

# 8<sup>th</sup> OBES Scientific Congress 2023

Obesity, Bariatric and Endocrine Societies

*Obesity Through the Asian Lens*

10 - 11 NOVEMBER

GRAND COPTHORNE WATERFRONT, SINGAPORE

Jointly Organised by



PROGRAMME BOOK

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## POWERSEAL™ Sealer and Divider

The Next Level of Advanced Bipolar Technology



**STRONG  
SEALING**



**MULTI-  
FUNCTIONAL  
DESIGN**



**IMPROVED  
ERGONOMICS**

# Saxenda®

liraglutide injection

**APPROVED for aged 12 and above**  
for weight loss management<sup>1</sup>



*Most of your patients have the will.  
You can offer them a way.*

**Saxenda® is a once-daily injectable treatment**



**Adolescents taking Saxenda® saw clinically relevant improvements in ALL weight-related end points<sup>2</sup>**



**No apparent differences in growth or pubertal development between Saxenda® and placebo<sup>3</sup>**



**Real-world experience in 1.5 million adult patients globally since launch**



**97% similar to natural GLP-1 and is considered to increase feelings of satiety and fullness, and decrease hunger<sup>1</sup>**

**References**

- Saxenda® Singapore Prescribing Information, May 2020.
- Kelly AS, Auerbach P, Barrientos-Perez M, et al. A randomized, controlled trial of liraglutide for adolescents with obesity. *N Engl J Med.* 2020;382:2117-2128.
- Foster GD, Borradaile KE, Sanders MH, et al; for the Sleep AHEAD Research Group of the Look AHEAD Research Group. A randomized study on the effect of weight loss on obstructive sleep apnea among obese patients with type 2 diabetes: the Sleep AHEAD study. *Arch Intern Med.* 2009; 169(17):1619-1626.

**Abbreviated Prescribing Information**

**Saxenda® (Liraglutide injection) 6 mg/ml Solution for injection in pre-filled pen** **Presentation:** Prefilled, disposable pen containing 18 mg of liraglutide in 3 mL of solution. 1 mL of solution contains 6 mg of liraglutide **Indications: Adults:** Saxenda® is indicated as an adjunct to a reduced-calorie diet and increased physical activity for weight management in adult patients with an initial Body Mass Index (BMI) of  $\geq 30$  kg/m<sup>2</sup> (obesity), or  $\geq 27$  kg/m<sup>2</sup> to  $< 30$  kg/m<sup>2</sup> (overweight) in the presence of at least one weight-related comorbidity such as dysglycaemia (pre-diabetes or type 2 diabetes mellitus), hypertension, dyslipidaemia or obstructive sleep apnoea. Treatment with Saxenda® should be discontinued after 12 weeks on the 3.0 mg/day dose if patients have not lost at least 5% of their initial body weight. The need for continued treatment should be re-evaluated annually. **Adolescents (≥12 years):** Saxenda® can be used as an adjunct to a healthy nutrition and increased physical activity for weight management in adolescent patients from the age of 12 years and above with: an inadequate response to reduced calorie diet and increased physical activity alone, and obesity (BMI corresponding to  $\geq 30$  kg/m<sup>2</sup> for adults by international cut-off points)<sup>\*</sup> and body weight above 60 kg. Limitations of Use: The safety and effectiveness of Saxenda® in paediatric patients with type 2 diabetes have not been established. Treatment with Saxenda® should be discontinued and re-evaluated if patients have not lost at least 4% of their BMI or BMI z score after 12 weeks on the 3.0 mg/day or maximum tolerated dose. **Posology:** The starting dose is 0.6 mg once daily. The dose should be increased to 3.0 mg once daily in increments of 0.6 mg with at least one week interval to improve gastro-intestinal tolerability. If escalation to the next dose step is not tolerated for two consecutive weeks, consider discontinuing treatment. Daily doses higher than 3.0 mg are not recommended. **Adolescents (≥12 years):** For adolescents from the age of 12 to below 18 years old a similar dose escalation schedule as for adults should be applied (see table 2). The dose should be increased until 3.0 mg (maintenance dose) or maximum tolerated dose has been reached. **Administration:** Saxenda® is for subcutaneous injection only, administered once daily at any time, independent of meals. Saxenda® should be injected in the abdomen, thigh or upper arm, preferably around the same time every day. Saxenda® must not be administered intravenously or intramuscularly. Saxenda® should not be mixed with other injectables (e.g. insulins). Patients with type 2 diabetes receiving liraglutide in combination with a sulfonylurea may have an increased risk of hypoglycaemia. The risk of hypoglycaemia may be lowered by a reduction in the dose of sulfonylurea. Saxenda® should not be used in combination with other Glucagon-like Peptide-1 (GLP-1) receptor agonists. Blood glucose self-monitoring is necessary to adjust the dose of insulin or insulin-secreting agents. The safety and efficacy of Saxenda® in children below 12 years of age has not been established. **Contraindications:** Hypersensitivity to liraglutide or to any of the excipients. **Special warnings and precautions:** In patients with diabetes mellitus Saxenda must not be used as a substitute for insulin. Diabetic ketoacidosis has been reported in insulin-dependent patients after rapid discontinuation or dose reduction of insulin. There is no clinical experience in patients with congestive heart failure New York Heart Association (NYHA) class IV and liraglutide use is not recommended for use in these patients. Saxenda® is not recommended in patients with inflammatory bowel disease or diabetic gastroparesis. Saxenda® is not recommended in patients: aged 75 years or more, treated with other products for hepatic impairment, with obesity secondary to endocrinological or eating disorders or to treatment with medicinal products that may cause weight gain, with severe renal impairment, with severe hepatic impairment. Saxenda® should be used cautiously in patients with mild or moderate hepatic impairment. Acute pancreatitis has been observed with the use of GLP-1 receptor agonists. Patients should be informed of the characteristic symptoms of acute pancreatitis. If pancreatitis is suspected, discontinue liraglutide; if acute pancreatitis is confirmed, liraglutide should not be restarted. In clinical trials for weight management, a higher rate of cholelithiasis and cholecystitis was observed in patients treated with liraglutide. Patients should be informed of the characteristic symptoms of cholelithiasis and cholecystitis. In clinical trials in type 2 diabetes, thyroid adverse events such as goitre have been reported in patients with pre-existing thyroid disease. An increase in heart rate was observed with liraglutide in clinical trials. Heart rate should be monitored at regular intervals consistent with usual clinical practice. Patients should be informed of the symptoms of increased heart rate (palpitations or feelings of a racing heartbeat while at rest). For patients who experience a clinically relevant sustained increase in resting heart rate, treatment with liraglutide should be discontinued. Patients treated with liraglutide should be advised of the potential risk of dehydration in relation to gastrointestinal side effects and take precautions to avoid fluid depletion. Patients treated with Saxenda® should be monitored for the emergence or worsening of depression, suicidal thoughts or behaviour, and/or any unusual changes in mood or behaviour. Discontinue Saxenda® in patients who experience suicidal thoughts or behaviours. Episodes of clinically significant hypoglycaemia have been reported in adolescents (≥12 years) treated with liraglutide. Patients should be informed about the characteristic symptoms of hypoglycaemia and the appropriate actions. **Pregnancy and lactation:** Saxenda® should not be used in women who are pregnant, who wish to become pregnant, or who are breastfeeding. **Undesirable effects:** The most frequently reported adverse reactions in patients treated with Saxenda® are nausea, vomiting, diarrhoea and constipation. Less common adverse reactions include dyspepsia, upper abdominal pain, gastritis, flatulence, abdominal distension, gastroesophageal reflux, eructation, dry mouth, dizziness, dysgeusia, insomnia, fatigue, asthenia, injection site reactions, malaise, tachycardia, urticaria, pancreatitis, cholelithiasis, cholecystitis, hypoglycaemia, anaphylactic reaction, dehydration, acute renal failure and renal impairment. **Overdose:** From clinical trials and marketed use overdoses have been reported up to 72 mg (24 times the recommended maintenance dose). Events reported included severe nausea, severe vomiting and severe hypoglycaemia. In the event of overdose, appropriate supportive treatment should be initiated according to the patient's clinical signs and symptoms. Full prescribing information is available upon request.

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For Healthcare Professionals only.

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## WELCOME MESSAGE

Welcome to the Obesity, Bariatric and Endocrine Societies (OBES) Congress 2023 website!

We are delighted to announce that the 8th OBES Congress will be held at the Grand Copthorne Waterfront Hotel, Singapore from 10 – 11 November 2023.

As some of you may recall, the OBES Congress had traditionally been held over 2 days before the start of the COVID-19 pandemic. After a very successful face-to-face 1-day meeting in November 2022, the annual OBES Congress in 2023 will pivot to our 2-day meeting to enable us to bring together more key opinion leaders in Singapore and in the region in the area of research, public health and clinical practice to discuss the rising challenge of obesity in the region.

The theme of this year's Congress, "Obesity through the Asian Lens", will focus on the unique pathophysiology, clinical phenotypes and treatment challenges in obesity posed by the Asian ethnicity. We will explore, in addition to genetic factors, how cultural, economic, and social factors contribute to the challenges of obesity prevalence and management, and how these factors can be addressed in the Asian region.

We look forward to meeting you at the 8th OBES Congress!



**Dr. Tan Chun Hai**  
Obesity and Metabolic Surgery  
Society of Singapore (OMSSS)



**Dr. Tham Kwang Wei**  
Singapore Association for the  
Study of Obesity (SASO)



**Dr. Kek Peng Chin**  
Endocrine and Metabolic  
Society of Singapore EMSS

# PROGRAMME



DAY 1: 10 November 2023 (Friday)	
TIME	Venue: Galleria Ballroom, Level 3
0730	Registration
0830	Welcome Message by OMSSS President <b>Dr. Tan Chun Hai</b>
0835	Welcome Message by SASO President <b>Dr. Tham Kwang Wei</b>
0840	Welcome Message by EMSS Vice President <b>Dr. Abel Soh</b>
	<b>PLENARY</b> <b>Chairpersons: Dr. Tan Chun Hai, Dr. Tham Kwang Wei &amp; Dr. Benjamin Lam</b>
0845	PLENARY 1: Obesity Complications in Asian Populations: How Different Are We? <b>Prof. Alice Kong</b>
0915	PLENARY 2 : Efficacy of Metabolic Surgery on Obesity Complication in Asians <b>Prof. Lee Wei-Jei</b>
0945	Q & A Session
1000	Morning Tea Break / Exhibition
	<b>SYMPOSIUM 1: NAFLD, MAFLD or MASLD: What's in the Name?</b> <b>Chairpersons: Dr. Lee Yingshan, Dr. Alvin Eng &amp; Dr. Toh Bin Chet</b>
1030	<b>From Bench to Bedside</b> Dr. Mark Muthiah
1055	<b>Clinical Aspects &amp; Medical Interventions</b> Dr. Ng Yunn Cheng
1120	<b>Intervening with Bariatric Surgery</b> Dr. Charles Peng Zhang
1145	Panel Discussion and Q&A Session
1200	Sponsored Pre-Lunch Symposium by Medtronic International Ltd <b>Chairperson: Dr. Tan Bo Chuan</b> <b>Bariatric Made Easy by Dr. Mustafa Mohammed Taher Al-Khafaji</b>
1230	Sponsored Premium Title Lunch Symposium by Novo Nordisk Pharma (Singapore) Pte Ltd <b>The Heavy Truth: Exploring The Impact of Obesity in Asia - Prof. John Dixon</b>
1315	Break / Exhibition

## BREAKOUT SESSIONS

Venue: Cardinal Room, Level 3		Venue: Swallow Room, Level 3	
TIME	TOPIC	TIME	TOPIC
<b>Surgical Track:</b> Bariatric Procedures State of the Art Chairperson: <b>Dr. Danson Yeo &amp; Dr. Aung Lwin</b>		<b>Medical Track:</b> Building Bridges: Sharing of Best Practices in Obesity Management Chairperson: <b>Ms. Angelina Foo &amp; Ms. Jessica Ong</b>	
1340	Intra-gastric Balloon vs Endoscopic Sleeve Gastroplasty vs Sleeve Gastrectomy <b>Assoc. Prof. Dato Dr. Nik Ritza Kosai (IGB) vs Dr. Ravishankar Asokkumar (ESG) vs Dr. Jaideep Raj Rao (LSG)</b>	1340	Transforming Lives through Nutrition for Patients Undergoing Bariatric Surgery in North-Eastern Singapore <b>Ms. Joanna Tan</b>
1410	Debate: Roux En Y Gastric Bypass vs One Anastomosis Gastric Bypass <b>Dr. Suthep Udomsawaengsup (RYGB) vs Dr. Asim Shabbir (OAGB)</b>	1355	Collaborative Prescribing Practice in Managing Patients Post-bariatric Surgery <b>Dr. Khee Giat Yeng</b>
1430	The Rapidly Evolving World of Metabolic Surgery: Which Surgery is Best for Asians? <b>Prof. Lee Wei-Jei</b>	1410	The Healthy Keto Programme in the Management of Metabolic Disorders <b>Dr. Lim Su Lin</b>
1445	Training surgeons in the rapidly evolving world of metabolic surgery <b>Dr. Suthep Udomsawaengsup</b>	1425	Community Lifestyle Intervention Programmes for Chronic Disease Management <b>Dr. Donna Tan</b>
		1440	The Role of the Nurse in Obesity Management <b>Ms. Joyce Lian Xia</b>
1500	Discussion and Q&A Session	1500	Discussion and Q&A Session
1510	Sponsored Tea Symposium by Ethicon Chairperson: <b>Assistant Professor Kim Guowei</b> "Early clinical experience with Harmonic 1100 in OAGB procedures" by Professor Lee Wei-Jei		
1540	Afternoon Tea Break/ Exhibition		
1600	Oral Presentations Venue: Cardinal Room, Level 3 Chairpersons: <b>Dr. Teh Jun Liang &amp; Dr. Daryl Chia</b> Judges: <b>Dr. Lin Jin Lin &amp; Dr. Tiffany Lye</b>	Oral Presentation Venue: Swallow Room, Level 3 Judges: <b>Dr. Winston Kon Yin Chian &amp; Ms. Irene Chu Jia Huey</b>	
	OMSSS AGM (by Invitation Only) Venue: Cardinal Room, Level 3	The Clinical Research Journey: Roundtable Meeting with the Experts Venue: Swallow Room, Level 3 Experts: <b>Prof. Alice Kong, Prof. John Dixon, Dr. Benjamin Lam &amp; Dr. Lee Phong Ching</b>	
1830	OBES Congress Dinner Venue: Galleria Ballroom, Level 3		
END OF DAY 1			



Day 2: 11 November 2023 (Saturday)	
TIME	TOPIC
0800	Registration
SYMPOSIUM 2: Is it Time to Update our Guidelines on Diabetes Care in Asia ? <b>Chairpersons: Dr Lee Phong Ching &amp; Dr. Jeremy Tan</b> <b>Panelists: Prof. Alice Kong &amp; Dr. Aung Myint Oo</b>	
0830	New ASMBS/IFSO Guidelines 2022: <b>1. Asian Patients Perspective – Prof. Wang CunChuan</b> <b>2. Singapore Perspective – Dr. Shanker Pasupathy</b>
	From the Medical Perspective- <b>Dr. Tham Kwang Wei</b>
0915	Panel Discussion
0945	Morning Tea Break / Exhibition
SYMPOSIUM 3: Challenges & Conundrums in Metabolic Care in Asia <b>Chairpersons: Dr. Ester Yeoh, Dr. Charles Peng Zhang &amp; Dr. Tan Bo Chuan</b>	
1030	Stigma: The Insidious Foe in Chronic Disease Care <b>Dr. Marvin Chua</b>
1050	Thromboembolic Events In Asian Bariatric Patients <b>Dr. Gooi Siao Ching</b>
1110	Optimal Metrics to Measure Postoperative Weight Loss <b>Dr. Ching Siok Siong</b>
1130	Perioperative Anaesthesia Care for Patients with BMI > 60 <b>Dr. Joanne Yeo</b>
1150	Optimizing Weight Loss Pre and Post – MBS <b>Dr. Lee Yingshan</b>
1210	Q&A Session
1220	Sponsored Lunch Symposium by Olympus Singapore Pte Ltd <b>Chairperson: Dr. Baldwin Yeung</b> <b>Emerging Field of Bariatric-Metabolic Surgery: Revision - Dr. Lim Chin Hong</b>
1305	Break / Exhibition

