



BRITISH SOCIETY OF  
GASTROENTEROLOGY

# NewWave

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**The Official e-Newsletter of the  
Association of GI Physiologists**

## AGIP Council 2024

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## Welcome

Welcome to the **April 2024** edition of NewWave!  
If you have any relevant articles or papers that you would like  
to be included in future editions, please email  
[gemma.norris@sthk.nhs.uk](mailto:gemma.norris@sthk.nhs.uk)

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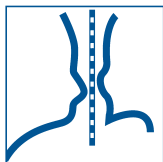
The Lyon Consensus 2.0  
(**Jordan Howarth**)

April 2024

## Upcoming Events: 2024

<b>May 2024</b>	<b>Digestive Disease Week</b> (Washington D.C. + Virtual) <a href="#">Digestive Disease Week</a> 18 <sup>th</sup> —21 <sup>st</sup> May 2024
<b>June 2024</b>	<b>BSG LIVE 2024</b> ICC Birmingham <a href="#">BSG LIVE</a> 17 <sup>th</sup> —20 <sup>th</sup> June 2024
<b>September 2024</b>	<b>SYNMED Clinical Training Seminar:</b> <a href="#">Impedance/pH Reflux Testing &amp; High Resolution Manometry</a> 12th & 13th September 2024 The Clermont, London
<b>October 2024</b>	<b>UEG Week 2024</b> Vienna <a href="#">UEG</a> 12 <sup>th</sup> —15 <sup>th</sup> October 2024
	<b>ICS 2024</b> Madrid <a href="#">ICS</a> 23 <sup>rd</sup> —25 <sup>th</sup> October 2024

## MANOαpHa HIGH RESOLUTION MANOMETRY SYSTEM



MANOαpHa High Resolution Manometry System is designed to better map, measure and evaluate oesophageal motility by providing accurate measurement, adaptive software, and an automated reprocessing solution. It consists of the MANOαpHa

central processor, reusable probe, calibration set and the optional portable cart with HD display screen and high-speed printer.



### Features:

#### Automated Reprocessing

- Validated for cleaning and reprocessing using automated reprocessing machines.
- Warranty: 2 years / 200 uses.

#### Accurate Measurement

- Solid-state sensor with up to 40 pressure sensors and 16 impedance sensors.
- Live acquisition of LOS relaxation.

#### Easy Operation

- Smaller diameter helps ease patient's discomfort.
- All-in-one workstation, with the whole procedure conducted on one portable cart.



#### Adaptive ManoLAB Software

ManoLAB software is a versatile tool for editing and navigation of your manometry study. Adapting to the latest Chicago Classification 4.0, ManoLAB provides the clinician with reliable and comprehensive data for an accurate assessment of oesophageal function.

## From the Editor

Welcome to the Spring edition of NewWave! I am thrilled to introduce myself, officially, as editor, having taken the reins from Elisabeth, who has done the most wonderful job over the last couple of years. I'm sure you will agree, we have seen NewWave go from strength to strength, and I hope to continue with the high standard that Elisabeth has set!



This issue begins with the exciting announcement that **three** positions have become available within the AGIP Council. We are on the lookout for enthusiastic and motivated individuals who would like to be involved in shaping the future of GI Physiology, and details regarding how to apply can be found on [Page 4](#).

We have a final reminder about CPD submissions which are due in by 30th April. Late submissions may incur a £50 charge, and further information regarding this can also be found on [Page 4](#) as well as within the AGIP section of the BSG website.

The European bursary remains available for anyone wishing to submit an abstract in application for this. The bursary will cover costs of up to £750 to attend the United European Gastroenterology Week, which will be held in Vienna this year. This not only represents a great opportunity to showcase your work, but also to explore the latest research developments and technologies, whilst in the most beautiful setting. See [Page 5](#) for further details.

Moving on to our feature articles, Dr Tanya Miller has been working hard behind the scenes, with numerous colleagues, to develop some additional guidance in relation to the safe performance of anorectal physiology studies, in the absence of prior endoscopic assessment. She has kindly shared details of this on [Page 6](#) to assist referrers and practitioners in the appropriate assessment of patients.

Themes of networking and collaboration are central within this issue, and this is highlighted by two fantastic articles completed by Elisabeth Kirton ([Page 8](#)) and Naomi Rune ([Page 12](#)), relating to networking events held in the North and South of the Country. It's wonderful to see our colleagues actively participating and connecting through physiological networks and both of these articles demonstrate the importance of sharing knowledge and experience, and how working together is of benefit to us all.

On [Page 15](#) you will find a review article by Niamh Kavanagh, who attended the Virtual Upper GI Symposium in February. Niamh shares her thoughts on her favourite presentation of the event, which just so happened to be delivered by our very own Dr Rami Sweis, and related to the role of provocative testing during High Resolution Oesophageal Manometry—an interesting read! Finally, updates to the Lyon Consensus were published at the start of the year, and on [Page 18](#), Jordan Haworth gives a succinct and informative breakdown of the main changes included within these guidelines.

I would like to extend thanks to all of our brilliant colleagues who have contributed to this issue of NewWave. Your time and effort is hugely appreciated!

For contributions to future issues, in the form of articles, announcements or important news, please don't hesitate to get in touch ([gemma.norris@sthk.nhs.uk](mailto:gemma.norris@sthk.nhs.uk)). Happy Reading!

