

CV of ASSMN 2024 Invited Faculty



Enders Kwok-Wai Ng

Country

Hong Kong

Position & Organization

Professor, Department of Surgery, Faculty of Medicine, The Chinese University of Hong Kong

Major Field

Upper GI Surgery, Bariatric Surgery, ERAS

Short Bio (in 300 words)

Professor Enders Ng embarked on both basic and clinical research shortly after finishing his surgical training in Hong Kong in the mid-1990s. His research foci include interventional endoscopy, surgical oncology for esophageal and gastric malignancies, bariatric surgery, as well as surgical nutrition. Over the years, he was awarded by different authorities and societies for research achievement, including Young Scientist Research Prize in the 4th United European Gastroenterology Meeting (1994) and Young Scientist Award in the 11th International Workshop on Gastrointestinal Pathology and Helicobacter pylori in Hungary (1998). His work on peptic ulcer complications has also led him to the winning of Second-Class Award of the 2007 State Scientific and Technological Progress Award of China. Up to now, he has published over 260 articles in various international peer-reviewed journals and more than 10 book chapters in Surgery and Endoscopy.

Professor Ng is the Founding President of the Hong Kong Society of Upper Gastrointestinal Surgeons from 2006 to 2010. He was also the President of Hong Kong Society of Parenteral and Enteral Nutrition from 2007 to 2023. He has been repeatedly elected as Councillor of the College of Surgeons of Hong Kong from 2007 to 2019, and appointed as the Vice-President (Internal Affairs) from 2013 to 2019. He is now the Associate Dean (Alumni Affairs) to the Faculty of Medicine, The Chinese University of Hong Kong. His current post is the Director of Surgery Service for the New Territories East Cluster of Hong Kong Hospital Authority. He is a keen teacher and trainer. His fondest hobbies are Chinese Calligraphy and Endurance Running.

Reimbursement of Surgical Nutritional Support in Hong Kong

Enders Kwok-Wai Ng

Department of Surgery, Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong, China

Hong Kong is a city with 7.5 million population locating on the south-eastern coast of People Republic of China. Health care provision is based on a dual-track model, i.e., public and private. The public sector under Hospital Authority provides services to about 90% of the population. Despite the return of sovereignty to China since 1997, the public health care remains very much similar to the National Health System (NHS) of the UK. Patients just need to pay a small, fixed sum of charge to receive either in-patient or out-patient services.

The nutrition policy being implemented in the public sector in Hong Kong also follows the same concept. All in-patients are provided with three meals per day with no additional charge. The types of diet depend on patient's clinical condition and the orders are usually jointly made by physicians and dietetic professionals. For high-risk patients, texture-modified diet, allergy diet and immune-compromised safe diet will be arranged on a case-by-case basis. For in-patients who could not tolerate oral feeding, enteral tube-feeding (EN) or parenteral nutrition (PN) would be provided. Most non-oral nutrition (EN or PN) and all in-patient dietitian consultation are free-of-charge.

For outpatients, all nutritional products (ONS, EN, and PN) are not supplied by the Hospital Authority. Conceptually nutrition outside hospital is considered as daily food and supposed to be taken care by patients themselves. For patients and families not able to pay for the nutritional products, they can apply for reimbursement from medical social welfare unit under the Hong Kong government, in the form of Disability Allowance (DA). The current monthly support for regular DA and higher DA is HK\$ 2070 (US\$ 265) and HK\$ 4140 (US\$530), respectively. For patients who are certified as not able to work (100% disabled) in addition to the illness, they can apply for Comprehensive Social Security Assistance (CSSA) up to HK\$5065 (USD 650) per month. If a patient is proven by doctors to need constant care by others, the CSSA could reach HK\$ 7130 per month (USD 920). An additional HK\$2620 (USD 335) per month will be provided if the patient is certified to have long-term (permanent) disability or ill-health by the doctor. For these sums of monetary support, the government assumes that the ONS, EN or TPN are being covered.

Body Fat Component Changes after Bariatric Surgery

Enders Kwok-Wai Ng

Department of Surgery, Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong, China

Objective:

Bariatric and metabolic surgery have been increasingly performed in Asia and it is now also an accepted treatment modality for obese patients with poorly controlled Type II DM. We investigated the changes of various fat components of the patients before and after bariatric surgery in Hong Kong.

Methods:

We developed a technique for the separation and quantification of brown adipose tissue (BAT) and white adipose tissue (WAT) using MRI measured fat fraction and T2* intensity based on the Gaussian mixture model (GMM). It was used to study the pre-op (baseline) and post-op (6 months and 12 months) changes in BAT and WAT, as well as fat content in the liver and pancreas, in patients undergoing bariatric surgery.

In another study, we used ultrasonographic methods to study the associations of the changes of abdominal fat thicknesses with changes of anthropometric indexes and improvements of metabolic phenotypes before and after metabolic surgery.

Results:

Supraclavicular BAT and abdominal WAT were measured with co-registered water, fat, fat-fraction and T2* image. Intrahepatic triglyceride (IHTG) was measured using MR spectroscopy and pancreatic fat was measured using a region-of-interest approach. BMI ($p=0.005$), IHTG ($p=0.005$), and subcutaneous ($p=0.005$) and visceral adipose tissues ($p=0.005$) were significantly reduced 6 months after surgery. Pancreatic fat ($p=0.009$) was significantly reduced at 12 months. Most reduction became stable between the 6-month and 12-month interval. No significant difference was observed in BAT volume, fat-fraction and T2* values.

On the other hand, from the USG study, at 1 year, of 25 patients who completed all scanning, significant decrease in mesenteric-fat-thickness was associated with significant reduction of BMI (-24%, $p < .001$), remission of metabolic syndrome (32%, $p = .008$), NAFLD (60%, $p < .001$) and T2DM (44%, $p < .001$). Lower baseline mesenteric fat thickness was associated with high odds of remission of metabolic syndrome.

Conclusion:

It appears that bariatric surgery reduced weight mainly by reduction of WAT. Liver and pancreatic fat decreased below the threshold possibly due to a reduction of free fatty acid. BAT volume, however, showed no significant changes, suggesting that surgery itself probably did not alter metabolic profile of the patients.