

CU **Medicine**

Autumn 2021

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VAXXING



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Dean's Message

The Virtues of Get, Set and Go

While the threat of COVID-19 is continuing, we have embarked on a new chapter of life to embrace the "new normal" with a sense of hope and ambition, with the availability of vaccines.

Thanks to the benefits of vaxxing, although the way of life before COVID-19 is not fully restored yet, **CU Medicine** manages to keep up our pursuit of excellence in fulfilling our academic, research, and outreach missions.

The stories in this issue illustrate our ongoing ambitions to make the world a healthier and better place. Our colleagues continued to unravel the mysteries of coronavirus and race to outpace the pandemic.

Members of CU Medicine join hands with the Government in promoting the territory-wide free vaccination programme, by **administering vaccination**, and by **deploying chatboxes in social media to answer vaccine-related questions**. Despite the Delta variant taking root and new variants emerging, vaccines are still effective in protecting us against the virus.

The Olympic Games is a reminder that perseverance and resilience make good sportmanship. We will keep up, fight it out and beat it!



Prof. Francis CHAN
 Dean

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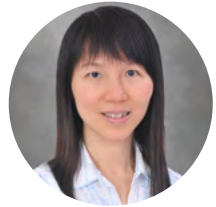
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Deep Learning

CU Medicine researchers delve into diverse topics to combat COVID-19

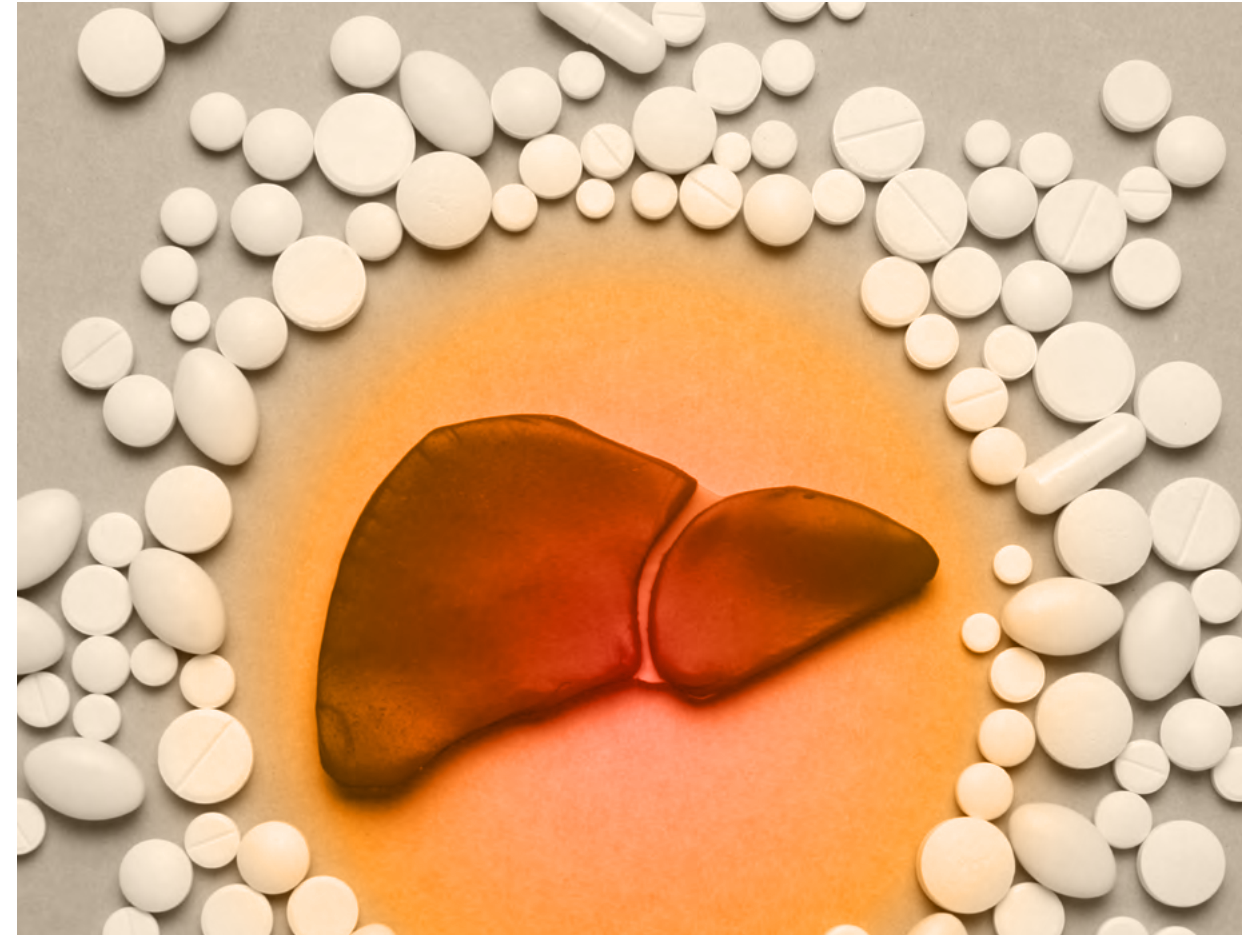
COVID Complications With Liver Disease



By [Prof. Grace WONG](#),
Department of Medicine & Therapeutics

Abnormal or impaired liver function has been a common problem for patients with COVID-19. Prof. **Grace Wong** of the Department of Medicine & Therapeutics led a team studying liver injuries among 1,000 COVID-19 patients in Hong Kong. The analysis shows that **COVID-19 patients who experience liver impairment have worse clinical outcomes from the virus**. The world-renowned medical journal [Gut](#) published the findings.

The Asia Pacific region has the highest prevalence of liver disease in the world. **Professor Wong led a group of Asia-based experts that issued a position statement on how to manage COVID-19 patients that have liver complications**. The clinical scenarios and recommendations in the statement provide a highly relevant framework for treatment best practices.



Professor Wong continued her research by identifying high-risk COVID-19 patients who may need aggressive treatment. In January 2021, her team discovered that **patients with acute kidney injury (AKI) were at particular risk of developing severe consequences from a COVID-19 infection**. However, AKI patients with COVID-19 had a lower rate of major adverse clinical outcomes than patients who suffered from SARS.

