

Peer-review report

Dear Reviewers,

We appreciate your thorough evaluation, which has helped us enhance the quality of our manuscript. Our detailed responses to your comments are provided below. The manuscript has been revised following your suggestions. We hope that the revised version is now suitable for publication in the *World Journal of Gastrointestinal endoscopy*.

Reviewer 1:

01. The manuscript can be improved by addressing the following points: - The abstract is comprehensive but could be more concise. Focus on key findings and advancements in pediatric upper GI endoscopy while reducing repetitive details.

Response: We have updated the abstract accordingly, as you can see on page 02 of the manuscript.

Abstract

Upper gastrointestinal (GI) endoscopy is considered an essential procedure in pediatric Gastroenterology. It has evolved over many decades into a state where it plays a crucial role in providing diagnostic and therapeutic advantages across a broad spectrum of diseases. This review examines its role in diagnosing and managing common pediatric gastrointestinal conditions, emphasizing notable advancements in techniques, clinical use and future directions. We conducted a detailed literature survey using PubMed, Scopus and Google Scholar, and English language articles were reviewed. This review process included the latest articles, guidelines and conference papers on pediatric and adult upper GI endoscopy.

An upper GI endoscopy is imperative in diagnosing many pediatric GI diseases as it enables visualization of the gut mucosa, obtaining mucosal biopsies from suspicious areas or lesions for histological assessment and selecting an effective management and follow-up plan. New advancements, including high-resolution endoscopy, narrow-band imaging, and confocal laser endomicroscopy, have revolutionized pediatric endoscopy by improving precision and reducing the need for invasive interventions. Furthermore,

recent therapeutic developments in the field, such as endoscopic submucosal dissection and endoscopic mucosal resection, are now being utilized to treat preneoplastic lesions or refractory esophageal strictures. However, despite its usefulness, performing this procedure in children is challenging for various reasons, including the need of sedation, anesthesia and smaller instrument sizes, unavailability of trained staff, lack of training facilities and the absence of dedicated endoscopy suites for children.

In conclusion, pediatric upper GI endoscopy plays a pivotal role in pediatric gastroenterology, offering both therapeutic and diagnostic benefits. Progress in the field leads to the development of novel techniques that improve overall patient care, such as artificial intelligence in pattern recognition, which enhance lesion detection, predict premalignant or pre-inflammatory areas and minimize investigator-related errors. Additionally, refining protocols and guidelines is essential to improve safety, efficacy and precision of upper GI endoscopy, ensuring the best possible care for children.

02. Provide a clearer transition from historical advancements to current practices in paediatrics in the introduction section.

Response: We have rewritten the history of endoscopy to give a more in-depth look at its evolution over the decades. Please refer to pages 03 & 04, the second paragraph of the introduction section. In addition, the history of development and progress of endoscopy is depicted in Figure 1.

“Endoscopy has evolved over 150 years before becoming a vital investigation in GI disorder diagnosis. Dr. Adolph Kussmaul of Germany was the first to examine the stomach of a living human body in 1868[7]. A landmark advancement in endoscopy came in 1958 with the development of the flexible fiberoptic endoscopy by Larry Curtiss, a physics graduate student and Basil Hirschowitz, a gastroenterology trainee[8]. In the early 1970s, as the size of the endoscope was reduced, a few pioneering pediatricians began using it to examine the upper digestive tract in children[9]. In 1990, the invention of video-endoscopy, utilizing charge-coupled devices (CCDs), marked another major step forward by replacing fiberoptic systems and resolving problems related to damaged fiberoptic cable bundles[10]. Endoscopy has

*undergone a substantial technological revolution since then, naming the provision of pediatric-sized scopes, which enable a detailed examination of the GI tract. Technical advancements such as fiberoptic and video technology with pediatric-friendly scopes, along with advances in anesthesia, have made it possible to examine even premature infants and severely sick patients[11]. Recent breakthrough in image capturing systems, such as magnification endoscopy, autofluorescence imaging (AFI), electronic chromoendoscopy techniques like narrow-band imaging (NBI), i-scan, or flexible spectral imaging color enhancement (FICE), and confocal laser microendoscopy, have enabled the endoscopist to view finer mucosal detail and subsurface structures such as the vasculature[10]. The key milestones in the development of the endoscope, along with its prospects, are summarized in **Figure 01**[7-12]”.*

03. Include a section on study methods, including how the literature review was performed.

Response: We have included a literature review and the types of articles we included in the abstract (page 02).

“We conducted a detailed literature survey using PubMed, Scopus and Google Scholar, and English language articles were reviewed. This review process included the latest articles, guidelines and conference papers on pediatric and adult upper GI endoscopy”.