BREAKOUT SESSIONS			
	Venue: Cardinal Room, Level 3		Venue: Swallow Room, Level 3
TIME	TOPIC	TIME	TOPIC
	Surgical Track : Complications + Sequelae Of Bariatric Surgery <b>Chairpersons: Dr. Ganesh Ramalingam, Dr. Shanker Pasupathy &amp; Dr. Eugene Lim</b>		Medical Track: How Are We Actually Different? <b>Chairpersons: Dr. Deanna Lee &amp; Dr. Kalpana Bhaskaran</b>
1400	Endoscopic Approach To Leaks In Bariatric Surgery (Exudrain) <b>Dr. Edward Cheong</b>	1400	Sarcopenia in Asians with Obesity <b>Dr. Serena Low</b>
1410	Endoscopic Approach To Leaks In Bariatric Surgery: Mega Stent <b>Dr. Lim Chin Hong</b>	1420	Nuances in Nutritional Deficiencies among Asians with Obesity <b>Ms. Agnes Chong</b>
1420	Surgical Approach To Leaks In Bariatric Surgery <b>Assoc. Prof. Dato Dr. Nik Ritza Kosai Nik Mohamood</b>	1440	Cultural Influences in Patient Engagement in Obesity Care <b>Mr. Sudev Suthendran</b>
1450	Severe Malnutrition Post Bariatric Surgery <b>Dr. Nor Alia Binti Mohd Noor</b>		
1500	Revisional Bariatric Surgery: Chinese Experience <b>Prof. Wang CunChuan</b>	1500	Weight Management and Dysfunctional Exercise <b>Ms. Kirsten Eve Abdul</b>
1520	Discussion and Q&A Session	1520	Discussion and Q&A Session
1540	Afternoon Tea Break		
1615	Oral & Video Presentations Venue: Cardinal Room, Level 3 <b>Chairpersons: Dr. Charleen Yeo &amp; Dr. Cheong Chern Yuen</b> <b>Judges: Dr. Baldwin Yeung &amp; Dr. June Lee</b>	Oral Presentations Venue: Swallow Room, Level 3 <b>Judges: Dr. Vivien Lim &amp; Dr. Mabel Yum</b>	
1730	Closing Plenary: The Role of Emerging Obesity Pharmacotherapy in Obesity Management <b>Chairperson: Dr. Tham Kwang Wei</b> <b>Prof. John Dixon</b>		
1810	Prize Presentation & Closing Ceremony		
END OF DAY 2			



# FACULTY BIOGRAPHY

## FACULTY



**Dr. Mustafa Mohammed Taher Al-Khafaji**  
Malaysia

Graduated from Baghdad University in year 2000 received the initial training in Iraq till year 2007 where got vast experience in managing war injuries. Carry on with the surgical training in Malaysia namely in the National University of Malaysia for Upper GI & Bariatric surgery training with special interest in Minimal Invasive Surgery. Join the Malaysia Nutrition Society. Achieved many publications in high impact international journals. Won the golden medal for innovation of the Creative Method of Managing Buried Bumper Syndrome which was published in the RCS (Royal College of Surgeons - United Kingdom ) as a new technique in the world . Running the novel study in the National University of Malaysia for the CD gene expression in gastric cancer which was published in Gut International Journal. Running the international Multi centric study of EXPEL. Member of MUGIS (Malaysia Upper GI Society) , member of MyMBSS (Malaysia Metabolic and Bariatric Surgery Society), member of PENSMA (Parental & Entral Nutrition Society of Malaysia),member of SELSMA (Society of Endoscopic and Laparoscopic Surgery Malaysia), member of IFSO (International Federation for the Surgery of Obesity and Metabolic Disorders). Currently practicing as resident consultant; Upper GI and Metabolic Surgeon in CENGILD Medical Center (Center of Gastroenterology and Liver Disease) with a record of more than 4000 Bariatric cases for the last 5 years with all the variation of surgeries ( sleeve gastrectomies, gastric bypass, mini gastric bypass and revision bariatric surgeries ) , recognized as Bariatric Centre of excellence IEF since February 2023 .

## FACULTY



**Dr. Ravishankar Asokkumar**  
Singapore

Dr. Ravishankar Asokkumar is a Consultant with the Department of Gastroenterology and Hepatology and is an Assistant Professor with Duke-NUS medical school. His clinical and research interests are in therapeutic and bariatric endoscopy. He is a National Fellow with the World Obesity Federation and has helped to build the Bariatric Endoscopic Service in Singapore

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**Ms. Kirsten Eve Abdul**  
Singapore

Kirsten is a senior physiotherapist currently working in Singapore General Hospital. Originally from the UK, she has been working in Singapore for more than 10 years. Having the opportunity to work with obesity as well as eating disorder clinical populations, she has carved a niche area of expertise, not only assessing and prescribing optimal physical activity and exercise but ensuring a healthy mindset and pattern of exercise is achieved. She is passionate about making exercise enjoyable and sustainable for clients. Kirsten believes in promoting healthy exercise to connect the body and mind, influencing physical and mental health as well as encouraging a positive body image.



## FACULTY



**Dr. Edward Cheong**  
Singapore

Dr. Edward Cheong BSc(Hons), BMedSci, MB, BCh, BAO (NUI), MD (UK), FRCS (Eng)  
Senior Consultant General Surgeon Specialising in Laparoscopic and Endoscopic treatments for Upper GI cancer, and Bariatric Surgery with PANASIA SURGERY.

In 2008 he completed specialist training at The Addenbrooke's Hospital, Cambridge, and the Norfolk and Norwich University Hospital (NNUH) in UK. In 2009, he completed a post-CCT surgical fellowship with the world-renowned MIO pioneer, Professor James D. Luketich at the University of Pittsburgh Medical Center, USA.

He was consultant UGI surgery and UGI cancer director at the NNUH from 2009 – 2022, and he introduced MIO, enhanced recovery after UGI cancer surgery, and endoscopic treatment for early oesophageal and gastric cancer. For 13 consecutive years, NNUH had the shortest length of stay (Median = 7 days) after UGI cancer surgery (Published in UK's National Oesophageal and Gastric Cancer Audit). This is a good surrogate marker of low post-operative complication (an important factor in long-term survival after cancer surgery).

Since 2015, he has been the Co-director at the annual Minimally Invasive Gastrectomy and Esophagectomy Course at the UMC, Utrecht with Professor Richard van Hilleberg.

In 2017, he was the recipient of the Inaugural Dr James D. Luketich Chairman International Award. He was the first surgeon to receive the award outside North America. (Presented to the most outstanding international graduate whose academic and clinical achievements have exemplified the innovative spirit of progress and commitment to cardiothoracic surgical excellence)

In 2018 he received the National Award by the Care Quality Commission (CQC) celebrating NHS 70th Birthday in UK "Driving Improvements - Top Doctors who have made a difference to the NHS."

## FACULTY



**Dr. Ching Siok Siong**  
Singapore

Dr. Ching is a consultant in General, Upper GI and Bariatric Surgery at Changi General Hospital. His surgical career started as a surgical trainee in Wales, UK and he went on to complete an MD by research work on different types of ultrasonic scalpels in laparoscopic surgery at Leeds, UK. He returned to Singapore in 2009 and completed his advanced specialty training in 2015. Dr Ching has published papers from his research endeavours, including topics on Helicobacter pylori treatment, surgical ultrasonic energy devices, laparoscopic ventral hernia repair, bowel sounds analysis, surgical knot tying, and more recently in bariatric surgery. He has been actively involved in teaching surgical trainees in basic and advanced surgical skills in the past years.

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**Ms. Agnes Chong**  
Singapore

Agnes Chong graduated with a Bachelor of Nutrition and Dietetics from Queensland University of Technology. She is a registered Dietitian at Dietitians Australia. As a Dietitian since 2017, she provides Medical Nutrition Therapy to patients in the inpatient and outpatient settings. Agnes Chong special area of interest is in weight management and gastroenterology.

## FACULTY



**Dr. Marvin Chua Wei Jie**  
Singapore

Dr. Marvin Chua is the Consultant Endocrinologist at Sengkang General Hospital. He is also the Honorary Secretary for Singapore Association for the Study of Obesity (SASO)



## FACULTY



**Prof. John Dixon**  
Australia

Professor John Dixon MBBS, PhD, FRACGP, FRCP Edin, Adjunct Professor, Iverson Health Innovations Institute, Swinburne University, Melbourne.

An experienced clinician, John is known globally for his breadth of clinical research into obesity and its risks and complications, as well as weight loss treatments and their effects on health. He has over 300 original research and review publications in the area and is experienced with all currently available effective weight management therapies.

John is focused on seeing findings translated into clinical practice and on patient advocacy for the obese.

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**Ms. Gooi Siao Ching**  
Singapore

Siao Ching is a Clinical Pharmacist in Changi General Hospital, where she is currently the Lead Pharmacist in the nutrition support team. In her role, Siao Ching works closely with the doctors and dietitians to manage patients requiring nutrition support. Having worked as an ICU Pharmacist, Siao Ching also has an interest in the dosage adjustment of drugs for obese patients. Siao Ching graduated from the University of Nottingham and had practised as a pharmacist in the Royal Marsden Hospital and Guys and St Thomas' NHS Trust in London before joining Changi General Hospital in 2008.

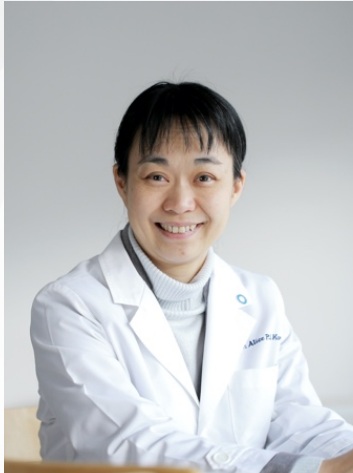
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**Dr. Khee Giat Yeng**  
Singapore

Dr. Khee Giat Yeng is a Senior Principal Clinical Pharmacist from Singapore General Hospital (SGH) with a board certification in pharmacotherapy. She is also a certified collaborative prescriber in inpatient glucose management and obesity management clinic. In addition, she is a clinical educator for hospital, community pharmacists and post-graduate students.

## FACULTY



**Prof. Alice Kong Pik Shan**  
Hong Kong

Dr. Kong is Professor in the Department of Medicine and Therapeutics at The Chinese University of Hong Kong, and Honorary Consultant at the Prince of Wales Hospital, Hong Kong. Dr. Kong graduated from The Chinese University of Hong Kong and completed her training in General Medicine and Endocrinology at the Queen Elizabeth Hospital, Hong Kong. She had her overseas training as postdoctoral fellow under the mentorship of Dr. Robert Henry at the Division of Endocrinology, Department of Medicine at University of California, San Diego, United States.

Dr. Kong's research interests are obesity and diabetes with focus on epidemiological studies and clinical trials related to sleep, lifestyle and psychosocial factors in adults and adolescents. Dr. Kong is the member of Nominating Committee for President, World Obesity Federation. She is the former Vice President of Hong Kong Association for the Study of Obesity. She has presented at numerous meetings and has published over 330 articles in international peer-reviewed journals.



## FACULTY



**Prof. Lee Wei-Jei**  
Taiwan

Professor Wei-Jei Lee is a well-known pioneer and researcher in bariatric/metabolic surgery. He pioneered the first laparoscopic bariatric surgery in Asia at 1998 and introduced this surgical division to the whole Asia in the following 2 decades. Professor Lee graduated from Medical College of National Taiwan University at 1980. He had a complete surgical residence training in National Taiwan University Hospital and became a boarded surgeon at 1986. He finished his PhD program of gastric cancer research in Institute of Clinical Medical Research of National Taiwan University, Medical College at 1994. He became professor of surgery of National Taiwan University at 2005.

Professor Lee started the laparoscopic UGI surgery in 1990 and finished the first laparoscopic gastric cancer resection with lymph node dissection in the world at 1997. In the following two decades, his major interest shifted to bariatric surgery since he was famous for the laparoscopic bariatric surgery in Taiwan and Asia. He had published more than 300 SCI papers in the field of bariatric/metabolic surgery and was number one publisher in this field. He performed many randomized trials in this field and deeply influenced the practice and progress of this new surgical division. He pioneered many novel bariatric/metabolic surgeries in Asia and was especially well known as the promotor of One Anastomosis Gastric Bypass. He was one of the most important pioneers in metabolic surgery for the treatment of type II diabetes mellitus. He organized the Asian Diabetes Study Group and innovated the ABCD Diabetes Surgery Score, and advocated the importance of metabolic surgery for young onset diabetes in Asia.

Professor also found the APMBSS at 2005 and co-found the IFSO-APC at 2009. He also teach many bariatric surgeons in this region and had been visiting professor of Kuwait for 10 years. Now, he working at new medical weight loss centre both in China Suzhou BenQ hospital and China Medical University Hsinchu hospital.

## FACULTY



**Dr. Lee YingShan**  
Singapore

Dr. Lee Yingshan is an endocrinologist with Tan Tock Seng Hospital. In 2018, she was awarded the Health Manpower Development Plan for obesity and was under the tutelage of Professor Joseph Proietto in Austin Health, Melbourne. Since returning, she has been instrumental in revamping the obesity service in TTSH, working closely with bariatric surgeons and the allied health team. She is also active in the efforts to introduce obesity education to both undergraduates and postgraduates medical doctors.

## FACULTY



**Ms. Joyce Lian Xia**  
Singapore

Ms. Joyce Lian Xia is an Advanced Practice Nurse in Tan Tock Seng Hospital. She attained her Master of Nursing in National University of Singapore. . She has undergone her specialist training in Diabetes at Joslin Diabetes Center, USA in 2015 and she is a certified licensed collaborative prescribing practitioner since 2018.

She is also a member with Association of Diabetes Educators Singapore (ADES) and Endocrine Metabolic Society of Singapore (EMSS) and has been actively involved in Diabetes related teaching and training in academics, hospitals and community locally and overseas.

Her research interest includes diabetes technology such as Continuous Glucose Monitoring System (CGMs), insulin pump and telehealth and she has conducted and published several research studies and projects locally and internationally on related subject matter.

## FACULTY



**Dr. Lim Chin Hong**  
Singapore

Dr. Lim is the senior consultant & lead bariatric surgeon at Singapore General Hospital. He completed his surgical training and accredited bariatric fellowship at Johns Hopkins and University of Minnesota respectively. Under the expert tutelage of Prof Sayeed Ikramuddin and Dr. Martin Freeman, he gained hands-on experience of over 200 cases of complex bariatric procedures and advanced foregut endoscopy in 2015. Dr Lim has special interests in revisional bariatric surgery, high risk bariatric patients and advanced endoscopic interventions for complication.



## FACULTY



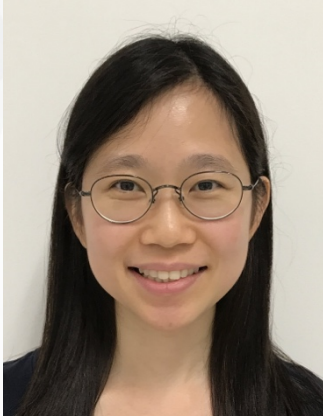
**Dr. Lim Su Lin**  
Singapore

Dr. Lim Su Lin is the Chief Dietitian and Head of Therapeutics (Allied Health & Pharmacy) at the National University Hospital. Over her 29 years as a clinical dietitian, Dr Lim has gained renown in developing many innovative tools which have been published internationally and subsequently incorporated into mainstream practice.

Her latest innovation is an effective weight management programme which combines a new Healthy Keto Diet, mobile apps, online health coaching and behavioural and lifestyle management, that has helped many who are overweight achieved significant results. She has also collaborated with a food industry partner to develop Healthy Keto local favourites and healthy meals ([HealthFull.sg](http://HealthFull.sg)) for effective and rapid weight loss.

Su Lin has received numerous awards on her work in research, innovation and quality improvement. She was a recipient of the QUT's Outstanding Doctoral Thesis and Outstanding Alumni Awards. She is also two-time winner of the prestigious Singapore National Day Awards.

## FACULTY



**Dr. Serene Low Kiat Mun**  
Singapore

Dr. Serena Low is a Public Health Physician who works in diabetes Centre in Admiralty Medical Centre and Clinical Research Unit in Khoo Teck Puat Hospital. She graduated with a medical degree from the National University of Singapore in 2002 and obtained a Masters of Science in Public Health from the University of London in 2007. She has keen interest in research on diabetic complications, in particular diabetic nephropathy, sarcopenia and cognitive impairment. Over the past nine years, she has published extensively on research based on the Diabetic Nephropathy cohort and Singapore Study of Macro-angiopathy and Micro-vascular Reactivity in Type 2 Diabetes (SMART2D) Study. The research work has won her numerous awards in local and regional competitions, including Clinician Investigator Award (Gold) in the Singapore Health and Biomedical Congress in 2021 and 2023, and ASEAN Federation of Endocrine Societies Investigator Award in 2017. She is also actively involved in patient care programme to augment care for patients with diabetes. She just completed her PhD on the influence of body composition on renal and cognitive function in middle-aged and older patients with type 2 diabetes from the Lee Kong Chian School of Medicine in Singapore.

## FACULTY



**Dr. Mark Muthiah**  
Singapore

Dr. Muthiah graduated from the National University of Singapore, and completed his fellowship in Gastroenterology and Hepatology in NUH, Singapore. He underwent further training in Hepatology in Virginia Commonwealth University, USA.

Dr. Muthiah has a keen interest in liver transplantation and is currently the Medical Director of the Liver Transplantation Programme in NUH. His other clinical interests include non-alcoholic fatty liver disease, end stage liver failure, and endoscopic mucosal resection of colon polyps.