[Full publication](#)

Tracking COVID's Course



By [Prof. Paul CHAN](#) [✉](#),
Department of Microbiology

Viruses constantly evolve through mutation, meaning that new variants of a virus are sure to appear. The SARS-CoV-2 that causes COVID-19 has already undergone several critical mutations during the pandemic. Prof. **Paul Chan**, Professor, together with Prof. Zigui Chen, Associate Professor, of the Department of Microbiology, led a global research initiative to explore the evolution of SARS-CoV-2, and what it implies.

The team examined 69,571 full genomes of the SARS-CoV-2 collected around the world within the first six months of the pandemic. **They observed that a new variant lineage called G* started to replace older variants in March 2020.** European countries such as Finland, France and Italy were the first nations to reach 50% prevalence of G*, while only Singapore and South Korea had non-G* strains persisting throughout those six months.



[The study](#) [✉](#) was the first to provide evidence from a global perspective that countries with a more stringent public health containment response had a delay in their early variants being supplanted, due to their success in suppressing importation and controlling the local spread of new viral variants. **The study was also the first to demonstrate a higher mortality associated with variant G* infection across the globe.**

[Full publication](#) [✉](#)

The Virome and the Virus



By [Prof. Siew NG](#) [✉](#),
Department of Medicine & Therapeutics

COVID-19, caused by the SARS-CoV-2 of enveloped RNA, primarily affects the respiratory and gastrointestinal systems. The RNA virus has been detected in faecal samples, suggesting that the gastrointestinal tract may be a site of viral replication. Prof. **Siew Ng**, a gastroenterologist and Associate Director of the Centre for Gut Microbiota Research at CUHK, examined the effect of SARS-CoV-2 on the viruses already resident in the gut (the gut virome), and discovered an association between the features of the host-gut virome and the severity of COVID-19.

Professor Ng and her team provided the first comprehensive characterisation of both the gut RNA and the DNA virome in COVID-19 patients. They examined blood samples and faecal specimens from 98 COVID-19 patients and 78 healthy individuals, finding that patients with COVID-19 had decreased levels of certain RNA viruses and DNA-based bacteriophages. In contrast, there were enriched levels of environment-derived eukaryotic DNA viruses in COVID-19 patients.



The team observed that gut viruses inversely correlated with both virus severity and the age of the host, which may partly explain why older subjects are prone to more-severe and worse COVID-19 outcomes. [These results](#) [✉](#) highlighted the importance of the human gut virome when considering potential therapeutics for COVID-19.

