯合實驗室」，冀透過專業交流、科研協作和學生培訓計劃，進一步鞏固在幹細胞、發育生物學及再生醫學領域的學術聯繫。該聯合實驗室由生物醫學學院中心實驗室營運總監及「發育及再生生物學」主題研究組主任李嘉豪教授（前），以及南安普頓大學醫學院「人類發展、幹細胞與再生中心」總監 Richard Oreffo 教授共同管理。

自生物醫學學院成立以來，幹細胞及再生醫學是其中一個主要研究方向。李教授說：「學院其中一個重要研究成果，是使用分子生物學和小分子從普通細胞（如皮膚成纖維細胞）孕育誘導式多能幹細胞，此細胞可製造人體組織和器官作臨床移植，治療退化性疾病。是次與南安普頓大學的合作項目，有助本院在3D生物打印範疇提升技術水平，製造各種用於生物打印的物料。」

南安普頓大學安排了兩位博士生分別到兩校的聯合實驗室接受研究指導，其中一位是 Alia Hafiz（右一），她得到兩校資助，於2016至2018年期間三次到中大的聯合實驗室從事研究，她說：

「我去年首次到中大做為期六星期的研究，涉足生物材料和幹細胞3D打印領域，獲益匪淺。其間我掌握到重要的研究技巧和工具，改善了我的研究進度。」另一位博士生 Ada Antypiuk 將於5月到中大，她主要研究代謝組對調節人體胚胎多能幹細胞的作用。

To conduct high impact research in the areas of stem cells, developmental biology and regenerative medicine, CUHK and the University of Southampton (UOS) set up CUHK-UOS Joint Laboratory for Stem Cell and Regenerative Medicine in 2016. The laboratory is an academic connection between the two institutions through personnel exchanges, research collaborations and student training programmes. It is co-directed by Prof. Kenneth Lee (front), managing director of Core Laboratories and chief of the Developmental and Regenerative Biology Thematic Research Programme of the School of Biomedical Sciences, and Prof. Richard Oreffo, director of the Centre for Human Development, Stem Cells and Regeneration, Faculty of Medicine, UOS.

Stem cell and regenerative medicine has been a major theme for research since the School of Biomedical Sciences was founded. 'One major achievement of the School is the use of molecular biology and small molecules to produce induced pluripotent stem cells (iPS cells) from ordinary cells, such as skin fibroblasts. The iPS cells could potentially be used to generate tissues and organs for transplantation in the clinical setting to treat degenerative diseases,' said Professor Lee. 'Collaborating with Southampton University has allowed the School to increase our technological know-how in the area of 3D bio-printing and the fabrication of different types of bio-inks for printing.'

Two PhD students have been recruited by UOS to support the research work at both locations under the joint supervision. One of the students, Miss Alia Hafiz (1st right), is undertaking



three visits to the joint laboratory at CUHK from 2016 to 2018 to work on a research project with funding provided by both universities. She said, 'In my six-week visit at CUHK last year, I've gained tremendous exposure to the fields of biomaterials and stem cells 3D printing. I've also developed the necessary skills and research tools which will help me further my research progress.' Another student Miss Ada Antypiuk will start her research at CUHK in May 2017. She will explore the role of metabolome on regulating human embryonic stem cell pluripotency.

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管理費與人氣

Is Management Fee Relevant to the Popularity of an ETF?

投資的決定視乎很多因素。有人以低管理費選擇投資工具，但這未必是一個聰明的選擇。讓我們看看表內四個在港交所掛牌的中國A50交易所買賣基金（ETF）的一些基本數據。

頭三個ETF（港幣櫃台股份代號分別是2823、2822和2832）所收取的管理費均是管理資產值每年的0.99%；而最後一個——東方匯理比較近期推出的2843——則比之少半（0.48%）。就算這個基金組合跟隨的指數——FTSE中國A50指數——跟其他四個一樣，它較低的管理費也似乎吸引不到很多投資者，這點可從它的日均交易量和日均成交額見到。

投資者關注的其他因素還有基金的規模（管理的資產總值）以及流動性（交易量和成交額）。規模大、流動性高，意味着市場上可找到更多商品和出現更頻密的交易，令到成交價格更接近「合理」價位。投資者關切的，是可以以市場機制下達到的「合理」價位來進行買賣，而往往不是管理費的幾個百分點。