Dr. Muthiah's research interest is in the interplay of cardiometabolic diseases and the liver, and he has published extensively on the topic. He is also actively involved in medical education and has received numerous teaching awards from the university. Despite his active involvement in research and education, he runs a busy clinical practice, and holds fast to the belief that excellence in medical research and education can only be borne out passion for clinical medicine.

## FACULTY



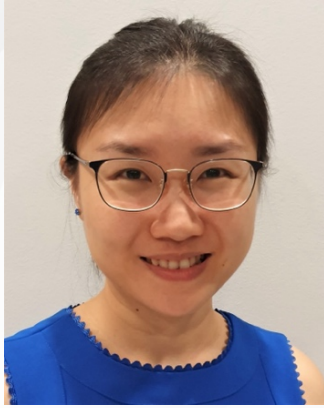
**Dr. Nor Alia Binti Mohd Noor**  
Singapore

Dr. Nor Alia graduated from University College of Cork, Ireland in 2012 and completed the General Surgery Residency with the National Healthcare Group Singapore in 2021. She was accredited by the Specialist Accreditation Board of Singapore in 2021 and was admitted into the Fellowship of Royal College of Surgeons Edinburgh in the same year.

She is currently working as a consultant surgeon in Khoo Teck Puat Hospital, Singapore. Her main clinical interests include bariatric surgery, gastric cancer surgery and advanced endoscopy.



## FACULTY



**Dr. Ng Yunn Cheng**  
Singapore

Dr. Ng Yunn Cheng graduated from the University of Aberdeen, United Kingdom in the year 2011 and obtained her Master of Medicine (Internal Medicine) and MRCP (UK) in 2014. She completed her specialist training in Gastroenterology and Hepatology in 2020 and is now a Consultant in Tan Tock Seng Hospital. Her main interests include Clinical Nutrition and Medical Education. She is currently the Principal Lead and Posting Lead for Gastroenterology in Lee Kong Chian (LKC) School of Medicine, Singapore.

## FACULTY



**Assoc. Prof. Dato Dr. Nik Ritza Kosai Nik Mohamood**  
Malaysia

Associate Professor Dr. Nik Ritza Kosai is currently a Senior consultant and head of the Upper GI and Bariatric Surgical Unit at the Department of Surgery, Hospital Canselor Tuanku Muhriz, National University of Malaysia Medical Centre since 2011. He graduated from The University of St Andrews Scotland, followed by University of Manchester and post Graduate and fellowship in Northwest of England. His Bariatric and Metabolic Surgical Unit at HCTM, UKMMC is the highest volume bariatric surgical centre in Malaysia. Since 2011, the unit has performed over 3500 bariatric surgeries and over 1000 intra-gastric Balloons (Allurion and Spatz). He is very active in teaching and research with over 200 peer reviewed publications, articles, magazines and newspaper editorials. His research interest is in metabolic outcomes following bariatric surgery, Oesophageal and gastric cancers, helicobacter pylori and gastro-oesophageal reflux and has received over Rm 2 million in grants. He currently sits in the committee for the National Upper GI surgery subspeciality training programme and Past President of the Malaysian Metabolic and Bariatric surgical society and Past Vice President of Malaysian Upper GI Society.

## FACULTY



**Prof. Charles Peng Zhang**  
China

Professor Charles Peng Zhang is currently Chief of Metabolic and Bariatric Surgery Division at Capital Medical University Beijing Friendship Hospital, principal investigator at National Clinical Research Center for Digestive Diseases (NCR-DD), Director of metabolic health research at the National Key Laboratory of Digestive Health, and Acting Director of Beijing Quality Control and Improvement Center for Metabolic and Bariatric Surgery. He is holding multiple leading roles in national and international academic organizations, including committee member of American Society for Metabolic and Bariatric Surgery (ASMBS) International Committee, Secretary and Treasurer for Chinese College of Metabolic and Bariatric Surgeons, Vice President of Chinese Society of Diabetes and Bariatric Surgery, etc. Beside clinical practice, he also leads multiple clinical studies. His current grant supports include designing and evaluating novel medical devices and individualized surgical procedures.

## FACULTY



**Dr. Jaideep Raj Rao**  
Singapore

Dr. Jaideep Raj Rao is the Senior Consultant Surgeon at JR Surgery Clinic at Mount Elizabeth Novena Specialist Centre.

He specializes in Laparoscopic and Robotic Surgery, Gastrointestinal Surgery, Bariatric & Metabolic Surgery, Oncology Surgery, Endoscopy as well as Hernia Surgery with Complex Abdominal Wall Reconstruction.

Dr. Rao has more than 20 years of surgical experience and is the past President of the Obesity & Metabolic Surgery Society of Singapore, President of the Singapore Hernia Society. He has also been conferred International Honorary Membership of the Korean Laparoscopic Surgical Society, Chilean Surgical Society & Peruvian Surgical Society.

**Special Interests:**

Gastric-Oesophageal & Intestinal Cancer

Gall Stones

Gastro-Oesophageal Reflux

Bariatric Surgery (Surgery for Obesity & Diabetes)

Hernia & Complex Abdominal Wall Reconstruction



## FACULTY



**Dr. Shanker Pasupathy**  
Singapore

Dr. Shanker Pasupathy is a consultant general surgeon with a special interest in gastrointestinal, bariatric and vascular surgery at Mount Elizabeth and Gleneagles Hospitals, Singapore.

He was formerly the director of the LIFE Centre and senior consultant and chief of the metabolic-bariatric surgery service at the Department of Upper GI and Bariatric Surgery, Singapore General Hospital.

He obtained his medical degree from the National University of Singapore and then underwent higher training in gastro-intestinal and vascular surgery in the UK, France and Germany. He completed a one year fellowship in “Advanced laparoscopy and robotic surgery” at the IRCAD (Institut de Recherche contre les Cancers de l’Appareil Digestif) and obtained a Diploma in Laparoscopic Surgery from Université Louis-Pasteur Strasbourg 1 in 2006/7.

He is a past president of the Endoscopic and Laparoscopic Surgeons of Asia Singapore (ELSAS) and the Obesity and Metabolic Surgery Society of Singapore (OMSSS). He is also a member of the American Society for Metabolic and Bariatric Surgery (ASMBS) and Visiting Professor at the Asian Institute of Telesurgery (AITS), Taiwan.

## FACULTY



**Dr. Asim Shabbir**  
Singapore

Associate Professor Asim Shabbir is Head & Senior Consultant with the Department of Surgery, National University Hospital (NUH) and Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) since Sept 2022 . His specialty is general surgery and his special interests are upper gastrointestinal surgery, bariatric & metabolic surgery, advance endoscopy and laparoscopic surgery.

## FACULTY



**Mr. Sudev Suthendran**  
Singapore

Sudev is a clinical psychologist with prior experience in community, humanitarian and forensic mental health settings. In his current role in Changi General Hospital, he provides psychological assessment and intervention to adolescents and adults with psychiatric conditions and psychological difficulties arising from physical health problems. Sudev is also part of the hospital's bariatric surgery, weight management, psycho-dermatology, cardiology and gender dysphoria multi-disciplinary care teams. Sudev is also involved in developing new psychological services and providing consultation and training to other healthcare professionals on a range of psychological issues. His clinical and research interests include eating and personality disorders, psychosexual health, psychological issues of under-served and minoritised communities and global mental health

## FACULTY



**Dr. Suthep Udomsawaengsup**  
Thailand

Dr. Suthep Udomsawaengsup MD, FACS, FRCST

President of Endoscopic and Laparoscopic Surgeons of Asia (ELSA), Laparoscopic Endoscopic Surgeons of Thailand (LEST), Thai Metabolic and Bariatric Surgery Society (TSMBS)

Congress President of The 14th Asia Pacific Congress of ELSA, Chiangmai, Thailand (Nov21-23,2019)

The Asia Pacific Metabolic and Bariatric Surgery Society (APMBSS2023) Rayong, Thailand

Immediate Past President of Thai Hernia Society (THS)

Governor: Endoscopic Laparoscopic Surgeons of Asia (ELSA), Governor and Treasurer: Asia Pacific Hernia Society (APHS)

President elected: Asia Pacific Metaboilc and Bariatric Surgery Society (APMBSS)

Secretary General: Maekong Endoscopic Surgery Development Association (MESDA)

Committee: Asia Pacific Endo Laparoscopic surgery (APELS) Executive committee and Foreign

Affair chair: The royal college of surgeons of Thailand

Honorary Fellow of Japanese Society for Endoscopic Surgery (JSES)

Philippines Association for Laparoscopic Endoscopic Surgeons (PALES)

Present Associate Professor of Surgery Department of Surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

- Director: Chula Minimally Invasive Surgery Fellowship Training Program

- Director: Chula Bariatric and Metabolic Institute

- Director: Chula Minimally Invasive Surgery center Department of Surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand



## FACULTY



**Ms. Joanna Tan**  
Singapore

Ms. Joanna Tan is a Dietitian at SengKang General Hospital. She graduated from Flinders University, South Australia with a Bachelor of Nutrition and Dietetics in 2007. She has accrued more than 15 years of experience in managing patients with obesity including those who have undergone various weight loss procedures such as Elipse gastric balloon insertion, Endoscopic sleeve gastroplasty, Sleeve gastrectomy and Roux-en Y gastric bypass. As an integral member in the multidisciplinary team for overweight and obese patients, Joanna has continuously pushed for optimal patient care by promoting integrated advice for medical and surgical weight management patients. In 2019, Joanna embarked on a HMDP training in Advanced Perioperative Management for Minimally Invasive and Endoscopic Upper Gastrointestinal and Bariatric Programme for SWITCH Programme in Taiwan. Upon her return, she has successfully established a Bariatric Nutrition Programme to compliment the SWITCH programme in SKH to improve patient's clinical outcomes.

## FACULTY



**Dr. Donna Tan Mui Ling**  
Singapore

Dr. Donna Tan is a senior Family Physician and Deputy Director, Clinical Services, in National Healthcare Group Polyclinics, and Chair of National Healthcare Group Tiered Weight Management Workgroup. She is also Clinical Lead and Co-Chair of the MOH Primary Care Musculoskeletal Workgroup.

She leads a trans-disciplinary team that establishes primary care Allied Health services within Team-Based care in the polyclinics and actively involved in multi-disciplinary workgroups that span primary care, hospitals and community. She is keenly focused on tapping on inter-collaborative expertise to integrate care that tackles conditions such as obesity and pre-disease in the population.

She has a special interest in complex patients with diabetes and obesity complicated with bio-psycho-social conditions. She believes firmly in preventive care and early effective intervention that includes patient and family education and engagement in their environment and life context. Donna has research and quality improvement interest in Inter-professional collaborative care in primary care, such as in chronic disease management, dietetics, diabetic foot care, MSK health and obesity.

## FACULTY



**Dr. Tham Kwang Wei**  
Singapore

Dr. Tham Kwang Wei is a Senior Consultant Endocrinologist from Singapore. She completed her Residency in Internal Medicine and Fellowship in Endocrinology, Diabetes and Metabolism at the Cleveland Clinic, USA.

Amongst her interests are, the care delivery and clinical interventions in obesity management, the outcomes of clinical interventions including remission of diabetes and metabolic diseases, quality of life, and in weight bias and stigma. Passionate about the training and education of healthcare professionals in obesity, she has been active in participating and crafting education programmes in this aspect, with an appointment in the Clinical Care Committee, World Obesity Federation. She holds concurrent teaching appointments with the Lee Kong Chian School of Medicine, National Technological University-Imperial College, Singapore and the Yong Loo Lin School of Medicine, National University of Singapore (NUS), Singapore.

As part of her work to improve the delivery of care and advocacy for people living with obesity, she is involved as the Co-Chair of the Obesity Policy Engagement Network in Southeast Asia (OPEN-SEA), the Co-Chair of the working group on the Consensus in the Care and Management of Obesity in South-SouthEast Asia, and has been appointed a Vice-President of the Asia Pacific Alliance of Obesity and Sarcopenia Medicine (APAOSM).

## FACULTY



**Prof. Wang CunChuan**  
China

Vice President of the First Affiliated Hospital of Jinan University (Guangzhou Overseas Chinese Hospital), engaged in clinical work in general surgery for more than 30 years; pioneered precise minimally invasive bariatric surgery for the treatment of metabolic diseases such as obesity and diabetes, as well as scarless endoscopic thyroidectomy for thyroid diseases thro transoral vestibular approachor areola approach; promoted and improved various laparoscopic hepatobiliary, pancreatic, spleen and gastrointestinal hernia operations. He has been invited to more than 400 hospitals at home and abroad to demonstrate and promote various minimally invasive surgeries.



## FACULTY



**Dr. Joanne Yeo**  
Singapore

Dr. Joanne Yeo is a fellow of the Australian and New Zealand College of Anaesthetists (ANZCA) with a Postgraduate Certificate in Clinical Ultrasound. She trained and worked as a Consultant in over 10 hospitals in New South Wales and Victoria, Australia. Since relocating to Singapore 8 years ago, she has been a Consultant Anaesthetist at Changi General Hospital (CGH). She has been involved in teaching in her role as the previous ANZCA Supervisor of Training of CGH.

Dr. Yeo is also the Sustainability lead for the Department of Anaesthesia and Surgical Intensive Care at CGH and is also part of the CGH Operating Theatre (OT) Green Committee and the Co-chair for CGH's Environmental Sustainability Committee. She has been a speaker on Sustainability topics at the Singhealth ACP Sustainability Symposium, Baxter Sustainability Symposium and NUH World Environment Week.

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Improved temperature control<sup>2</sup> minimizes impact on tissue<sup>1</sup>

Achieve greater control with lower maximum blade temperature<sup>3</sup>

Reduce heat exposure on tissue with 35% faster transection speed<sup>4</sup>

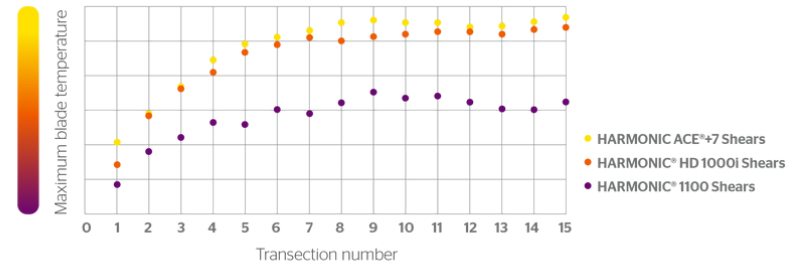
- Energy button is designed to provide the reliable sealing of the MIN button with the cutting speed of the MAX button of HARMONIC ACE®+7 Shears<sup>5</sup>



**CURVED, TAPERED TIP**

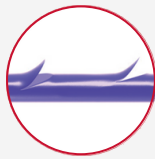
- Enables more precise dissection than HARMONIC ACE®+7 Shears with Advanced Hemostasis<sup>6</sup>

HARMONIC® 1100 Shears had lower maximum blade temperature than HARMONIC ACE®+7 Shears and HARMONIC® HD 1000i Shears<sup>3</sup>



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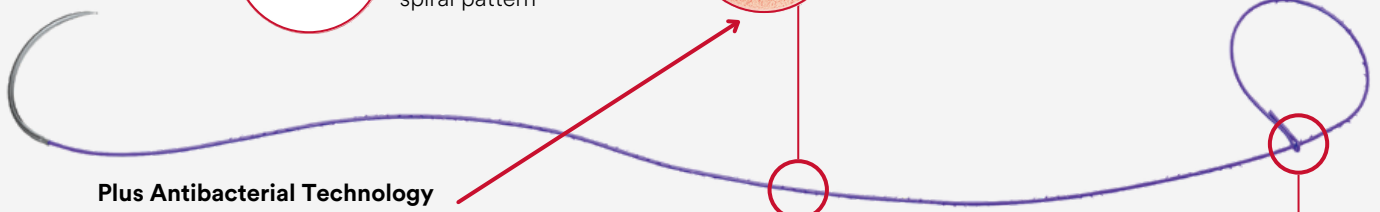
Unidirectional with Plus Antibacterial Technology



Anchors formed within the core of the device in a spiral pattern<sup>7</sup>



Triclosan has in vitro activity that inhibits bacterial colonization of the suture. For illustration purposes only.



