

e-WGN

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WGO Vice President, 2011-2015

Green Endoscopy: Championing Sustainability in the Endoscopy Suite



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Climate change is a crisis that all of humanity is facing with its impact in various spheres including trade, economy, healthcare and geopolitics. Considering its global impact, the Paris Climate Accords were signed on Earth Day, i.e., 22 April 2016 by 195 countries, in an attempt to keep the global temperatures from rising two degrees Celsius from preindustrial levels, and to preferably keep it below one and a half degree Celsius.¹ The aim was mitigating the rise in temperature by reducing the carbon footprint, which was the total set of greenhouse gas emissions caused directly and indirectly by an individual, event, organization or product.² To achieve the targets set by the Paris Climate Accords, a year-on-year reduction in emission by at least 7.6% in emissions is needed.³ Healthcare industry is a major contributor to the carbon footprint, accounting for about 4.4% of all greenhouse emissions, ranking fifth amongst all industries.⁴ A major part (~71%) of these emissions are generated not in processes within the hospital, but in an attempt to provide ancillary services associated with healthcare like production of medicines and equipment, transport and other logistics. Endoscopy ranks third amongst different specialities with respect to carbon footprint.⁵ Endoscopy is also a growing industry with market size estimated at \$10.8 billion USD in 2020 with an anticipated 8% increase every year.² With increasing indications for minimally invasive procedures and use of endoscopy in different situations, emissions are expected to increase.

Sustainability and Green Endoscopy

Decreasing emissions directly correlates with sustainability, which is one of the Royal College of Physicians domains of quality.⁶ While the practical aspect of sustainability is about ensuring healthcare continues, the ethical aspect is to minimize impact on climate change. Traditionally, the value of any intervention is weighed by the outcome relative to cost. With respect to sustainability, value of any intervention is now redefined by the “triple bottom-line” with outcome relative to the environmental, social and financial impact of the intervention.⁷ The concept of green endoscopy emanates from this new concept of value of any intervention.

Green endoscopy refers to the coordinated effort by various stakeholders to reduce the carbon footprint generated by endoscopic intervention by actions in the pre-

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BARRIERS TO "GREEN ENDOSCOPY"	
FINANCIAL	<ul style="list-style-type: none"> Practice volume dependent with Profit driven by numbers Need for funding to develop newer technology
REGULATORY AND QUALITY CONTROL	<ul style="list-style-type: none"> Infection prevention practices Device certification Fear of missing lesions and malpractice
KNOWLEDGE GAP	<ul style="list-style-type: none"> Lack of large scale data on carbon footprint of endoscopy No formal training Lack of evidence based guidelines Lack of incentive for green initiatives in endoscopy

Figure 1: Barriers to "Green Endoscopy"

procedure, procedural and post-procedural period.⁸ Barriers exist to green endoscopy at various levels (Figure 1).⁹ Financial pressures drive the healthcare industry as well, with profits being driven by increased numbers. There is worry with respect to regulatory requirements and quality assurance, especially with respect to reusable devices in endoscopy. There is a significant knowledge gap with respect to sustainable practices in endoscopy with little or no incentives for taking up these practices at an individual unit level. Hence, there are concerted efforts at various levels from an international, national, unit and individual levels for adoption of green endoscopy practices.

Change is the Only Constant - Reduce, Reuse, Recycle

Changes at policy level remain critical in guiding units and individuals towards the adoption of best practices. International endoscopy societies can take the initial step towards improving adoption of sustainable endoscopic practices with multiple societies coming up with guidelines discussing green endoscopy.^{8, 10} Key issues remain establishing aims at large. For example, the World Gastroenterology Organisation has created a Climate Change Working Group in a bid to assess impact of our endoscopic practices on the environment and to promote sustainable practices.¹¹ The National Health Service (NHS) also aims to reduce carbon footprint

by 80% between 2028-2032 and achieving net zero by 2040.¹² Disease prevention and health promotion, patient empowerment, choosing lean systems and pathways and preferential use of technology with lower environmental impact are the tenets of the campaign for greener healthcare. Designing quality improvement plans for green endoscopy adopting these tenets may improve adoption.¹³ Unit accreditation for green initiatives and fostering research in sustainable practices through grants are likely to have benefit in the long-term.

At an individual and endoscopy unit level, changes can be made on multiple grounds (Figure 2). The first step towards ensuring sustainability is to reduce wasteful procedures.¹⁴

Identification of drivers for wasteful procedures like economic (free market healthcare), administrative (old records not available needing repetition), behavioral (defensive medicine) or technical (no low-cost green alternatives available) factors and attempting to address these individually is vital. Appointing a green endoscopy lead from the unit to take responsibility and act as a facilitator for knowledge and good practice will be a welcome step in most units.¹⁵ Auditing waste disposal and taking corrective measures is another step in the right direction. A recent study from Portugal looked at targeted intervention to reduce regulated medical waste in a four-stage prospective audit. They showed a 12.9% and 41.9% reduction respectively in total waste and regulated medical waste from start of study to one-month after intervention with increase in landfill and recyclable waste, with sustained benefits at four-months after initial intervention.¹⁶ Units can attempt a paperless modus operandi with digital information, especially considering most patients now have access to mobile phones and internet.¹⁷ Teleconsultation can reduce

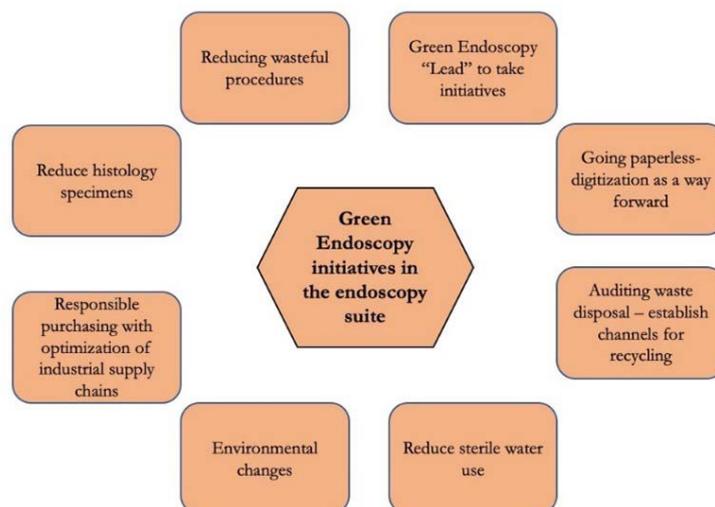


Figure 2: Green Endoscopy Initiatives

hospital visits and help further reduce carbon footprint.

Other steps necessary in the endoscopy unit include the need to reduce histology samples, reduction in use of sterile water and responsible purchasing with survey of industrial supply chains with environmental changes. In a previous study, Gordon et al. demonstrated that the carbon footprint for every bottle of pathology was similar to driving 0.7 miles.¹⁸ Hence, reduction in unnecessary biopsies will significantly reduce carbon footprint. A clear definition for biopsy protocols and indications are necessary. Despite internal processing plants, sterile water may be a major source for CO₂ generation in the endoscopy suite. Alternatively, drinking water may be used for flushing ports, thereby reducing both CO₂ generation for water processing and reduce plastic utilization for transport of water. Packaging is a potential source of CO₂ generation and hence streamlining supply chains is critical. In a previous study, Rizan et al. showed that hospitals in the United Kingdom generate up to one million metric tons of clean non-infectious plastic waste every year.¹⁹

Understanding waste streams which generate maximum CO₂ and optimizing waste disposal methods like recycling and incineration accordingly is imperative. Also, responsible purchasing with appropriate maintenance of stock may help reduce wastage and unnecessary reprocessing of equipment. Lastly, environmental changes implemented to reduce energy wastage like lighting motion sensors and also self-switch-off of non-functional computers may be useful in optimizing the energy utilization in the endoscopy suite.

Disposal vs. Reuse Conundrum

With industry actively pushing towards single use of all accessories as well as endoscopes, there is need to rationalize use of both single use endoscopes and accessories. While disposable duodenoscopes have been found to be technically as good as reusable duodenoscopes in various studies, their environmental impact remains a matter of debate (Figure 3).^{20, 21} In a previous study by Nguyen et al. assessing life cycle (“cradle to grave”) of single use duodenoscopes, reusable duodenoscopes with and

without disposable caps, greenhouse emissions were 24 to 47 times higher with single use duodenoscopes.²² With respect to cost effectiveness, reusable duodenoscopes with disposable caps are the most cost-effective alternative for ERCPs in practice after considering the risk of duodenoscope related infections.²³ As with every new technology, we have reached the peak of inflated expectations with the single-use duodenoscope. However, rational use and appropriate indications are yet to be established. With respect to accessories, policies on reuse of accessories need to be established by various organizations in consultation with industry to optimize patients’ outcomes, without any adverse impact on the environment. Channels for recycling of accessories need to be established.

Conclusions

With ever increasing indications for endoscopic interventions, the environmental cost relative to outcome needs weightage. Radiation units follow the ALARA principle, i.e. as low as reasonably achievable dose of radiation to minimize exposure.²⁴ The next



Figure 3: Environmental impact of disposable duodenoscopes

challenge remains finding a balance and following the ALARA principle in our endoscopy units as a means of reducing our carbon footprint. Systematic concerted efforts by the entire gastroenterology fraternity from the individual and unit level till the national and international society level are the need of the hour to streamline green endoscopy initiatives and to follow the tenets of reduce, reuse and recycle.

Green Endoscopy is a major topic in the ongoing WGO Climate Course for Global Gastroenterology. Please see the article on page 20 for more information.



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Message from the Editors



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To our WGO Community,

Welcome to our June issue of *e-WGN*. We are pleased to share another newsletter of diverse articles and Expert Point of Views on topics including climate change and green endoscopy, to the celebration of WGO medal recipients and Masters of the WGO awardees, and other WGO highlights over the past few months.

Climate change is a rapidly developing public health crisis. Dr. Sridhar Sundaram (India) provides an Expert Point of View for the practice of green endoscopy as an effort to reduce the carbon footprint generated by endoscopic interventions. He offers practical suggestions and a call to action for our global gastroenterology community to reduce, reuse and recycle. WGO is committed to increasing awareness and educating health care providers on climate change and offer a nine-part webinar series to implement positive change, adapt and mitigate these efforts. We encourage you to register

and join the free webinars.