另一方面，iShares FTSE A50 China Index ETF 和CSOP FTSE China A50 ETF（港幣櫃台股份代號分別是2823和2822）則頗受投資者歡迎。事實上，香港有170多個ETF，2823和2822以及其他三個（包括香港盈富基金）是其中交易量最高的，佔了整體交易量的95%。在表中，這兩個基金的日均交易量和日均成交額也比其他兩個高出很多。投資在它們身上，可以放心買賣價不會偏離市場的合理價位太多，享有這種流動彈性，管理費多一點也不在意了。

香港中文大學教職員公積金計劃（1995）的A50中國盈富基金，刻下總資產值為港幣一億七千萬，現在只投資在CSOP FTSE China A50 ETF（2822），這個基金的資產規模和流動性，給予大學公積金計劃的成員一定的保證。

Stock Code	2823.HK	2822.HK	2832.HK	2843.HK
Name	iShares FTSE A50 China Index ETF	CSOP FTSE China A50 ETF	Bosera FTSE China A50 Index ETF	Amundi FTSE China A50 Index ETF
Fund size	HKD28.4 b (31.1.2017)	RMB18.5 b (28.2.2017)	~HKD17.8 m (31.1.2017)	RMB259 m (31.1.2017)
Management fee as a percentage of asset-under-management	0.99% p.a.	0.99% p.a.	0.99% p.a.	0.48% p.a.
Average daily trading volume from 11.2016 to 2.2017	36.2 m units	40.2 m units	0.001 m units	0.09 m units
Average daily turnover from 11.2016 to 2.2017	HKD404.5 m	HKD467.3 m	HKD0.007 m	HKD1.08 m

Investment decisions are based on many factors. While many may believe that choosing an instrument with a lower rate of management fee is a smart decision, this is not necessarily the case. Let's look at the four China A50 exchange traded funds ('ETFs') listed in the Hong Kong stock exchange table above.

Note that the first three ETFs (2823.HK, 2822.HK and 2832.HK) are all charging 0.99% p.a. on the asset-under-management, while the last one, the latest ETF from Amundi (2843.HK), charges only 0.48% p.a. However, even if this ETF mimics the same underlying index—FTSE China A50 Index—as the others, its lower management fee has not attracted too many investors, as is evidenced from its average daily trading volume and average daily turnover.

Investors would rather look at other factors such as the size of the fund (asset-under-management) and the liquidity (trading volume and trading turnover). Larger sizes and greater liquidities mean that there are more commodities and transactions in the market so that the theory of big numbers applies to produce a reasonably fair price at which investors can comfortably do business. To be able to buy or sell at this market-derived 'fair price' means much more than a few percentage points off the management fee to the investors.

On the other hand, iShares FTSE A50 China Index ETF and CSOP FTSE China A50 EFT (2823.HK and 2822.HK) are very popular. Indeed, they are two of the five most highly traded ETFs in the Hong Kong market. These five ETFs (including Tracker Fund of Hong Kong) represent 95% of the total trading volume of over 170 ETFs in Hong Kong. The average trading volumes and average daily turnovers of 2823.HK and 2822.HK far overdid their neighbours in the table. Therefore, investors in them can be more assured that the buying or selling prices are not too far from the fair market prices and so are willing to pay higher management fees for such liquidity privileges.

The A50 China Tracker Fund of The Chinese University of Hong Kong Staff Superannuation Scheme (1995), currently of a size of HKD170 million, is currently invested solely in CSOP FTSE China A50 ETF (2822.HK). The fund size and the liquidity of the latter (2822.HK) have enabled members of the University's staff superannuation scheme to enjoy reasonable benefits and privileges.

在線不再是時興

Cool to be Off-line

現實生活中，虛擬活動無處不在。但物極必反，賞味實物近年似有復甦趨勢，且不只是部分年長的人的懷舊嗜好，而是年青族群都樂此不疲的事。

首先回歸的是筆記本。這裏指的不是各種屏幕尺寸、記憶體容量齊備的筆記本電腦，而是供人抄寫的紙本筆記。城市一族或是潮流分子，每多人手一本Moleskine或Rhodia。前一個品牌的專門店更是在高檔商場愈開愈多。