04. Expand on the psychosocial aspects of preparation, emphasizing strategies to reduce anxiety in children and parents during the pre-procedural evaluation. - Include a table of various pediatric-sized scopes available, including manufacturer information.

Response: We have addressed the issues under preprocedural evaluation. Please refer to page 07. We also include a table listing various pediatric-sized scopes, along with their corresponding manufacturer information (Table 04).

“A child’s ability to control his/her behavior during a procedure depends on both the chronological age and the level of cognitive and emotional development. The capacity to cooperate with a procedure also relies on these factors. Many short procedures, such as suturing

a minor laceration, can be performed using distraction and guided imagery techniques, along with the application of topical or local anesthetics and minimal sedation if necessary. However, since upper GI endoscopy can be invasive and could be lengthy specially during a therapeutic procedure, general anesthesia is mandatory”.

Models and specifications of gastroscopes available for pediatric use are outlines in the Table 04.

Table 04 Models and specifications of gastroscopes available for pediatric use^[35,36]

<i>Weight of the child (kg)</i>	<i>Model</i>	<i>Working length (cm)</i>	<i>Diameter (mm)</i>		<i>Manufacturer</i>
			<i>Outer</i>	<i>Inner</i>	
< 5	Olympus GIF- 110 Ultrathin XP190N gastroscope	110	4.9	2	Olympus corporation
5-20	Olympus GIF- 110 Slim adult XP190N gastroscope	110	5.4	2.2	Olympus corporation
	Fujifilm EG- 110 580NW2	110	5.9	2.4	Fujifilm Endoscopy
>20	Olympus GIF- 103 Adult-size H190 gastroscope	103	9.2	2.8	Olympus corporation
	Fujifilm EG- 110 590WR	110	9.4	2.8	Fujifilm Endoscopy

35 Olympus Medical Systems. Product catalog and specifications. HYPERLINK "<https://medical.olympusamerica.com>" <https://medical.olympusamerica.com>

36 Fujifilm Endoscopy. Pediatric endoscope portfolio. HYPERLINK
"https://www.fujifilm.com/us/en/healthcare/endoscopy"
<https://www.fujifilm.com/us/en/healthcare/endoscopy>

05. Add a section on the role of pediatric upper GI endoscopy in resource-limited settings or countries.

Response: We have addressed this issue under 'Challenges and Limitations'. Please refer to pages 12 & 13.

“Developing pediatric upper GI endoscopy services in low-income countries faces challenges such as a lack of expertise in the field, with most pediatric procedures being performed by adult gastroenterologists. Additionally, there is often a shortage of funds to establish dedicated endoscopy suites, unavailability of equipment and infrastructure, limited theatre facilities, and a shortage of anesthetists capable of providing anesthesia”.

06. Incorporate more examples of how artificial intelligence and image-enhanced endoscopy can be integrated into pediatric practice.

Response: We rewrote the section, including examples of the use of artificial intelligence. Please refer to the section “Recent advances and future directions” on pages 13-14.

“NBI uses explicitly a specific light wavelength, based on the principle that the depth of light penetration into tissue is proportional to the wavelength used[12]. Blue light (415 ± 15 nm) penetrates only the superficial tissues, and it is absorbed by hemoglobin. Therefore, the capillaries in the superficial mucosal layer appear darker, helping to distinguish them from one another. In contrast, green light (540 ± 15 nm) penetrates slightly deeper layers, resulting in a secondary hemoglobin absorption peak, which makes deeper mucosal and submucosal vessels visible. This aids in the detection of early GI neoplasias, boundaries of Barrett’s esophagus, and the gastroesophageal junction, to diagnose gastroesophageal reflux disease. FICE and i-SCANs are another software that utilizes post-processing algorithms on white light images[11]. Their main functions include surface, contrast, and tone enhancements, which assist in visually inspecting subtle changes in the mucosa and better identifying and examining lesions[48]”.

07. Ensure consistent terminology throughout the manuscript (e.g., "upper GI endoscopy" vs. "gastroscopy").

Response: We have corrected the manuscript using upper GI endoscopy throughout.

"In dysphagia, odynophagia, chest pain, or feeding difficulties, it is essential to perform an upper GI endoscopy to rule out caustic ingestion or eosinophilic esophagitis.[6]"

"Preparation for upper GI endoscopy in children should respect their physiology as well as the psychosocial and emotional needs of them and their parents[13]"

08. Revise the conclusion to more succinctly summarize the key takeaways, emphasizing the importance of innovation, training, and research, as well as the need for standardized protocols and dedicated pediatric endoscopy units.

Response: We have revised the summary and made the necessary modifications according to the provided comments. Please refer to pages 14 & 15.