[Full publication](#) [✉](#)

Potent Treatment for COVID-19



By [Prof. Billy NG](#) [✉](#),
School of Pharmacy

Since the emergence of COVID-19, CU Medicine has been working tirelessly to find ways to understand the virus, to treat the illnesses that result from infection, and to curb the pandemic. Prof. **Billy Ng** from the School of Pharmacy led a group of international scientists from Hong Kong and from international laboratories in mainland China, the United States, France, Germany, South Korea and Taiwan to discover a potent treatment for COVID-19. The findings of this highly collaborative and interdisciplinary study were published in the leading international chemical journal [ACS Central Science](#) [✉](#).

Using a combination of biochemistry, cell biology and computational chemistry, **the team's laboratory tests showed that the drug simeprevir, used to treat the hepatitis C virus, is able to suppress the replication of SARS-CoV-2. Simeprevir is the only antiviral drug that can target more than one SARS-CoV-2 viral protein simultaneously, meaning it can still function even if one of the proteins becomes mutated.**



The combination of this drug with remdesivir, which was already prescribed as a drug for seriously ill COVID-19 patients, can result in a synergy between the medications, enhancing their overall effectiveness. This encouraging discovery by Professor Ng and the team indicates a promising course for the future of antiviral drug development.

[Full publication](#) [✉](#)

[Real-World Experience in Simulation Wards](#)

[Fresh Graduates Face the Pandemic](#)

CU Medicine turns COVID disruptions into educational opportunities

Classes Run On • To Better Finishes

The COVID-19 outbreak forced hospitals to limit patient access even for trained medical professionals, to avoid cross-contamination. To improve the practical experience of medical students, **CU Medicine** has therefore built two high-fidelity simulation wards, which mimic the real-life setting of a Hong Kong hospital. The wards at **Prince of Wales Hospital** are equipped with everything that you'd find in a normal ward setting : **hospital beds, of course, but also the bedside cardiac monitors, suction apparatus, wall-mounted oxygen supply ... you name it, and you'll find it on the proxy wards.**

Real-World Experience in Simulation Wards

[Read More](#)



Each ward can accommodate up to 16 students. CU Medicine plans to continue the wards' use even beyond the pandemic, since they serve as an opportunity to simulate real-life scenarios at a planned instruction time. In the real world, students and teaching staff alike may be waiting for situations to develop that produce a "learning moment". Some scenarios may seldom occur during a student's time at medical school. Sessions on the simulation wards, on the other hand, can be scheduled to coincide with the medical curriculum, and what is being taught at that time.

Experienced clinical staff can participate alongside students as they respond to scenarios on the ward. CU Medicine instructors can also serve as "patients" with specific medical conditions and demands. The teaching staff can also remove themselves from the real-world environment and observe the behaviour and performance of medical students from behind a one-way mirror.

Students can therefore experience unusual but nevertheless vital or life-threatening situations without any exposure to actual patients. The wards provide a safe and controlled clinical learning environment to supplement classroom teaching. They offer a valuable addition to any real-time experience students may get when they are able to attend "normal" hospital wards.

CU Medicine has adapted the way it teaches according to the necessities of the pandemic. It hopes that innovations developed in response to the strictures during COVID-19 lockdowns can inform and improve future instruction in a way that serves public health needs but provides medical students with an even better educational experience.

Fresh Graduates Face the Pandemic

It's tough enough to be a medical student at the best of times. These times, in a pandemic era, have been some of the worst.



Dr Rachel Lai (2nd from right)

Fresh CU Medicine graduates saw their sixth and final year of medical school heavily disrupted by COVID-19 lockdowns and restrictions. Their skills are currently needed more than ever. But how could they hone their skills when hospital clinics were off-limits?

Now interns in their first rotation, CU Medicine graduates of 2021, **Brian SIU Wai Hei** and **Rachel LAI** recall that they were completely barred from hospital access for two spells, lasting several months. At other times, they needed special permission from doctors to enter the wards.

Doctors at **Prince of Wales Hospital** did their very best to bring the clinical experience to medical students on Zoom, where they interviewed patients online instead. "It's rather different from really seeing a patient," Lai admits. Still, the patients were very understanding, appreciating that these are very different and difficult times.

[Read More](#)



Dr Brian Siu (left)



Although it was hard for students to adjust, the learning style did have its advantages. The instructors strove to standardise the clinical process, putting patient examination, for instance, into a logical and orderly framework.

“It becomes almost like an algorithm,” Lai says. “It keeps repeating through a flow of patients. Presentation, history, examination. It’s more methodical.”

While there was less of an opportunity to perform physical exams and experience real-life scenarios, teachers crafted interactive tutorials and simulated case files that proved very instructive. Siu feels he gained better knowledge of acute management for life-threatening situations, which occurred in the scenarios but can’t be experienced in real life.