WGO recently published an updated version of Global Guidelines on Probiotics and Prebiotics to help improve understanding and address current knowledge gaps in use and overuse of probiotics, prebiotics and nutritional supplements. This guideline was chaired by Dr. Francisco Guarner (Spain) and co-chaired by Dr. Mary Ellen Sanders (USA) and Dr. Hania Szajewska (Poland). In this issue, Drs. Anca Trifan and colleagues from Romania summarize and review the twelve clinical applications of probiotics and prebiotics included in the WGO guidelines and provide recommendations based on current literature.

Prof. Reda Elbadawy (Egypt) describes an emerging condition related to the metabolic syndrome called fatty pancreas or nonalcoholic fatty pancreatic disease (NAFPD) and reports the prevalence and diagnostic evaluation, as well as potential consequences of excessive fat accumulation in the pan-

creas. Because of the limited literature on the impact of the microbiome/metabolomics of fatty pancreas among obese and nonobese patients with diabetes and without diabetes, a cross-sectional study is designed to determine the prevalence of NAFPD among each cohort, evaluate risk factors for fatty pancreas, and determine a microbiome profile that may serve as a biomarker in the diagnosis and treatment.

The quality performance of upper gastrointestinal endoscopy is prudent in the diagnosis, treatment and management of patients. For many of us, oesophagogastroduodenoscopy (OGD/EGD) are procedures performed regularly. Our Expert Point of View article from Drs. Tony C. Tham and Gary Morrison (Northern Ireland) reviews key metrics for performance of a quality procedure, including high quality examination and adequate inspection time.

Let us extend our congratulations to Henry Cohen, MD and Maryam Al Khatry, MD as WGO Medal Recipients. Professor Cohen, past president of WGO, is the recipient of the WGO Henry L. Bockus Medal. This is awarded at each World Congress to a gastroenterologist who has made distinguished contributions to the clinical practice, science, and/or teaching of gastroenterology. Prof. Cohen presented his excellent lecture at the World Congress of Gastroenterology 2022 in Dubai, United Arab Emirates on "Project Echo: Democratizing Medical Care, Demonopolizing Medical Knowledge, Worldwide." Prof. Al Khatry, head of the GI Endoscopy Department at Ibrahim bin Hamad Obaid Allah Hospital and elected president of Pan Arab Society

of Gastroenterology, was recipient of the WGO Georges Brohée Medal. The Brohée lecturer delivered during each World Congress is selected by either the host country or the respective region. Prof. Al Khattry presented on the topic of “State of the Art update on Endoscopic Bariatric and Metabolic Therapies.”

We should also celebrate the recipients of the Masters of the WGO (MWGO) Award, granted to individuals who have provided outstanding dedication in the mission of WGO and also have achieved distinction in areas of service, teaching and scholarly research.

Our upcoming Train the Trainer (TTT) courses of 2023 include new partnerships with the Asociacion

Colombiana De Gastroenterologia in August 2023 in Spanish, as well as the Saudi Gastroenterology Association workshops to be held in December 2023. If you are interested in attending any of the upcoming TTT workshops, make sure to visit our WGO website for more information.

In celebration of International Day of Women and Girls in Science, WGO launched the inaugural session of WGO Women in GI webinar series to focus on building an inclusive community, foster and promote the involvement and advancement of women in medicine. Global perspectives were shared and there were over 850 registrants that joined the webinar. If you are interested in becoming a future WGO Women in GI panelist, please contact us.

Next, please read the message from our World Digestive Health Day (WDHD) 2023 Co-Chairs Drs. Christina Surawicz (USA) and Carol Semrad (USA) who share this year’s WGO public health campaign - *Your Digestive Health: A Healthy Gut From the Start.*

Finally, on behalf of WGO and all member societies, we pay our tributes to Professor KL Goh who passed away recently. Dr. Goh’s contribution to medical science and his great support to WGO will be remembered forever.

We hope you enjoy this e-WGN issue.

Mahesh and Anita





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Deadline 17 July 2023!



Quality in Diagnostic Upper Gastrointestinal Endoscopy



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Glossary of Acronyms/Abbreviations:

AGA - American

Gastroenterological Association

AI - Artificial Intelligence

BO - Barrett's Oesophagus

BSG - British Society of Gastroenterology

CAD - Computer Aided Detection

ESGE - European Society of Gastrointestinal Endoscopy

JAG - Joint Advisory Group of GI Endoscopy

JETS - JAG Endoscopy Training System

IM - Intestinal Metaplasia

NBI - Narrow Band Imaging

SCC - Squamous Cell Carcinoma

UGI - Upper Gastrointestinal

WLE - White Light Endoscopy

Introduction

With the rising incidence of upper gastrointestinal malignancy worldwide, oesophagogastroduodenoscopy (OGD/EGD) has become an ever more vital tool in both the diagnostics and therapeutics of these malignancies. In the western world the incidence of oesophageal adenocarcinoma is dramatically increasing, leading to an increased demand for OGD by over 50% in the United States since the turn of the millennium.¹ Considering the precursor lesions, Barrett's oesophagus and gastric intestinal metaplasia are both endoscopically detectable and treatable, this figure is understandable. Likewise, in high-risk regions for gastric cancer such as Japan and South Korea, OGD has become a first line screening modality. The cancer "miss rates" defined as upper GI cancers diagnosed following a normal OGD in the three years prior to diagnosis is approximately 11.3%.² Paying attention to key performance indicators, i.e. the quality of the procedure, when performing OGD may be able to reduce this miss rate. In this article, we summarise the key recom-

mendations from available worldwide guidance from societies including, AGA, ESGE, BSG and an Asian consensus guideline. Key performance indicators of diagnostic OGD will be assessed and the impacts this will have in detection and treatment of upper GI cancers and their precursors.

Pre procedure

Adequate preparation prior to endoscopy optimises conditions for a high quality study, with sufficient patient comfort and mucosal views to attain a satisfactory diagnostic OGD. The guidances recommend appropriate indications for the procedure, assessment of fitness and consent prior to procedure, as well as a fasting protocol. ESGE advises two hours fasting for liquids and six hours for solids. Both AGA and BSG highlight the importance of the competency of the endoscopist, with the latter referencing JAG/JET accreditation and minimum procedure rate of 100 procedures per year following attainment of sign off.³

Sedation

No studies to date have directly assessed the role of sedation on the endoscopic detection rate of superficial upper GI neoplasia. However, one large placebo-controlled randomised controlled trial showed that midazolam use increased patient cooperation, satisfaction and willingness to repeat procedure.² This has the possible potential to result in higher compliance and uptake with future screening, therefore influencing the increase in detection of upper gastrointestinal malignancies. There is a paucity of evidence as to an increased risk of complications in routine clinical practice, however, JETS/JAG recommend

no more than 5mg Midazolam or 100mcg Fentanyl in under 70-year-old patients and no more than 2mg Midazolam or 50mcg Fentanyl for those patients over 70 years of age.^{3,4}

Documentation of procedure duration

The consensus of a seven-minute minimum diagnostic UGI endoscopy procedure is widely agreed while the Asian consensus recommends a minimum eight-minute procedure. Timing commences following intubation of the oesophagus and finishing at the point of extubation. Studies have shown that endoscopists with an average procedure time of at least seven minutes are up to three times more likely to identify dysplastic lesions and gastric cancers compared with those taking an average of less than seven minutes.⁵ This highlights the importance of close inspection, and in certain circumstances an even more prolonged inspection time is advocated, such as Barrett’s and gastrointestinal metaplasia surveillance. In Barrett’s surveillance there is some evidence that a “Barrett’s inspection time” of >1 min/cm is associated with a significantly greater detection of high-grade dysplasia and adenocarcinoma. Barrett’s oesophagus may be present in up to 5 to 15% of high-risk patients.⁶ This should be documented as per Prague classification, a validated, widely used protocol describing both the circumferential and maximal extent of the affected area. Barrett’s segment lesions should be documented and described as per Paris classification, photographed and biopsied. The Seattle protocol should be followed as recommended by the BSG, ESGE and AGA.

Accurate photodocumentation

A meta-analysis showed that 11.3% of upper GI cancers were missed during OGDs performed up to 36 months before diagnosis.² With rising inci-

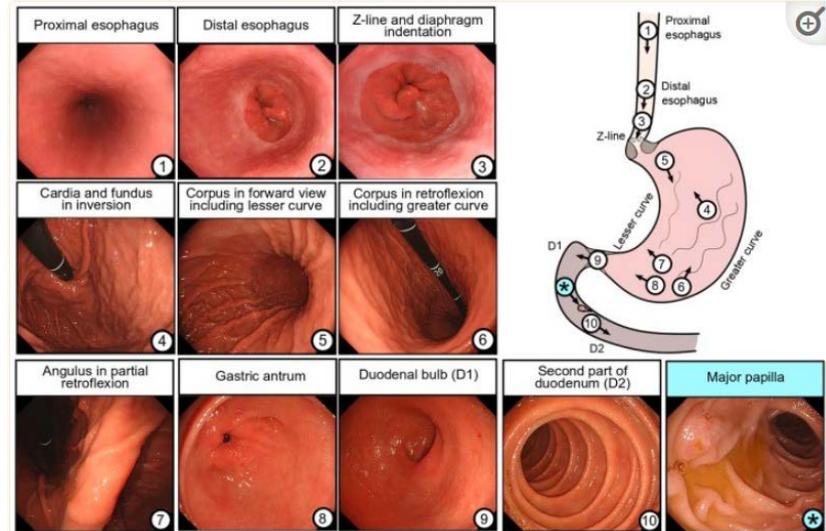


Image 1: Photos of anatomical landmarks

dence of gastric cardia cancers the J manoeuvre is an important aspect of OGD. It is suggested that endoscopic photo mapping could help mitigate the risk of missing cancers in these locations. All landmarks of interest should be visualised from the oesophageal sphincter to the second part of the duodenum.⁷ The BSG advises a minimum of eight photographs of the anatomical landmarks; upper oesophagus, gastro oesophageal junction, fundus in retroflexion, stomach body, incisura, antrum, duodenal bulb and second part of duodenum. ESGE advises ten images with the addition of proximal oesophagus, upper end of gastric folds and major papilla. See Image 1.^{4,6} The Asian consensus guideline goes further again, mentioning two studies proposing a systematic screening protocol of

20-22 photographs of the stomach.² However, there is no well-designed study comparing the diagnostic yield of increased photographic mapping.