"In conclusion, pediatric upper GI endoscopy plays a pivotal role in diagnosis and management of pediatric gastrointestinal disorders, offering both diagnostic precision and therapeutic advantages. It is particularly critical in identifying complex and emerging pediatric GI conditions. Recent advances endoscopic technology has resulted in improve mucosal visualization, leading to greater diagnostic accuracy and enhanced therapeutic outcomes. To fully harness these benefits, robust and standardized pediatric-specific training programs, validated assessment tools, and simulation-based curricula are essential. Setting clear competency standards tailored to pediatric practice and providing structured trainer development are important for maintaining safety and quality. Additionally, there is a pressing need for pediatric-centered research, including well-designed clinical trials, to understand the clinical impact of endoscopy better, refine current techniques, and evaluate the suitability of methods adapted from adult practice. Ongoing commitment to innovation and education will be key to ensuring that pediatric endoscopy continues to meet the evolving needs of children. Furthermore, incorporating advances used in adult endoscopy into children, after following safety precautions, will help to improve the technology more quickly"

Reviewer 2:

01. However, substantial revisions are necessary to elevate the manuscript to a publishable standard and ensure its accuracy and utility as a definitive reference. Technical descriptions currently lack the precision required for a comprehensive review.

For instance: The discussion of ultrathin endoscopes (<6 mm diameter), vital for neonates and infants, omits critical specifications like working channel diameters and compatible therapeutic tools/accessories, details directly impacting clinical utility and procedural planning. Explanations of Image-Enhanced Endoscopy (IEE) techniques (e.g., Narrow Band Imaging - NBI, Fujifilm Intelligent Chromo Endoscopy - FICE) remain superficial. They fail to detail the underlying optical principles (e.g., NBI's reliance on specific light wavelengths like 415nm and 540nm targeting hemoglobin absorption) that differentiate them and inform their diagnostic application in conditions like Barrett's esophagus surveillance or early neoplasia detection.

Response: Thank you for bringing this to our attention. We have added information on the optical principles behind image-enhanced endoscopy and its applications. Please refer to the section 'Recent advances and future directions' on pages 13-14.

"The working channel diameter (also referred to as the auxiliary channel or channel size/diameter) is a crucial component of an endoscope, through which various accessories and tools can be passed during endoscopic procedures. The reduced diameter of the working channel in smaller pediatric scopes can restrict the passage of many useful accessories (e.g. hemostatic clipping), limiting their therapeutic applications[4,18].

The selection of an endoscope depends mainly on the patient's size and is designed with a directly proportional auxiliary channel[12]. If the child's weight exceeds 20 kg, they will often accept a standard adult-size gastroscope with a working channel diameter of 2.8 mm[18]. In contrast, patients weighing less than 5 kg may require an ultrathin or neonatal gastroscopes with an outer diameter of less than 6 mm, featuring a working channel of approximately 2 mm. As with neonates, the length of the esophagus is nearly 10cm, with a diameter of approximately 0.5cm[21]. For smaller children weighing between 5 and 20 kg, a slimmed-down endoscope of less than 9 mm (7.8 -9 mm) is preferable with a working channel between 2.2 - 2.8 mm, and it

*is advisable to have a more miniature endoscope available in case the preselected endoscope is found to be too large during the procedure[18,34]. Models and specifications of gastroscopes available for pediatric use are outlined in the **Table 04**[35,36].*

“NBI uses explicitly a specific light wavelength, based on the principle that the depth of light penetration into tissue is proportional to the wavelength used[12]. Blue light (415 ± 15 nm) penetrates only the superficial tissues, and it is absorbed by hemoglobin. Therefore, the capillaries in the superficial mucosal layer appear darker, helping to distinguish them from one another. In contrast, green light (540 ± 15 nm) penetrates slightly deeper layers, resulting in a secondary hemoglobin absorption peak, which makes deeper mucosal and submucosal vessels visible. This aids in the detection of early GI neoplasias, boundaries of Barrett’s esophagus, and the gastroesophageal junction, to diagnose gastroesophageal reflux disease. FICE and i-SCANS are another software that utilizes post-processing algorithms on white light images[11]. Their main functions include surface, contrast, and tone enhancements, which assist in visually inspecting subtle changes in the mucosa and better identifying and examining lesions[48]. “

02. A critical deficiency is the complete absence of all referenced tables and figures (specifically Figure 1, Tables 1-2, Box 1). These visual aids are indispensable for summarizing complex information, comparing techniques, and illustrating key concepts. They must be provided in the revision, ensuring their content aligns perfectly with the text and that numbering is consistent throughout the manuscript. Furthermore, the content of Table 1 (as referenced in the text) raises concerns; the inclusion of "GERD surveillance for Barrett’s esophagus" as a common indication requires significant qualification. This practice is exceedingly rare in pediatric populations and not routinely recommended, a point strongly emphasized in current guidelines from the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN). Failing to contextualize this risks misleading readers. The literature review exhibits notable gaps and outdated information: Sedation protocols rely on 2008 ASA standards, overlooking crucial 2016 updates from the American Academy of Pediatrics (AAP) regarding age-based fasting guidelines, which are fundamental for safe procedural practice in children.