“We may have had more chances to learn in-depth knowledge, but fewer practical aspects of the medicine,” Siu says. “Some simulated and online elements should still be the curriculum. It has its advantages.”

After graduation, the new doctors found the “pre-intern” block very useful, three weeks or so where they shadow previous interns. That helped them prepare and understand the daily workflow they were about to face.

“It’s a really steep transformation curve,” Lai admits. “That pre-internship block really helps a lot. In the end, it’s really up to you, and they throw you in.”

Siu agrees that to suddenly find himself a “medical officer,” and a bona fide doctor, is tough and at times stressful.

“You have to be accountable for everything you say and bear responsibility for the patients,” Siu notes. “You can’t afford to make any mistakes as a doctor.”

Siu is happy that he has been able to handle the situation when a patient’s condition deteriorates. “When you are able to find out the cause and do the appropriate management, you feel quite satisfied,” he explains.



Siu with his urology team colleagues

Lai meanwhile has already contended with stressful situations such as a “crash caesarean section” due to an obstetric emergency in the mother, a cord prolapse in which the umbilical cord drops ahead of the baby itself. Lai got the call at 7 a.m. and so she needed to interrupt her rounds and dash to the operating theatre.



“I received an urgent direct call from the labour ward midwife while I was in another ward taking care of more stable patients,” Lai says. But she knew the gravity of the situation, and the delivery took 10 minutes. “It all worked out for the mother and the newborn.”

New doctors inevitably deal with failure, too. One early patient had a premature rupture of the fetal membrane at 22 weeks of gestation. Lai attended the mother every day as she fought to keep her unborn child. But her condition couldn’t be controlled, and a decision was taken that she would require a medical abortion.

The new intern administered the medication. “I literally cried with the patient,” Lai says. “I will not forget my first patient 10 to 20 years later. But she was healthy returning home.”

A rowing team of four people is silhouetted against a bright, shimmering sunset over a body of water. The sun is low on the horizon, creating a dense field of golden light reflecting off the water's surface. The rowers are in a long, narrow boat, and their oars are visible as they move through the water. The overall mood is serene and collaborative.

In the Same Boat

CU Medicine supports the community as it contends with a deadly disease

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GETTING VACCINATED

DEANERY & FACULTY MANAGEMENT



Prof. Philip CHIU
DEPARTMENT OF SURGERY



Prof. Patrick YUNG
DEPARTMENT OF ORTHOPAEDICS AND TRAUMATOLOGY



Prof. Tony MOK
DEPARTMENT OF CLINICAL ONCOLOGY



Prof. Siew NG
DEPARTMENT OF MEDICINE AND THERAPEUTICS



Prof. Francis CHAN
DEAN



Prof. David HUI
DEPARTMENT OF MEDICINE AND THERAPEUTICS



Prof. Samuel WONG
THE JOCKEY CLUB SCHOOL OF PUBLIC HEALTH AND PRIMARY CARE

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FACULTY NEWS

New CUHK Hospital Becomes Vaccination Hotspot

Hong Kong began its vaccination scheme in February to combat COVID-19, and now offers free doses to all residents. A high coverage rate is essential in bringing an end to the pandemic and ensuring that life can go back to some kind of normal.


The newly opened CUHK Medical Centre (CUHKMC) extended its support for the Government's vaccination scheme through serving as one of the 29 Community Vaccination Centres around Hong Kong. CUHKMC is a new private hospital that's wholly owned by The Chinese University of Hong Kong. It started opening in phases as of 6 January 2021.

The Community Vaccination Centre run by CUHKMC operates 15 vaccination booths for 12 hours per day, 7 days per week. It was opened on March 16, following a successful trial run, in which 690 CUHK academic staff, administrative staff and students got their first dose.

By mid-July, the CUHKMC vaccination centre was operating at full capacity, delivering between 2,300 and 2,400 jabs per day. Through the end of August, it had administered 300,000 doses, making it one of the busiest vaccination centres in Hong Kong.

The CUHKMC facility is one of 24 Community Vaccination Centres around the city that administers the Comirnaty vaccine developed by BioNTech. In addition, CUHK Medical Clinic at Tsim Sha Tsui offers the CoronaVac vaccine by Sinovac, another vaccine on offer in Hong Kong.