Standardised terminology

ESGE maintains that the quality of the endoscopy is inextricably linked to the quality of the report and strongly recommend that abnormal findings should be reported according to internationally validated and standardised terminology.⁶ Such examples include use of the Paris Classification in describing early neoplastic lesions and the Prague classification for Barrett’s oesophagus, which have already been referenced. The Los Angeles classification for describing erosive reflux esophagitis has been in use since 1996 and again demonstrates a relatively straightforward and reproducible scoring system. Table 1 is a non-

Location	Condition	Classification
General	Neoplastic Lesions	Paris
Oesophagus	Barrett’s	Prague
	Erosive Oesophagitis	Los Angeles (LA)
	Caustic Oesophagitis	Zargar
	Varices	Baveno
Stomach	Bleeding Ulcers	Forrest
Duodenum	Adenomas in patients with FAP	Spigelman

Table 1: Table of common classification systems^{1,8}

exhaustive list of some of the common internationally validated classification systems. Scoring systems in endoscopy allow better communication between physicians and researchers, as well as being especially important in cases of international collaboration.¹

Biopsy protocols

As per the aforementioned Seattle protocol, all the leading gastroenterology societies advocate the use of four quadrantic biopsies for every two cm of Barrett's oesophagus, as well as targeting concerning lesions for early detection of dysplasia and neoplasia. Other such biopsy protocols include the use of the Sydney protocol for surveillance of gastric intestinal metaplasia and atrophic gastritis. BSG advocates two no-targeted samples from the gastric antrum, two from the gastric body and one from the incisura. The BSG advises that cases of iron deficiency anaemia should have gastric antral and body biopsies to exclude gastric atrophy.⁴ Accurate diagnosis of eosinophilic oesophagitis recommends six biopsies from at least two different areas of the oesophagus, usually the proximal and distal or mid-oesophagus. This should be performed in >90% of dysphagia and food bolus presentations, according to the BSG position statement in 2017. Cases of LA classification C and D should result in biopsies and repeat endoscopy at six to eight weeks to ensure healing and exclude malignancy. Likewise, cases of gastric ulcers should be described and biopsied with repeat OGD in six to eight weeks. Gastric and duodenal ulcers should prompt *H. pylori* testing and eradication in the event of a positive result.⁴ Biopsies from the duodenum are required for the diagnosis of celiac disease in adults. In cases where celiac is suspected, such as iron deficiency anaemia, weight loss and diarrhea, four biopsies from the duodenum should be taken.^{1,4}

Polyps and malignant lesions

The presence of gastric polyps should be recorded with the number, size, location and morphology described, and representative biopsies taken.¹ In the event of identifying a malignant lesion these should be documented as per anatomical location, number, size and morphology as well as any abnormalities of the background mucosa. A minimum of six biopsies should be obtained. Biopsies should be collected prior to dilatation of any stricture, due to the small risk of converting localised tumour into disseminated disease via perforation.⁴

Image enhancing techniques and CAD

Various imaging techniques have been developed in recent times to assist in the recognition of lesions in the GI tract. The three different organs assessed during OGD makes for a wider spectrum of epithelia and therefore pathology, when compared to colonoscopy.¹ Such imaging techniques include chromoendoscopy with Lugol staining in the oesophagus, which has been shown to improve detection of squamous neoplasia. Both the BSG and ESGE recommend its use where SCC is suspected.^{1,4,6} Other techniques include narrow spectrum imaging such as narrow band imaging (NBI). A multicentre RCT reported that detection of Gastric Intestinal Metaplasia was significantly higher using NBI compared with white light endoscopy (WLE).² In recent years there have been significant advancements in the use of artificial intelligence (AI) and computer aided detection (CAD) which could increase the diagnostic yield of pre-malignant or early malignant lesions.¹ For now, these remain outside of the current guidance.

Reporting systems, Audit and Complication documentation

All procedures should be documented using reporting systems where complications can be documented and audited. ESGE advises these should be electronic and have structured data entry, limiting free text that are not searchable. Reporting systems should include information such as patient satisfaction, adverse events, and surveillance recommendations.¹ After OGD readmission, mortality and complications should be audited, with units also auditing the rates of missed cancers, defined as malignancy identified within three years of OGD.

Conclusion

OGD remains an operator dependent procedure and as incidence of UGI malignancies and their precursor lesions are on the rise, quality in the performance of gastroscopy is paramount. Just as detection of malignancy (especially early) and premalignant lesions is important, the documentation of benign pathologies where monitoring guides treatment and surveillance is equally important. The international societies display slight variation in the minimum standards, but the themes are similar, such as high quality examination and reporting with use of photodocumentation, adequate inspection time and use of the readily available classification systems. While there is a paucity of evidence towards some measures increasing the yield of neoplasia detection, such as use of sedation, all concur that a minimum procedure time of seven minutes increases diagnostic yield significantly. By striving to improve quality in OGD, variation in practice could be reduced and performance standards increased for individual endoscopists and units around the world.

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Fatty Pancreatic Disease Among DMtype2 Obese & Non-obese People and the Role of Microbiome-Metabolomics



Reda Elbadawy, MD

Banha University Hospital
Banha, Egypt

Fatty pancreas emerged as serious component related to Metabolic Syndrome Mets. Also, potentially leading to DM type 2, chronic pancreatitis with pancreatic insufficiency, and lastly pancreatic cancer. Fatty pancreas or nonalcoholic fatty pancreatic disease (NAFPD) is an excessive fat infiltration of the pancreas due to obesity in the absence of significant alcohol intake. The potential systemic and local consequences of excessive fat accumulation in the pancreas have not been well established.

Although non-alcoholic fatty pancreas (NAFP) was reported early in the 1930s, our knowledge about this disease is still in its infancy and perceived as a relatively new condition. NAFP is defined as pancreatic fat deposition in the absence of significant alcohol intake.^{1, 2} It was considered a benign incidental finding, and therefore its clinical consequences were ignored. The prevalence of NAFP ranges from 16–35% and is increasingly associated with obesity, IR, deterioration of beta-cell function and metabolic syndrome which might lead to the development of diabetes and pancreatitis.¹ Therefore, its early detection may help to diagnose prediabetic patients to reduce the rising morbidity and mortality due to diabetes mellitus.

High energy intake in human (obesity) may lead to excessive fat which could be accumulated in visceral organs that are unusual for adipose tissue storage, the so-called ectopic fat.³

Fatty pancreas or non-alcoholic fatty pancreatic disease (NAFPD) is an excessive fat infiltration of the pancreas in the absence of significant alcohol intake.⁴ Fatty pancreas is a common ultrasound finding which has increased echogenicity when compared to the normal pancreas which contain fat up to 6% of its tissue.⁵

On the contrary to the nonalcoholic fatty liver disease (NAFLD), the potential systematic and local consequences of excessive fat accumulation in the pancreas have not been well established. Fatty infiltration in the pancreas has been shown to correlate with the metabolic risk factors and may represent a meaningful manifestation of metabolic syndrome. Epidemiology study also suggests that obesity is a risk factor for pancreatic cancer.⁶ Based on a study, fatty infiltration in the pancreas may increase the risk of pancreatic ductal adenocarcinoma beyond the effect of obesity alone.⁷ It is usually an incidental finding during transabdominal ultrasound examination and its clinical significance is still poorly

understood.

Prevalence of NAFPD has been reported in Asia as well as in Western countries. In Taiwan, Wang et al. reported that 16% of Chinese population had fatty pancreas.⁸ In USA, Sepe et al. reported as high as 27.8% of the patients who underwent EUS evaluation had NAFPD.³ In Indonesia, which represents the biggest South-east Asian country, the prevalence of NAFPD in the medical check-up population was 35%. Egyptian studies had explored NAFPD and its relation to obesity or DM and the conclusions were that fatty pancreas was triple that of fatty liver and present in non-obese non-diabetics too.¹⁰ Pancreatic fat content may play a role in several local pathological processes such as pancreatic cancer or subtypes of pancreatitis. In addition, available data suggest that decreased pancreatic volume and increased pancreatic fat content are more frequently observed in subjects suffering from impaired glucose metabolism and pancreatic fat content was reported to correlate with insulin secretion in subjects at increased risk for metabolic diseases. Larger studies covering greater numbers of participants report rather inconsistent results on a direct association of pancreatic fat content and impaired glucose metabolism.

Endoscopic ultrasound (EUS) examination is the most sensitive tool for examining the pancreas in the era of modern imaging development; however, the availability, cost, and training are still debatable, especially in most developing countries.⁷ The new paradigm of NAFPD, risk factors, its clinical impact on pancreatic

cancer development and screening modalities for early detection are considered by use of EUS. Other modalities like CT and MRI can also be used but are expensive and not available at all centers.

Patients with type 2 DM have a two-fold increase in the risk of pancreatic cancer.⁸ Therefore, T2DM patients with NAFLD should be considered for pancreatic cancer screening and surveillance. However, previous studies provided inconsistent results regarding the association of NAFLD with age, sex, hypertension, hypertriglyceridemia, and NAFLD. Gut microbiome in patients with diabetes secondary to chronic pancreatitis (called Type 3c DM) is different from those with Type 1 and Type 2 diabetes in a cross-sectional preliminary study that included eight patients with Type 1, 10 with Type 2, 17 with Type 3c diabetes and nine healthy controls.⁹ Fatty pancreas was diagnosed even in non-obese non-diabetic subjects in an Egyptian pilot study and it was three times that of NAFLD too.¹⁰

Currently, no microbiome/metabolomics studies have been done in Egypt examining fatty pancreas DM/non-DM, and also using obese/non obese as simple noninvasive biomarker for diagnosis and therapy too. As such, a cross sectional study will be conducted to determination the prevalence of NAFLD among obese and non-obese people with and without DM type 2. Evaluation of associated risk factors will be explored. This helps to handle and treat NAFLD and reduce the progress of the disease to DM, chronic pancreatitis with its complications like cancer pancreas. Also evaluation of microbiome profile /metabolomics as a simple noninvasive biomarker in diagnosis, therapy for NAFLD to prevent the development of DM and its complications. For this study, enrollment and randomization of patients will

be from Banha University Hospital. There will be two cohorts, Group 1: obese and non-obese with diabetes and Group 2: obese and non-obese without diabetes included, as well as additional randomly selected patients with no history of chronic pancreatic diseases, DM type 2 or drugs induced pancreatic disorders. All patients will be evaluated clinically with laboratory testing and abdominal ultrasound for grading of fatty liver and pancreas echogenicity. We anticipate that the results of our study will provide a better understanding of prevalence of NAFLD among different study populations, explore metabolomics and other risk factors for disease progression.