Response: Thank you for the feedback. We have included all the references to Figure 01 as well as to the four tables, which are attached separately.

Inclusion of GERD surveillance for Barrett's oesophagus is included in the Pediatric gastrointestinal endoscopy: European Society of Gastro- intestinal Endoscopy (ESGE) and European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) Guideline Executive summary published in 2017. But we agree that the condition can be very rare among children.

Sedation protocols, as you kindly highlighted, were updated in 2016, and we have included the latest recommendation in the paper (please refer to pages 07 & 08).

Figures and Tables

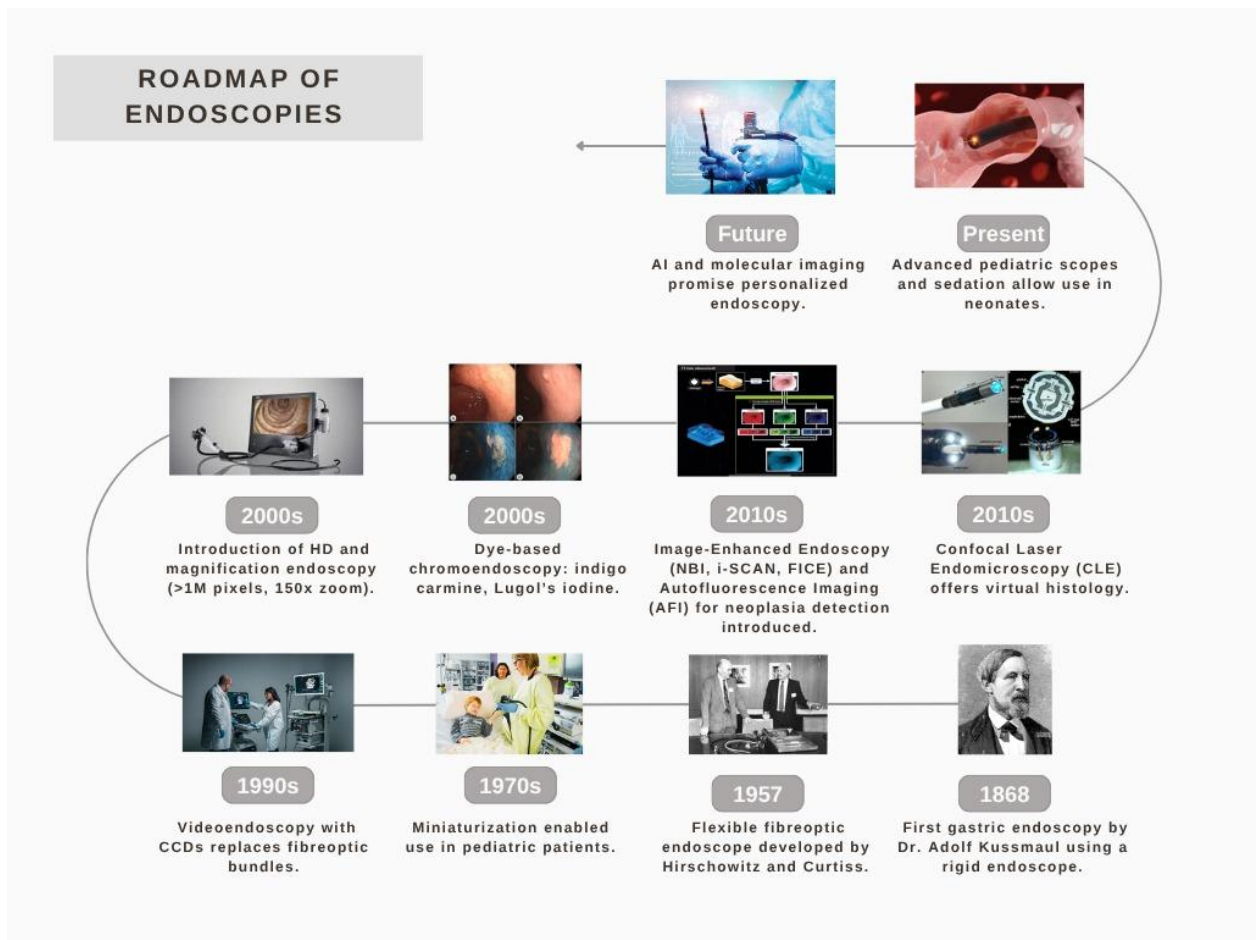


Figure 01 Key milestones in endoscope development and prospects[7-12]

