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Correspondence

## Author's reply: "Time is over: step back to reusable and step forward to recyclable!"

Dear Editor,

We would like to thank the Editors of DLD for the opportunity to reply to the comments of Schepis et al. on our recent paper on issues related to sustainability in gastroenterology and digestive endoscopy from the Italian Association of Hospital Gastroenterologists and Digestive Endoscopists (AIGO) [1]. The commentary is of extreme interest, and provides insight into how endoscopic ultrasound (EUS) and retrograde cholangiopancreatography (ERCP) may contribute to the environmental impact of digestive endoscopy [2].

In a previous study, Namburar et al. estimated the carbon footprint of digestive endoscopy, including biliary endoscopies (ERCP and EUS), in their analysis [3]. However, their study focused only on the disposable waste produced and did not differentiate the environmental contributions of the single and specific endoscopic procedures. Unfortunately, we still face a knowledge gap that hampers our ability to accurately calculate the environmental impact of a single specific endoscopic procedure. In fact, the industry does not currently provide the exact material composition of endoscopes and devices, nor does it provide the carbon footprint of the production phase, which can allow to calculate the life cycle assessment of endoscopes and accessories. Despite these limitations, we could reasonably infer that EUS and ERCP, since they are frequently operative, have a higher carbon footprint compared to esophagogastroduodenoscopy (EGD) and colonoscopy (CLS). Despite not being supported by solid evidence of their benefit for patients, the recent widespread use of single-use scopes and devices contributes heavily to increasing the environmental impact of endoscopy, and particularly of EUS and ERCP, especially in light of the current supply chain crisis [3,4]. The latest position statement by the European Society of Gastrointestinal Endoscopy (ESGE) on sustainability advised against the routine use of disposable endoscopes and underscored the need to reconsider and reduce the impact of disposable devices in endoscopy [5].

According to the data from Schepis et al. the waste mass generated during EUS is almost double compared to CLS and EGD, and ERCP generates approximately five times as much waste as colonoscopy. Future studies, hopefully emerging through the proactive collaboration of clinicians, industry and institutions, are needed to confirm these data and clarify the exact carbon footprint of each specific endoscopic procedure. Meanwhile, a rational application of guidelines on quality, appropriateness and sustainability is essential to improve the environmental impact of endoscopy, especially EUS and ERCP, without altering the quality of patient care, therefore guiding digestive endoscopy toward a more sustainable future.

### Conflict of interest

The authors declare no conflict of interest related to the present paper.

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