REDUCING THE ENVIRONMENTAL IMPACT OF ENDOSCOPY STARTS TOMORROW

LITERATURE REVIEW ON GREEN ENDOSCOPY

The following information was devised by **The Eco-Responsibility** and Sustainability **Development Committee** from the **French Society for Digestive Endoscopy** (SFED). The **European Society for Gastrointestinal Endoscopy** (ESGE) are grateful for the opportunity to bring these important resources to a wider audience.

Recent articles about the following subjects…

Life Cycle Assessment (LCA) of endoscopy procedures

- 1 outpatient endoscopy: average 28 kg CO2e[1]
- 1 endoscopy in India: average 38.4 kg CO2e[2]
- 1 standard colonoscopy: average 56 kg CO2e[3]
- 1 piecemeal mucosal resection without follow-up: average 63 kg CO2e[4]
- 1 dissection without follow-up: average 73 kg CO2e[4]
- 1 capsule endoscopy: 20 g CO2e[5]

Comparison

- Recycling vs no recycling[6]:
  4.4 tons of CO2e saved for 3000 patients
- Single-use vs reusable:
  - Single-use vs reusable endoscope[7]: impact of 10.9 vs 4.7 kg CO2e
  - Bougie cap vs balloon dilatation[8]: 4 g vs 480 g of waste
- Green Project on scope 3 emissions: reducing patient/staff transport[9]

Greenhouse gas emissions are categorised into three groups or SCOPES by the most widely used international accounting tool, the Greenhouse Gas Protocol

1

- Fuel combustion
- Company vehicles
- Fugitive emissions

2

- Purchased electricity, heat and steam

3

- Purchased goods and services
- Business travel
- Employee commuting
- Waste disposal
- Use of sold products
- Transportation and distribution (up- and downstream)
- Investments
- Leased assets and franchises

Interventional study

- Green Project on scope 3 emissions: 18% reduction in carbon footprint[10]
- Education of endoscopists on single-use tools in colonoscopy (cold snare)[14]
- Reduction of the number of multiple tools used in colonoscopy[11]

Awareness surveys

- Europe[12]: 86% of endoscopists acknowledge climate emergency or crisis and the need for action (n = 407)
- Asia-Pacific[13]: 80% want to integrate green endoscopy; only 13% currently have a green policy

Green tips

- One single cold snare for gastro and colonoscopy[14]
- Stop using spray catheter for chromoendoscopy [15]

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(15) **De Cristofaro E, Grau R, Lafeuille P, et al.** Ecological tips to reduce waste during Barrett's evaluation. Endoscopy 2023.