CCD: Charge-coupled device, FICE: Flexible spectral imaging color enhancement, HD: High-definition, NBI: Narrow-band imaging

References

- 7 Klufe F, Seidler E. Zur Erstanwendung der Ösophago- und Gastroskopie: Briefe von Adolf Kussmaul und seinen Mitarbeitern. *Medizinhist Journal* 1986; 21: 288-307 [PMCID: 11637391]
- 8 Hirschowitz BI, Curtiss LE, Peters CW, Pollard HM. Demonstration of a new gastroscope, the fiberscope. *Gastroenterology* 1958; 35: 50; Discussion 51-50; Discussion 53 [PMID: 13562387 DOI: 10.1016/S0016-5085(19)35579-9]
- 9 Cadranel S, Rodesch P, Peeters JP, Cremer M. Fiberendoscopy of the gastrointestinal tract in children. A series of 100 examinations. *Am J Dis Child* 1977; 131: 41-45 [PMID: 299976 DOI: 10.1001/archpedi197702120140043006]
- 10 Kostovski A, Zdraveska N. Indications for gastrointestinal endoscopy in children. *Slovenian Medical Journal* 2013; 82: 114-126
- 11 Subramanian V, Ragunath K. Advanced endoscopic imaging: A review of commercially available technologies. *Clin Gastroenterol Hepatol* 2014; 12: 368-76.e1 [PMID: 23811245 DOI: 10.1016/j.cgh.2013.06.015]
- 12 Jang JY. The Past, Present, and Future of Image-Enhanced Endoscopy. *Clin Endosc* 2015; 48: 466-475 [PMID: 26668791 DOI: 10.5946/ce201548.6.466]

Table 01 Diagnostic and therapeutic indications of upper gastrointestinal endoscopy in children[6]

DIAGNOSTIC INDICATIONS	THERAPEUTIC INDICATIONS
<i>weight loss, failure to thrive</i>	<i>Percutaneous endoscopic gastrostomy (re)placement</i>
<i>unexplained anemia</i>	<i>Duodenal tube placement</i>
<i>abdominal pain with suspicion of an organic disease</i>	<i>Foreign body removal</i>
	<i>Food impaction</i>
	<i>Hemostasis</i>
<i>dysphagia or odynophagia</i>	<i>Esophageal varices</i>

<i>recurrent vomiting with unknown cause</i>	<i>Percutaneous jejunostomy placement</i>
<i>hematemesis</i>	<i>Perforation</i>
<i>hematochezia</i>	<i>Achalasia</i>
<i>unexplained chronic diarrhea</i>	<i>Dilatation of esophageal or upper GI strictures</i>
<i>suspicion of graft vs host disease</i>	<i>polypectomy</i>
<i>chronic GERD, to exclude other diseases, or surveillance of Barrett's esophagus</i>	

GERD; gastroesophageal reflux disease, GI; gastrointestinal

[6] **Thomson M**, Tringali A, Dumonceau JM, Tavares M, Tabbers MM, Furlano R, Spaander M, Hassan C, Tzvinikos C, Ijsselstijn H, Viala J, Dall'Oglio L, Benninga M, Orel R, Vandenplas Y, Keil R, Romano C, Brownstone E, Hlava Š, Gerner P, Dolak W, Landi R, Huber WD, Everett S, Vecsei A, Aabakken L, Amil-Dias J, Zambelli A. *Paediatric Gastrointestinal Endoscopy: European Society for Paediatric Gastroenterology Hepatology and Nutrition and European Society of Gastrointestinal Endoscopy Guidelines*. *J Pediatr Gastroenterol Nutr* 2017; 64: 133-153 [PMID: 27622898 DOI: 10.1097/MPG.0000000000001408]

Table 02 Absolute and relative contraindications for upper gastrointestinal endoscopy in children^[13]

ABSOLUTE CONTRAINDICATIONS	RELATIVE CONTRAINDICATIONS
<i>Unstable airway</i>	<i>bowel obstruction</i>
<i>Cardiovascular collapse</i>	<i>severe thrombocytopenia</i>
<i>Intestinal perforation</i>	<i>coagulopathy</i>
<i>Peritonitis</i>	<i>recent GI surgery</i>
	<i>respiratory infection</i>
	<i>recent food intake</i>

GI; gastrointestinal

[13] **Friedt M, Welsch S.** *An update on pediatric endoscopy.* *Eur J Med Res* 2013; 18: 24
[PMID: 23885793 DOI: 10.1186/2047-783X-18-24]

Table 03 Cardiac conditions with a high risk of infective endocarditis during endoscopic procedures

LIST OF CARDIAC CONDITIONS^[32]

(1) Prosthetic (mechanical or bioprosthetic) cardiac valves

(2) History of previous IE

(3) cardiac transplant recipients who develop cardiac valvulopathy

(4) Patients with congenital heart disease (CHD)

- unrepaired cyanotic CHD, including palliative shunts and conduits.