**Plus Antibacterial Technology** available for all unidirectional codes

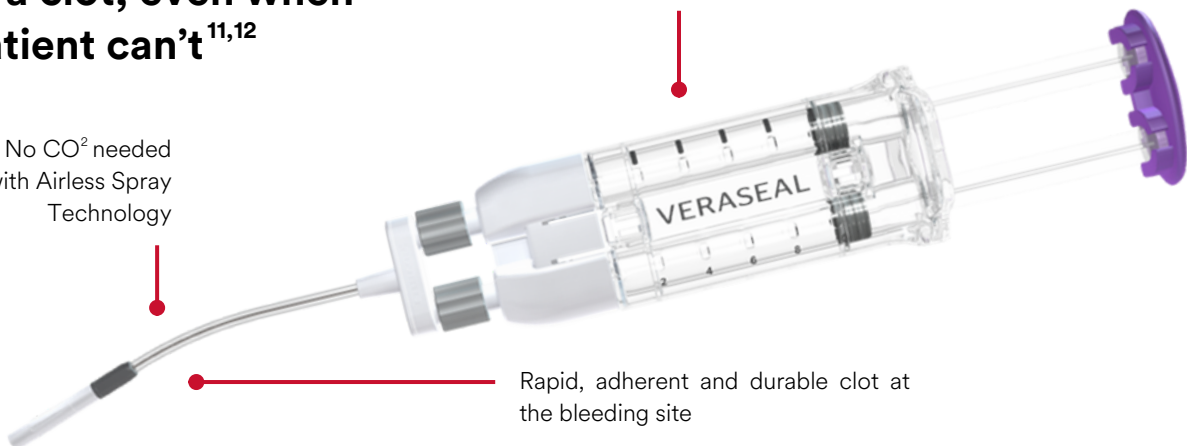
**Unidirectional design** has adjustable loop on the end<sup>8-10</sup>

# VERASEAL

Deliver a clot, even when your patient can't<sup>11,12</sup>

No CO<sup>2</sup> needed with Airless Spray Technology

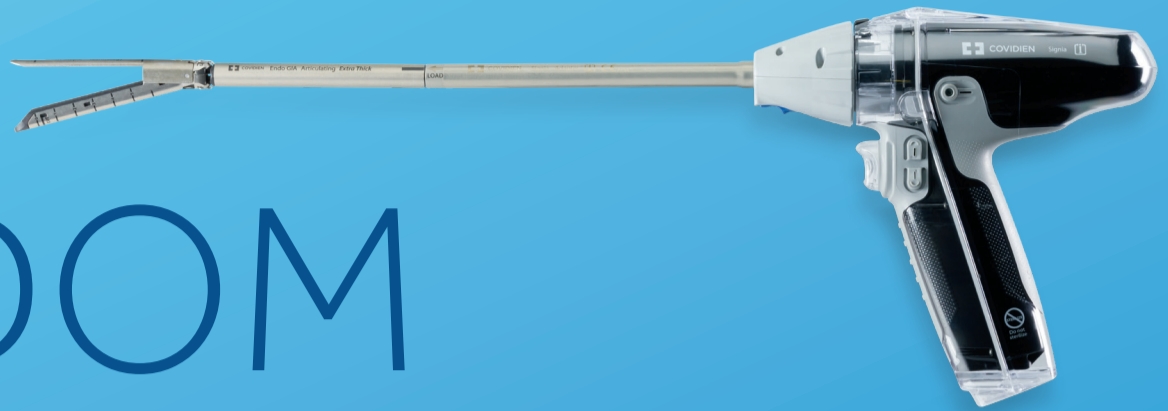
Pre-filled syringes containing Human Fibrinogen and Human Thrombin



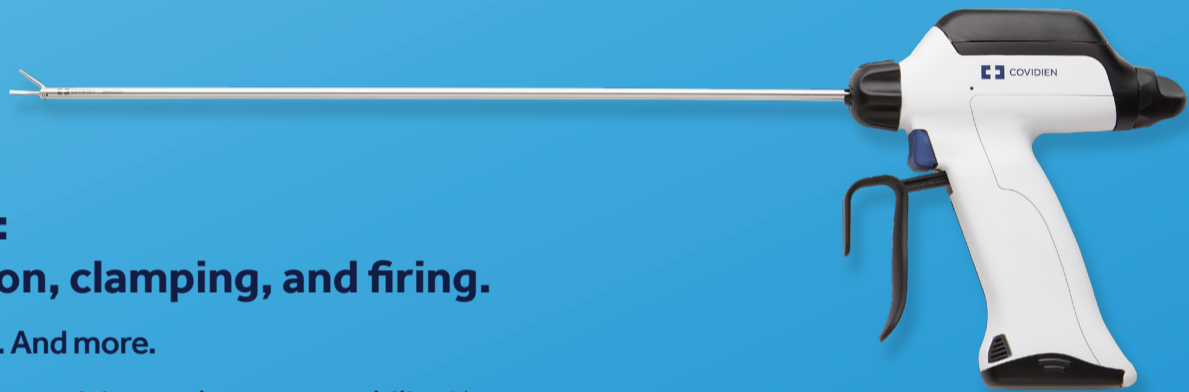
Rapid, adherent and durable clot at the bleeding site

1. Market share data compiled from Decision Resources Group. (20150-190806) 2. Compared to previous generations of Harmonic devices. (M0049-200512) 3. Based on bench top study with porcine vessels 3-5 mm in diameter. (I38458-200427) 4. Based on benchtop study that showed Harmonic 1100 had significantly lower maximum blade temperature than Harmonic ACE+7 Shears and Harmonic HD 1000i Shears after 15 tip bite transections. (M0050-200512) 5. Seal reliability at 240 mmHg of 98.2% vs 98.4% for Harmonic ACE+7 MIN button. Speed based on average time to transect 150 mm of porcine jejunum. (D50508-200422) 6. Based on preclinical evaluation. (I38469-200427) 7. Ethicon StrataFix Unidirectional CAD File. 2013. Ethicon, Inc. 8. STRATAFIX™ Spiral PDO Knotless Tissue Control Devices. [Instructions for Use]. Ethicon, Inc. 9. STRATAFIX™ Spiral MONOCRYL™ Plus Knotless Tissue Control Device. [Instructions for Use]. Ethicon, Inc. Rev. LAB100217233v1. 10. STRATAFIX™ Spiral PDS™ Plus Knotless Tissue Control Device [Instructions for Use]. Ethicon, Inc. Rev. LAB100217233v1. 11. VISTASEAL™ Fibrin Sealant (Human). Full Prescribing Information. Instituto Grifols, S.A. 2019. 12. Bjelovic M, Ayguasosna J, Kim RD, et al. A prospective, randomized, phase III study to evaluate the efficacy and safety of fibrin sealant Grifols as an adjunct to hemostasis as compared to cellulose sheets in hepatic surgery resections. J Gastrointest Surg. 2018;22:1939-1949

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- Cordless design. Enables more natural movement, improves safety<sup>7</sup> in any OR, and enhances efficiency with simple set up.
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† Compared to manual staplers or competitor stapler. ‡ Compared to manual firing. § Preclinical results may not correlate with clinical performance in humans. Ω Per bench testing. Staple line strength: Endo GIA™ tan reload vs. competitor white reload and Endo GIA™ purple reload vs. competitor green, gold, and blue reloads. Leak resistance: In-vitro synthetic eak comparison: Endo GIA™ purple reload vs. competitor blue and gold. †† Testing performed on bench tissue (porcine mesentery) and measured across 10 consecutive activations using maximum power.

1. Based on internal report #R0033554, iDrive™ Ultra stapler PCR summary report. November 2012. 2. Drew S, Tarek T, Donald P. UCONN biodynamics final report #RE00022065, Biomechanical exposures related to laparoscopic stapler use. 2012. 3. Based on internal test report #R2146-173-0, ASA verification testing with slow speed force limit evaluation. 2015. 4. Based on internal test report #R2146-151-0, Powered stapling firing speed DOE analysis and ASA parameters. 2015. 5. Based on internal test report #PCG-001, Tyvek pull-apart test comparing Echelon™ and Tri-Staple™ technology. March 2011. 6. Based on internal test report #PCG-002, In-vitro leak comparison. March 8, 2011. 7. Brogmus G, Leone W, Butler L, Hernandez E [2007]. Best practices in OR suite layout and equipment choices to reduce slips, trips and falls. AORN J86:384-398. 8. Based on internal test report #R0032385 rev A, Thermal profile comparison with competitor ultrasonic dissector vs. Sonicision™ curved jaw (SPD-83) and LigaSure™ coated Maryland (LF19xx) on the ForceTriad™ and Valleylab™ FT10 generators May 17-18, 2017, and June 14, 2017.

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# 8<sup>th</sup> OBES Scientific Congress 2023

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*Obesity Through the Asian Lens*

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GRAND COPTHORNE WATERFRONT, SINGAPORE

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Society of Singapore

ABSTRACT BOOK

[www.obes.sg](http://www.obes.sg)





Abstract ID: OB\_001

Track 1: Interventional and Clinical Studies

**Title:** Pepsin in Saliva for the Diagnosis of Erosive Esophagitis Post-sleeve Gastrectomy: A Prospective Observational Study

**Authors:** Jinyuan Gan<sup>1</sup>, Yarn Kit Chan<sup>2</sup>, Deepa Chandra Segaran, Jean-Paul Kovalik, Alvin Eng, Phong Ching Lee, Jeremy Tan, Chin Hong Lim\*

<sup>1</sup>Sengkang General Hospital

<sup>2</sup>Duke-NUS Medical School

**Background:** Laparoscopic sleeve gastrectomy (LSG) has become the preferred bariatric procedure in many countries. However, new onset erosive esophagitis (EE) is a major shortcoming. Current recommendation is esophago-gastro-duodenoscopy (EGD) should be performed routinely at 1 year and subsequently every 2–3 years to enable the early detection of Barrett’s or esophageal adenocarcinoma. This would put significant strains on resources and costs of bariatric program. Our study assesses the association between and diagnostic value of salivary pepsin concentration and endoscopically proven EE in post-LSG patients as a surrogate for EGD.

**Methods:** Twenty patients on routine post-LSG endoscopy between June and September 2022 were recruited for this correlational pilot study. Under supervision, fasting and post-prandial saliva sample was collected and analyzed by Peptest lateral flow device. EGD examinations were performed, and patients completed a validated 25-item QoLRAD questionnaire.

**Results:** We found a significant correlation between positive endoscopy findings of EE and salivary pepsin concentrations. The normal group had a lower mean fasting pepsin level ( $13.13 \text{ ng/mL} \pm 18.97$ ) versus the EE-group ( $90.55 \text{ ng/mL} \pm 81.28$ ,  $p = 0.009$ ) and lower mean post-prandial pepsin level ( $30.50 \text{ ng/mL} \pm 57.72$ ) versus the EE-group ( $135.09 \text{ ng/mL} \pm 130.17$ ,  $p = 0.02$ ). The predictive probabilities from the binary regression of fasting and post-prandial pepsin concentrations yield AUC of  $0.955 \pm 0.044$  (95% CI 0.868 to 1.000,  $p < 0.001$ ).

**Conclusion:** Our study distinctively identified salivary pepsin to have excellent sensitivity and negative predictive value in EE, potentially useful to preclude the need for post-LSG EGD in asymptomatic patients with low salivary pepsin.

Abstract ID: OB\_002

Track 1: Interventional and Clinical Studies

**Title:** Familial Partial Lipodystrophy –Anthropometric, Biochemical, Genetic and Imaging Characteristics in Females

**Authors:** Wann Jia Loh<sup>1,2,6</sup>, Yaligar Jadegoud<sup>3</sup>, Amanda J. Hooper<sup>5,6</sup>, Suresh Anand Sadananthan<sup>3</sup>, Yeshe Kway<sup>3,4</sup>, Su Chi Lim<sup>9</sup>, Sambasivam Sendhil Velan<sup>3,4\*</sup>, Melvin Khee Shing Leow<sup>2,3,7,8\*</sup> and Joan Khoo<sup>1\*</sup>

<sup>1</sup>Department of Endocrinology, Changi General Hospital, Singapore

<sup>2</sup>Duke-NUS Medical School, Singapore

<sup>3</sup>Singapore Institute for Clinical Sciences, Agency for Science Technology, Singapore.

<sup>4</sup>Departments of Medicine and Physiology, NUS Yong Loo School of Medicine, NUS

<sup>5</sup>Department of Biochemistry, Pathwest and Fiona Stanley Hospital Network, Australia

<sup>6</sup>School of Medicine, University of Western Australia, Perth, Australia

<sup>7</sup>Department of Endocrinology, Tan Tock Seng Hospital, Singapore

<sup>8</sup>LKC School of Medicine, NTU, Singapore

<sup>9</sup>Diabetes Centre, Admiralty Medical Centre, Singapore, Singapore

**Background:** Familial partial lipodystrophy (FPL) is an under-recognised condition characterised by increased genetic predisposition to abnormalities in white adipose tissue function, quantity, and distribution, leading to young-onset metabolic syndrome, severe insulin resistance, type 2 diabetes mellitus (T2DM), hepatic steatosis, dyslipidaemia, and premature coronary artery disease. However, in clinical practice, there are no clear criteria to diagnose FPL.

**Aim:** This pilot study aimed to (i) determine clinical markers using skinfold measurements, DXA and MRI scans to identify individuals with FPL, and (ii) to characterise their adipose tissue distribution and fat phenotypes.

**Methods:** Patients with clinically apparent partial lipodystrophy with a positive family history were recruited. Controls were age and BMI-matched females without partial lipodystrophy. In 8 females with FPL and 4 female controls, skinfold measurements, HOMA-IR, whole genome sequencing, and DXA were performed. MRI was used to measure abdominal subcutaneous adipose tissue (SAT), visceral adipose tissue (VAT), femoral and calf SAT and muscle volumes. Liver, pancreatic and muscle fat were quantified by MRI based proton density fat-fraction (PDFF) measures.

**Results:** Both groups median BMI were 32-33 kg/m<sup>2</sup>. All 8 patients in the FPL group had T2DM with a median disease onset at age 31 years. FPL when compared to controls, had higher levels of HOMA-IR (9.49 vs 3.23, p=0.028). In the FPL group, the median thigh skinfold thickness was lower (20.4 mm vs 51.4 mm, p=0.008) with a correspondingly increased subscapular to thigh skinfold ratio (1.73 vs 0.91, p=0.004), and iliac to thigh skinfold ratio (1.78 vs 0.73, p=0.004). The FPL group had a reduced leg fat percentage (p=0.004), with an increased ratio of trunk to legs fat percentage (p=0.004), and android to gynoid ratio (1.21 vs 0.98, p=0.008). The FPL group had decreased SAT volume in the femoral and calf (p<0.01), but not abdominal SAT, VAT, femoral or calf muscle volumes. The intra-hepatic, pancreatic, and muscular PDFF trended higher in the FPL group but were

not statistically significant. Whole genome sequencing was negative for monogenic causes of FPL, obesity, and diabetes, but polygenic scores for partial lipodystrophy were elevated in keeping with FPL type 1.

**Conclusion:** Patients with FPL have significant loss of adipose tissue in lower limbs and early onset of diabetes. Reduced thigh skinfold, and increased fat percentage of trunk to legs ratio on DXA are potentially clinically useful markers to identify FPL. More studies are required to confirm the clinical utility of these markers.

Abstract ID: OB\_003

Track 1: Interventional and Clinical Studies

**Title:** Cost-Savings of Short Stay Sleeve Gastrectomy and Walk-In Hydration Clinic Versus Conventional Inpatient Care

**Authors:** Stephanie Cheng<sup>1</sup>, Tiffany Sin Hui Bong<sup>1</sup>, Phong Ching Lee<sup>2</sup>, Jacqueline XL Sim<sup>3</sup>, Ai Shan Tan<sup>4</sup>, Cindy LW Ng<sup>5</sup>, Angelina XY Foo<sup>6</sup>, Hairil Rizal Bin Abdullah<sup>3</sup>, Jeremy TH Tan<sup>1</sup>, Hock Soo Ong<sup>1</sup>, Chin Hong Lim<sup>1</sup>

1. Department of Upper Gastrointestinal and Bariatric Surgery, Singapore General Hospital, Singapore
2. Department of Endocrinology, Singapore General Hospital, Singapore
3. Department of Anesthesiology, Singapore General Hospital, Singapore
4. Department of Dietetics, Singapore General Hospital, Singapore
5. Department of Physiotherapy, Singapore General Hospital, Singapore
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**Background:** The SARS-CoV-2 pandemic has placed a significant strain on the healthcare system. One method to minimize bed and resource utilization for elective cases is to maximize the use of Short Stay Wards (SSW). Typically, SSW manages planned surgery or procedures requiring admission up to 23 hours with rapid turnover. We aim to evaluate the cost-saving of the short-stay ward (SSW) versus conventional inpatient-care following sleeve gastrectomy (LSG). We also compared the readmission rates pre- and post-inception of the intravenous (IV) hydration clinic and analyzed the cost-savings.

**Methods:** Patients who underwent LSG between December 2021 to March 2022 with SSW-care were compared with standard inpatient-care. Total costs were analyzed using univariate analysis. With separate cohort of patients, 30-day readmission rates in the 12-months preceding and following implementation of the IV hydration clinic and associated cost-saving were evaluated.

**Results:** After matching on the propensity score to within  $\pm 0.1$ , 20-subjects pairs were retained. The total cost per SSW-subject was significantly lower at \$13,647.81 compared to \$15,565.27 for conventional inpatient-care ( $p=0.0302$ ). Lower average ward charges (\$667.76 vs \$1371.34,  $p<0.0001$ ), lower average daily treatment fee per case (\$235.68 vs \$836.54,  $p<0.0001$ ) and lower average laboratory investigation fee (\$612.31 vs \$797.21,  $p<0.0001$ ) accounted for the difference in costs between the groups. Thirty-day readmission rate reduced from 8.9% to 1.8% after implementation of the hydration clinic ( $p<0.01$ ) with decreased 30-day readmission cost (S\$96,955.57 vs. S\$5,910.27,  $p<0.01$ ).