“Vaccination is the key to overcome the pandemic,”
Dr FUNG Hong , the Chief Executive Officer of CUHKMC, says.
“Getting vaccinated can not only protect oneself, but also one’s family and friends, as well as reducing the risk of community outbreak.”



| | |
|--|---------------|
| Operating hours per week | 84 |
| Jabs per day | 2,300 ~ 2,400 |
| Administered doses (As of the end of August 2021) | 300,000 |

[< Previous In the Same Boat | CUHKMC Becomes Vaccination Hotspot](#)


CUHK Medicine
@CUHKMedicine

One disheartening aspect of the pandemic has been the widespread dissemination of disinformation, especially throughout the social media platforms. With the dissemination of inaccurate information, misleading data, and deliberate obfuscation, a thorough understanding of COVID-19 related information has been a difficult task to achieve.

FAKE

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Combatting Disinformation With Twitter Truths

To counteract the effects of disinformation, CU Medicine launched an outreach programme on Twitter this summer, to answer questions posed by the general public about COVID-19 symptoms, treatment and vaccines. The [#askCUexperts campaign](#) , which has started since June till now, provides reliable facts and figures as well as expert opinion on COVID-19 related issues, aiming to increase community awareness and understanding of the disease.

So far, 17 CU Medicine professors have participated, taken questions on Twitter and answered with video messages, Q&A sessions, and infographics. These tweet replies provide health tips and address common health queries.

Social @CUHKMedicine : [Twitter](#)  | [Facebook](#) 

The Twitter campaign creates an environment that allows close interactions between the general public and our professors. Information can also be updated instantly as we learn more about the disease.

COVID-19 has created a lot of fear and anxiety among the public. It has also hampered the usual healthcare treatment of vulnerable populations such as children, women, the elderly and patients with chronic illnesses. Our professors provided the latest information and knowledge on transmission, prevention, treatment, vaccines, and clinical guidelines for COVID-19, as well as addressing hot topics that have emerged such as the Delta variant and “long COVID”.

The Twitter posts have generated 5.7 million impressions at last count, with >290,000 video views both within Hong Kong and from abroad. The campaign is a useful way to enhance conversations about COVID. In addition, CU Medicine is also cooperating with overseas universities and academics to exchange views on the best practices of, as well as the latest information on the medical developments and scientific findings related to COVID-19.

The Right Time for Post-COVID Surgery

CU Medicine doctors have played an important part in research to establish how long COVID-19 patients should wait before they undergo surgery for other medical conditions. Their work suggests patients should wait at least seven weeks before undergoing a procedure.

In all, **45 doctors from CU Medicine** and the Hospital Authority in the New Territories East Cluster participated alongside **15,025 surgeons** across the world as part of the COVIDSurg Collaborative. Their aim was to establish the optimal period that patients should delay surgery, if they have also had a SARS-CoV-2 infection.


The COVIDSurg Collaborative conducted one of the world's largest and broadest studies on post-COVID-19 surgery.


The doctors collected data on 140,727 patients at 1,674 hospitals in 116 countries, spanning Asia, the Americas, Europe, Africa and Australia.

Their work has been awarded the Guinness World Records for the world's largest scientific collaboration.

The researchers published their findings in the journal *Anaesthesia*. The findings show that patients are at increased risk of postoperative death if they have an operation within six weeks of their initial SARS-CoV-2 diagnosis or are displaying ongoing COVID-19 symptoms. The conclusion is that surgery should be delayed for seven weeks after a patient tests positive for COVID-19, to reduce the risk of post-operative death.



“Previous study showed that half of the patients with perioperative SARS-CoV-2 infection developed pulmonary complications post-operatively, which were associated with high mortality,” **Dr. Kaori FUTABA** , an Assistant Professor in the Department of Surgery, explains. “However, the optimal duration of delay was unknown. **This study has shown that surgery should be delayed by seven weeks, if possible.**”

Prof. Simon NG , a Professor in the Department of Surgery, believes the findings can be useful in his hometown. “There are over 12,000 confirmed COVID-19 cases to date in Hong Kong. Some of these patients may now require elective surgery,” Professor Ng notes. “**This data has allowed us to optimise timing of the surgery in order to minimise COVID-19 related perioperative risks.**”



There is a 6% increased mortality rate for patients who still have ongoing COVID-19 symptoms, even if they wait and delay surgery for seven weeks or more. “**We therefore suggest**



patients with ongoing symptoms opt for further delay,” **Dr. Albert CHAN**, an honorary Clinical Assistant Professor with the Department of Anaesthesia and Intensive Care, concludes.

Establishing Aerosol Danger for a Common Procedure

COVID-19 is a respiratory tract infection that is predominantly transmitted by large droplets. Apart from direct contact and respiratory droplets, SARS-CoV-2 can also spread through aerosols, which are tiny water particles in the air, during medical procedures.