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Contributions to WGO support and expand the educational, training, research, and awareness programs and initiatives of WGO by strengthening the reach of WGO to areas in the world that benefit directly from the education offered through programs such as Training Centers, Train the Trainers, World Digestive Health Day, Global Guidelines, and international meetings such as the World Congress.

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2022 Georges Brohée Medal Recipient



Maryam Al Khatry, MD - 2022 WGO Georges Brohée Medal Recipient

Maryam Al Khatry, MD, received the WGO Georges Brohée Medal and presented her lecture on the topic, “State of the Art Update on Endoscopic Bariatric and Metabolic Therapies.” This session took place during the World Congress of Gastroenterology 2022 in Dubai, United Arab Emirates.

Dr. Al Khatry is a head of the GI Endoscopy Department, Gastroenterologist, Endoscopist and Advanced Therapeutic Endoscopy, including therapeutics for obesity and metabolic disease, at Ibrahim bin Hamad Obaid Allah Hospital, Ras Al Khaimah, Emirates Health Services (Ministry of Health and Prevention UAE).

She has great interest in the specialty of obesity. Dr. Al Khatry com-

pleted her Master of Science (MSc) in Obesity and Weight Management from University of South Wales UK and gained her SCOPE certificate (Strategic Center for Obesity Professional Education) in 2021.

Her current and past achievements include being a former president of the Emirates Gastroenterology and Hepatology Society (EGHS) from 2011-2018, elected 2022 president of Pan Arab Society of Gastroenterology and the founder of the UAE IBD society in 2020. Dr. Al Khatry has received multiple awards and grants in support of her research, been invited to national and international keynote lectures, and is involved in educational activities and training MBBS students/interns. In addition

to all that, she is a member of the Scientific Program Committee of the World Gastroenterology Organisation from 2019 to 2023 and a member of WGO’s Train the Trainers Committee from 2022 to 2023.

About the WGO Georges Brohée Medal and Lecture

A Brohée Lecture is delivered during each World Congress of Gastroenterology to commemorate Georges Brohée, the founder of the first International Association of Gastroenterology. The Brohée Lecturer is chosen by the WGO Governing Council from either the host country or the respective region. A medal is presented to the nominated lecturer during the World Congress by the Belgian Society of Gastroenterology.

WGO originated largely due to the initiative of Dr. Georges Brohée (1887-1957), a Belgian surgeon and radiologist who promoted modern gastroenterology, particularly by founding the Belgian Society of Gastroenterology in 1928 and by organizing the first International Congress of Gastroenterology in Brussels in 1935. His continuing efforts culminated in the constitution of the “Organisation Mondiale de Gastro-entérologie” (OMGE) on 29 May 1958 in Washington, DC, USA where the first World Congress of Gastroenterology was held.



2022 Henry L. Bockus Medal Recipient



Henry Cohen, MD - WGO Henry L. Bockus Medal Recipient

Henry Cohen, MD, received the Henry L. Bockus Medal and presented his lecture on the topic “Project ECHO: Democratizing Medical Care, Demonopolizing Medical Knowledge, Worldwide.” This session took place during the World Congress of Gastroenterology 2022 in Dubai, United Arab Emirates.

Prof. Cohen’s past appointments at World Gastroenterology Organisation (WGO) include General Secretary, Vice President, President and Past President. Within the organization, he has played a pivotal role in the training of gastroenterologists worldwide, especially by supporting the Training

Centers and the Train the Trainers programs. Also, as part of his work in the dissemination of gastroenterology, he was responsible for the organization of several courses and congresses, including the 2003 Pan-American Congress of Gastroenterology in Punta del Este, Uruguay.

He is a member of honor of multiple gastroenterology societies across the Americas and was declared Master of America’s GE by AIGE. He is also FACG and AGAF. In his country of Uruguay he has also been president of the National Academy of Medicine. Prof. Cohen is frequently invited to lecture across the globe and has served as a member of the editorial committees of multiple journals, including a position as associate editor of *The American Journal of Gastroenterology*.

During the pandemic, Prof. Cohen was chosen by the president of Uruguay to be one of his honorary scientific advisors. He was decorated by the National Government as well as by the French Senate.

Prof. Cohen’s plans for the future are far from over. His current endeavor lies in the implementation of the ECHO Project in Uruguay and Latin America. He is committed to the project alongside his friend and colleague, Sanjeev Arora, seeking to demonopolize medical knowledge and democratize access to care in his country, regardless of the place where people live.

About the WGO Henry L. Bockus Medal & Lecture

A medal, known as the Henry L. Bockus Medal, is awarded at each World Congress to a gastroenterologist who, in the opinion of the WGO Governing Council, has made a distinguished contribution to the clinical practice, science and/or teaching of gastroenterology.

Dr. Henry L. Bockus (1894-1982) was a leading American gastroenterologist from Philadelphia, Pennsylvania, with a well-deserved reputation. This reputation was earned due to the authorship of an outstanding gastroenterology treatise and the organization of specialty postgraduate courses at the University of Pennsylvania which were attended by physicians from North and South America, as well as from Europe. He was elected president of the first World Congress of Gastroenterology, held in Washington, DC, USA on 29 May 1958. On the last day of the Congress, a provisional WGO Governing Council was elected, and Dr. Bockus became the first president of what is now the World Gastroenterology Organisation. His vision to enhance standards of education and training in gastroenterology lives on today.



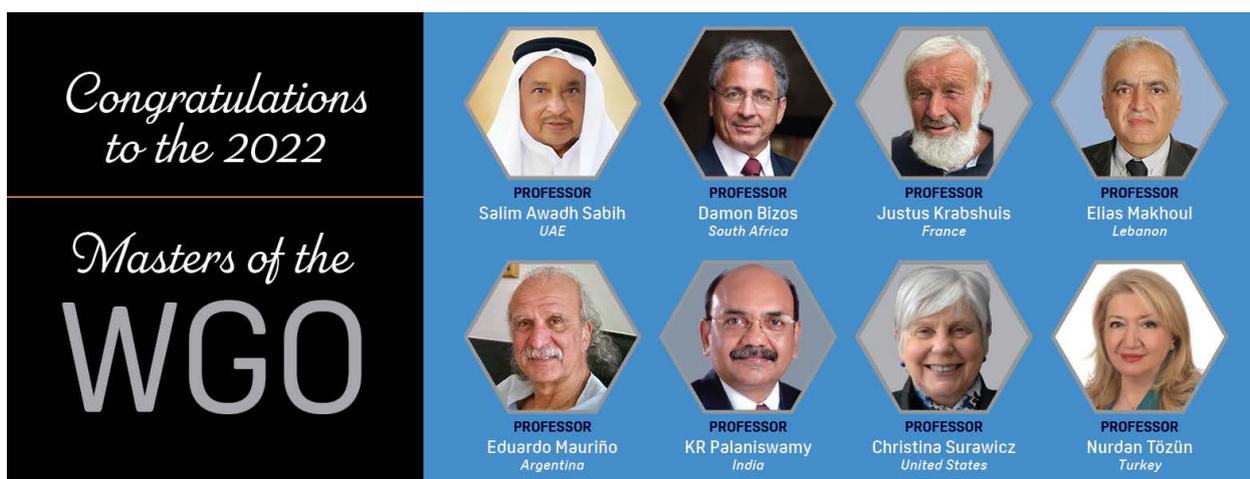
WGO Announces Recipients of the Masters of the WGO (MWGO) Award

Established in 2009, the Master of the WGO (MWGO) Award is the highest honor the World Gastroenterology Organisation (WGO) can bestow on a member and is granted only to those individuals who have provided outstanding dedication to the mission of the WGO and achieved distinction in such areas as scholarly research, teaching, and service to WGO and the community at large.

The MWGO Award was created to recognize these contributions and by this recognition provide incentive, encouragement, and guidance for others to significantly contribute to their fields. The Masters of the WGO Award is a capstone career award and is given in conjunction with each World Congress of Gastroenterology.

Recipients of the 2022 Masters of the WGO Award were recognized

with an engraved plaque at the WGO General Assembly during the World Congress of Gastroenterology 2022 on Monday, 12 December 2022 in Dubai, UAE. Recipients may now use the title of "Master of the WGO" and the letters "MWGO" in conjunction with their name. Please join WGO in congratulating the 2022 recipients of this prestigious award!



Past recipients of the MWGO Award include:

Julio Bai, MWGO (Argentina)
Luiz de Paula Castro, MWGO (Brazil)
T.S. Chandrasekar, MWGO (India)
Henry Cohen, MWGO (Uruguay)
Daiming Fan, MWGO (China)
Makki H. Fayadh, MWGO (Iraq)
Suliman Fedail, MWGO (Sudan)
Peter Ferenci, MWGO (Austria)
Michael Fried, MWGO (Switzerland)
Jean Paul Galmiche, MWGO (France)
Joseph Geenen, MWGO (USA)
Khean-Lee Goh, MWGO (Malaysia)
Richard Hunt, MWGO (UK)

Richard Kozarek, MWGO (USA)
Günter Krejs, MWGO (Austria)
Bernard Levin, MWGO (USA)
Juan Malagelada, MWGO (Spain)
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Melvin Schapiro, MWGO (USA)
Isidor Segal, MWGO (South Africa)
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Shuji Shimizu, MWGO (Japan)
Joseph Sung, MWGO (China)
Rakesh Tandon, MWGO (India)
Sandie Thomson, MWGO (South Africa)
James Toouli, MWGO (Australia)
Guido Tytgat, MWGO (The Netherlands)
Guido Villa-Gomez, MWGO (Bolivia)
Shu-Dong Xiao, MWGO (China)

Message from the WDHD 2023 Co-Chairs

WDHD 2023 - Your Digestive Health: A Healthy Gut From the Start



Christina Surawicz, MD

Professor Emeritus, Medicine
University of Washington
WDHD 2023 Co-Chair



Carol Semrad, MD

Professor, Medicine
The University of Chicago Medicine
WDHD 2023 Co-Chair



Your Digestive Health

Each year, the World Gastroenterology Organisation (WGO) celebrates World Digestive Health Day (WDHD) by initiating a worldwide public health campaign that focuses on a particular digestive or liver disorder in order to increase awareness of prevention, prevalence, diagnosis, management, and treatment of the disease or disorder worldwide. This year’s campaign Your Digestive Health: A Healthy Gut From the Start, led by co-chairs Prof. Christina Surawicz (USA) and Prof. Carol Semrad (USA), culminated on Monday, 29 May 2023.