閱讀也不再純是虛擬作業。電子書的銷量已經見頂，同時主流報刊如《紐

約時報》及《經濟學人》的讀者及訂戶人數均見顯著上升，新讀者或訂戶很多都是年輕人。The Revenge of Analog: Real Things and Why They Matter的作者David Sax認為，人們追求手執一書的樂趣，是由於厭倦了在網上閱讀，資訊沒完沒了，點擊之後又是點擊，永遠沒有終卷的一刻。他在書中也指出近年黑膠唱片銷量回升，各類棋盤遊戲也如雨後春筍般蓬勃，人們預期這兩項玩意會因iTunes和網遊而式微，但事實卻不是如此。

另一個復古的現象是書信。在電郵還未統治我們私人及職場世界的年頭，我們寫信寄信，也耐心等待回信。書信的黃金時代的確是一去不復返了，但一些網上平台如Letters of Note和The Letters Page，起初只是真跡信件的檔案庫，或是書信愛好者的部落格，但後來見到書信的實體有市場，於是紛紛把書信結集成書。Letters of Note的書信集已經出到第二冊，而The Letters Page剛剛印行的限量本，信件的原味複製品裝在精美框盒中，加上做做以前空郵信封邊沿圖案設計的絲帶，頗適合收藏把玩。

未來我們還會見到共處一室的親人，或餐桌上的情侶繼續互傳短訊，但當擁有智能手機如擁有八達通卡一般的平民味道時，如果能實實在在地把一些東西捧在手裏，用來做點實事出來，那末也不失為有品味、隱隱然提升身分的象徵。

There appears to be a respite from the tyranny of virtual reality in that objects, not their digitized avatars, are being sought by people. And not just people but young people.

First, the notebook is back. By notebook I mean the sheets of paper, lined, ring-bound or otherwise, for one to scribble in, not the laptop device that comes in different screen sizes and capacities. Among the urban and the savvy, it's become trendy to possess and display a Moleskine or a Rhodia as a personal effect. The former brand has its own stores opened in high-end malls everywhere.

Reading materials get real again, too. E-book sales have plateaued but major newspapers and magazines like *The New York Times* and *The Economist* are seeing hikes in sales and in print subscriptions (and from young people, too). David Sax, author of *The Revenge of Analog: Real Things and Why They Matter*, attributes the comeback of the-paper-in-hand to the frustration of a web reader of never seeming to come to the last page or be able to put down the book. There is always further but not necessarily better information one click away. He also refers to the booming sales of vinyl records and the resurgence of board games, two pastimes that were once thought to be pushed to the verge of extinction with the emergence of iTunes and computer games, respectively.

Another relic from a previous era that is given a new lease of life is the letter. Yes, the letter we used to write, stamp and post, then expect to receive a reply, if prompt, in a matter of days or weeks before we are enslaved by e-mails.

Online platforms such as 'Letters of Note' and 'The Letters Page', which started out as archives of real letters or blogs by epistolary aficionados, saw the appeal of the letter as artefact and began putting their collections in the market in print form. 'Letters of Note' has already published two volumes of their collection, while the limited edition published by 'The Letters Page' comes in a boxed set containing loose-leaf reproduction of the original letters tied with strings that resemble the border strip of an airmail envelope.

Make no mistake. Family under the same roof and couples at the same restaurant tables would still text each other. But when carrying a smart phone is only as smart as carrying an Octopus card, getting one's hand on something tangible and concrete and *actually* doing something with it is an acquired taste and a badge of distinction

T.C.



雅共賞 / ARTICULATION

喜上眉梢 連枝相依

此對瓷碗敞口、深腹，口沿及圈足以金彩作飾，簡約典雅中流露貴氣。用金包鑲瓷器沿處的飾法最早可見於五代，稱為「扣金」，至明清尤被廣泛使用。瓷碗內施白釉，外壁以黃釉為地，透露用者尊貴不凡的身分。「黃」與「皇」諧音，黃色自古以來就是皇室的象徵，明清時期更是皇家的專用釉色，民間不得擅用。

端詳碗壁，黃地上以粉彩紋飾，繪出喜鵲在梅花錦簇間穿梭飛舞、熱鬧歡騰之景。梅傳春信，有萬物欣欣向榮之意；至於喜鵲，顧名思義，乃吉祥報喜之鳥。「梅」與「眉」諧音，喜鵲立於梅梢則象徵「喜上眉梢」，寓意喜事臨門。瓷碗底部有「永慶長春」四字紅彩楷書款，有別於同治官窯瓷器之青花楷書款主流。