*Gemma Norris*

# AGIP News

## AGIP Council Vacancies Application Details

**The AGIP Council invites applications for three, full-member vacancies.**

The Council meets on a quarterly basis, either in person at the BSG office, or via virtual link. Applications are welcomed from accredited physiologists, Clinical Scientists, Gastroenterologists, or Upper/Lower GI surgeons who are interested in making a meaningful contribution to the field. Please see below for the available positions and associated responsibilities:

**Research Representative:** A position that is pivotal to drive forward the AGIP research agenda. Attendance BSG research meetings is essential.

**Minutes Recorder:** A position which holds responsibility for recording and disseminating the discussions, decisions, and actions of the Council meetings, to serve as an official record of proceedings.

**Chair:** The AGIP Chairperson should have prior experience within committee activities and be willing to represent AGIP at national body levels.

To apply, please submit a short paragraph, outlining your interest in becoming an AGIP member, along with a short CV detailing your relevant experience, to [Dr Anthony Hobson](mailto:anthony@thefunctionalgutclinic.com), Section Chair at [anthony@thefunctionalgutclinic.com](mailto:anthony@thefunctionalgutclinic.com). The deadline for applications is Wednesday 15<sup>th</sup> May 2024.

## CPD Submissions: A Final Reminder

A final reminder that the deadline for CPD submissions is **Tuesday 30th April 2024.** The process remains the same as in previous years, and [Form 4](#) can be found on the BSG website in the AGIP section, alongside guidance regarding how to make a complete submission. Please send a paper copy (to reduce the amount of printing required for the review panel) directly to [Tanya Miller](#) at the Churchill Hospital in Oxford, as detailed in the AGIP section. Please only send what is necessary to achieve re-accreditation. An electronic copy can be sent in addition to the paper copy, but is not required.

### **Late submissions are subject to an administrative charge of £50**

Review of submissions is subject to the availability of the panel. The result of the CPD submission will result in either continuation of AGIP membership, OR a request for additional information due to an incomplete submission (a timeframe for re-submission will be provided if this is the case).

**Failure to submit will lead to removal from the register as an Accredited Independent Healthcare Professional in GI Physiology.**

## Remaining Conference Bursaries: The European Bursary

In order to support a high level of training and education within our discipline, the AGIP committee are delighted to announce that accredited AGIP members (or STP/ASP trainee AGIP members) will be eligible to apply for the following bursary to fund expenses related to conference attendance:

- **'European Bursary'** (up to £750, 1 bursary available) to attend [United European Gastroenterology \(UEG\) Week](#) (12-15<sup>th</sup> October 2024, Vienna)

Applicants will be **required to have an abstract accepted and prepare a short report on the conference for publication in New Wave**. If more than one application is made, the bursary will be awarded by a random ballot.

The closing date for application is as follows:

**Friday 2nd August 2024**

Please note, the deadlines to apply for the ***Graeme Duthie International Award***, and the ***Margaret Maples Bursary***, have now passed.

In order to apply for a bursary, please send the following information to [Joanne Hayes](#) ([joanne.hayes@uhb.nhs.uk](mailto:joanne.hayes@uhb.nhs.uk)):

- Name
- Organisation
- The bursary you are applying for
- AGIP membership (Accredited AGIP Member / STP or ASP Trainee AGIP Member)
- Job Title
- Accepted Abstract Title (if applicable)

Payment of the bursary will be given via BACS payment, following:

1. The submission of appropriate receipts for the meeting expenses
2. The submission of the report/abstract for inclusion in NewWave

# Updated Guidance prior to Anorectal Physiology and Endoanal Ultrasound (ARP studies)

**Dr Tanya Miller, Principal Clinical Scientist**  
Oxford Universities NHS Foundation Trust

There have been recent concerns amongst GI Physiologists that patients may not be receiving the recommended work up prior to ARP studies (as documented on the BSG website). This may be related, in part, to the recent Covid-19 pandemic and the resultant change from face to face consultation, to more frequently remote appointments.



The current BSG guidelines state:

*'Patients should be assessed by a Gastroenterologist or Colorectal Surgeon prior to referral for HR-ARM. **Ideally**, patients should undergo endoscopy +/- biopsies to exclude carcinoma or inflammatory conditions as the cause of symptoms, and to assess for structural abnormalities such as intussusception or stricture'*

The inclusion of the word 'ideally' can be interpreted with ambiguity, and this may result in a varied understanding amongst referrers, surrounding the clinical requirements prior to ARP studies. Further guidance has therefore been created, with the aim of providing clarity surrounding the contraindications to anorectal physiology, and enhancing patient safety.

When patients are referred for ARP and have not undergone prior endoscopic assessment, the safety of the procedure should not be assumed. If there is any doubt regarding patient safety or suitability, the clinician performing ARP studies should not proceed without additional confirmatory checks to minimise possible adverse events. Whilst we acknowledge that the risk of ARP studies remains low, even without prior endoscopic assessment, it remains important to ensure appropriate mitigation.

It is for this purpose that a 'red flag' document has been developed, to guide clinicians when there is no record of endoscopic assessment within the last 2-3 years. It provides reassurance to the patient and clinician, and the opportunity to reassess the requirement for endoscopy if necessary.

This will reduce unnecessary, on the day cancellations of ARP studies, improve patient safety and protect the integrity of the clinician performing the ARP study.

The following information has been devised in association with GI Physiology Departments; the Professional Body (Association of GI Physiologists); authors of the London Protocol and has been reviewed by the Pelvic Floor Society. The list is NOT intended to be exclusive and individual departments may wish to adapt accordingly and incorporate other local policies that may already be in place.