**Conclusion:** SSW for LSG is cost-effective and should be preferred to inpatient management. Walk-in hydration clinics significantly reduced readmission rates and result in tremendous cost savings.



Abstract ID: OB\_004

Track 1: Interventional and Clinical Studies

**Title:** Predictors of Early Removal of Intra-gastric Balloon secondary to Intolerance – A Multiethnic Asian Cohort

**Authors:** Amadora Choo<sup>1</sup>, Eugene Lim<sup>1</sup>, Alvin Eng<sup>1</sup>, Weng Hoong Chan<sup>1</sup>, Ravishankar Asokkumar<sup>2</sup>, Jeremy Tan<sup>3</sup>, Ai Shan Tan<sup>3</sup>, Agnes Chong<sup>3</sup>, Yummi Binte Md Shahrin<sup>3</sup>, Xuan Wang<sup>3</sup>, Phong Ching Lee<sup>4</sup>, Chin Hong Lim<sup>1\*</sup>

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**Background:** Intra-gastric balloons (IGBs) have been shown to be safe and effective in treating obesity and its metabolic complications. They are reversible and anatomy-preserving unlike metabolic-bariatric surgery (MBS). Balloon intolerance, characterised by refractory nausea, vomiting and abdominal discomfort, is a frequent problem that results in early balloon removal. Our study aims to identify predictors of balloon intolerance and early removal, which will help to guide patient selection for this intervention and peri-procedure care.

**Methods:** We conducted a retrospective cohort study of 54 consecutive patients who underwent IGB insertion from July 2017 to July 2022 in a single tertiary institution in Singapore. Forty-seven (87.0%) patients completed therapy, while 7 patients (13.0%) had early removal of the balloon due to intolerance. Characteristics of both groups were compared.

**Results:** We found that after adjusting for age, gender, ethnicity, height, nulliparity, balloon type and volume; depression ( $p=0.012$ ) and anxiety ( $p=0.001$ ) were statistically significant associated with early balloon removal. While univariate logistic regression revealed only anxiety to be statistically significant ( $p=0.004$ ).

**Conclusion:** Identifying predictors for balloon intolerance and early removal allows for improved patient selection for the procedure. In patients with a history of depression or anxiety, it is important to ensure adequate counselling and preparation prior to balloon insertion.

Abstract ID: OB\_008

Track 5: Others

**Title:** The Associations Between Adverse Childhood Experiences (ACEs) and Body Mass Index (BMI) Among Chinese University Students: An Analysis Stratified by Cultural Background and Gender

**Authors:** Yuhan Chen MS<sup>1</sup>; Zhiyong Dong Ph.D<sup>1</sup>; Peng Xiong, Ph.D<sup>2\*</sup>

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**Background:** Experiencing adverse childhood experiences (ACEs) are linked to childhood and adulthood weight status. However, research examining these associations is scarce in Chinese young adults. This study aimed to examine the relationships between ACEs subtypes and BMI using an analysis stratified by cultural background and gender among Chinese university students.

**Methods:** A total of 6,786 Chinese university students aged 20.36 (SD=2.10) participated in the study. BMI was calculated utilizing self-reported weight and height data, and categorized into four classifications: underweight, normal weight, overweight and obesity. ACEs were measured with Childhood Trauma Questionnaire. Multinomial logistic regression analyses were performed to investigate the association between ACEs and BMI status. Our analyses were stratified by culture background and gender.

**Results:** Of the 6,786 participants included in the study, 1,799 (26.51%), 655 (9.65%), 4,155 (61.23%), and 177 (2.61%) participants were categorized as underweight, normal, overweight, and obese, respectively. After adjusting for demographic covariates, compared to those in the normal weight category, the finding indicated that in general participants who experienced emotional abuse were more prone to report being obese (OR=1.63, 95%CI: 1.17-2.27). Cultural background stratified analysis revealed that participants from non-mainland China with emotional abuse were more prone to report being obese (OR= 1.69, 95%CI: 1.11-2.59). Gender stratified analysis further revealed that females with any type of ACEs were prone to report being obese (OR= 1.86, 95%CI: 1.10-3.14). Females with emotional abuse were more prone to report being obese (OR= 2.87, 95%CI: 1.85-4.47). Females with physical abuse were more prone to report being obese (OR=1.93, 95%CI: 1.20-3.11).

**Conclusion:** ACEs were shown to be directly associated with obesity among Chinese university students. Longitudinal analyses are recommended to investigate the casual factors and the mechanisms elucidate these associations. Urgent actions in developing effective interventions and providing related prevention counseling for university students are needed.

Abstract ID: OB\_009

Track 1: Interventional and Clinical Studies

**Title:** Comprehensive Treatments for Generalized Skin Laxity Following Weight Reduction Surgery: A Precise and Formal Perspective

**Author:** Cui Xin\*

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**Background:** Currently, obesity has emerged as a pressing global societal concern, subsequent to rapid weight loss, generalized skin laxity presents a significant issue affecting patients' quality of life and psychological well-being. While skin laxity plastic surgery is well-established in foreign countries, its practice in China remains relatively nascent.

**Methods:** A tailored surgical plan is devised to address varying degrees of laxity in different body regions following bariatric surgery. The plan includes procedures such as abdominoplasty, breast lift, upper arm laxity dermatoplasty, thigh laxity dermatoplasty, lateral chest and back laxity dermatoplasty. Notably, abdominoplasty, as the primary concern for post-weight loss patients, is modified from the standard approach. The modifications involve an expanded excision area, lowered incision placement, wider separation range, and maximum removal of loose skin. Subsequent stages include breast lift, performed using the modified vertical scar method or inverted T method to restore breast position and shape, along with thigh laxity dermatoplasty using transverse or T-shaped incisions for optimal correction of laxity. All plastic surgeries are conducted with meticulous layer-by-layer tension-reducing sutures and incisional super-tension-reducing sutures. Postoperative care involves scar paste and tension-reducing tape, supplemented with laser and injection-based antiscarring treatments when necessary, resulting in minimal scar proliferation.

**Results:** The implementation of the modified surgical plan and comprehensive postoperative antiscarring treatments yielded satisfactory outcomes in terms of body contour and incisional scarring for the majority of patients. A small subset of patients required continued anti-scarring treatment due to more pronounced scarring.

**Conclusion:** Compared to Asians, postoperative scars of European and American patients are typically less conspicuous. As a result, European and American surgeons may not prioritize incision placement and scar visibility during various skin excision surgeries. However, the modified abdominoplasty, breast lift, and limb laxity dermatoplasty presented in this study are better suited for East Asian patients, considering the emphasis on inconspicuous incision locations and scar minimization. These procedures prove effective in addressing generalized skin laxity following weight reduction surgery in this demographic.



Abstract ID: OB\_011

Track 1: Interventional and Clinical Studies

**Title:** Complications and the Impact on Cost After Metabolic-Bariatric Surgery: An Asian Single-Center Experience of 1016 Patients

**Authors:** Daryl Kai Ann Chia<sup>1,2</sup>, Chua Wei Yu<sup>3</sup>, Chan Yiong Huak<sup>4</sup>, Javis Fung<sup>2</sup>, Rachel Patricia Johnson<sup>2</sup>, Shefali Jay Poojari<sup>3</sup>, Qamaruzaman Syed Gani<sup>3</sup>, Lin Wen<sup>3</sup>, Wai Shu Ning<sup>3</sup>, Geetha Kayambu<sup>3</sup>, Serene Peiyong Lim<sup>3</sup>, Neo Wen Joo<sup>3</sup>, Candice Xin Yi<sup>3</sup>, Davide Lomanto<sup>2,3,5</sup>, Kim Guowei<sup>2,3,5</sup>, Jimmy Bok Yan So<sup>2,3,5</sup>, Asim Shabbir<sup>2,3,5\*</sup>

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<sup>5</sup>Department of Surgery, National University of Singapore, Singapore

**Background:** Current global benchmark for complications rates in MBS are based on standard risk patients in western populations. Complication rates and impact on costs in high risk patients and Asian populations are unknown. To evaluate the incidence of complications after metabolic-bariatric surgery (MBS) in 1016 consecutive Asian patients and the impact of complications on costs.

**Methods:** All patients that underwent MBS from January 2010 to December 2022 were included. MBS procedures included laparoscopic sleeve gastrectomy (LSG), roux-en-y gastric bypass (RYGB) or one-anastomosis gastric bypass (OAGB). Post-operative complications were graded by the clavien-dindo (CD) classification at 30-day and 90-day postoperatively. Complication rates were analyzed among different bariatric procedures, patient risk profiles and compared against global benchmarks. Multivariate linear regression was used to evaluate the relationship between costs of complication and time to surgical intervention in patients requiring reoperation.

**Results:** 1016 MBSs were performed, comprising 73.6% LSG (n = 748), 12.6% RYGB (n = 128) and 13.8% OAGB (n = 140). Our study reported low overall 90-day mortality (0.2%), major complication rates (1.9%) and all complication rates (5.3%). High risk patients had higher major and all complication rates than standard risk patients (2.6% vs 0.3%, p<0.05; 6.6% vs 2.5%, p<0.05) respectively. Delayed surgical intervention in patients requiring reoperation is associated with higher total cost ( $\beta=351374$ , [95% CI: 104569, 598180, p<0.05]) and higher median medical cost (USD 40726 vs USD 20782, p<0.05) than patients with early surgical intervention.

**Conclusion:** The 90-day complication rates in an Asian population are low and outperforms global bariatric complication benchmarks. Cost attributable to medical management is significant compared to surgical cost across all patient groups. Early surgical intervention in patients with surgical (major) complications could result in cost savings to the patient.



Abstract ID: OB\_012

Track 2: Epidemiology

**Title:** Determinants of Quality of Life and Emotional Well-Being in A Prospective Bariatric Cohort of 1501 Multi-Ethnic Asian Patients

**Authors:** Wei Yu Chua<sup>1</sup>, Daryl Kai Ann Chia<sup>2,3</sup>, Chan Yiong Huak<sup>4</sup>, Eugene Kwong Fei Leong<sup>2</sup>, Ashley Chen<sup>1</sup>, Sharen Asif<sup>1</sup>, Yu An Wong<sup>1</sup>, Javis Fung<sup>2</sup>, Rachel Patricia Johnson<sup>2</sup>, Shefali Jay Poojari<sup>3</sup>, Qamaruzaman Syed Gani<sup>3</sup>, Wen Lin<sup>3</sup>, Shu Ning Wai<sup>3</sup>, Geetha Kayambu<sup>3</sup>, Serene Peiying Lim<sup>3</sup>, Wen Joo Neo<sup>3</sup>, Candice Xin Yi Wee<sup>3</sup>, Davide Lomanto<sup>2,3,5</sup>, Guowei Kim<sup>2,3,5</sup>, Jimmy Bok Yan So<sup>2,3,5</sup>, Asim Shabbir<sup>2,3,5</sup> \*

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**Background:** The relationship between ethnicity, obesity and health-related quality of life (HR-QoL) outcomes in a multi-ethnic population remain poorly understood. We aim to investigate the relationship between ethnicity, body mass index (BMI), comorbidities, as well as determinants of quality of life (QoL) in Southeast Asian patients with obesity. We aim to develop and validate a simple objective score to identify bariatric patients at high risk for major depression.

**Methods:** Associations between ethnicity, comorbidities, BMI and determinants of QoL (PHQ-9 and SF-36) were analysed using multivariate logistic regression in a prospective cohort of 1501 bariatric patients. Multivariate regression and Receiver Operating Characteristics curves were used to develop and validate a novel scoring system to identify patients at risk of major depression.

**Results:** Patients of Chinese, Malay and Indian ethnicity had increased risk of hypertension (OR: 1.51 [95% CI: 1.19–1.92, p<0.001]), BMI Class 4 (OR: 17.89 [95% CI: 9.53–33.60, p<0.001]) and major depression (OR: 1.71 [95% CI: 1.23–2.39, p=0.002]) respectively. Females (OR: 1.46 [95% CI: 1.16 – 1.84, p=0.001] & OR: 1.43 [95% CI: 1.11 – 1.83, p=0.005]) and Indian ethnicity (OR: 1.47 [95% CI: 1.09 – 1.98, p=0.011] & OR: 1.42 [95% CI: 1.04 – 1.94, p=0.028]) are at increased risk for poor physical & mental quality of life. Factors associated with major depression (gender, ethnicity, age, OSA, PCS and MCS scores) were used to create and validate a novel scoring system with an AUC of 0.812 (95% CI: 0.787–0.837). A cut-off of 4 of 7 points was identified on ROC curves and Youden's index with a sensitivity of 70%, specificity 81%, PPV 53% and NPV 90%.

**Conclusion:** The prevalence of metabolic complications from obesity significantly varies with ethnicity. We developed a novel and simple scoring tool combining objective demographic and patient-reported outcomes to screen and triage patients at risk of depression.

Abstract ID: OB\_013

Track 1: Interventional and Clinical Studies

**Title:** Natural Orifice Transluminal Endoscopic One-Anastomosis Gastric Bypass: A Feasibility Study Using Human Cadavers

**Authors:** Chin Hong Lim, Zhen Jin Lee, Tiffany Lye, Asokkumar Ravishankar, Baldwin Yeung, Hock Soo Ong, Jeremy Tan

**Background:** Endoscopic bariatric therapies has emerged as an effective treatment in the management of the patient with obesity. Unfortunately, most procedures involve only the restriction of gastric volume without altering the underlying metabolism. The objective of this study was to investigate the practicability and limitations of the metabolic altering procedure: “One anastomosis gastric bypass (OAGB)” with “natural orifice transluminal endoscopic surgery (NOTES)” on human cadavers.

**Methods:** We performed OAGB with NOTES approach in 3 human cadavers. The steps of the procedure can be divided as follows: step 1, endoscopic sleeve gastropasty; step 2, trans-gastric access to peritoneal cavity; step 3, identification of suitable loop of jejunum; step 4, introduction of the jejunal loop into the stomach; step 5, creation of the gastro-jejunostomy with lumen-apposing metal stent; step 6, gastric pylorus occlusion with over-stitch.

**Results:** We performed OAGB with NOTES in 3 human cadavers with bypassed biliopancreatic limb of 55, 75 and 105cm from the pylorus. The average weight for the cadavers was 64.9kg (61.2-71.1kg). The mean procedure time was 157 min. The optimal bypassed length for the procedure was 105cm.

**Conclusions:** This study has provided proof-of-principle in a pre-clinical cadaveric model that NOTES approach can be used to perform OAGB and, therefore, merits additional evaluation and consideration in surviving porcine model.

Abstract ID: OB\_014

Track 2: Epidemiology

**Title:** Effect of Income and Food Intake to the Lipid Profile of the Middle-Aged Group in A Locality in Bulacan, Philippines

**Authors:** Miguel Antonio R. Camacho\*<sup>1</sup>, Venice Evianne H. Chua<sup>1</sup>, Daniella Shane G. Dela Cruz<sup>1</sup>, Zelene DJ Adrienne P. Dy<sup>1</sup>, Mark Raymund G. Nava<sup>1</sup>

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**Background:** Ischaemic Heart Diseases account for the leading cause of mortality among Filipinos. Preventive measures thereof are exerted in diagnosis and management of dyslipidemia or serum lipid levels—an established risk factor for the development of the disease diagnosed by measuring clinical indicators primarily through lipid profile testing. Serum lipid levels may be affected by various behaviors and risk factors however, there is no clear correlation between abnormal serum lipid levels and specific socioeconomic strata.

**Methods:** Our aim was to investigate the correlation between abnormal serum lipid levels and socioeconomic status in middle-aged adults living in Barangay Poblacion, City of Meycauayan, Bulacan, filtering out outlying intrinsic factors such as genetic predisposition, lifestyle, medication, and behavioral risk factors, and limiting only to the inclusion of the major behavioral risk factor, diet. Out of the 304 population, 84 participated to which their serum lipid levels stood as quantitative data collected through lipid profile testing; encompassing the measurement of serum total cholesterol, triglycerides, high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C). As the study employed correlational methods, quantitative data in the form of serum lipid levels were run against quantitative data from the respondent profiling which were collected through survey questionnaires examining respondent demographics, including their eating practices. Data collected were employed through regression analysis to quantify relative association strength and determine a significant correlation, or lack thereof, of dyslipidemia among middle-aged Filipinos and specific socioeconomic strata.

**Results:** The study showed 25 participants (29.8%) to have high cholesterol, 57 (67.9%) to have high triglycerides, 1 (1.2%) to have high HDL, and 6 (7.1%) to have high LDL, albeit statistical analysis concludes no significant differences between income class and food intake—only VLDL demonstrates a significance between high and normal levels to which the high income class is 33.3 times more likely to have increased VLDL as compared to the low middle income class while the low income class is 15.6 times more likely to have increased VLDL as compared to the low middle income class. No statistically significant relationship was observed between lipid profile and eating practices.

**Conclusion:** Given the limited factors used in this study, we recommend the consideration of further intrinsic and extrinsic factors surrounding hyperlipidemia not limited to food intake frequency for a more comprehensive review.