Dr. Shannon CHAN of the Department of Surgery was the first to provide scientific evidence establishing that esophagogastroduodenoscopy (EGD) is an aerosol-generating procedure. The medical journal *Gastroenterology*, the leading academic publication in the field of gastrointestinal disease, published her paper on the research findings.

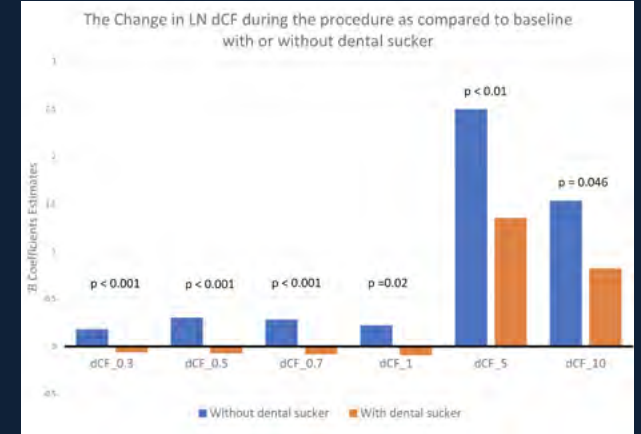
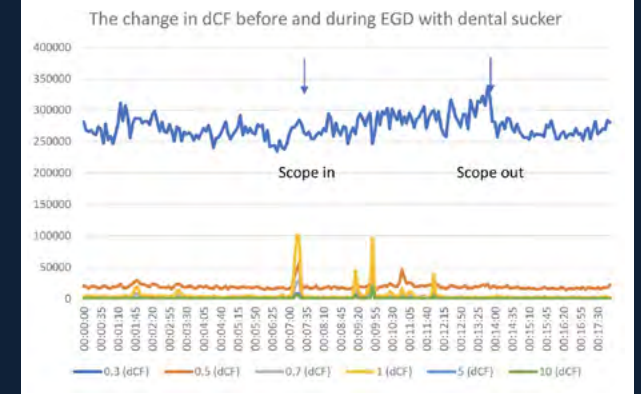
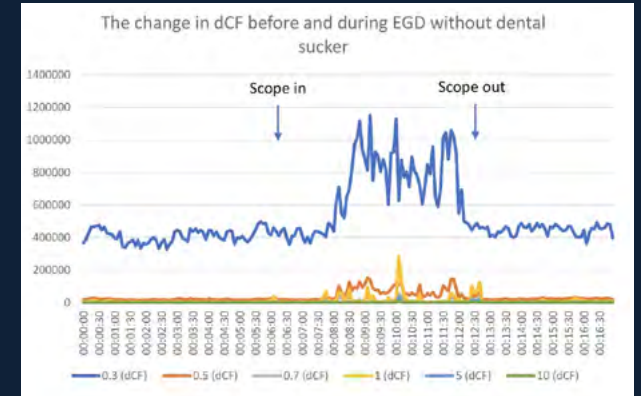
“Our study results support that EGD is an aerosol-generating procedure, and the use of a dental sucker may decrease the number of aerosols generated,” Dr. Chan says, as the lead author of the study. **“We recommend that in addition to full personal protective equipment (PPE), the use of a dental sucker during EGD could reduce the risk to healthcare workers.”**



EGD is an outpatient procedure in which a doctor uses an endoscope to examine a patient's esophagus, stomach and the duodenum portion of the small intestine. It typically takes around 45 minutes to perform.

Dr. Chan used laser-particle counters to examine any generation of aerosols, detecting the change in the concentration of particles before and during EGD. The study examined 93 patients using a handheld particle counter placed 10 centimetres from their mouths before, during and after the procedure.

The results demonstrate that aerosol levels are significantly higher during the EGD process. However, Dr. Chan observed that using a dental sucker and conducting continuous oral suction caused a significant reduction in the number of aerosols and breath droplets generated during the procedure. The study also established that sedating the patient does not reduce the number of aerosols generated. The above findings suggest that changes are necessary to current infection control guidelines about how to conduct digestive endoscopy procedures.