## **Contraindications to HR-ARM:**

At appointment, the practitioner performing the HR-ARM investigation should be aware of any red flags (according to local guidance; see also list below). If any current sinister pathology is suspected, this needs to be documented, the referring clinician informed without delay, and the procedure postponed until the issue is resolved.

### **Red flags:**

- *Known anal or rectal stenosis or stricture*
  - *Known acute inflammation of rectum (proctitis) or colon (IBD, diverticulitis etc.) or strong suspicion based on undiagnosed rectal bleeding +/- diarrhoea*
  - *Recent rectal surgery with anastomosis (avoid balloon distension for 6 months post-surgery) or any question of ongoing anastomotic leak*
  - *Previous radiation therapy to the anorectum (within past 6 months)*
  - *Pre-operative assessment of anal or rectal cancer OR strong suspicion of new rectal cancer diagnosis that has not been investigated (e.g. bleeding with diarrhoea)*
  - *Any anorectal surgery within the last 3 months (excluding minimally invasive procedures, e.g. seton insertion, haemorrhoidal banding)*
  - *Polypectomy within the last 4 weeks*
  - *Faecal impaction*
- <20 weeks gestation or prior to gross abnormality scan (balloon distention not performed in all cases)*

SIGNED:

DATED:

It is the opinion of the above signee that this patient is suitable to proceed with HR-ARM studies without prior rigid/flexible sigmoidoscopy or colonoscopy.  
This document is valid for 12 months from the date of signing.

### **In Summary:**

Additional guidelines prior to patient referral for ARP studies have been created alongside the published guidelines contained on the BSG website. Patients referred for ARP studies without a previously documented endoscopy (within the previous 2 -3 years) should be asked the questions listed within the 'red flag' document. Those patients identified with red flags should be discussed with the referring Consultant and offered endoscopic assessment, before ARP studies are performed. It should be noted that if no red flags are identified, but the performing clinician still has concerns for patient safety in the absence of an endoscopy, ARP studies should be postponed pending further discussion with the referrer.

## Feature Articles

### **Event Review: The Northern GI Physiology Group Meeting (01/03/2024)**

**Elisabeth Kirton, Clinical Scientist**  
Hull University Teaching Hospitals NHS Trust

This March, it was Hull's turn to host the third meeting of the recently established Northern GI Physiology Working Group (NGIWG). Following on from two successful meetings hosted in Sheffield and Manchester, we certainly had big shoes to fill. The event was planned and hosted by John Gallagher and the GI Physiology team at Hull University Teaching Hospitals NHS Trust, and was kindly sponsored by Medtronic.



As always, it was lovely to see so many GI Physiology colleagues who travelled from as far afield as Birmingham, Sheffield and Derby. After coffees and biscuits to welcome everyone on arrival, John Gallagher (Clinical Scientist, Hull University Teaching Hospitals NHS Trust) opened the event by asking everyone in the room to introduce themselves. John and the Hull team were keen to maintain the group's aim of an informal and friendly event, with open discussions for all to participate in.

The first presentation of the day was delivered by Samantha Hewitt (Specialist Practitioner in GI Physiology, Hull University Teaching Hospitals NHS Trust). Sam is currently taking the lead in implementing a new protocol for carrying out Biofeedback Therapy (Figure 1). The new protocol aims to provide a structured framework for "on-screen" Biofeedback Therapy, where patients are given a series of exercises with an anorectal manometry probe in situ whilst viewing the live manometry trace on a computer screen.



**Fig. 1: Samantha Hewitt presenting "Biofeedback Service Improvements". Image captured by Elisabeth Kirton.**



As part of the protocol, patients repeat the on-screen Biofeedback Therapy during two further appointments (after 6 weeks and then after 12 weeks). The patients are provided with questionnaires to measure their symptoms at each appointment, and physiological measurements from each on-screen Biofeedback Therapy session are also recorded and compared. Patients have already responded positively to the new protocol, and the new approach has garnered praise from Consultant Colorectal Surgeons at Hull University Teaching Hospitals.

Sam's presentation led to an engaging discussion amongst GI Physiology practitioners involved in Lower GI Physiology, including how much time should be allocated to a Biofeedback Therapy session and supporting patients having the treatment. On-screen Biofeedback Therapy offers patients another dimension of treatment for distressing bowel symptoms, and we look forward to reporting the outcome of the new protocol in future.

For the second session, Warren Jackson (GI Physiology Manager at Hull University Teaching Hospitals NHS Trust) performed a live oesophageal manometry study on a very brave volunteer (Kendra Hall, Clinical Scientist at Sandwell and West Birmingham Hospitals NHS Trust)! Whilst carrying out oesophageal manometry with Kendra, Warren talked the group through tips and tricks for performing the procedure (Figure 2). Advice included asking patients to sniff if you're faced with a difficult nasal intubation, and performing deep breathing to confirm the probe position after crossing the diaphragm. Whilst observed by the group, Kendra experienced a selection of oesophageal manometry measurements for demonstration (including 5mL water swallows, a resting pressure measurement, multiple rapid swallows and solid test swallows with bread). Well done Kendra!



**Fig. 2: Warren Jackson performing Oesophageal Manometry. Image captured by Elisabeth Kirton.**

In the final session before lunch, Professor Alyn Morice gave a very interesting presentation about vagal hypersensitivity and the mechanism behind chronic cough (Figure 3). The Professor emphasised the devastating impact that a chronic cough can have on individuals, from distressing incontinence symptoms to receiving abuse from strangers when coughing in public. He encouraged referral of patients to their local chronic cough service for expert management.