Abstract ID: OB\_015

Track 1: Interventional and Clinical Studies

**Title:** Short Term Result of Laparoscopic One Anastomosis Gastric Bypass in China

**Authors:** Xiaoguang Qin MD,<sup>1,2</sup> Zhongqi Mao, M.D.,<sup>1,2</sup> Wei-Jei Lee, M.D., PH.D.,<sup>1,3</sup> Min Zhang, R.N.,<sup>1,2</sup> Shu-Chun Chen, R.N.,<sup>3</sup> Jung-Chien Chen, M.D., PH.D.,<sup>3</sup> Guoqiang Wu M.D.,<sup>1,2</sup> Xiaoqing Zhou M.D.,<sup>1</sup> Tiantian Wei, R.N.,<sup>1</sup> Yan Huang, R.N.,<sup>1</sup>

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<sup>2</sup>Department of General Surgery, The First Affiliated Hospital of Soochow University, Suzhou, China

<sup>3</sup>Medical Weight Loss Center, China Medical University Hsinchu Hospital, Taiwan, China

**Background:** Bariatric surgery has long been regarded as the most effective treatment for severe obesity. In recent years, this surgical approach has garnered increasing attention. Mainland China has been actively exploring and advancing in the field of metabolic and weight loss surgery. Many medical professionals and patients have embraced novel surgical concepts and techniques. Starting in 2019, the laparoscopic one-anastomosis gastric bypass surgery has shown a growing trend in Mainland China. Currently, there are still some debates regarding the efficacy and complications. This paper aims to share the research findings of 425 cases of OAGB conducted in a single center in Mainland China.

**Methods:** The data was collected from patients who underwent laparoscopic one-anastomosis gastric bypass surgery at the Suzhou BenQ medical Center from August 2019 to September 2023. Among these individuals, there were 75 male and 350 female patients. Mean age was 32.8 years, with an average preoperative body weight of 100 kg and mean BMI 36.6kg/m<sup>2</sup>.

**Results:** All patients underwent the OAGB procedure with a mean surgical duration of 104 minutes. The mean postoperative length of hospital stay was 3.8 days, and the mean blood loss was 20.7ml. The mean total length of the small intestine among the patients was 764.7cm, with a mean biliopancreatic loop is 246.1cm. The mean common channel length was 518.6 cm. In the early postoperative period, there were 15 cases of minor complications (3.5%), and 5 cases of major complications (1.2%). Furthermore, there were 20 cases of marginal ulcer (4.7%), 51 cases of anemia (12%), 20 cases of gallstones (4.7%), and 17 cases of gastroesophageal reflux disease (4%). The mean BMI decreased to 24.5kg/m<sup>2</sup> in the first year and further decreased to 24 kg/m<sup>2</sup> in the second year. Additionally, the mean excess weight loss percentage decreased to 86.7% in the first year and to 84% in the second year.

**Conclusions:** OAGB is a concise, safe, and effective surgical approach. Surgeons, after undergoing formal and comprehensive training, find it easier to grasp the key aspects of the procedure. However, in order to prevent the occurrence of prolonged malnutrition, the postoperative nutritional management is an issue that the Metabolic and bariatric Center needs to prioritize and continuously monitor.

Abstract ID: OB\_016

Track 5: Others

**Title:** Anemia After One-Anastomosis Gastric Bypass : Short Term Result in China

**Authors :** Min Zhang<sup>1,2</sup> · Zhongqi Mao<sup>1,2</sup> · Wei-Jei Lee(\*)<sup>1,3</sup> · Xiaoguang Qin<sup>1,2</sup> · Guoqiang Wu<sup>1,2</sup> ·

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**Background:** Surgical treatment for severe obesity has a history of over 60 years. In recent years, more people are choosing bariatric surgery due to the rising obesity rates and advancements in minimally invasive techniques. Notably, the one anastomosis gastric bypass (OAGB) has become a recognized option for bariatric surgery, gaining popularity in China with nearly a thousand cases in 2022. OAGB reduces nutrient intake and absorption, which has increased the focus on postoperative anemia in patients. This study analyzes data and treatment strategies for post-OAGB anemia in China.

**Methods:** The retrospective analysis encompassed follow-up data from 216 patients with obesity who had undergone OAGB at the Suzhou BenQ Metabolic and Bariatric Medical Center. These patients had successfully completed a 1-year post-surgery follow-up. The study included a comprehensive statistical assessment of both the quantity and prevalence of anemia, as well as an in-depth investigation into the underlying causes of anemia and the development of preventive strategies."

**Results:** This study included a total of patients, including female patients 176 , male 40. The mean age is 31.93±8.17 years. The total length of small intestine is 785.88±115.32cm, biliopancreatic loop 256.81±59.59cm, common channel 529.07±74.55cm, and the EWL% one year after surgery is 86.59%±21.01%. The incidence of anemia 6 months and 1 year after surgery was 5.56%, 12.5%, hemoglobin 117.03±21.65(g/L), red blood cells deposited 84.38±11.37 (fl) , ferritin 108.01±163.01 (ug/L) , vitamin B12 319.56±127.37 (pmol/L) , folic acid 13.24±8.12 (nmol/L) . OAGB postoperative anemia basic for iron deficiency anemia. Iron deficiency anemia can be effectively improved by oral iron prescription and combined intravenous therapy if necessary.

**Conclusions:** After OAGB, monitor anemia closely, providing iron supplements when needed. Prevent and correct postoperative anemia proactively. The bariatric surgery team should offer preoperative education and regular follow-up, intervening early to control postoperative anemia effectively.

Abstract ID: OB\_017

Track 1: Interventional and Clinical Studies

**Title:** Effect of Omega 3 Supplementation vs Very Low Calorie Diet (VLCD) on Metabolic Associated Fatty Liver Disease (MAFLD) in Patients Pre-Bariatric Surgery

**Authors:** Ng C.Y.D.\*<sup>1</sup>, Nor A. B.M. N.<sup>1</sup>, Tan B.C.<sup>1</sup>, Lim K.T.<sup>1</sup>, Bhuvanewari P.<sup>3</sup>, Moh M.C.A.<sup>3</sup>, Babu S.<sup>2</sup>, Tan C.H.<sup>1,4</sup>, Cheng K.S.A.<sup>1,3</sup>

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<sup>4</sup>Surgicare Bariatric and General Surgery

**Background:** In Bariatric surgery, for easier access to the Gastroesophageal Junction (GEJ), Very Low Calorie Diet (VLCD) is often used to reduce liver size but has compliance and cost issues (SGD\$222 for 2 weeks). In our previous study analysing Omega-3 (\$40 for 200 1mg capsules) as a cheaper and more acceptable alternative to VLCD, we found a significant reduction in liver volume after a 4 week course of 2g/day Omega 3 (mean  $-157 \pm 135$  cm<sup>3</sup>,  $p < 0.01$  in 95%)<sup>1</sup>.

We further investigated if Omega 3 supplementation had any effect on Metabolic Associated Fatty Liver Disease (MAFLD) (previously termed non-alcoholic fatty liver disease (NAFLD)), in comparison with VLCD by comparing NAFLD Fibrosis scores<sup>2</sup> and Plasma Glucagon levels.

Glucagon is also an important regulator of lipid and amino acid metabolism. Emerging evidence found that individuals with MAFLD may have hepatic glucagon resistance, and hence have dysregulated lipid and amino acid metabolism, resulting in a vicious cycle of excessive fat accumulation, hyperglucagonemia and oxidative stress thereby worsening MAFLD<sup>3</sup>.

**Methods:** Patients with BMI < 45 with no excessive central obesity who were planned for Bariatric Surgery were recruited between 2019- 2023. They were given 2g/day of Omega-3 supplementation (720mg Eicosapentaenoic acid (EPA), 480mg Docosahexanoic acid (DHA)) for 4 weeks pre- bariatric surgery. They were matched against patients who had VLCD meal replacement pre- bariatric surgery by age, gender and BMI in a 1:3 ratio. All patients were seen by a Dietician for standard pre- Bariatric Surgery counselling.

NAFLD fibrosis scores were calculated pre- and post- Omega 3. There was however no data to calculate NAFLD scores in the VLCD group. Plasma Glucagon levels were measured during time of Bariatric Surgery.

**Results:** 19 patients in the Omega 3 group were matched to 52 patients in the VLCD group. Compliance rate to Omega 3 was 80%, with 4 patients missing not more than 4 doses; compliance rate to VLCD was unknown. There were no adverse events in either groups.

In the Omega-3 group, although there was a slight worsening of NAFLD fibrosis score post intervention, mean pre- and post- Omega 3 NAFLD scores were  $-2.97 \pm 0.44$  and  $-2.92 \pm 0.5$  respectively. This was not statistically significant  $p = 0.33$ .



When compared with the VLCD group, although the mean plasma glucagon levels amongst the Omega 3 group was higher ( $5.40 \pm 4.66$  pmol/L) than the VLCD group ( $4.26 \pm 2.88$  pmol/L), this was not statistically significant ( $p=0.43$ ).

**Conclusion:** Omega 3 supplementation is cheaper and just as good for liver size reduction as VLCD, and is non-inferior to VLCD for glucagon resistance improvement.

Special acknowledgements to Dr Chloe Cheng (then an overseas elective medical student from Monash University Melbourne) for her prior research in Omega-3 during her Surgery elective with KTPH Upper GI and Bariatric Surgery in 2018.

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NAFLD Fibrosis Score (NFS) =  $-1.675 + (0.037 \times \text{age}) + (0.094 \times \text{BMI}) + (1.13 \times \text{hyperglycemia}) + (0.99 \times \text{AST/ALT ratio}) - (0.013 \times \text{platelet count}) - (0.66 \times \text{albumin})$
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Abstract ID: OB\_018

Track 1: Interventional and Clinical Studies

**Title:** Effect of Omega-3 Supplementation on Access to Gastroesophageal Junction (GEJ) in Bariatric Surgery (an update)

**Authors:** Ng C.Y.D.\*<sup>1</sup>, Nor A. B.M. N.<sup>1</sup>, Tan B.C.<sup>1</sup>, Lim K.T.<sup>1</sup>, Babu S.<sup>2</sup>, Moh M. C. A.<sup>3</sup>, Tan C.H.<sup>1,4</sup>, Cheng K.S.A.<sup>1,3</sup>

Note: Mark (\*) after the name, if it is the corresponding author

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**Background:** Very Low Calorie Diet (VLCD) meal replacements are commonly used to reduce liver size and improve access to the Gastro-esophageal Junction (GEJ) for Bariatric Surgery. It is however costly (SGD\$222 for 2 weeks) and entails hunger for several days before it becomes more manageable, resulting in poor compliance.

Omega-3 supplementation has been found to reduce hepatic steatosis by reducing lipogenic gene expression. Recent studies have also found reduction in hepatic volume after 1 month of Omega-3 supplementation. It is also cheaper (\$40 for 200 1mg capsules).

**Methods:** Patients with BMI<45, with no excessive central obesity were recruited. They were given 2 g/day (720mg Eicosapentaenoic acid (EPA), 480mg Docosahexaenoic acid (DHA)) of Omega-3 for 4 weeks. All patients were seen by a Dietician for standard pre- Bariatric Surgery counselling. Pre and post- Omega 3 supplementation, ultrasounds to measure liver size, as well as Liver Function and Platelets levels were measured .

Intraoperatively, the Operating Surgeon subjectively scored ease of access (1- most easy, 5- most difficult) to the area under the left liver lobe.

**Results:** A total of 25 patients were recruited between 2019 to 2023. 20 patients completed the study- 2 dropped out, 2 did not proceed to surgery due to non-Omega 3 related reasons, 1 crossed over to VLCD due to weight gain after COVID-19 Pandemic related surgery postponement. Compliance rate to Omega 3 was 80%, with 4 patients missing not more than 4 doses. There were no adverse events from Omega-3 intake.

Although 52% (12/23) gained weight post intervention (mean +1.5kg), 95% (22/23) experienced a reduction in liver volume (mean -157 ±135 cm<sup>3</sup>, p<0.01).

Of significance, even when stratified amongst the 12 who gained weight post intervention, 100% (12/12) experienced a statistically significant reduction in liver volume (mean -145 ±114 cm<sup>3</sup>, p<0.01).

Intraoperatively, majority of patients (12/20) had a Likert Score of 2 "Easy" (60%) access to the Gastroesophageal Junction (GEJ). Mean operative time was 115 minutes and Length of Stay (LOS) 2.5 days.

The Pearson correlation coefficient ( $\rho$ ) comparing Access to GEJ scores to Change in liver volume ( $\rho = -0.27$ ,  $p = 0.26$ ); Operative time to change in liver volume ( $\rho = 0.116$ ,  $p = 0.63$ ); and change in liver enzymes to liver volume ( $\Delta\text{ALT } \rho = -0.2$ ,  $p = 0.19$ ;  $\Delta\text{AST } \rho = -0.24$ ,  $p = 0.27$ ) were all not significant.

**Conclusions:** 4 weeks of 2g/ day supplementation with Omega-3 is a viable and cheaper alternative to VLCD for liver shrinkage pre- Bariatric Surgery.

Special acknowledgements to Dr Chloe Cheng (then an elective medical student from Monash University Melbourne) for her prior research in Omega-3 during her Surgery elective with KTPH Upper GI and Bariatric Surgery in 2018.

Abstract ID: OB\_019

Track 1: Interventional and Clinical Studies

**Title:** Structured Education Program for Ramadan Fasting – A Diabetes Care Nurse-led (DCN) Initiative in Persons with High-Risk Diabetes Mellitus (DM) in A Tertiary Centre.

**Authors:** Chieu Leng Teoh<sup>1</sup>, Nursyafiqah Binte A Yazid<sup>1</sup>, Elaine Tan Guat Kian<sup>1</sup>, Dr Nastar Fathima Ashna<sup>2</sup>, Dr Doddabele Srinivasa Deepak<sup>3</sup>

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**Background:** During the holy month of Ramadan, millions of Muslims worldwide observe fasting from dawn to sunset. This religious practice is also significant in Singapore with a 15% Muslim population.

For Muslims with diabetes deemed to be high-risk, Ramadan fasting can pose unique challenges and potential health risks related to hypoglycemia or hyperglycemia leading to subsequent hospitalization.

**Aim:** To develop a DCN-led structured education program including self-care management and BG (blood glucose) monitoring in high-risk persons with diabetes to enable safe undertaking of Ramadan fasting.

**Methods:** This study was undertaken in a busy tertiary centre Diabetes clinic. Muslims with diabetes who had expressed intention to undertake Ramadan fasting to their primary endocrinologist were referred to DCN for education and management. A risk assessment using the IDF-DAR risk categories was performed and those identified as ‘high risk’ were initially counseled about the potential risk of undertaking the month-long Ramadan fasting.

Those with high-risk diabetes who chose to fast after counseling were then enrolled to a Ramadan High-risk clinic comprising of a nutrition review by a dietician along with personalized education from DNE. Patients were advice on medication adjustment, frequency and timing of BG monitoring, hypoglycemia management and safety advice on when to breakfast. DNE maintained communication via teleconsultations throughout the Ramadan month and a post Ramadan follow up.

**Results:** From a total of 40 high-risk patients with DM who were identified, 27 decided to undertake Ramadan fasting. Almost 46% of them had received counseling previously. No patients were on insulin pump therapy. Details of patients are shown in figure 1.

Average age participant 60.3 with 24 T2DM and 1 T1DM.

83% participants have DM >10years duration.