瓷碗慶祝的喜事，儼然是同治皇帝愛新覺羅·載淳大婚。根據江西巡撫劉坤一的奏摺記載，同治六年傳諭御窯廠需於七年之內燒造一萬餘件婚儀瓷器。大婚禮儀瓷器合共二十四套樣式，黃地粉彩喜鵲梅紋屬其一，同類樣式的瓷器還有盤、杯、唾壺等等，每套接近七百件器物。自咸豐五年以後，戰亂迭起，景德鎮御窯廠工匠紛紛遷徙，迄同治之初均未復業，名窯的瓷器質量漸走下坡。儘管如此，為了皇室大婚，景德鎮御窯工匠還是竭盡所能，故該批婚儀瓷器仍屬同治年間官窯器上品之作。

細看此對黃地粉彩喜鵲梅紋碗，色澤勻潤凝厚，黃地粉彩鮮艷奪目；寫實工細的喜鵲與筆觸簡練的梅花交錯相映，疏落有序；梅花蕊點上粉藍，粉彩微微凸出器表，更添立體美感。

同治十一年二月，同治帝冊立翰林院侍講崇綺之女阿魯特氏為孝哲毅皇后，並於同年九月舉行大婚盛典，持續兩天，不惜耗費巨款履行一切繁縟禮儀及特製婚儀用器，規模空前絕後。同治帝六歲即位，因慈安太后與慈禧太后「垂簾聽政」而從未掌握實權。相傳他十分鍾愛皇后，惟礙於親母慈禧的阻撓而被迫疏遠之，轉到煙花柳巷尋歡作樂。同治十三年臘月，皇帝染天花駕崩，年僅十九歲。七十五天後，皇后「遽爾崩逝」。帝后雙雙早隕，但這對標誌他倆山盟海誓的婚儀瓷碗，歷經歲月風霜，流傳至今，以另一種方式延續美好的約定。

文：歷史系三年級歐靄明

Living Happily Ever After...

Items bearing names which rhyme with words of auspicious connotation make popular motifs in Chinese art, the pair of bowls shown here being a vivid illustration. On the *famille-rose* yellow ground are magpies (*xique*) and prunus blossoms (*meihua*). While *xi* means happiness '喜', the magpie is considered a bird bringing good tidings. The prunus blossoms signalling the onset of spring are emblematic of robust growth. The Chinese word for eyebrow '眉' also pronounces as *mei*. So the scene of magpies flying among prunus blossoms alludes to the Chinese idiom '*xishang meishao*', which literally means 'joy flooding up to the eyebrows'. At the bottom of each bowl is a mark of four characters '*yongqing changchun*'—'celebrating everlasting spring'. The mark was written in red, a colour of joy and celebration in the Chinese context.

The jocund mood of well-wishing was created to celebrate the imperial wedding of Qing Tongzhi Emperor who was on the throne for only 13 years. According to a memorandum issued by a provincial official of Jiangxi, in the sixth year of Tongzhi's era, the Qing government ordered the imperial kilns to produce more than 10,000 wedding porcelain items in 24 selections, each consisting close to 700 pieces of bowls, plates, cups and spittoons. The '*famille-rose* with magpies and prunus decorations on a yellow glaze ground' was one of these selections.

With deep rounded sides rising from a short tapering foot to an everted rim, both gilded, the bowls are elegant and aristocratic. Decoration with gold rimming was first found in Chinese porcelains during the Five Dynasties in the 10th century, and the skill was extensively adopted in the Ming and Qing dynasties. The bowls' interiors were glazed in white. The yellow glaze ground on the exteriors discloses the prestigious status of the user, as yellow in Chinese is *huang*, which is homophonous to '皇' meaning 'royalty'. That is why the use of yellow glaze on porcelains was monopolized by the imperial family in the Ming and Qing dynasties.

Jingdezhen in Jiangsu was renowned for its exquisite porcelain products and home to a number of imperial kilns, but many craftsmen had fled the place since warfare broke out in the days of the preceding Xianfeng Emperor. However, upon receiving the order, the imperial kiln craftsmen still gave their best to produce wedding porcelains with such refinement that the batch ranked top in quality among the products in the Tongzhi era.

The rich colours of the bowls were evenly glazed to form a warm lustre. The magpies were drawn in fine strokes and the blossoms in simple lines. They were evenly spaced against the bright yellow ground, and the stamens of the flowers were accentuated with light blue dots which stood out from the bowl surface to give a three-dimensional presence.