From birth, the GI tract serves to provide nutrients to our bodies,

enhance the immune response, house the intestinal microbiota, and serve as a “second brain” with the brain-gut axis. The dietary needs of the GI tract change from newborn, thru infancy, childhood, and adulthood. Core focuses of the campaign will explain the function of the GI tract and how a healthy diet can promote optimal organ function and a healthy microbiome. Understanding the normal functions of the GI tract and diet also help identify when to seek GI care for symptoms. There are natural tie ins to prior WDHDs, particularly the 2020 campaign on the gut microbiome and the 2021 campaign on obesity.

In addition to efforts organized

locally by WGO member societies, WGO members and the general public were encouraged to engage with the awareness campaign online through social media by using the hashtags #WDHD2023 and #YourDigestiveHealth. You are invited to see more activities from WDHD 2023 by viewing these hashtags on Facebook, Twitter, Instagram, and LinkedIn.

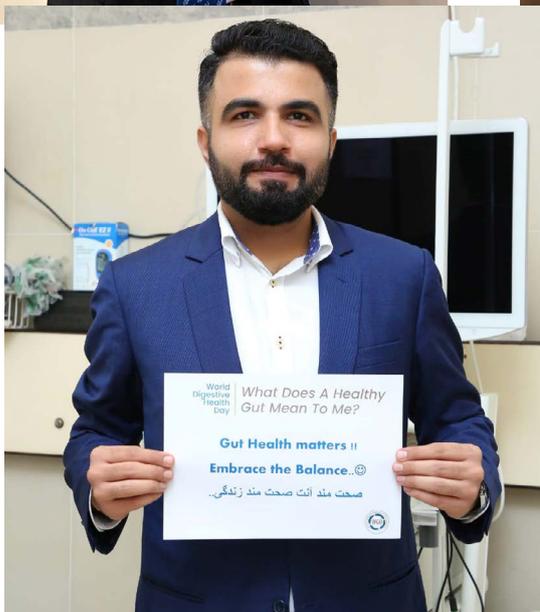
As an additional method to raise awareness of digestive health, WGO members were asked to take a Selfie Card photo, amplifying short messages related to CRC prevention and screening efforts. Healthcare professionals and the public shared their photos with WGO, with submissions



received from all parts of the world. WGO is delighted to feature some of these photos in this issue of *e-WGN* as well as on WGO's social media channels.

Activities of WDHD 2023 extend beyond the singular day of 29 May.

The WDHD website (wdhd.world-gastroenterology.org) remains as a year-round resource for information pertaining to the 2023 WDHD campaign as well as past WDHD campaigns.



Tribute to Professor Khean Lee Goh, WGO Vice President, 2011-2015

Dear members,

It is with great sadness that WGO has learned about the passing of our esteemed colleague and friend, Professor Khean Lee Goh.

We join so many others who knew him well in offering our deepest sympathies at his passing. Prof. Goh was a valuable and irreplaceable asset to the field of gastroenterology and will be missed.

During his long and distinguished career, Prof. Goh had many achievements and contributed so much to the specialty. He was a personal friend, esteemed colleague and mentor to many around the world. He will be remembered as a true leader in the advancement of medicine.

Prof. Goh was actively involved in WGO for more than 20 years and made many contributions along the way. Prof. Goh served as Vice President of WGO from 2011-2015 and was member of the following committees during this time: International Digestive Cancer Alliance (IDCA) from 2005-2009; Finance Committee from 2011-2017; WDHD Committee in 2018; Hepatology Interest Group from 2019-2021; and Global Guidelines Committee from 2019-2023. In 2017, Prof. Goh became a Master of the WGO and was recognized for his contributions to WGO and the specialty during the World Congress in Orlando.

Most recently, Prof. Goh was the co-author of the Digestive Tract Tuberculosis Guideline and was a committed member of the Global Guidelines Committee.

Our thoughts and prayers are with the Malaysian Society of Gastroenterology & Hepatology, his family, friends and colleagues.



Professor Khean Lee Goh delivered the WGO Distinguished Global Lecture entitled "Emerging GI and Liver Diseases in the Asia-Pacific - Implications for Healthcare in the Region" at Asian Pacific Digestive Week 2015 in Taipei, Taiwan.



We share with you some memories from current and past WGO leadership below:

“Professor KL Goh’s legacy and example for wisdom in his global decisions will extend far beyond his achievements with our Malaysian friends, to whom we would like to send our heartfelt condolences, along with his friends and family.”

- *Guilherme Macedo, MD, PhD, MACG, FAASLD, AGAF, FASGE, WGO President (2021-2023)*

“I was very close to KL; he was in Amsterdam for quite some time to learn ERCP, sphincterotomy and stenting. During one of the many follow-up visits, I may have suggested to him to get involved in WGO activities. He was an outstandingly kind, wise, loyal, talented and charismatic person with genuine leadership. So much in need in this troubled world. WGO and especially myself lost a dear friend. His regular Amsterdam visits will be forever missed.”

- *Guido NJ Tytgat, Professor Emeritus, WGO President (2002-2005)*

“He was an excellent clinician and teacher, a humble academician. He will be missed throughout the Asia-Pacific region and by friends around the world.”

- *Professor Richard Kozarek, WGO President (2009-2011)*

“I have had the pleasure of knowing KL for over 40 years. He had invited me to be on a panel at a meeting which he hosted in Penang. A most memorable meeting for me as he had also invited his mentor Sheila Sherlock to the meeting and I had the pleasure of being the token surgeon on a number of panel discussions with her. KL and I then had a lot to do with each other in the early days whereby we were both involved in the formation of the Asia Pacific Society of Gastroenterology. I then met him over the period of his involvement with WGO. He made significant contributions to our organization. KL my friend, you will be missed. Vale KL Goh”

- *Professor Jim Toouli, WGO President (2013-2015)*



WGO Climate Course for Global Gastroenterology: “From Basics to Solutions”

Climate change is a rapidly developing public health crisis with significant implications for digestive health and disease. Physicians, nurses, and all healthcare providers involved in digestive care need to understand the challenges we are facing.

To increase awareness and educate health providers, WGO has broad-

casted a series of nine interactive webinars, one hour each, over the last four months. The last session of the series will be broadcast at 07:00 Central US time on 28 June (corresponding UTC, GMT and local times can be found on the registration page).

We assembled experts from around the world who are the leading au-

thorities on the subjects that will be presented. We hope that you will find this series helpful to your practice and to your understanding of the issues. On completion of this course attendees will have a clear understanding of the issues and will be prepared to take positive actions to help adapt to, and mitigate, climate change.

Subjects include:

1. Overview of Course and Climate Change Fundamentals
2. Climate Change and GI Health
3. Food, Water Security, and Vulnerable Populations
4. Adaptation, Resilience, and Industry Partnership
5. Understanding the Carbon Footprint of GI Care
6. Greening Endoscopy and Reducing Waste
7. Personal, Systems Advocacy, and Nursing Efforts to Mitigate the Climate Crisis
8. Perspectives on Pediatric Health, Trainees, and Early Career Providers
9. Building a Brighter, Sustainable, and Better Future

Attendance is free of charge, and WGO will provide a certificate of completion for those who attend a majority of the sessions. Registration is encouraged as space may be limited. Details of the course are located here: <https://www.worldgastroenterology.org/education-and-training/webinars/wgo-climate-course-for-global-gastroenterology>.

Registration can be done using this link: https://us02web.zoom.us/webinar/register/WN_sk1ct0SVQ-1Gry5no_Sjhdg



Course Directors

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Looking Ahead to Our 2023 Train the Trainers Workshops!

WGO cannot wait for our upcoming Train the Trainer courses in 2023! This premier educational program for physicians across the globe focuses on enhancing the skills as an educator and leader in the fields of gastroenterology, endoscopy, hepatology or GI surgery.

The program brings together faculty and participants from around the world in intensive and interactive workshops. With many new modules, the workshops are characterized by numerous hands-on sessions with ample opportunity for discussion and interchange. This has proven to be a highly successful method of disseminating teaching skills to GI physicians who hold training positions in their own countries.

TTT Mendoza Argentina 2022 past participant shares her inspiration following the workshop:

“...Nos enseñan a hacerlos protagonistas del proceso de aprendizaje y a nutrirnos como docentes de la interacción y la retroalimentación. Además, nos enseñan a que el error es una oportunidad para aprender, en contraposición al modelo clásico punitivo. El curso es divertido, ágil, moderno, lleno de sorpresas.” — Maria Marta Piskorz

“...They teach us to make them protagonists of the learning process and to nurture ourselves as teachers of interaction and feedback. In addition, they teach us that mistakes are an opportunity to learn, in contrast to the classic punitive model. The course is fun, agile, modern, full of surprises.” — Maria Marta Piskorz



In partnership with the Asociación Colombiana De Gastroenterología (ACG), WGO is pleased to offer the next *Spanish* language Train the Trainers workshop in Pereira, Colombia. This workshop will be held 16-18 August 2023, prior to the Colombian-Venezuelan Congress.



In partnership with the Saudi Gastroenterology Association (SGA), WGO is pleased to offer a 4-day Train the Trainers workshop in Jeddah, Saudi Arabia. This workshop will be held 11-14 December 2023.