HbA1c ranging from 5.6% to 14.1% with average 9.2%

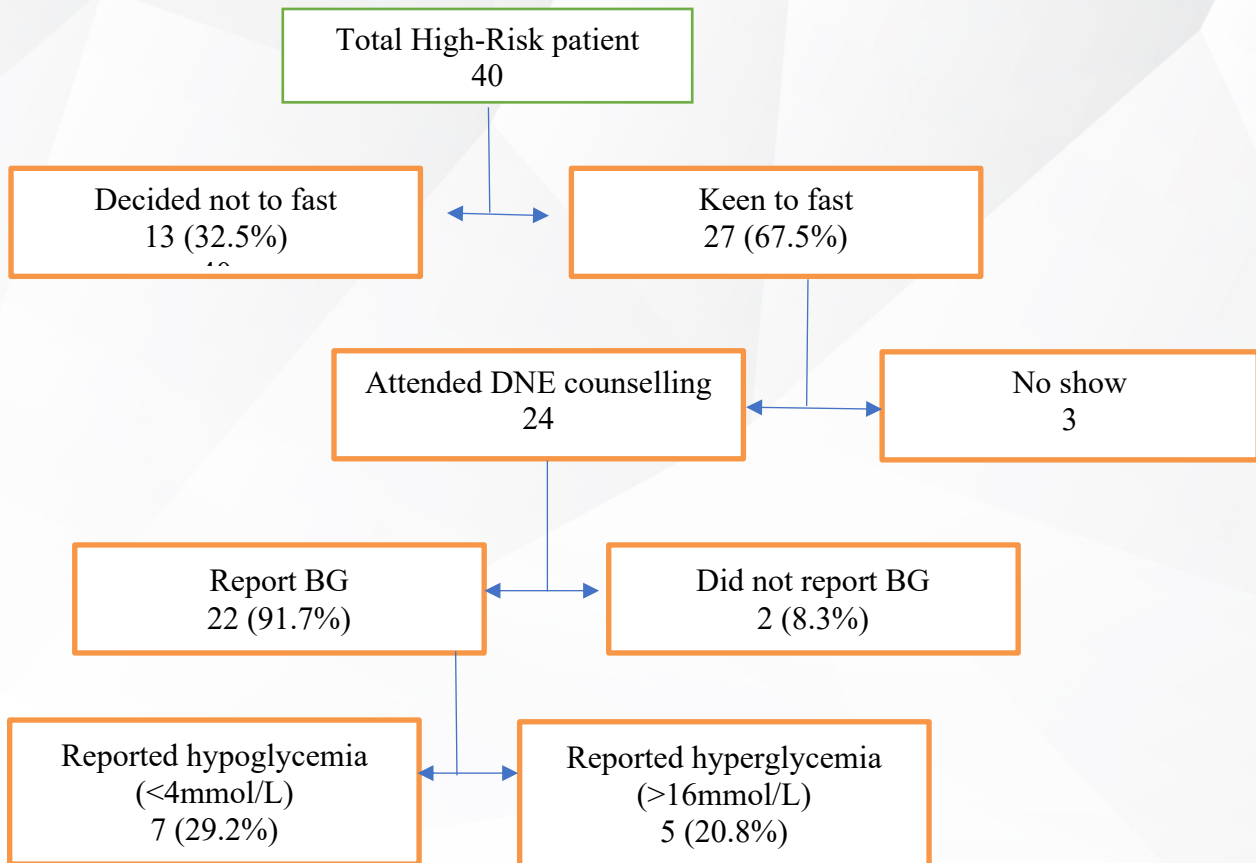
Risk stratification ranging from 6 to 16.5 with average 10.2

Treatment on:

46% =basal bolus dose

33%=premix  
8%=combination of premix and rapid insulin at lunch  
13%=combination of oral diabetes medication and basal insulin.

**Figure 1.**



As shown in Table 2, there were some positive changes in metabolic parameters following Ramadan fasting. Encouragingly there were no admissions for hypoglycemia and hyperglycemia during this period.

**Table 2. Changes to metabolic parameters**

	At entry	At conclusion	Change
HbA1c	9.2%	8.9%	-0.3%
Weight	79.6kg	78.6kg	-1.0kg

Data shown is mean

**Conclusions:** DCN-led initial risk stratification followed by providing a personalized, well-supported diabetes management strategies and close monitoring helps Muslim persons with diabetes undertake safe Ramadan fasting without excess complications and potential metabolic benefit.



Abstract ID: OB\_020

Track 1: Interventional and Clinical Studies

**Title:** Higher Serum Calcium/Phosphate Ratio Predicts Significant Weight Loss Within 6 Months After Sleeve Gastrectomy

**Authors:** Bhuvanewari Pandian<sup>1</sup>, Alicia Miyuki Lim<sup>1</sup>, Lim Boon Khim<sup>1</sup>, Angela Moh<sup>1</sup>, Anton Cheng<sup>1</sup>, Tan Bo Chuan<sup>1</sup>, Deborah Ng<sup>1</sup>, Shao Yi-Ming<sup>1</sup>, Tang Wern Ee<sup>2</sup>, Melvin Khee Shing Leow<sup>3,4</sup>, Lim Su Chi<sup>1,4,5,6</sup>

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**Background:** Hyperparathyroidism is sometimes linked to obesity through a proposed mechanism in which elevated intracellular calcium induced by parathyroid hormone (PTH) leads to reduced catecholamine-induced lipolysis in adipocytes that, in turn, promotes weight gain. Regression of hyperparathyroidism in morbid obesity along with weight loss has been observed. Limited evidence suggests that higher preoperative serum PTH is correlated with greater weight loss after bariatric surgery. Recently, calcium/phosphorus (Ca/P) ratio has been proposed to be a highly accurate index to diagnose hyperparathyroidism. In this study, we evaluate the predictive performance of Ca/P ratio for weight loss after sleeve gastrectomy (SG).

**Methods:** Adult patients undergoing bariatric surgery were recruited into the OMICS cohort from 2007 to 2023. This study included SG patients who had complete data required for analysis (n=146; baseline age:40.5±10.3 years, 34.3% men, BMI:44.3±8.9 kg/m<sup>2</sup>). Percentage body mass index loss (%BMI loss) was determined at 6 months after surgery (6-month %BMI loss) when weight loss was drastic, and between 6 and 12 months (12-month %BMI loss) when the rate of weight loss tapered off. Significant BMI loss was defined as at least 20% BMI loss decrease at 6 months post-surgery. Baseline serum calcium and phosphate levels were measured as part of pre-bariatric surgery work-up, and Ca/P ratio was calculated.

**Results:** The median 6-month and 12-month %BMI loss after surgery were 19.72% (interquartile range:-23.25, -16.30) and 3.20% (interquartile range:-7.94, -0.95), respectively. The mean Ca/P ratio level was 2.08±0.36. Although Ca/P ratio was not correlated with baseline BMI, association analysis revealed that Ca/P ratio was associated with a greater reduction in 6-month %BMI in the unadjusted linear regression model (coefficient:-4.26, 95% CI:-7.32 – -1.20, P=0.007). The relationship persisted after adjustment for baseline age, gender, ethnicity, BMI and fasting plasma glucose (coefficient:-5.44, 95% CI:-8.61 – -2.28, P=0.001). Furthermore, Ca/P ratio predicted increased likelihood of achieving significant BMI loss (≥20%) in the covariate-adjusted modified Poisson regression model (risk ratio:2.28, 95% CI:1.62 – 3.22, P<0.001). No association between Ca/P ratio and 12-month %BMI loss was observed.

**Conclusion:** Increased preoperative serum Ca/P ratio was associated with greater 6-month %BMI loss, suggesting that elevated baseline PTH levels may lower BMI in the early phase after bariatric surgery. One postulation is patients with higher baseline PTH will experience substantial normalization of PTH after SG, thus promoting weight loss beyond that induced by surgery.

Abstract ID: OB\_021

Track 1: Interventional and Clinical Studies

**Title:** Changes in Nitrogen Balance in Individuals with Morbid Obesity Undergoing Bariatric Surgery

**Authors:** Ramalakshmi Gayathri Vinjamuri<sup>1</sup>, Vieon Wu<sup>2</sup>, Alvin Eng<sup>3</sup>, Jeremy Tan<sup>3</sup>, Eugene Lim<sup>3</sup>, Lee Phong Ching<sup>2</sup>, Jean-Paul Kovalik<sup>1</sup>, Hong Chang Tan<sup>2\*</sup>

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2. Department of Endocrinology, Singapore General Hospital, Singapore.
3. Department of Upper Gastrointestinal and Bariatric Surgery, Singapore General Hospital, Singapore.

**Background:** Obesity is a chronic disease defined as a state of abnormal or excessive accumulation of fat tissue. Singapore's 2019/2020 National Population Health Survey showed that the prevalence of obesity (body mass index (BMI)  $\geq$  30 kg/m<sup>2</sup>) among residents increased from 8.6% in 2017 to 10.5%. The most effective treatment for patients with severe obesity is bariatric surgery. However, bariatric surgery results in the loss of fat mass and muscle mass. Adequate protein intake is important to prevent muscle loss, and the objective of this study is to evaluate the nitrogen balance in participants with obesity before and after bariatric surgery.

**Methods:** In this study, 16 participants with morbid obesity (BMI > 32.5 kg/m<sup>2</sup>) scheduled for bariatric surgery (14 sleeve gastrectomy and 2 Roux-en-Y gastric bypass) were recruited. Nitrogen balance were calculated based on the difference between dietary protein intake and urine nitrogen excretion. 20 participants with normal weight (BMI < 25 kg/m<sup>2</sup>) were also recruited as controls. Participants with morbid obesity returned 6-months later for reassessment of nitrogen balance. Data were analysed by parametric methods and presented as mean  $\pm$  SD.

**Results:** At baseline, mean BMI of controls was  $20.83 \pm 2.11$  and of those with morbid obesity  $40.94 \pm 7.29$ . Compared to those with controls, there were no significant differences in the total daily calorie intake at  $1466.79 \pm 430.56$  kcal/day vs.  $1461.62 \pm 390.8$  kcal/day ( $p = 0.9701$ ) in participants with obesity. Similarly, dietary protein intake at  $74.21 \pm 28.69$  vs.  $64.56 \pm 18.3$  g/day was not significantly different ( $p = 0.2289$ ). Nitrogen balance between participants with obesity and controls was insignificant ( $p = 0.1742$ ). Post-surgery BMI, fat free mass, fat mass, total energy intake, and carbohydrate(g/day), protein intake (g/day) were significantly lower ( $p < 0.01$ ). However, there were no changes in protein oxidation, and urine nitrogen excretion. Nitrogen balance decreased significantly from  $2.62 \pm 5.07$  g/day to  $-1.69 \pm 5.07$  g/day ( $p = 0.025$ ) post-surgery.

**Conclusion:** Reduction in dietary protein intake after bariatric surgery results in a negative nitrogen balance and was associated with significant reduction in fat free mass.



Abstract ID: OB\_022

Track 2: Epidemiology

**Title:** A Comparison of Adiposity Quantification Measured by Bioelectrical Impedance (BIA) and Dual Energy X-Ray Absorptiometry (DEXA) in The Asian Population

**Authors:** Amanda Auyong Sze Yen<sup>1,\*</sup>, Theresia Mina<sup>1</sup>, Gervais Wansaicheong<sup>1,2</sup>, Rinkoo Dalan<sup>1,3</sup>, Benjamin Chih Chiang Lam<sup>1,4</sup>, Yik Weng Yew<sup>1,5</sup>, Marie Loh<sup>1,5</sup>, Joanne Ngeow<sup>1,6</sup>, Eng Sing Lee<sup>1,7</sup>, Jimmy Lee<sup>1,8</sup>, and John Chambers<sup>1,9</sup>

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**Background:** The measurement of excess adiposity is of increasing clinical importance as obesity rates rise in Asia. BMI, while widely used, is inaccurate in estimating adiposity. Direct quantification can be done via imaging-based technologies such as dual-energy X-ray absorptiometry (DEXA), or non-imaging technologies like bioelectrical impedance (BIA). While DEXA offers greater accuracy in quantification, the higher costs and radiation exposure limit serial examinations. BIA has the advantages of accessibility and absence of radiation, but it is prone to inaccuracies when its equations are applied to different ethnicities or weight categories. This study aims to compare the quantification of adiposity measured by DEXA in the multi-ethnic Asian population.

**Methods:** The Health for Life in Singapore (HELIOS) Study is a population-based study of multi-ethnic males and females from the community in Singapore. 9,504 participants had their total, trunk, arm, leg, and visceral adiposity quantified via BIA and DEXA. Both measurements were compared with Bland-Altman plots. The effect of age, gender, ethnicity, and weight category was determined through univariate linear regressions, and adjusted for in the final beta values.

**Results:** The cohort was 59.9% female, and the ethnic distribution was 68.4% Chinese, 18.2% Indian and 13.4% Malay. The differences in the mean measurements of BIA and DEXA were ranging a 10-20% difference, or about 1kg for trunk, arm, leg fat mass to 3kg for total fat mass, and 30cm<sup>2</sup> for visceral fat area. The Bland-Altman plots showed that BIA tended to underestimate at lower fat mass and overestimate at higher fat mass for all masses except visceral fat area, which both overestimated and underestimated at higher fat area (fan shaped). The plots were not different when stratified by gender and ethnicity. The beta for visceral fat area in the associations between BIA and DEXA measurements were  $\beta=0.854$ , while total and trunk fat mass were  $\beta=0.976$  and  $\beta=0.987$ , respectively (All  $p<0.0001$ ).



These beta values of visceral fat were found to be smaller in individuals with BMI above 27.5 compared to those BMI below 27.5 ( $\beta=0.673$  and  $\beta=0.753$  respectively).

**Conclusion:** Our findings support the potential application of BIA in primary care and informal settings to measure total fat in this multi-ethnic Asian population settings, but caution against the application to quantify visceral fat. Further research is needed to derive potential gender- or ethnic-specific correction factors for visceral fat.

Abstract ID: OB\_023

Track 1: Interventional and Clinical Studies

**Title:** Longitudinal Study of Psychological Distress and Changes in Body Mass Index in Adolescents with Overweight/Obesity

**Authors:** Grace Cheng En Hui<sup>1</sup>, Khairunisa Binte Khaider<sup>2</sup>, Rehena Sultana<sup>3</sup>, Chew Chu Shan Elaine<sup>2</sup>

<sup>1</sup>Duke-NUS Medical School, Singapore

<sup>2</sup>Adolescent Medicine Service, Department of Paediatrics, KK Women's and Children's Hospital, Singapore

<sup>3</sup>Centre for Quantitative Medicine, Duke-NUS Medical School, Singapore

**Background:** Childhood obesity is rising in Singapore, with many physical and psychosocial health consequences. The association between psychological distress and response to obesity treatment amongst adolescents in Singapore has yet to be examined and can potentially inform early screening psychological interventions. Therefore, this preliminary study aimed to investigate 1) changes in body mass index (BMI) over 6 months amongst adolescents with overweight/obesity seeking obesity treatment presenting with or without psychological distress, and 2) gender as a moderating variable.

**Methods:** Adolescents aged 11 to 17 were recruited from KK Hospital's Weight Management Clinic from June 2022 to January 2023. Participants with BMI values measured at KK Hospital 6 months after recruitment into the study were included. Participants previously diagnosed with psychological disorders and sought psychological help were excluded. Upon recruitment, participants completed the Young Person's Clinical Outcomes in Routine Evaluation (YP-CORE) to assess their psychological distress. Clinically significant cut-off values (age- and gender-specific) were referenced. Significant psychological distress was indicated by scores above the cut-off. Baseline demographic and anthropometric data of the participants were collected at recruitment and 6 months. BMI was analysed as a percentage of the 95th percentile BMI (%95<sup>th</sup> BMI), calculated using age- and gender-specific Centers for Disease Control and Prevention (CDC) growth charts. Data was analysed using SPSS version 29.0. Independent *t*-test was used to compare changes in %95<sup>th</sup> BMI for adolescents presenting with and without psychological distress.

**Results:** 48 participants with baseline and 6 month data were analysed (35 males, 13 females). Of the 35 males, 24 presented with no psychological distress and 11 presented with psychological distress. Of the 13 females, 5 presented with no psychological distress and 8 presented with psychological distress. When analysing both genders together, there was no significant difference in changes in BMI between those presenting without or with psychological distress (-3.9 vs -2.4,  $p=0.506$ ). When analysing by gender, there was a significant difference in changes in %95<sup>th</sup> BMI between those presenting without or with psychological distress for females (-4.0 vs 3.7,  $p=0.006$ ) but not for males (-3.8 vs -6.9,  $p=0.253$ ) (Table 1).

**Table 1.** Changes in BMI (percentage of the 95th percentile BMI) over 6 months.

	No psychological distress					Psychological distress				p value
	N=	n=	Mean (SD)	Median	IQR <sup>1</sup>	n=	Mean (SD)	Median	IQR <sup>1</sup>	
Males + Females	48	29	-3.9 (6.0)	-4.1	8.5	19	-2.4 (8.8)	-1.7	9.6	0.506
Males	35	24	-3.8 (6.5)	-4.3	9.1	11	-6.9 (8.6)	-6.1	8.4	0.253
Females	13	5	-4.0 (2.6)	-4.0	4.2	8	3.7 (4.5)	3.3	9.2	<b>0.006</b>

<sup>1</sup> IQR refers to interquartile range.

**Conclusion:** Psychological distress is associated with less improvement in BMI for females. These results highlight the potential role of systematic screening for psychological distress in adolescents with overweight/obesity for early psychological interventions as part of obesity intervention.

Abstract ID: OB\_024

Track 1: Interventional and Clinical Studies

**Title:** The Correlations of Fat Mass Index and Skeletal Muscle Index with Insulin Resistance in Obese Indonesian Adults: Exploring the Role of Body Composition

**Authors:** Maggie Nathania, Diana Sunardi\*, Krisadelfa Sutanto

<sup>1</sup>Department of Nutrition, Faculty of Medicine Universitas Indonesia-Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia

**Background:** The prevalence of obesity is increasing worldwide, including in Indonesia, which is associated with an increase in insulin resistance (IR) and subsequent cardiometabolic abnormalities. Several anthropometric markers have been proposed to predict IR. We aimed to assess the correlation between skeletal muscle index (SMI) and fat mass index (FMI) with insulin resistance in non-diabetic obese Indonesian adults.

**Methods:** We performed a cross-sectional study with 89 (33 men, 56 women) non-diabetic obese Indonesian office workers aged  $\geq 18$  years with BMI  $\geq 25$  kg/m<sup>2</sup>. Physical activity level assessed by Global Physical Activity Questionnaire (GPAQ) score classification. SMI and FMI were calculated by multi-frequency bioelectrical-impedance analysis (SECA-mbca525) and the classification proposed by Kyle UG et al. for FMI and Kim YS et al. for SMI were used as a reference for interpretation. Insulin resistance was estimated by the homeostasis model assessment (HOMA) index. Correlation coefficient (r) was used to assess the associations of SMI and FMI with HOMA-IR, followed by subgroup analysis by sex.