## The Northern GI Physiology Group Meeting (01/03/2024)



**Fig. 3: Prof. Morice presenting “Gut-lung axis and cough.” Image captured by Elisabeth Kirton.**

Following a spread of sandwiches and cakes for lunch, Mr Andrew Woodcock gave a presentation about Peptest. Peptest is a non-invasive medical device that can be used to rapidly detect the presence of pepsin in saliva or sputum. The presence and quantity of pepsin in saliva may indicate the presence of gastro-oesophageal reflux disease (GORD).

John Gallagher returned to give a presentation about identifying hiatus hernias during oesophageal manometry. He began his presentation by providing “textbook” examples of hiatus hernias, where there is clearly visible diaphragmatic pinching below the lower oesophageal sphincter when breathing in. John then moved on to show examples of more challenging traces that may falsely give the appearance of a hiatus hernia, including a vascular impression just above the lower oesophageal sphincter.

John’s presentation flowed nicely into the following talk given by Mr Terence Lo (Consultant Upper GI Surgeon at Hull University Teaching Hospitals NHS Trust). Mr Lo discussed different types of hiatus hernias and their surgical management, including diagnostic work up and patient selection for surgery. Mr Lo emphasised the value of both oesophageal manometry and 24-hour pH-Impedance testing, to provide a measure of oesophageal motility as well as objective evidence of reflux. Before the afternoon break, the session was wrapped up with a presentation on Endoflip by Lewis Howard from Medtronic.

Following the afternoon coffee break, Katie Dickinson (Clinical Scientist, Mersey and West Lancashire Teaching Hospitals NHS Trust) led an interesting discussion about the effect opiates can have on manometry (Figure 4), including the appearance of “pseudo achalasia” and outflow obstruction. During open questions, the group discussed the potential impact of opioids on anorectal manometry results and how this could be mitigated.



**Fig. 4: Katie Dickinson presenting “Opioids: effects on the gastrointestinal system.” Image captured by Elisabeth Kirton.**

In the final presentation of the day, Warren Jackson returned to present a selection of interesting case studies for discussion (Figure 5). The cases included a patient who was unable to have oesophageal manometry through their nose (due to complete obstruction of their nasal passages) who instead had the procedure successfully performed through their mouth, and a patient with a very long oesophagus, where a vascular impression in the upper oesophagus could be falsely mistaken as the upper oesophageal sphincter.



**Fig. 5: Warren Jackson presenting “Interesting HRM Cases.” Image captured by Elisabeth Kirton.**

The meeting concluded with suggestions for the location and date of the next meeting, which will be announced shortly. Going forwards, the decision was also made to re-name the group as the “North East and Yorkshire GI Physiology Network”, to tie it neatly with the NHS healthcare science region. It was great to catch up with so many GI Physiology colleagues, and I’m looking forward to future meetings of the group.

# Event Review: The South West GI Physiology Meeting (22/03/2024)

**Naomi Rune, Clinical Scientist**  
Oxford University Hospitals NHS Foundation Trust

On March 22<sup>nd</sup> this year we, here at Oxford University Hospitals, hosted the South West GI Physiology meeting. Following nomination for hosting the event last year, it was with equal parts excitement and trepidation that we entered in to its organisation. As most of our colleagues know, when juggling the pressures of clinical work, research management, general admin, and department upkeep, finding the time and bandwidth to organise a meeting can be a stretch. Despite this, the day went without a hitch, and it was fantastic to have the opportunity to showcase some of the great work that goes on in our extended community. As always, it was a wonderful opportunity to meet with colleagues from the network; a special thank you to those who made the journey to attend in person, it was a pleasure to have you there.



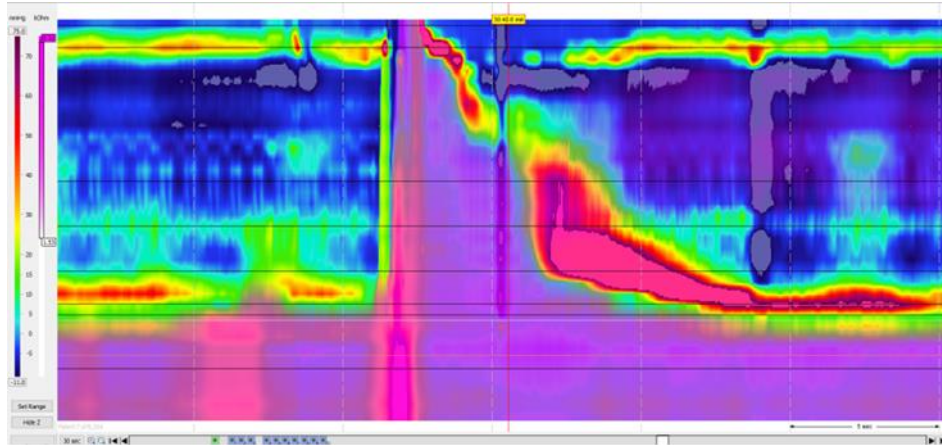
The talks kicked off with Rebecca Doyle, a Clinical Scientist who specialises in bowel therapeutics, and is a key member of our esteemed SNS team. In her talk, she gave a detailed explanation of the rigorous assessment patients undergo prior to selection for trans anal irrigation (TAI), an accessible management option for faecal incontinence, slow transit constipation, obstructed defecation and low- anterior resection syndrome (LARS). TAI offers a conservative alternative to surgery which is often costly, time consuming for the Trust and carries a significant risk of complications. TAI is supported by NICE guidance and by data obtained from randomised controlled trials.