For more information about upcoming workshops and the TTT program, visit the WGO website!
<https://www.worldgastroenterology.org/education-and-training/train-the-trainers/upcoming-workshops>

WGO's Women in GI Webinar Series – Building a Community



A group photo from the Women in GI session at our 2022 World Congress in Dubai.

In celebration of International Day of Women and Girls in Science, WGO was proud to present its inaugural session of the Women in GI webinar series, which kicked off on 22 February 2023. This event was preceded by the Women in GI Symposium at the World Congress of Gastroenterology held this past December in Dubai, UAE, in partnership with the Emirates Gastroenterology and Hepatology Society.

The WGO Women in GI webinar series is focused on building an inclusive community of passionate professionals who foster and promote the involvement and advancement of women in medicine. We hope these global conversations will empower

one another and provide a supportive environment for women in every region of the globe.

The theme for the first webinar was leadership. Our moderator and panelists provided global perspectives from Morocco, Thailand, Uruguay and the United States. WGO President Guilherme Macedo of Portugal joined the panelists to provide allyship and discuss the importance of women in science, particularly in leadership roles. Highlights of the webinar touched on *Building your Brand*, recognizing that *All Paths Have Opportunity*, identifying *What is Holding Women in GI Back From Leadership*, and learning *How to Make Your Voice Heard at the Table*. The webinar concluded with

a call to action, asking women to continue empowering and inspiring one another.

Thanks to everyone who participated in this webinar! There were over 850 registrants! WGO's message and awareness in support of Women in GI was well received throughout the globe. A special thanks to our moderator Prof. Carolina Olano, (WGO Secretary General) and our panelists Prof. Naima Lahbabi-Amrani (WGO Past President and Chair, Nominations Committee), Prof. Varocha Mahachai (Promotion of Education in Asia-Pacific Region), Prof. Aasma Shaukat (Chair, WGO Young GIs Committee), and Prof. Nancy Reau (Chair, WGO Hepatology Interest Group).

The WGO Women in GI webinar recordings can be found at <https://www.worldgastroenterology.org/education-and-training/webinars/women-in-gi>. Stay tuned through social media and email blasts as new details emerge on upcoming webinar installments! If you would like to become a future WGO Women in GI panelist, please email: info@worldgastroenterology.org. Join us in supporting Women in GI!

"Excellent discussion of the existing problems and pathways for progression of women in GI... as clinicians, leaders, mentors!"
- Marybeth Spanarkel, USA

"Empower and inspire!!!"
- Sonam Mathur, India

"If women believe in themselves, they can achieve everything they want."
- Sonia Garcia Vizuete, Spain

"Cooperation is the key to success in all walks of life - well emphasized by all speakers."
- Tim O'Hanrahan, Ireland

UEG Week 2023



Please join us for another exciting week of scientific advances and updates from the world's leading experts in digestive health at UEG Week 2023! Held in a hybrid format, both virtually and at the Bella Center, Copenhagen, Denmark from October 14 – 17, 2023!

Explore the Detailed Program

Keep up with the latest and greatest scientific advancements. The dynamic UEG Week and PGT 2023 programs feature scientific highlights in extremely interactive ways. In every session, delegates have the opportunity to interact in real-time via a Q&A tool, both in-person and virtually.

Enjoy the best of both worlds where we will deliver one event but allow two experiences, both in Copenhagen (Bella Center Copenhagen) and online.

Virtual Congress Platform

If you are unable to watch live, the on-demand recordings are easily accessible on our virtual congress platform. In addition to being hosted in Copenhagen, the hybrid UEG Week and Postgraduate Teaching (PGT) experiences are also located on a uniquely innovative virtual congress platform. From the platform's entrance lobby, the fully remote offer is accessible within a few clicks. This includes all Session Streams, the Posters,

our UEG Booth, a Help Desk, the Industry Area, and much more. Our platform offers live interaction, the ability to ask experts questions in real-time, and the opportunity to connect with colleagues on a global scale.

The 2023 Postgraduate Teaching Program

The PGT Program occurs during UEG Week with two days of excellent Continuing Medical Education. We are calling GIs of all ages and career stages to attend our two-day Postgraduate Teaching (PGT) Program from October 14 – 15, 2023 during UEG Week to keep on track with their training!

Science Lounge: Posters & Networking

The Science Lounge at UEG Week is the place to meet peers for networking and scientific exchange! In addition to Moderated Poster Sessions and the Poster Exhibition, this area can be utilized for face-to-face interaction with other delegates. All posters are featured on terminals. The virtual exhibition on the platform will additionally feature the possibility to play previously recorded audio presentations. All poster presenters are invited to include such a recording of their presentation.



Editorial | Expert Point of View | WGO International Meetings | WDHD News | WGO News | WGO Global Guidelines | Calendar of Events

Leading Companies & Latest Advances

Join us in Copenhagen or online via our virtual platform to get updates on therapies and innovations as well as new diagnostic and product insights in 2023. Meet renowned experts, network with colleagues and get in touch with the leading companies in the field.

Hands-on Area & Live Endoscopy

The Hands-on Area at UEG Week offers excellent training for practical minded gastroenterologists to advance their knowledge, remain up to date and practice techniques that are in-demand. Look, learn, ask questions, discuss cases with a multidisciplinary expert panel and perform or learn about techniques under personal doctor and nurse tutoring in the Endoscopy, Ultrasound or Surgical Learning Area. Thanks to our collaborators, EFSUMB/BICUS, ESGE, ESGENA and ESSAT for their excellent cooperation in running the Learning Areas.

During the ESGE Live Endoscopy on Tuesday, October 17, top international experts will demonstrate cutting-edge techniques alongside basic procedures transmitted directly



to UEG Week in Copenhagen and your living room. The inclusion of multiple parallel cases and experienced chairs ensures an interactive learning experience.

UEG education festival

With UEG you can learn all-year round: Check out the stellar line-up across the varying stages of the UEG:

Our **Live Stage** includes face-to-face events such as our renowned Summer School, and our Masterclass.

The **Virtual Stage** includes dynamic, free online courses and webinars, many of which you can join live, and the Career Development.

Our **Media Stage** encompasses too many terrific online resources to count, like Mistakes in... articles, our GI Guidelines App, Journal Podcasts, on-demand recordings and more.



A Light in the Shadows - The New WGO Probiotics and Prebiotics Guideline



A Resource Sensitive Solution

Anca Trifan^{1,2}, Horia Minea^{1,2}, Robert Nastasa^{1,2}, Adrian Rotaru^{1,2}, Remus Stafie^{1,2}, Ermina Stratina^{1,2}, Carol Stanciu^{1,2}

1. Department of Gastroenterology, Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania
2. Institute of Gastroenterology and Hepatology, "St. Spiridon" University Hospital, Iasi, Romania

In the beginning of 2023, the World Gastroenterology Organisation (WGO) released their Global Guidelines latest version of the Probiotics and Prebiotics Guideline. This guideline tries to bring some light into the contemporary problem of use and overuse of probiotics, prebiotics and nutritional supplements for various indications. The high amount of enthusiasm related to the possibility of modulating human microbiota by probiotic and prebiotic use, and thus to influence various diseases or even to prevent others could lead to some confusion to practitioners. The success of the probiotics could be assessed by the global market valued at US \$32.1 billion in 2013, according to a 2015 Grand View Research report and by the prediction that the worldwide probiotic market will progress rapidly at an annual growth rate of 8.1% to reach US \$85.4 billion by 2027.¹

The authors of the present guideline, chaired by Francisco Guarner, have comprehensively evaluated the evidence for gastrointestinal conditions and formulated specific recommendations. In the beginning, a history of pro-, prebiotics was presented and the definition was clearly formulated. Probiotics are defined as "live microorganisms that, when administered in adequate amounts, confer a health benefit on the host."²

A probiotic's unique strain, which includes the genus, species, subspecies, if applicable, and an alphanumeric strain identification, serves as its unique identifier. *Lactobacillus*, *Bifidobacterium*, *Saccharomyces*, *Streptococcus*, *Enterococcus*, *Escherichia*, and *Bacillus* are the seven main genera of microorganisms that are most frequently employed in probiotic products.³ The guideline clarified some aspects related to quality of products, dosage and standardization.

The WGO guideline focused on twelve clinical applications of probiotics and prebiotics: prevention and treatment of diarrhea, colorectal cancer prevention, *Helicobacter pylori* eradication, prevention and treatment of hepatic encephalopathy, immune response, inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), colic, lactose malabsorption, necrotizing enterocolitis, non-alcoholic fatty liver disease (NAFLD) and prevention of systemic infections.³

The analysis of the latest research did *not* allow the authors to formulate recommendations regarding the use of pre-, probiotics for preventing colorectal cancer.³

Regarding diarrhea prevention and treatment, it has been shown that some probiotic strains can reduce the severity and duration of children's acute infectious diarrhea. Several meta-analyses of controlled clinical

trials evaluating other probiotic strains have been published, demonstrating that probiotics are probably safe and effective.⁴

Treatment with antibiotics frequently alters the intestinal microbiome and, by reducing microbial diversity, can result in a loss of microbial metabolism, a loss of colonization resistance, and an increase in intestinal motility. Antibiotic-associated diarrhea (AAD) affects up to 30% of patients.⁵

The last guideline by WGO recommends that in adults or children receiving antibiotic therapy, there is increasing evidence of efficacy of probiotics and prebiotics for the prevention of AAD.³ Also, probiotics have a modest benefit in avoiding AAD in children, adults, and elderly adults, according to a meta-analysis which have been introduced in the previous version of the probiotics WGO guideline in 2017.⁶