Early in the 11th year of Tongzhi's era, the Emperor appointed Lady Alute, daughter of a Hanlin Academy official, to be his empress titled Xiaozheyi. The imperial wedding ceremony that took place seven months later lasted for two days on a scale most grand and extravagant, with thoroughly-observed rituals and everything custom-made. Tongzhi, who had been enthroned at the tender age of six, had never really governed the country. Overseeing national affairs practically behind the curtain were two Empress Dowagers—Ci'an and Cixi, the latter being his mother. It was said that Empress Xiaozheyi was dear to Tongzhi, but since she failed to win the favour of Cixi, he was forced to detach himself and finally turned to seek carnal pleasure in the brothels. He died in the last month of his 13th year in throne at the age of 19, followed by the 'sudden death' of his beloved queen 75 days later. Spring did not last long for the young couple.

The pair of bowls, fired to commemorate an imperial matrimony, has outlived the fragility of youth and survived generations of turmoil and changes. It remains a symbol of love and vows and is now housed in the University's Art Museum.



黃地粉彩喜鵲梅紋碗一對
「永慶長春」款
江西景德鎮窯
清同治年間 (1862-1874)
香港中文大學文物館 (1996.0543)
鍾棋偉先生惠贈
現於文物館展出

A pair of *famille-rose* bowls decorated with magpies and prunus on a yellow glaze ground
Yongqing changchun mark
Jingdezhen ware, Jiangxi province
Qing, Tongzhi period (1862-1874)
Gift of Mr. Anthony Cheung

口談實錄 / VIVA VOCE

Photo by ISO Staff

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甚麼原因促使你投身中風治療及研究？

十年前我加入黃家星教授的團隊從事中風研究，他的視野與毅力是我的動力。中風十分普遍，發病前未必有先兆，但一旦中風，有機會導致癱瘓或殘障，失去自理能力。血管狹窄是缺血性中風的重要原因，但白人和華人血管狹窄的位置各有不同，白人主要是頸部血管，而華人多是腦血管。由於位置殊異，治療白人的方法和藥物未必適用於華人，所以我投身華人中風研究，冀尋找更有效的治療方案。

廿四小時遠程中風溶栓治療服務如何令病人得益？

香港每年有超過二萬名中風病人需要住院治療，但公立醫院的腦神經科醫生約只有六十位，礙於整體醫生人手不足，診治專科病人以外，其實大部分時間都用於診治普通科病人，更不可能有廿四小時駐院的腦神經科醫生。2012年起，威爾斯親王醫院率先利用流動影像傳訊系統，讓專科醫生在非辦公時間隨時隨地遙距評估及診斷送院病人，並指示中風專科護士為確診者提供急性中風溶栓治療。直到今年，威院接受溶栓治療的人數比以往增加達四倍，而提供這服務的公立醫院也增加至七家。現時，威院是新界東聯網唯一提供廿四小時遠程中風治療的醫院，我們打算拓展此服務，讓威院、雅麗氏何妙齡那打素醫院和北區醫院的腦神經科醫生組成團隊，為這三家醫院的病人提供遠程中風治療。由於需要更多人手配合新計劃，我們正與醫管局磋商額外撥款。

近年各地中風患者有年輕化趨勢，如何從生活習慣入手預防？

改變飲食習慣和適度運動有助控制血壓、血糖和血脂，減低中風風險。要盡量少吃紅肉和加工肉類，多吃新鮮蔬果，果汁是取代不了蔬果的；無論生活有多忙碌，也要堅持每星期做三次運動，以改善新陳代謝，避免血管狹窄。良好的生活習慣，愈早建立愈好。

治療病人以外，你也要負責行政、研究和教學等，你最享受哪類工作？

在每個崗位累積的經驗，都能讓我在另一個崗位發揮得更好，所以我樂意承擔不同的工作。我初出道時主力臨床工作，後來多了教學的機會，曾遇見的奇難雜症，往往成為我教學的臨床個案，幫助學生活用醫學知識。在醫院累積的行政經驗，亦幫助我逐步改善制度上的不足。現時我投放七成時間於研究，希望研究成果有助於改善診斷，提升治療成效。例如我們剛完成長達十五年的病人追蹤分析，發現多了病人因心律不整引發中風，而原因之一是少病人吃薄血藥，那麼便要找出原因：到底是藥太貴，還是醫生擔心病人吃藥會有出血風險？