The involvement of the healthcare professional is vital in ensuring the appropriate selection of patients, in addition to selecting the most appropriate irrigation system. There are many types of irrigation systems available, offering variation within features as well as fluid-holding capacity. This allows specific treatment regimes to be effectively tailored to the patient's needs. Once treatment has begun, further support, and follow up is essential for long term benefit.

A presentation slide from Oxford University Hospitals NHS Foundation Trust. The slide features the NHS logo and the text 'NICE Guidance'. The main heading is 'NICE Guidance'. Below this, there is a quote: 'The case for adopting Peristeen Plus for transanal irrigation in people with bowel dysfunction is supported by the evidence. Peristeen Plus can reduce the severity of constipation and incontinence, improve quality of life and promote dignity and independence.' Below the quote is the URL 'https://www.nice.org.uk/guidance/mtg36'. There are two bullet points: 'The use of Peristeen Plus for managing bowel dysfunction is accredited by NICE guidance (MTG36)' and 'Peristeen is also shown to have a cost saving of £5144 per patient over 37 years vs. standard bowel care'. The slide also includes the NICE logo and the text 'TAI Suitability and Assessment 22/03/2024'.

**Fig. 1: Presentation side with NICE Guidance recommendation for Peristeen irrigation device.**

Following on from Rebecca's talk, I outlined the protocol used at Oxford University Hospitals, to diagnose rumination syndrome, in the absence of combined impedance and manometry catheters. This protocol identifies the simultaneous gastric strain and regurgitation events, which hallmark the condition, by inserting manometry and impedance catheters into the patient at the same time, and observing the time points of events during analysis. I further went on to explain the method of diaphragmatic breathing we have devised as non-invasive treatment for rumination, along with 2 monthly follow up calls to support the patient and encourage compliance.



**Fig. 2: Trace showing a typical rumination event detected using a combined impedance-manometry catheter. Simultaneous gastric strain and liquid volume reflux are shown.**

Karen Curran and Helen Boffin, specialist nurses working within therapeutics and bowel management, discussed the processes and procedures that were followed to set up an SNS service. It was clear from this presentation, the extensive effort that was put in to setting up a project with many elements needed to come together for success. The process included, developing a business case, budgeting, acquiring space, facilities, resources and appropriate staff. None of these are simple tasks and each can take a significant amount of time to organise. I was in awe of what my colleagues had achieved to bring the SNS service into fruition, and felt that this was a very informative talk, especially for those hoping to set a service like this up themselves in the future.

SNS devices are inserted by Miss Kim Gorissen, Consultant Colorectal Surgeon at Oxford University Hospitals NHS Foundation Trust, and remarkably, these devices are fitted in day case surgery, without the need for general anaesthetic. Instead, a short acting dose of Fentanyl and Paracetamol is provided, in conjunction with strategically distracting conversation, and this enables the patient to remain comfortable enough for procedure to go ahead whilst they are awake. The result of this, is that an open channel of communication remains between the patient and the operating clinician, allowing for appropriate feedback on stimulation sensations, optimising the position of the wire within the sacrum.



**Fig. 3: Medtronic Interstim device and placement**

## The South West GI Physiology Meeting (22/03/2024)

Teresa Robinson, head of physiological sciences and diagnostics at NHS England, and a Clinical Vascular Scientist in Bristol, delivered an update on what the Physiological Science Transformation Programme is hoping to achieve. Teresa revealed that the dashboard with the analysed data gathered from the national collection was now available to view, and there is hope that this information can be utilised to identify where support is needed most, aiding in the delivery of support.

Mr Sheraz Markar, an Upper GI Surgeon at Oxford University Hospitals NHS Foundation Trust, delivered an overview of the 'GOLF' study, comparing long term patient outcomes from two methods of anti-reflux surgery (LINX devices and fundoplication). The study has an impressively large cohort of patients due to multi-centre participation from across Europe. Mr Markar discussed the thorough protocols, which ensure that all centres perform their surgeries uniformly, prior to inclusion within the study.



*Fig. 4: The GOLF study logo*

Finally, Dr Tanya Miller, head of the GI Physiology Service, and Principal Clinical Scientist at Oxford University Hospitals NHS Foundation Trust, provided an update regarding the appropriate triage of patients, referred for anorectal physiology studies, in the absence of prior endoscopic assessment ([Page 6](#)). As endoscopic procedures carry risks, it is important that patients are not referred for these investigations unnecessarily, as a prerequisite to ARP, yet it is equally important to ensure a detailed understanding of the level of risk relating to performing ARP in the absence of recent macroscopic examination. The developed criterion ensures appropriate assessment can be made, and reduces the likelihood of missed underlying pathologies.

Following completion of the presentations, there was the opportunity to discuss patient case studies. Rebecca Doyle delivered a positive discussion regarding an SNS patient, successfully treated for symptoms associated with the congenital condition, imperforate anus. Karen and Helen also delivered further success stories of SNS patients.

It is wonderful to hear that the care given by our team can provide such a difference to patient quality of life. Once again, thank you to all who attended the event, online and in person and we look forward to the next opportunity to see you all at the South West meeting.