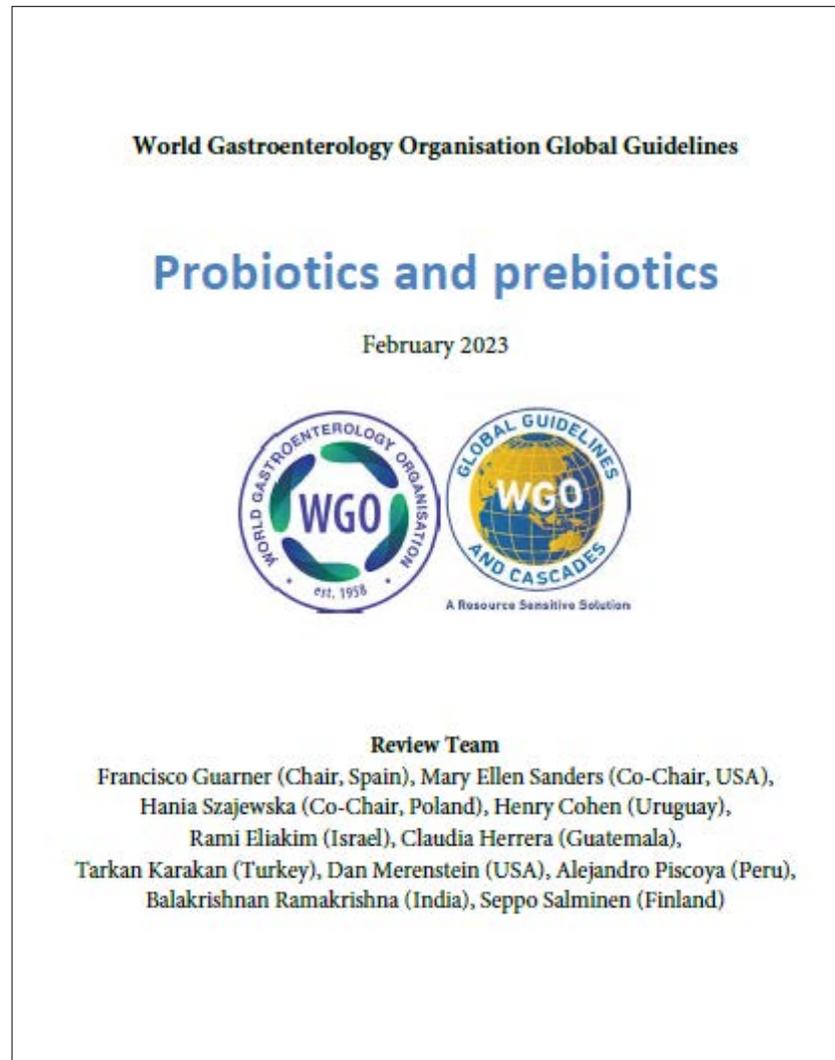
Concerning *Clostridioides difficile* infection, a meta-analysis from 2017 concluded with moderate certainty that probiotics prevent *C. difficile*-associated diarrhea in antibiotic-treated patients.⁷ It appeared safe to administer probiotics to patients who were neither immunocompromised nor severely debilitated. In addition to noting the need for additional research, the authors concluded that patients at high risk of developing *C. difficile*-

associated diarrhea would benefit from being apprised of the potential benefits and risks of probiotics.³

The prevention role of probiotics in radiation-induced diarrhea had no modification between the last two guidelines stated by WGO. Based on the potential role of gut microbiota in the pathogenesis of radiation-produced diarrhea, the involvement of probiotics could have a beneficial use, a conclusion sustained by a meta-analysis of randomized trials which observed a benefit in stool formation.⁸

Regarding *Helicobacter pylori* eradication, there is no proof to back up the idea that using a probiotic alone would be useful without concurrent antibiotic medication. Instead of having a direct impact on *H. pylori*, probiotics appear to boost the rate of eradication by lowering the negative effects associated with eradication therapy.³ In patients who received probiotic supplements, a meta-analysis of ten clinical studies of adjuvant probiotics for *H. pylori* infection showed greater cure rates and a lower incidence of side effects.⁹ The usefulness of probiotics and prebiotics in IBD stands similarly between the second and last edition of the WGO guideline. In both adult and pediatric populations, several probiotics have been shown to increase response and remission rates in mild to moderately active ulcerative colitis. These results compare favorably to conventional therapy.³

The effectiveness of probiotics in treating IBS patients has been evaluated in several meta-analyses. A meta-analysis of 23 randomized controlled trials revealed that probiotics generally decreased the likelihood that IBS symptoms would worsen or persist by 21%.¹⁰ Most studies employed multi-strain probiotic supplements that showed a statistically significant reduction in overall symptoms or a clinically significant reduction in



abdominal pain.¹¹ Whether different strains of probiotic bacteria have beneficial effects on IBS probably depends on the IBS symptom being evaluated, this being in line with the last WGO guideline which points out that a strain-specific approach for managing certain IBS related symptoms is recommendable.³ Overall, the available evidence indicates that probiotics might reduce some symptoms of IBS.

Lactulose, a prebiotic and a non-absorbable disaccharide, is known to be an efficient treatment for hepatic encephalopathy (HE).¹² When lactulose,

rifaximin, probiotics, and L-ornithine-L-aspartate were compared for the treatment of minimal HE, a more recent network meta-analysis discovered that lactulose was the only agent able to meet all the three endpoints: reverse minimal HE, prevent overt HE, and improve quality of life. These findings are in line with the last WGO guideline, which also indicates that lactulose is commonly used for preventing and treating HE.³ Several probiotic strains and the prebiotic oligofructose have been shown to enhance the immune response. Studies aimed at preventing acute infectious disease

and studies testing antibody responses to vaccines have yielded evidence of enhanced immune responses. *Streptococcus thermophilus* and *Lactobacillus delbrueckii* subsp. *bulgaricus* enhance lactose assimilation and alleviate lactose intolerance-related symptoms. Several controlled investigations involving individuals who consumed yogurt with live cultures confirmed these results.¹³ These statements are similarly formulated in the 2017 WGO guideline.³

Evaluating the risk of necrotizing enterocolitis in preterm neonates, it has been shown that the use of probiotic supplementation can reduce the risk of appearance and death, this idea being in line with the AGA recommendations.^{3, 14}

Multiple randomized clinical trials have demonstrated the efficacy of particular probiotics as a treatment option for steatohepatitis. Probiotics improved the results of the homeostasis model assessment, blood cholesterol, tumor necrosis factor alpha, and liver function tests, with no differences between the 2017 and 2023 WGO guidelines. The data regarding the prevention of systemic infections in critically ill patients in intensive care units still does not have relevance for clinical practice.³

In conclusion, the present guideline offers a new insight on the use of probiotics and prebiotics for the enthusiast practitioners around the world. We hope that the next version of the WGO guideline on probiotics and prebiotics use in clinical practice will provide more strong recommendations supported by plentiful research.

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WGO and IFSO Publish Joint Guidelines on Obesity



The World Gastroenterology Organisation, in partnership with the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO), is pleased to announce the publication of “Guidelines on Obesity.” This joint IFSO and WGO effort gives clinicians a tool to use when dealing with people with obesity. The Guideline was led by Drs. Scott Shikora (USA), Reem Sharaiha (USA), Kevin P. White (Canada), Guilherme Macedo (Portugal), James Toouli (Australia) and Lilian Kow (Australia). Prof. Macedo is the current President of WGO and Prof. Toouli served as president from 2013 to 2015.

Guidelines constitute a very useful roadmap for the practicing clinicians, who may face challenging patients and difficult clinical scenarios, where reasonable and feasible recommendations for action are warmly welcome. Along with providing conditional recommendations comprised of different levels of certainty, and addressing the knowledge gaps, guidelines should have the dynamics to support evolving and changing medical processes. Our Global Guidelines are aimed to enlighten the navigation through a large spectrum of possibilities, avoiding controversies through clear messages and producing clinically sound and efficient decisions.

Obesity is a global condition, promoting in all corners of the world a wide range of metabolic diseases and biological consequences, where gastroenterology, with its scope of fostering digestive health, has a clear and growing role. The biology of nutrition, digestion and metabolic disarray needs the efforts of joining hands and minds to adequately embrace this great health challenge of obesity.

This was the purpose of including different perspectives and approaches, either medical, endoscopic or surgical,

providing insight, experience and knowledge so that up-to-date and efficient clinical algorithms could be reached.

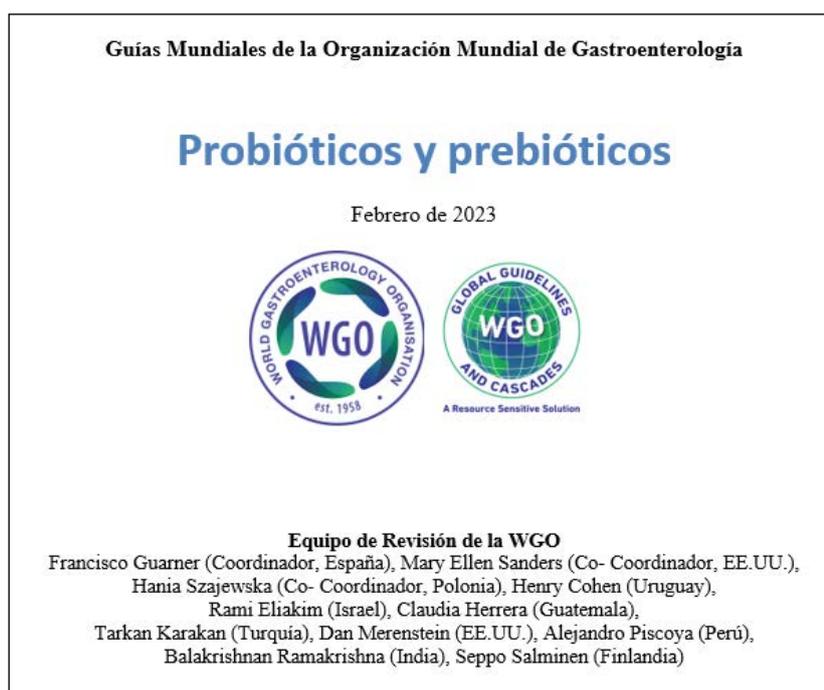
This endeavor of WGO and IFSO displays the effort and energy both organizations have dedicated to the topic of obesity. These Global Guidelines are tangible proof of the benefits of a transdisciplinary approach. The seeds for further collaboration have now been planted. Let us all, health care providers and all those we influence and serve throughout the world, profit from the great examples of joint ventures such as this one.

An Executive Summary of the Guidelines will be soon published in *Obesity Surgery* and the *Journal of Clinical Gastroenterology*. The summary and extended version are available now for download on the WGO website at: <https://www.worldgastroenterology.org/guidelines/obesity/obesity-english>

While this updated guideline is only available in English, translations into French, Portuguese, Mandarin, Russian and Spanish are underway.