- those with completely repaired CHD with prosthetic material or devices, placed surgically or by catheter, for the first 6 months after the procedure.

- those with repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or device.

CHD; congenital heart disease, IE; infective endocarditis

[32] **Hirota WK, Petersen K, Baron TH, Goldstein JL, Jacobson BC, Leighton JA, Mallery JS, Waring JP, Fanelli RD, Wheeler-Harbough J, Faigel DO;** Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy. *Guidelines for antibiotic prophylaxis for*

GI endoscopy. *Gastrointest Endosc* 2003; 58: 475-482 [PMID: 14520276 DOI: 10.1067/s0016-5107(03)01883-2]

Table 04 Models and specifications of gastroscopes available for pediatric use^[35,36]

<i>Weight of the child (kg)</i>	<i>Model</i>	<i>Working length (cm)</i>	<i>Diameter (mm)</i>		<i>Manufacturer</i>
			<i>Outer</i>	<i>Inner</i>	
< 5 <i>Ultrathin gastroscop</i>	<i>Olympus GIF- XP190N</i>	110	4.9	2	<i>Olympus corporation</i>
5-20 <i>Slim adult gastroscop</i>	<i>Olympus GIF- XP190N</i>	110	5.4	2.2	<i>Olympus corporation</i>
	<i>Fujifilm EG- 580NW2</i>	110	5.9	2.4	<i>Fujifilm Endoscopy</i>
>20 <i>Adult-size gastroscop</i>	<i>Olympus GIF- H190</i>	103	9.2	2.8	<i>Olympus corporation</i>
	<i>Fujifilm EG- 590WR</i>	110	9.4	2.8	<i>Fujifilm Endoscopy</i>

35 *Olympus Medical Systems. Product catalog and specifications. HYPERLINK "https://medical.olympusamerica.com" <https://medical.olympusamerica.com>*

"<https://www.fujifilm.com/us/en/healthcare/endoscopy>"

<https://www.fujifilm.com/us/en/healthcare/endoscopy>

“According to the guidelines of the American Academy of Pediatrics (AAP), children should be fed clear liquids up to two hours before sedation to prevent dehydration. Breastmilk should be given prior to four hours, whereas formula milk or light diet should be given six hours before the procedure. Therefore, infants younger than six months may be given infant formula up to six hours and clear liquids up to two hours before sedation[24]. For patients older than six months, fasting from non-clear liquids and solids is recommended for six to eight hours prior to sedation[24,29].”

03. Terminology inconsistencies, such as the sporadic use of the acronym "EoE" for eosinophilic esophagitis instead of consistent full terminology or defined abbreviation upon first use, disrupt readability and professionalism.

Response: We initially used the full terminology, followed by the abbreviations later.

04. Certain claims lack robust evidence, notably the assertion regarding routine pre-procedural coagulation screening. This is overstated and contradicted by evidence demonstrating its limited predictive value for clinically significant bleeding in children undergoing routine diagnostic endoscopy without specific risk factors.

Response: Thank you very much for the feedback. However, there is limited evidence in the literature on risk assessment before routine endoscopy; therefore, we have cited the available evidence. But, as you have correctly highlighted, it is not enough to make a recommendation for children.

“Although coagulation and liver function tests are included in blood investigations. However, it is reported that routine coagulation screening in children undergoing gastrointestinal endoscopy does not predict those at risk of bleeding and the significance of

coagulation screening before the procedure is limited[26]. However, severe coagulopathy is a contraindication for endoscopic procedures in children, and appropriate treatment must be administered when endoscopy is deemed essential[13]."

05. To significantly enhance the pediatric relevance and practical value of the review, the authors should consider expanding discussions on: Anatomic challenges unique to children (e.g., navigating the acutely angled duodenum in infants). Ethical considerations, particularly the principles of family-centered care surrounding sedation choices, consent processes involving both parents and older children, and post-procedural communication. Resource-adaptive strategies for settings with limited equipment or personnel, offering practical alternatives without compromising core safety.

Response: These points are addressed in the revised manuscript {please refer to the sections titled "Pre procedural evaluation and preparation" (pages 07-09), "Technique and Equipment" (pages 09-11) and "Challenges and limitations" (pages 12-14)}.