## **Event Review:** **Upper GI Symposium Presentation Review** **CCv4.0 Provocative testing & provocative testing** **examples**

**Niamh Kavanagh, Clinical Scientist**  
Salford Royal Foundation Trust

The Upper GI Virtual Symposium took place on 5th & 6th February 2024, and as part of this event, Dr Rami Sweis, Consultant Gastroenterologist and Upper GI Physiology Unit lead at University College London Hospital, gave a thought-provoking presentation on the role of provocative testing during high-resolution oesophageal manometry (HRM). Of particular interest, was the role of provocative testing in cases of suspected achalasia.



The standard investigation of oesophageal dysmotility on HRM, includes the use of single-wet swallows (SWS) however, abnormal motility detected using SWS is only weakly associated with patients' symptoms or clinical outcomes <sup>[1]</sup>. Thus, the Chicago classification v4.0 (CCv4.0) advocates for the use of provocative testing to address such limitations <sup>[2]</sup>. Dr Sweis began his presentation by talking about the different types of provocative tests and their role in HRM testing as per the CCv4.0 guidelines. Commonly used provocative tests include the rapid drink challenge (RDC), multiple rapid swallows (MRS), solid swallows, and the solid test meal (STM). All of which work to challenge the oesophagus by swallowing larger volumes of water and/or solid food and have been shown to increase the sensitivity of detecting clinically relevant motility disorders when compared with less physiological SWS <sup>[1,3]</sup>.

Dr Sweis presented the results of many research studies which he used to demonstrate the importance of provocative testing on HRM. One such study which sparked my particular interest, was the results of a recent study, which highlighted the importance of provocative testing in the diagnosis of achalasia, despite the current CCv4.0 recommending that if achalasia is demonstrated with SWS; provocative testing is not required <sup>[2]</sup>.

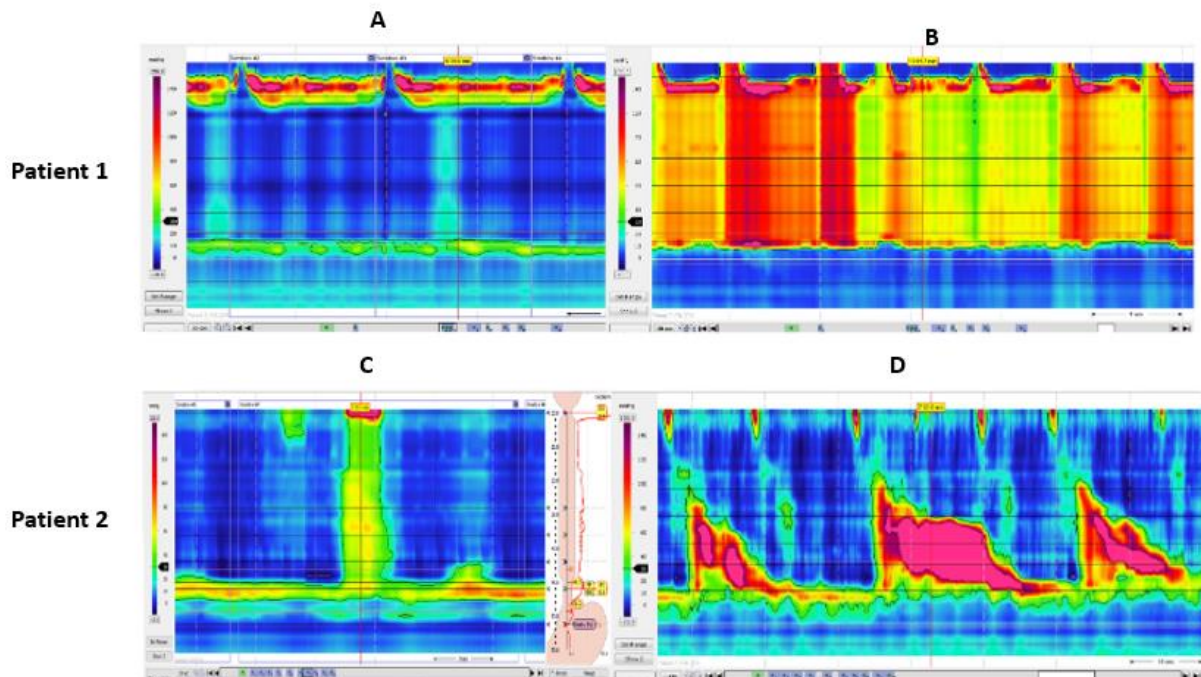
The researchers in this study retrospectively analysed 127 consecutive manometry studies of patients diagnosed with achalasia in a single tertiary referral centre from 2016 to 2022. Both patients who were naïve to previous therapy and those who had undergone therapeutic interventions for achalasia were included. A standard protocol, of 5 mL SWS, a STM of 200 g rice or at least 5 1x1 cm cubes of bread and/or a 200 mL RDC was performed in all patients. All swallows were performed in the more physiological upright position and any symptoms reported were recorded directly onto the HRM trace at the time of investigation. The change in a patients manometric findings was calculated and compared for each patient diagnosed with achalasia on SWS, RDC and the STM <sup>[1]</sup>.

# Upper GI Symposium Presentation Review

## Results

Of the 127 patients included in this study, 116 (91.3%) patients completed a RDC. Of these 116 patients, 90 (77.6%) demonstrated an obstructed response during the challenge, with 88 (75.9%) of these reaffirming the findings on SWS. However, 15.4% of patients who demonstrated a normal median integrated relaxation pressure (IRP) during SWS exhibited a non-relaxing lower oesophageal sphincter (LOS) on the RDC. Furthermore, all patients who did not demonstrate an obstructed response on the RDC, did demonstrate a non-relaxing LOS on the STM.