Newly Updated Probiotics and Prebiotics Guideline Available in Spanish



WGO is pleased to announce that the updated Probiotics and Prebiotics Guideline is now available in a Spanish language translation under the title “Probióticos y Prebióticos.”

In addition to English and Spanish, the updated WGO Probiotics and Prebiotics Guideline will also soon be available in French, Mandarin, Portuguese and Russian. It can be viewed at <https://www.worldgastroenterology.org/guidelines/probiotics-and-prebiotics>.

This guideline is chaired by Dr. Francisco Guarner (Spain) and co-chaired by Dr. Mary Ellen Sanders (USA) and Dr. Hania Szajewska (Poland).

The guideline was created through the global view of many Guideline Review Team experts including Profs. Alejandro Piscocoya (Peru), Henry Cohen (Uruguay), Rami Eliakim (Israel), Claudia Herrera (Guatemala), Tarkan Karakan (Turkey), Dan Merenstein (USA), Balakrishnan Ramakrishna

(India) and Seppo Salminen (Finland). This updated version revises one that dated to 2017.

Probiotics are live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. Lactobacilli, along with species of *Bifidobacterium*, have historically been common probiotics. In 2020, the genus *Lactobacillus* underwent a major restructuring to address the wide diversity of microbes assigned to this genus. 23 new genera have been defined, including some with well-studied probiotic species.

The prebiotic concept is a more recent concept than probiotics. First proposed by Gibson and Roberfroid in 1995, the key aspects of a prebiotic are that it is nondigestible by the host and that it leads to health benefits for the consumer through positive influence on the resident beneficial microbes.

The administration and use of prebiotics or probiotics is intended to influence the gut environment, which is inhabited by trillions of microbes, for the benefit of human health. Both probiotics and prebiotics have shown to have beneficial effects that extend beyond the gut, but this WGO Guideline will focus on gut effects.

Calendar of Events

Due to uncertainties of scheduling from the COVID-19 situation, please check the WGO Meetings and Events Calendar for the latest updates at <https://www.worldgastroenterology.org/meetings/meetings-and-events-calendar>

WGO RELATED EVENTS

WGO Climate Course for Global Gastroenterology: From Basics to Solutions

When: March 8, 2023 - June 28, 2023
Location: Online webinar -- every two weeks

Organizer: WGO Climate Change Working Group

Website: <https://www.worldgastroenterology.org/education-and-training/webinars/wgo-climate-course-for-global-gastroenterology>

Drug Induced Liver Injury (DILI) Diagnosis: More Than Guilt by Association

When: June 19, 2023

Location: Online webinar

Organizer: WGO Hepatology Interest Group

Website: <https://www.worldgastroenterology.org/education-and-training/webinars/dili-diagnosis>

Women in GI: Women in Leadership Webinar

When: June 22, 2023

Location: Online webinar

Organizer: WGO

Website: <https://www.worldgastroenterology.org/education-and-training/webinars/women-in-gi>

CALENDAR OF EVENTS

Semana Digestiva 2023

When: June 14, 2023 - June 17, 2023

Location: Coimbra, Portugal

Organizer: Sociedade Portuguesa de Gastroenterologia

Email: secretariado@semanadigestiva.pt

Website: www.semanadigestiva.pt

WGO-Endorsed Event

BSG Live 2023

When: June 19, 2023 - June 22, 2023

Location: ACC

Address: Liverpool, United Kingdom

Organizer: British Society of Gastroenterology

Website: <https://live.bsg.org.uk/>

2023 International Liver Congress™

When: June 21, 2023 - June 25, 2023

Location: Vienna, Austria

Organizer: EASL

Website: <https://easl.eu/event/easl-congress-2023/>

XIV International Fall Course AGA SAGE 2023

When: June 26, 2023 - June 27, 2023

Location: Juan Pablo II Auditorium of the Universidad Católica

Address: Buenos Aires, Argentina

Organizers: American Gastroenterological Association and Sociedad Argentina de Gastroenterología

Website: <https://sage.org.ar/evento/xiv-curso-internacional-de-otono-aga-sage/2023-06-26/>

15th Annual Meeting and Scientific Conference

When: July 28, 2023 - July 29, 2023

Location: Enugu, Nigeria

Organizer: Society for Gastroenterology and Hepatology in Nigeria

Website: <https://www.soghin.org.ng/>

SAGES Congress 2023

When: August 9, 2023 - August 12, 2023

Location: CSIR Convention Centre

Address: Pretoria, South Africa

Organizer: South African Gastroenterological Society

Website: <https://easternsun.eventsair.com/2023-sages-congress/>

GUT 2023

When: August 18, 2023 - August 20, 2023

Location: Kuala Lumpur, Malaysia

Organizer: Malaysian Society of Gastroenterology & Hepatology

Website: <https://msggh.org.my/GUT.html>

ALEH XXVII Congreso

When: August 29, 2023 - September 1, 2023

Location: Bogotá, Colombia

Organizer: ALEH

Website: congresoaleh.com

IFSO Congress 2023

When: August 30, 2023 - September 1, 2023

Location: Naples, Italy

Organizer: IFSO

Website: <https://www.ifso.com/world-congress/>

HSI World Series Webinar on Stomach Health and Disease - Asia

When: September 6, 2023

Location: Online webinar

Country: Asia

Organizer: Healthy Stomach Initiative (HSI)

Website: https://us02web.zoom.us/webinar/register/WN_fVyZrnlDRniolU_0x0MHsA

WGO-Endorsed Event

GastroEndo: Congreso Argentino de Gastroenterología y Endoscopia Digestiva 2023

When: September 7, 2023 - September 9, 2023

Location: Mar del Plata, Argentina

Organizers: FAAED, FAGE and SAGE

Website: <https://gastroendo2023.org/>

EUS ENDO International Live Course 2023

When: September 28, 2023 - September 30, 2023

Location: Marseille, France

Organizer: Dr. Marc Giovannini, Course Director

Website: <https://eus-endo.org/>

Semana Panamericana de las Enfermedades Digestivas 2023

When: October 8, 2023 - October 11, 2023

Location: Santiago, Chile

Organizers: Organización Panamericana de Gastroenterología and Sociedad Interamericana de Endoscopia Digestiva

Website: <https://www.opge.org/portal/>

UEG Week 2023

When: October 14, 2023 - October 17, 2023

Location: Bella Center

Address: Copenhagen, Denmark

Organizer: United European Gastroenterology

Website: <https://ueg.eu/week>

ACG 2023 Annual Scientific Meeting & Postgraduate Course

When: October 20, 2023 - October 25, 2023

Location: Vancouver Convention Centre

Address: Vancouver, British Columbia, Canada

Organizer: American College of Gastroenterology

Website: <http://www.gi.org>

JDDW 2023 - Japan Digestive Disease Week 2023

When: November 2, 2023 - November 5, 2023

Location: Kobe, Japan

Organizer: Organization of JDDW

Website: <https://www.jddw.jp/jddw2023/en/index.html>

The Liver Meeting 2023

When: November 10, 2023 - November 14, 2023

Location: Hynes Convention Center

Address: Boston, Massachusetts, USA

Organizer: AASLD

Website: <https://www.aasld.org/the-liver-meeting>

Semana Nacional de Gastroenterología 2023

When: November 17, 2023 - November 21, 2023

Location: Cancun, Mexico

Organizer: Asociación Mexicana de Gastroenterología

Website: <https://www.gastro.org.mx/>

HSI World Series Webinar on Stomach Health and Disease - Americas

When: November 30, 2023

Location: Online webinar

Country: Americas

Organizer: Healthy Stomach Initiative (HSI)

Website: https://us02web.zoom.us/webinar/register/WN_ginmtBOKSY-CEuffHpsHAL-g

WGO-Endorsed Event

APDW 2023

When: December 6, 2023 - December 9, 2023

Location: Bangkok, Thailand

Organizer: Asian Pacific Digestive Week

Website: <https://www.apdwcongress.org/>

APASL 2024

When: March 27, 2024 - March 31, 2024

Location: ICC Kyoto

Address: Kyoto, Japan

Organizer: Asian Pacific Association for the Study of the Liver

Website: www.apasl2024kyoto.org

64th Annual Meeting of Indian Society of Gastroenterology (ISGCON)

When: December 21, 2023 - December 24, 2023

Location: Bengaluru, India

Organizer: Indian Society of Gastroenterology (ISG)

Website: <http://www.isg.org.in/>

JDDW 2024 - Japan Digestive Disease Week 2024

When: October 31, 2024 - November 3, 2024

Location: Kobe, Japan

Organizer: Organization of JDDW

Website: <http://www.jddw.jp/english/index.html>

WGO Member Societies Submit Your Event

Are you a WGO Member Society wanting to share your event with WGO readers? Visit <https://www.worldgastroenterology.org/forms/submit-event.php> to submit your event for publication in WGO's website conference calendar as well as the quarterly *e-WGN* calendar of events!

www.biocodexmicrobiotainstitute.com/pro: an international hub of knowledge dedicated to microbiota!

Biocodex Microbiota Institute is an international scientific institution that aims to foster health through spreading knowledge about the human microbiota. To do so, the Institute addresses both healthcare professionals and the general public to raise their awareness about the central role of this still little-known organ of the body.

It is designed to provide you with reliable, updated, and adapted content. It is also designed to reflect the dynamism and innovation of the human microbiota.



Available in 7 languages (English, French, Spanish, Russian, Polish, Turkish, and Portuguese), this online international hub provides Healthcare Professional with the latest scientific news and data about microbiota including the Institute's exclusive content such as Microbiota magazine, thematic folders, continuing medical education (CME) courses and interviews with experts. Check them out!

<p>Accrediting training on microbiota</p> <p>Research on microbiota is advancing! Benefit from accrediting courses to learn about microbiota.</p> <p>► Access accrediting courses</p>	<p>Infographics to share with your patients</p> <p>Download original graphic material to explain to your patients the role of the microbiota in their daily health.</p> <p>► Discover all the Biocodex infographics</p>	<p>An expert magazine "Microbiota"</p> <p>Read our Microbiota magazine with exclusive content written by leading microbiota experts.</p> <p>► Read the Microbiota Mag</p>
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