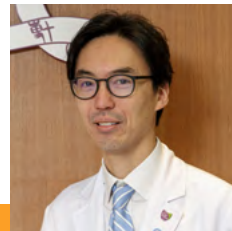


The particles emitted during EGD with a dental sucker reduced significantly

Faculty News



Prof. Dennis LO becomes the first Chinese scientist to receive the *Royal Medal* for outstanding achievements in biological sciences



Prof. Ronald MA received *The Xiaoren Pan Distinguished Research Award for Epidemiology of Diabetes in Asia 2020*

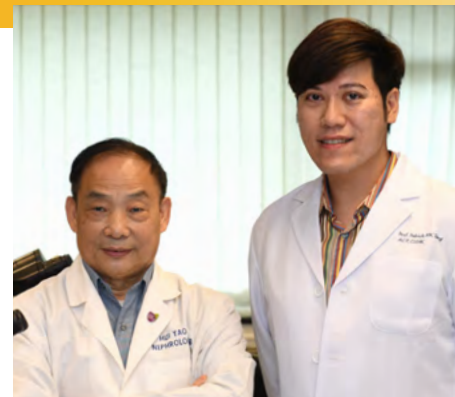


Dr. Ho KO clinched the *Croucher Innovation Award 2020* and *2021 Excellent Young Scientists Fund* by National Natural Science Foundation of China (NSFC)

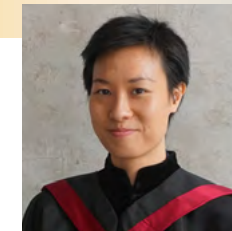


Ministry of Education Higher Education Outstanding Scientific Research Output Awards (Science and Technology) 2020

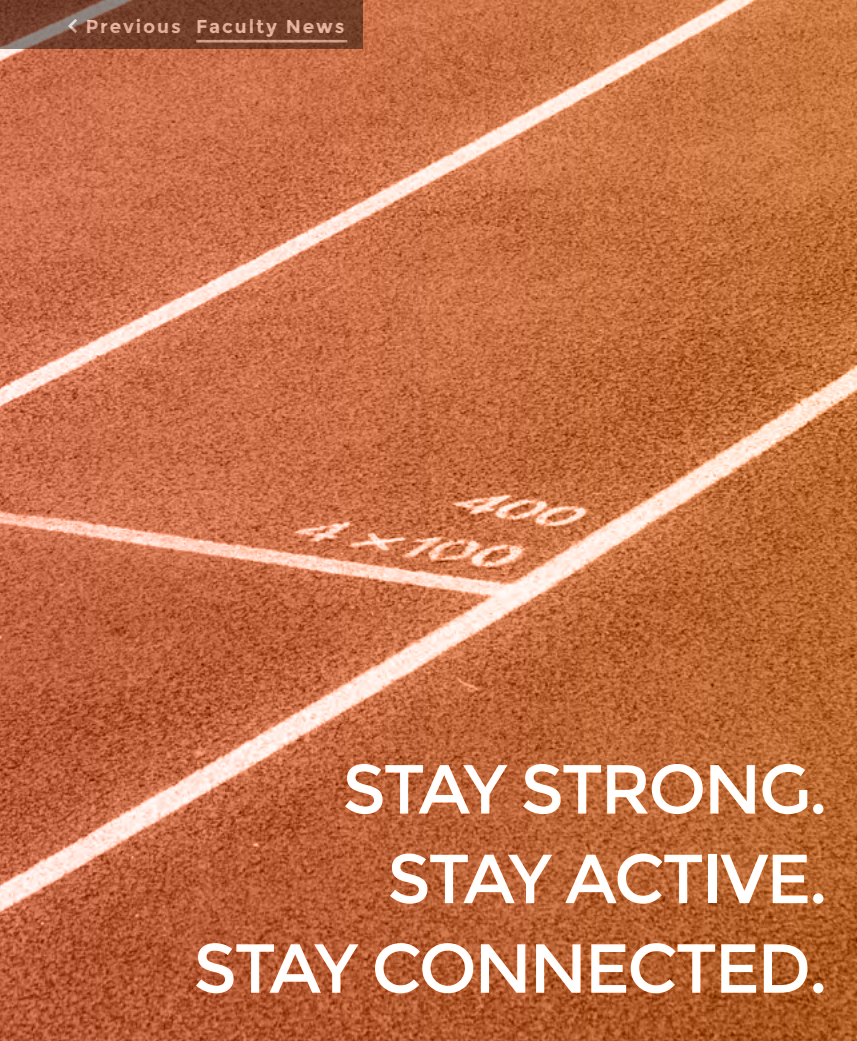
- **Prof. Siew NG**, • **Prof. Francis CHAN** & • **Prof. Joseph J.Y. SUNG** got *First-class award in Natural Sciences*
- **Prof. Tony MOK** got *Second-class award in Natural Sciences*



Dr. Patrick Ming Kuen TANG & **Prof. Hui-yao LAN** got *Gold Medal with Congratulations of the Jury* from the International Exhibition of Inventions Geneva 2021



Rachel LEUNG selected as *Rhodes Scholar*



STAY STRONG.
STAY ACTIVE.
STAY CONNECTED.