Moreover, this study found that in 57 patients (44.9%), the manometric diagnosis had changed based on the STM when compared with manometric findings on SWS. Of these 57 patients, 29 (64.4%) patients had type I achalasia on SWS, but demonstrated manometric features of type II achalasia on STM (Figure 1 a & b) and 1 patient demonstrated features of type III achalasia on STM. In addition, 11 patients diagnosed with type II achalasia on SWS demonstrated features of type III achalasia on STM (Figure 1 c & d). Interestingly, however, for 13 patients who demonstrated type III achalasia on SWS, the manometric diagnosis did not change with the RDC or STM.

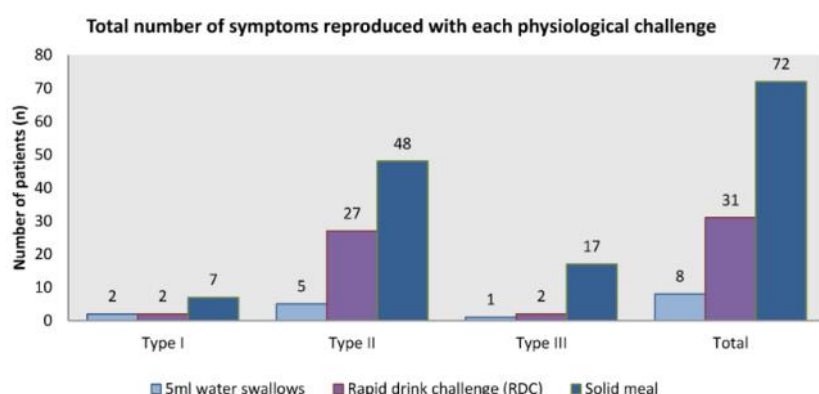


**Fig. 1: The change in manometric findings with the inclusion of a STM during HRM. (A) demonstrates type I achalasia on SWS with an IRP of 38.5 mmHg (B) a STM was then performed in the same patient and demonstrated panoesophageal pressurisation with an IRP of 76.1 mmHg. The patients symptoms were produced on the STM. Patient 2 demonstrated type II achalasia on SWS (IRP 42.8 mmHg) (c) and type III achalasia on STM in the same patient (d) with episodes of hypercontractility [Adapted from Dervin et al., 2023<sup>[4]</sup>].**

The study also found that symptoms were more likely to be reproduced on provocative testing, with 56.7% of patients demonstrating symptoms on the STM versus just 6.6% of patients on SWS (Figure 2).



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**Fig. 2: Frequency of symptoms experienced during each physiological challenge for each achalasia subtype.**

[Dervin et al., 2023 <sup>[5]</sup>].

These findings are of particular interest as, despite the CCv4.0 recommendation that SWS may be sufficient to secure a diagnosis, according to this study, limiting the test protocol to SWS may result in misidentification of the achalasia phenotype in a substantial number of patients with type I or type II achalasia on SWS. Conversely, for patients diagnosed with type III on SWS provocative testing may have no additional benefit as no change in manometric findings was demonstrated with provocation.

Furthermore, the inclusion of a RDC could uncover obstruction where the IRP was normal on SWS, which can be treatable and is often seen in recurrence following prior surgical interventions for achalasia <sup>[3]</sup>. In addition, the analysis of symptom provocation in this study, underscores the importance of provocative testing to reproduce clinically relevant symptoms. For example, over half of patients in this study demonstrated their typical symptoms on STM versus just 6.6% of patients on SWS.

## Conclusions

Dr Sweis highlighted the importance of provocative testing and the need to 'chase the symptom' during HRM. He also demonstrated how provocative testing in achalasia, can improve achalasia subtyping, uncover recurrent or persistent achalasia, and reproduce clinically relevant symptoms which could be correlated to a manometric abnormality. Ultimately, this could help rule out diagnostic uncertainty and guide personalised, effective therapeutic decision making. Overall, the presentation provided food for thought and could lead us to rethink the role of provocative testing during HRM, particularly in cases of suspected achalasia.

## References

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5. Dervin H, Endersby J, Sanagapalli S, Mills H, Sweis R. Assessing the diagnostic yield of achalasia using provocative testing in high-resolution esophageal manometry: Serial diagnostic study. *Neurogastroenterology & Motility*. 2023 Nov;35(11):e14668. [Taken from] Figure 2 Frequency of symptoms reproduced with every swallow modality for each achalasia subtype based on the achalasia diagnosis obtained from the solid meal; pg 9.

## Highlighting the Updates The Lyon Consensus 2.0

**Jordan Haworth, GI Physiologist**  
The Functional Gut Clinic, Manchester

Clinical history, questionnaires and response to proton pump inhibitor (PPI) therapy are not sufficient to diagnose gastroesophageal reflux disease (GORD). Further investigations are required to make a conclusive diagnosis of GORD including endoscopy and ambulatory reflux monitoring.



Over the years, attempts have been made to better standardise the diagnosis of GORD. Starting with the Genva Workshop in 1999, then Porto Consensus in 2004 and Montreal definition of GORD in 2006. However, the Lyon Consensus in 2018 went beyond previous classifications with more clearly defined endoscopy and physiology parameters. Now, we have the updated Lyon Consensus 2.0. So, what's new?