"A child's ability to control his/her behavior during a procedure depends on both the chronological age and the level of cognitive and emotional development. The capacity to cooperate with a procedure also relies on these factors. Many short procedures, such as suturing a minor laceration, can be performed using distraction and guided imagery techniques, along with the application of topical or local anesthetics and minimal sedation if necessary. However, since upper GI endoscopy can be invasive and could be lengthy specially during a therapeutic procedure, general anesthesia is mandatory.

According to the guidelines of the American Academy of Pediatrics (AAP), the main objectives in procedural sedation in children are to ensure the child's safety, minimize pain and discomfort, control anxiety, avoid psychological trauma, modify behaviors to reduce movements to ensure safety and return the child to their normal state before discharge[24]. Explaining the need for general anesthesia to parents and to obtain their consent is a major challenge to the endoscopist. Due to multiple risks associated with general anesthesia, parents often express their reluctance for the child to undergo general anesthesia. Parental anxiety is higher when the patient is a neonate or a young child. The endoscopy team needs to educate

and reassure parents, provide all relevant information and take all necessary precautions before the procedure. Sometimes, using visual aids such as photographs, videos, or animations can help alleviate anxiety for both children and their families. It is recommended to engage parents in preprocedural preparation, as it will minimize anxiety in younger patients[25]”.

“The working channel diameter (also referred to as the auxiliary channel or channel size/diameter) is a crucial component of an endoscope, through which various accessories and tools can be passed during endoscopic procedures. The reduced diameter of the working channel in smaller pediatric scopes can restrict the passage of many useful accessories (e.g. hemostatic clipping), limiting their therapeutic applications[4,18].

*For smaller children weighing between 5 and 20 kg, a slimmed-down endoscope of less than 9 mm (7.8 -9 mm) is preferable with a working channel between 2.2 - 2.8 mm, and it is advisable to have a more miniature endoscope available in case the preselected endoscope is found to be too large during the procedure[18,34]. Models and specifications of gastroscopes available for pediatric use are outlines in the **Table 04**[35,36] However, when using a smaller auxiliary or working channel of 2 to 2.2 mm, it can reduce the suction capacity and limit the number of therapeutic interventions performed with the endoscope, as only a few devices fit through the smaller channel. Therefore, to perform procedures more easily and safely, adult duodenoscopes are sometimes used in children over 10 kg because they have wider auxiliary channels, allowing the passage of accessories required for ERCP or therapeutic interventions such as stenting and applying hemostatic clips[6,16]. Although the techniques of endoscopy in children are the same as those in adults, it can be challenging due to anatomical variations or limited physiological reserves. Neonates have very soft airways that can be easily compressed during endoscopic procedures.*

Further, the other significant difficulty is the angle between the gastric antrum and the first part of the duodenum, which requires a greater degree of tip deflection to overcome[33].

It is routine to perform tissue biopsies during pediatric endoscopy, even in the absence of obvious macroscopic abnormalities, to minimize the risk exposing the child to repeated procedures and anesthesia[6]. Abnormal histological findings may be present even when the macroscopic appearance is unremarkable in endoscopy, potentially changing the therapeutic strategies[5]. Porto criteria recommends multiple endoscopic biopsies from the esophagus, stomach, and duodenum for all children with IBD, irrespective of upper GI symptoms[33].

With technological advancements, imaging techniques have revolutionized endoscopy by enhancing mucosal visualization and enabling real-time optical diagnosis[10]. Endoscopic instruments and adaptations for pediatric use have transformed the way gastroenterologists diagnose and treat a wide range of gastrointestinal disorders in children. Advanced technologies, including computer processing and imaging innovations, are continuously upgrading endoscopic equipment and refining their diagnostic utility in pediatrics. However, modalities used in adult gastroenterology practice, such as endomicroscopy, image-enhanced endoscopy, and impedance planimetry, are yet to be routinely adopted for pediatric endoscopy[37]”.

06. Additionally, several formatting and presentational issues require attention: Inconsistent ORCID iD hyperlinking across author affiliations. Journal name errors in the reference list (e.g., Reference 12 cited incorrectly). Crucially, the references need updating to be predominantly within the last 5 years to reflect the most current evidence, guidelines, and technological advancements.

Response: Apologies, and we have inserted ORCID ID hyperlinks accordingly.

There are limited studies conducted in this field; therefore, it is difficult to rely solely on published literature from the last 5 years, as some guidelines have been revised beyond that period. Consequently, we have considered published literature from the last 10 years.