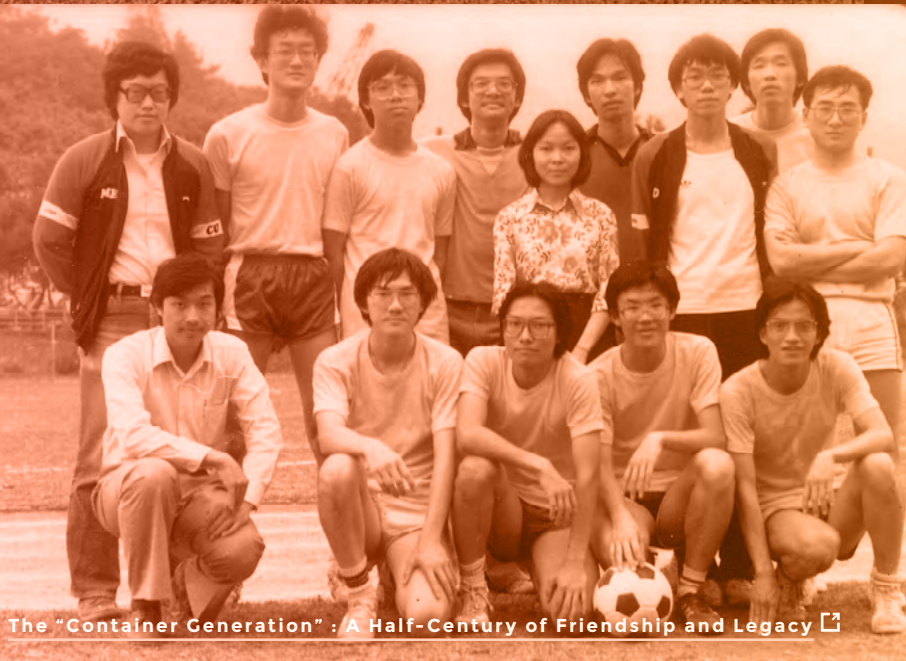
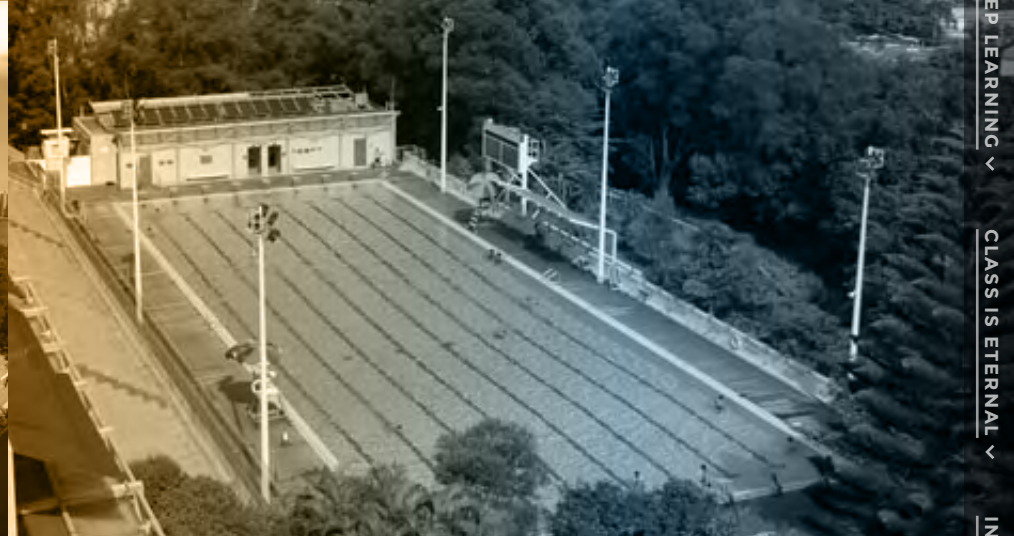
Fun Run [↗](#)



Smart Fun Day [↗](#)



Sports Facilities & Amenities [↗](#)



The "Container Generation": A Half-Century of Friendship and Legacy [↗](#)



Joining the League of Super Rhodes [↗](#)

Transforming our Passion into Perfection