### **Proven GORD**

Proven GORD can be diagnosed by endoscopy with LA grade B, C or D oesophagitis, as well as confirmed Barrett's on biopsy or an acid exposure time (AET) >6% on previous pH testing. In patients with proven GORD, the Lyon Consensus 2.0 recommends that pH-impedance monitoring should be performed on PPI to determine response to optimised PPI therapy.

It is rare that doctors refer patients for testing on PPI based on this methodology. In any case, if the patient is referred for on PPI testing, the most important thing is to make sure that the patient remains on their optimised dose of PPI therapy for the test.

### **On PPI**

The Lyon Consensus 2.0 provides thresholds for on PPI testing, which were not defined in the first iteration. Conclusive evidence for GORD with pH-impedance testing on PPI therapy is an AET >4% and/or total number of reflux episodes >80.

### **Unproven GORD**

In patients with unproven GORD, the Lyon Consensus 2.0 suggests that wireless pH monitoring off PPI is the preferred method of reflux testing since a study duration of 96 hours has the highest diagnostic yield. In addition, the wireless capsule can be placed during endoscopy reducing hospital visits.

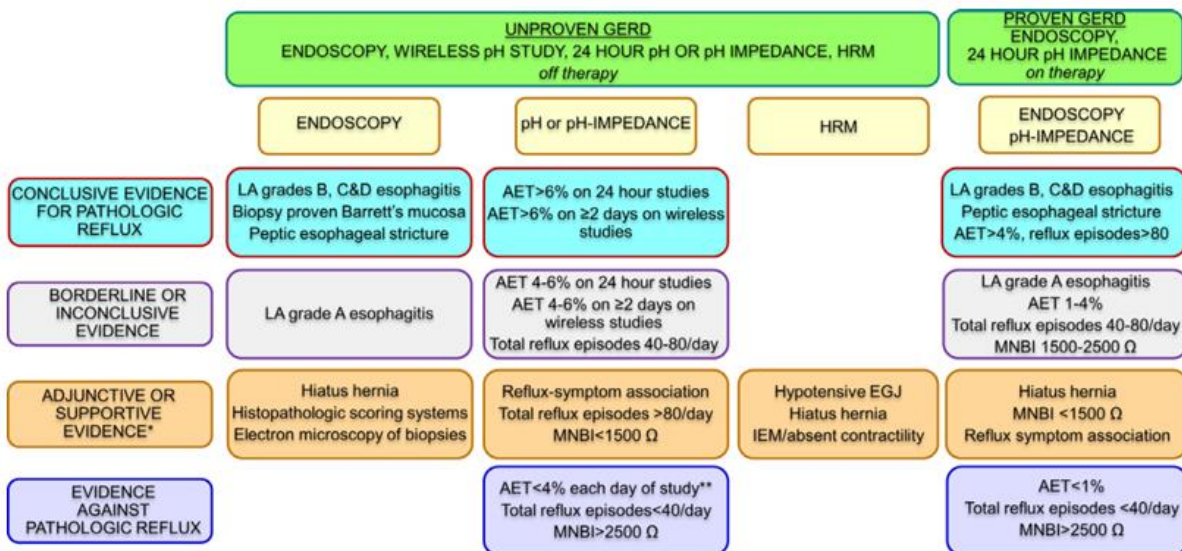
In summary, the new parameters introduced in the Lyon Consensus 2.0 include thresholds for on PPI testing and baseline impedance. The diagnosis of GORD remains complex based on a combination of techniques. These criteria help us to better standardise results and have more confidence in diagnosis, but analysis and interpretation of data requires careful consideration since this ultimately determines the patient's management pathway.

## Ambulatory pH-impedance

Criteria for conclusive evidence of GORD on 24-hour pH-impedance monitoring remains unchanged in the Lyon Consensus 2.0. An AET >6% and/or total number of reflux episodes >80 is confirmatory of GORD. Other impedance parameters can also provide supportive evidence of GORD in patients with borderline results (4-6% AET and 40-80 reflux episodes). These impedance metrics include a positive reflux-symptom association and the mean nocturnal baseline impedance (MNBI). Specifically, a new MNBI threshold has been introduced in Lyon 2.0, with a cut-off of <1500 ohms are supportive for GORD. The baseline impedance is a marker of oesophageal mucosal integrity and reflects long-term acid reflux burden. The post-reflux swallow induced peristaltic wave (PSPW) impedance metric from the previous iteration of Lyon has been retired.

## High resolution manometry

HRM cannot diagnose GORD, but it is able to provide supportive evidence which can sway confidence in patients with borderline results on reflux testing. According to the Lyon Consensus 2.0, these include the presence of a hiatus hernia, hypotensive oesophago-gastric junction, and ineffective or absent oesophageal motility.



\* factors that increase confidence for presence of pathologic reflux when evidence is otherwise borderline or inconclusive

\*\* wireless pH monitoring: <4% on all days; pH-impedance: all criteria should be met.

Figure adapted from Lyon Consensus 2.0

In summary, the new parameters introduced in the Lyon Consensus 2.0 include thresholds for on PPI testing and baseline impedance. The diagnosis of GORD remains complex based on a combination of techniques. These criteria help us to better standardise results and have more confidence in diagnosis, but analysis and interpretation of data requires careful consideration since this ultimately determines the patient's management pathway.

### Are you attending a conference / event?

NewWave is always looking for reviews of GI Physiology events and meetings. If you have an event coming up and would like to submit a review (or advertise it in our next issue), please contact [Gemma Norris](mailto:gemma.norris@sthk.nhs.uk) ([gemma.norris@sthk.nhs.uk](mailto:gemma.norris@sthk.nhs.uk))

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