12 Jang JY. The Past, Present, and Future of Image-Enhanced Endoscopy. Clin Endosc 2015; 48: 466-475 [PMID: 26668791 DOI: 10.5946/ce.2015.48.6.466]

07. In conclusion, while the manuscript provides a valuable foundation for understanding pediatric upper GI endoscopy, it currently requires substantial refinement before publication. Prioritization should be given to: 1) Completing and integrating all missing figures and tables; 2) Updating and adding precision to technical descriptions (scope specs, IEE principles); 3) Thoroughly revising the literature review to incorporate the latest sedation guidelines, correct terminology and overstated claims, and include recent references; and 4) Resolving formatting

inconsistencies. By diligently addressing these points related to technical completeness, accurate data presentation, adherence to contemporary guidelines, and scholarly presentation, this review has the potential to become an indispensable, timely, and authoritative reference for pediatric gastroenterologists, surgeons, trainees, and nurses, actively contributing to the advancement of safe and effective endoscopic practice for children globally.

Response: We have reviewed the manuscript and made the necessary changes according to the reviewer's comments.

2 Editorial Office's comments

Specific comments

(1) **Country/Territory of origin:** Sri Lanka.

(2) The language classification are Grade B and Grade B. Please provide the latest language certificate after Return the Manuscript to Author for Revision. Please visit the following website for the professional English language editing companies that we recommend: <https://www.wjgnet.com/bpg/gerinfo/240>.

Response: Updated language certificate provided

(3) **Manuscript Title:**

If a title contains a colon, please capitalize the first letter of the first word after the colon. For example: Unexplained fetal tachycardia: A case report.

Response: Title was revised according to the editorial comment

(4) **The “Key Words” does not meet the requirements:**

The ‘Key words’ list will provide 5-10 keywords that reflect the main content of the study.

The first letter of each keyword will be capitalized, and each keyword will be separated by a semicolon, with no comma. **An example of correct formatting is:** Non-alcoholic fatty liver disease; Alcoholic liver disease; Non-alcoholic steatohepatitis; Insulin resistance; Oxidative stress.

Response: The keywords were revised according to the editorial comment

(5) **Core Tip.** This section should be less than 100 words.

Response: Word count was revised to 100 words according to the editorial comments.

(6) **Audio Core Tip.** In order to attract readers to read the full-text article, we request that the first author make an audio file describing the final core tip. This audio file will be published online, along with the article. **The author can invite English language editing company to assist in resolving the language issues of Audio Core Tip.**

Response: The audio core tip is Attached

(7) **Reference numbers in the main text.**

The name of the author(s) of a reference is listed in the sentence, the reference number should be placed immediately after the author(s) of the reference. **Example:** Mandal *et al*[8] proposed that retractor aponeurosis disinsertion is the most likely cause of congenital low lid entropion.

Response: Corrected as suggested by the editor

(8) **There are issues with the references:**

To ensure the accuracy of the references, please use "Edit References by Auto-Analyser"

(<https://www.f6publishing.com/Forms/main/ArticleReferenceTool.aspx>) to edit the references of the manuscript.

Response: This was done by editing the "Edit Reference by Auto-Analyser".

(9) **Figures.**

Original figure documents. *In the meantime, authors should provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor, and upload it to the file destination of "Image File" in the F6Publishing system.*

Response: The original figure in "Power Point" format is attached.

(10) **Tables.**

Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content.

Response: Tables were rearranged accordingly

(11) Please verify if all pictures (s) are original? If an author of a submission is re-using a figure or figures published elsewhere, or that is copyrighted, the author must provide documentation that the previous publisher or copyright holder has given permission for the figure to be re-published, and correctly indicate the reference source and copyrights. For example, “**Figure 1 Histopathological examination by hematoxylin-eosin staining (200 ×)**. A: Control group; B: Model group; C: Pioglitazone hydrochloride group; D: Chinese herbal medicine group. **Citation:** Yang JM, Sun Y, Wang M, Zhang XL, Zhang SJ, Gao YS, Chen L, Wu MY, Zhou L, Zhou YM, Wang Y, Zheng FJ, Li YH. Regulatory effect of a Chinese herbal medicine formula on non-alcoholic fatty liver disease. *World J Gastroenterol* 2019; 25(34): 5105-5119. Copyright ©The Author(s) 2019. Published by Baishideng Publishing Group Inc^[6]”. And please cite the reference source in the references list. If the author fails to properly cite the published or copyrighted picture(s) or table(s) as described above, he/she will be subject to withdrawal of the article from BPG publications and may even be held liable.

Response: The figure 1 was developed using AI software. No copy write material are available
(12) **Abstract.** An informative, unstructured abstract of no more than 200 words should accompany each manuscript.

Response: The abstract was prepared unstructured according to the editorial comment