2003年沙士肆虐期間加入dirty team那一段經歷對你的人生有何影響？

我慶幸是其中一分子，因為沙士一役令我體會到人很渺小——隨時會被細菌擊敗。這教我要珍惜每一天，善用時間做重要的事，同時珍惜與家人相處的時光。

醫生超時工作甚為普遍，你如何兼顧事業與家庭？

現代的職業女性一點也不易，因為無論在家庭或工作崗位，家人和同事都希望你全情投入。我深知全時間照料家庭的好處，但醫治病人的經歷、應對工作挑戰的毅力，都可以令孩子對生命有更深體會，所以我不會毅然放下工作。直至約兩年前，我有機會獲中大醫學院半職聘用從事教學與研究，既可繼續我喜愛的醫療工作，又有精力照顧家人，雖然收入減半，比起全職醫生少了發展的機會，但我覺得十分值得。



What caused you to engage in stroke treatment and research?

I joined Prof. Lawrence Ka-sing Wong's team on stroke research 10 years ago. His vision and perseverance have been my motivation. Stroke is very common, which may not announce itself but once it has happened, the patient might be paralyzed or disabled. Blood vessel stenosis is the main cause of ischemic stroke. The location of stenosis varies across ethnicity: carotid stenosis is more common among westerners while intracranial stenosis is more common in the Chinese population. Hence, the treatment and medicine that work well on westerners might not work on the Chinese. My research is on better treatment for the Chinese patients.

How does the TeleStroke for 24-hour thrombolysis service benefit patients?

In Hong Kong, over 20,000 stroke patients per year are admitted to hospital for treatment. Neurologists in public hospitals, however, are merely around 60, and these neurologists have to spend time on general clinical services on top of neurological patient care. To have a resident neurologist around the clock is out of the question. The Prince of Wales Hospital (PWH) launched the mobile visual communication system TeleStroke in 2012 to facilitate neurologists' off-site assessment of thrombolysis during non-working hours and to instruct specialist nurses to administer thrombolytic therapy in urgent cases. PWH has recorded a fourfold increase in the number of stroke patients who receive thrombolysis. The public hospitals offering this service have now reached seven. PWH is currently the only hospital in the New Territories East Cluster providing 24-hour telemedicine service. We are lining up the neurologists in our cluster (including PWH, Alice Ho Miu Ling Nethersole Hospital and North District Hospital) to offer telemedicine services to patients in these three hospitals. As more manpower is required for the project, we are negotiating with the Hospital Authority for additional resources.

Young stroke patients have been increasing worldwide. What kind of lifestyle helps prevent this?

A healthy diet and optimal exercise help stabilize blood pressure, blood glucose and blood lipids, which minimize the risk of stroke. Don't eat too much red meat and processed meat, but eat fresh fruits and vegetables. Note that the latter can't be replaced by juices. However

busy you are, you need to exercise three times a week for better metabolism to prevent blood vessel stenosis. A healthy lifestyle should be acquired as early as possible.

Apart from clinical services, you also need to take part in administration, research and teaching. Which do you enjoy the most?

The experience gained in each position helps me do better in the others, so I'm pleased to take up different positions. I first took up clinical work, and was assigned a teaching role later on. Some complicated diseases encountered have become case studies which help my students apply their medical knowledge. My administrative work in the hospital has enabled me to see what improvement in the system is needed and to improve it gradually. I now spend 70% of my time in research. I hope the findings would help improve diagnoses and enhance treatment effectiveness. For instance, we have just completed a 15-year follow-up study of stroke patients and discovered an increasing number of arrhythmia-induced stroke cases. One reason is fewer patients are willing to take anticoagulant. Then we have to figure out the root of the problem: Is the drug too expensive? Or, are doctors worried about the risk of anticoagulant-associated haemorrhage?

You were in the 'dirty team' in 2003. How did it change your life?

I'm glad I was part of it. The battle against SARS is a constant reminder of the insignificance of human beings, who could be very much at the mercy of the bacteria. I've learned to seize each day, do whatever matters to me, and cherish my family time.

Working overtime is common among physicians. How do you strike a balance between work and family?

It's never easy to be a working woman nowadays. Absolute devotion is expected of her in family and at work. I do know what good a full-time mom would do to the family, but I also know that my experience of curing patients and taking on the challenges at work would help my kids understand life better. About two years ago, I was offered a part-time position at CUHK's Faculty of Medicine. I could therefore remain in my beloved medical field to teach and to do research, and have the energy to take care of my family. Even though my income and career growth are halved as compared to other full-time physicians, I find it worthwhile. 📖