**Results:** The median age and BMI of the participants were 40 (21-59) years and 29 (25,0-48,5) kg/m<sup>2</sup> with majority (65,2%) subjects have moderate physical activity level. Median FMI in males and females are 9,9 (4,8-16,3) kg/m<sup>2</sup> and 16,3 (13,1-25,1) kg/m<sup>2</sup>, respectively. Median SMI in males and females are 10,4 (6,3-15,2) kg/m<sup>2</sup> and 7,8 (6,6-12,5) kg/m<sup>2</sup>, respectively. Spearman analysis showed FMI has a weak positive significant correlation with HOMA-IR ( $r=0,258$ ,  $p=0,015$ ), and SMI has no significant relationship. Subgroup analysis showed that FMI has a moderate positive correlation with HOMA-IR ( $r=0.457$ ,  $p=0.007$ ) in males and not statistically significant in females, while SMI has a weak positive significant correlation with HOMA-IR ( $r=0.358$ ,  $p=0.007$ ) in female and not statistically significant in males.

**Conclusion:** Our study provides evidence for a positive correlation between FMI and insulin resistance in the obese Indonesian population, which further analysis found only significant in males. We observed that there may be sex-specific anthropometric parameters that correlate with insulin resistance, highlighting the importance of considering gender differences when assessing body composition and its relation to insulin resistance.



Abstract ID: OB\_025

Track 2: Epidemiology

**Title:** Nutrition Surveillance on Nutrition Adequacy and Eating Behavior amongst Toa Payoh Residents

**Authors:** Lee Xuan Ying<sup>1</sup>, Winnie Chia Qin Ying<sup>1</sup>, Rae Challander<sup>1</sup>, Verena Ming Hui Tan<sup>1</sup>, Chng Pey Ling<sup>2</sup>, Ng Puay Shi<sup>2</sup>

<sup>1</sup>Singapore Institute of Technology

<sup>2</sup>Tan Tock Seng Hospital

**Background:** With Singapore's rapidly ageing population, prevalence of nutritional risk (under- and over-nutrition) is expected to be even higher in regions housing a greater proportion of older adults such as Toa Payoh (TPY). However, the nutritional landscape of TPY residents is currently unknown, highlighting the need for nutrition surveillance to determine the residents' nutritional status, dietary adequacy, and practices.

**Methods:** A mixed-method cross-sectional study design was used. 200 community-dwelling adults aged  $\geq 21$  years, staying in TPY public housing estate, were recruited for a nutrition survey which consisted of (a) nutrition screening to determine undernutrition risk (b) anthropometry measurements, (c) an interviewer-administered dietary screener to assess dietary adequacy and practices, and (d) a semi-structured interview for a subset of 15 residents to explore factors influencing eating behaviours. Stepwise multivariate logistic regression models were used to identify independent risk factors of nutritional risk (under- and over-nutrition).

**Results:** Out of 200 residents, 45.2% were found with undernutrition risk and 58.5% were found with an overweight/obese BMI. Multivariate analysis showed that age  $\geq 65$  years (OR: 25.2, 95% CI = 19.21-38.88,  $p = 0.008$ ) was significantly associated with undernutrition risk while consumption of grains (OR: 0.19, 95% CI = 0.08-0.45,  $p < 0.001$ ) and protein-rich foods (OR: 0.33, 95% CI = 0.12-0.88,  $p = 0.033$ ) were inversely associated undernutrition risk. Frequency of eating out in Western fast-food outlets at least once a week (OR: 4.41, 95% CI = 1.41-13.81,  $p = 0.011$ ) was the only dietary practice significantly associated with residents with overweight/obese BMI. A higher proportion of Malay (100.0%) and Indian (75.0%) residents were found with an overweight/obese BMI as compared to Chinese (52.8%). Additionally, our qualitative data suggests that factors influencing food choices are predominantly intrapersonal, including preferences, convenience, and budget.

**Conclusion:** Approximately 1 in 2 TPY residents was identified with nutritional risk, with a higher prevalence of residents with an overweight/obese BMI. Community-based interventions can be directed at the individual level, prioritizing adequate grains and protein-rich foods consumption among older adults to reduce undernutrition risk, and reducing the frequency of eating out in Western fast-food outlets to less than once a week to maintain a healthy BMI. More attention should be given to Malay and Indian residents to effectively combat overweight/obesity in TPY.

Abstract ID: OB\_026

Track 1: Interventional and Clinical Studies

**Title:** Is Obesity a Risk of Postoperative Ileus in Asian Population? Insight from a Cross-Sectional Study

**Authors:** Adelina Haryono\*<sup>1</sup>, Diana Sunardi<sup>1</sup>

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**Background:** Postoperative ileus (POI) is a complication commonly found after major abdominal surgery, with a prevalence ranging from 3 to 32%. Obesity may contribute in POI development due to mechanical factor from higher and thicker abdominal fat mass. However, studies have shown conflicting results on impact of high body mass index (BMI) and high visceral fat towards increased risk of POI. Higher BMI criteria was used in previous studies. This study aims to explore the link between POI and obesity according to BMI, and also central obesity determined by waist circumference, using criteria specific for Asian population.

**Methods:** This study was a cross-sectional study done at tertiary referral hospital in Jakarta, Indonesia. Adult subjects who were scheduled to undergo elective laparotomy were recruited from March to May 2023. Anthropometry was measured preoperatively. Asia-Pacific classification was used to diagnose obesity ( $BMI \geq 25 \text{ kg/m}^2$ ), while waist circumference is used as a proxy to measure visceral adipose tissue. Central obesity was diagnosed for waist circumference  $>90 \text{ cm}$  for man, and  $>80 \text{ cm}$  for woman. Subjects were followed until postoperative day 7 to evaluate POI. Analysis to determine the link between POI and obesity was done, and continued with logistic regression analysis to control confounding factors.

**Results:** Ninety-four subjects were recruited, 4 of which dropped-out because unable to undergo laparotomy. Ninety subjects analyzed in this study underwent elective laparotomy for digestive (37,8%), gynecology (57,8%), urology (2,2%), also joined digestive-vascular and digestive-gynecology (2,2%) surgery. Prevalence of obesity was 35,6%, with mean BMI of  $23,4 \pm 4 \text{ kg/m}^2$ . Mean waist circumference was  $86,6 \pm 1,9 \text{ cm}$  for men, and  $87,9 \pm 1,3 \text{ cm}$  for women. Central obesity was found in 63,4% subjects. Obesity and central obesity were not found to increase the risk of POI. Only intraoperative bleeding volume of 500 mL or more was found to be linked significantly with POI, even after logistic regression analysis (OR 7.95, 95% CI 1.41 – 44.78;  $p=0.019$ ).

**Conclusion:** In this study, obesity and central obesity were not found to increase the risk of POI, only high intraoperative bleeding was found to increase risk of POI. Further study needs to be done to determine the link between POI and obesity in population with a larger variety of BMI.

Abstract ID: OB\_028

Track 1: Interventional and Clinical Studies

**Title:** An Interim Analysis of the Effectiveness of A Structured Tri-Phasic Diabetes Remission Programme in Multi-Ethnic Asians with Type 2 Diabetes

**Authors:** Lim Boon Khim<sup>1</sup>, Angela Moh<sup>1</sup>, Diana Yong<sup>1</sup>, Bhuvanewari Pandian<sup>1</sup>, Serena Low<sup>1,2</sup>, Lee Ting Yuan<sup>2</sup>, Mariana Binte Mahadi<sup>2</sup>, Luah You Min<sup>2</sup>, Jane Han<sup>1,2</sup>, Vi Vien Seow<sup>2</sup>, Benjamin Lam<sup>1</sup>, Tavintharan Subramaniam<sup>1,2</sup>, Chee Fang Sum<sup>2</sup>, Su Chi Lim<sup>\*1,2,3,4</sup>

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**Background:** Groundbreaking evidence from the primary care-led United Kingdom Diabetes Remission Clinical Trial (DiRECT) showed that type 2 diabetes (T2D) remission is achievable through a tri-phasic intensive calorie restriction-based weight management programme. The generalizability to Asian populations that exhibit the distinct Asian diabetes phenotype is uncertain. Modelled after the DiRECT programme, we examined the effectiveness of the approach in weight loss and diabetes remission among multi-ethnic Asians with T2D.

**Methods:** The programme commenced in July 2022, recruiting individuals aged 21-65 years old, clinically diagnosed with T2D, diabetes duration 0-6 years, HbA1c $\geq$ 6% (on glucose-lowering medications) or  $\geq$ 6.5% (on diet control), body mass index (BMI) of 27-45 kg/m<sup>2</sup>, and not on insulin therapy. All glucose-lowering medications were stopped after initiation of 3-month total diet replacement (TDR; ~800 kcal/day; Phase 1), and during the food reintroduction phase (FR; ~1000 kcal/day). Baseline and monthly post-intervention weight was recorded, and total weight loss (TWL) was calculated. Ambulatory glucose levels were monitored from the start of each phase using the FreeStyle Libre system. Diabetes remission defined as HbA1c $<$ 6.5% and fasting plasma glucose $<$ 7 mmol/L off glucose-lowering medications for at least 3 months was determined.

**Results:** A total of 16 patients (age: 34 $\pm$ 7 years, BMI: 34.9 $\pm$ 4.1 kg/m<sup>2</sup>, 68.8% men) with a median diabetes duration of 2 years and baseline HbA1c of 6.9 $\pm$ 1.4% participated in the programme. A ~5% TWL was observed within 1 month of TDR. The Libre results showed that normal average daily glucose readings ( $<$ 7.0 mmol/L) were attained on Day 3 after start of TDR without medications. At Phase 1 completion, the body weight decreased from baseline 103.2 to 94.0 kg, achieving an 8.5% TWL. All patients who attained  $\geq$ 10% TWL (n=5) had diabetes remission. Even non-remitters with  $<$ 10% weight loss (n=3/7) showed substantial improvements in glycaemic control. After FR, mean weight increased moderately to 98.4 kg due to progressive reintroduction of solid food, corresponding to 4.3% TWL. In general, the average daily glucose levels were maintained within normal range during Phase 2. However, 1 patient with  $<$ 5% TWL experienced T2D relapse. Two patients shifted to a lower TWL category after weight rebound but remained in remission. Overall, 75% and 66.7% of the patients achieved diabetes remission upon completion of Phase 1 and Phase 2, respectively.



**Conclusions:** Intensive calorie restriction led to high diabetes remission rates despite variable degree of weight loss. However, an extended observation period is required to ascertain the durability of glycaemic control.



Abstract ID: OB\_029

Track 1: Interventional and Clinical Studies

**Title:** Goal Directed Program vs Standard Weight Loss Program for Weight Loss 1 Year After Laparoscopic Sleeve Gastrectomy (NCT02885220)

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**Background:** To evaluate the efficacy of a goal-directed program on weight loss outcomes after laparoscopic sleeve gastrectomy (LSG).

**Methods:** A randomized clinical trial was conducted to compare excess weight loss (EWL) and total body weight loss (TBWL) between a goal-directed and conventional weight loss program after LSG. From November 2015 to July 2020, patients who underwent LSG were enrolled.

**Results:** A total of 107 participants were enrolled. 55 participants were randomized to either a goal directed program or a standard weight loss program. Mean (SD) age was 40.1 (10.5); mean (SD) pre-operative weight was 104.3 kg (16.3 kg); mean (SD) excess weight was 42.9 kg (11.0 kg); mean (SD) BMI was 39.1kg/m<sup>2</sup> (3.6 kg/m<sup>2</sup>); there were 73 females (68.2%). The mean difference in % EWL and % TBWL between the goal directed program and the standard weight loss program at 12 months -7.42% (95% CI, -15.54 to 0.70, p= 0.073) and -4.55 (95% CI, -12.52 to 3.43, p= 0.261) respectively.

**Conclusion:** There was no statistically significant difference in %EWL in participants who underwent a goal-directed weight loss program 1 year after LSG.

Abstract ID: VD\_001

Track 1: Interventional and Clinical Studies

**Title:** Transumbilical Stapling Technic of OAGB

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**Abstract:** Single-site or single-incision laparoscopic surgery (SILS) is favored for its effectiveness in postoperative pain and cosmesis comparing to conventional laparoscopic technique[1-3]. SILS technique for bariatric surgery was first reported by Saber's team in 2008 for laparoscopic sleeve gastrectomy (SG) followed by laparoscopic adjustable gastric banding (AGB) [4,5]. The first SILS Roux-en-Y gastric bypass was reported in 2009 using a plastic reconstruction technique . Because pure SILS technique is very difficult for a complex bariatric surgery we have previously reported a modified SILS technique,trans-umbilical 2-site(TUTS) technique, for routinely performing RYGB using SILS in 2010[6]. To the best of our knowledge, there was only 1 article on OAGB surgery published in 2010, which describes the length of the small gastric pouch is only 8-9cm, it does not meet the modern surgical requirements for OAGB [7],However, this TUTS technique had not yet been reported for OAGB because of the difficulty for making a 25-cm long, narrow gastric tube. This year we have innovated a new way to solve the above problem. This study aimed to present the transumbilical stapling technic of OAGB.

**Conclusions:** SG+OAB operation had a non-inferior or even better weight loss than OAGB, with a similar glycemic control efficacy. However, the high complication rate of SG+OAB is the major drawback that needs attention.

Abstract ID: VD\_002

Track 1: Interventional and Clinical Studies

**Title:** Single Anastomosis Sleeve-Ileal Bypass as Revision Surgery For Weight Regain Patient After Sleeve Gastrectomy: A Single Institute Experience

**Authors:** Cheng-Chieh Hsia<sup>1,2</sup>, Wei-Jei Lee<sup>\*1,2</sup>

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**Background:** In Taiwan, sleeve gastrectomy(SG) is the most common bariatric surgery. In 2022, 1434 patients underwent SG, which accounts 45.8% of all bariatric surgery. However, weight regain is still a challenge for the result. Previous study observed 5.7% after 2 years and in 75.6% after 6 years. Single Anastomosis Sleeve-Ileal Bypass(SASI) is a novel bariatric surgery which is effective for weight loss. We reviews 9 cases underwent SASI as revision surgery for weight regain after SG.

**Methods:** Between October 2022 and August 2023, we performed SASI as revision surgery for 9 patients. We will present a video to demonstrate how we perform the operation.

**Results:** For 3 patients complete 1, 3 and 6-month post-operative follow-up, no post-operative complication noted. The trend of body weight decreasing is observed.

**Conclusion:** SASI as revision surgery for patient with weight regain after SG would be effective and safe in short-term follow-up. We still new more patient number and long-term follow-up data for further analysis.

Abstract ID: VD\_003

Track 1: Interventional and Clinical Studies

**Title:** Sleeve Gastrectomy Leaks: Case Report and Literature Review

**Authors:** Authors: Rui En Lee<sup>1</sup>, Daryl Kai Ann Chia<sup>2</sup>, Jimmy Bok Yan So<sup>2</sup>, Asim Shabbir<sup>2</sup>, Guowei Kim\*<sup>2</sup>

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**Background:** Laparoscopic sleeve gastrectomy (LSG) has become increasingly popular around the world as a type of bariatric surgery for morbid obesity. One of the known complications of LSG is staple line leaks, which occurs in 0.74-1.7% of patients<sup>1</sup>. The pathophysiology of staple line leaks is thought to be due to two possible causes: mechanical failure of the staple line, and ischaemia in that area causing tissue breakdown<sup>2</sup>. Staple line leaks can occur in either the proximal or distal part of the staple line, with proximal staple line leaks often presenting later in the postoperative period, from 6 weeks to months from the procedure<sup>3</sup>.

**Methods/Results:** We present a case report of a proximal staple line leak after an LSG performed at our surgical centre in Singapore. A 35-year-old patient was electively admitted for a LSG. The index surgery was largely uneventful, except for a slight oozing seen at the proximal aspect of the staple line which required diathermy. On post-operative day 2, the patient became tachycardic with a 2g/dL drop in haemoglobin. A computed tomography (CT) scan showed a haematoma next to the stapler line. He was started on antibiotics and conservatively managed with improvement of his tachycardia. However, on post-operative day 4, he became tachycardic again and had a further drop in his haemoglobin. A repeat CT scan was done which showed oral contrast extravasation extraluminally within the haematoma next to the proximal stapler line. Early intervention via a re-operation using a laparoscopic approach was performed to rectify the leak: the haematoma was evacuated, and the site of leak (a pinpoint defect in the proximal stapler line) was identified using an on-table esophagogastroduodenoscopy and primarily repaired with barbed suture. A drain was inserted. The patient subsequently recovered well and was discharged after a week.

**Conclusion:** In conclusion, staple line leaks are a feared complication of LSG. Once suspected, medical personnel must act expediently to diagnose and curb the leak to 'rescue' the patient.

## References

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