

# Sampling and culturing of flexible endoscopes:

## Stage one - the sampling process

Microbiological sampling and culturing is a multi-step surveillance testing technique. Stage one, the sampling process, involves sampling endoscope channels and critical areas of the endoscope. Stage two, the culturing process, evaluates collected samples to detect any contamination still present after reprocessing.<sup>1</sup>

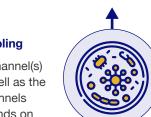
### Stage one: the sampling process<sup>2,3</sup>

### Stage two: the culturing process<sup>2,3</sup>



### **Preparation**

First stage is hanging of the endoscope or lying on a sterile drape



# Delivery to laboratory

Samples are transported as fast as possible so culturing can start within 24 hours from sampling



# Culturing + documentation

Culturing process including colony count, identification of microorganisms and documentation



#### **Channel sampling**

The specific channel(s) sampled, as well as the number of channels sampled depends on local practice<sup>1</sup>

### Sample collection

Samples are either collected separately by channel or pooled together as one collection



# Evaluating culturing results

Evaluation of culturing results and decision on further actions

### Channel sampling examples<sup>2,3</sup>

Although the sampling and culturing of endoscopes is commonplace in many countries, national guidelines and laws on hygiene and infection control vary and are based on historic regional/national level evidence<sup>1</sup>

# 4. Auxiliary water channel or elevator wire channel and/or balloon channel(s)

Install adequate adapters, then choose from one of the following:

- Flush the auxiliary water channel
- Flush the elevator wire channel
- Flush the balloon channel(s)

#### 3. Air/water channels

Put air/water valve on control body and install adequate adapter, then:

 Flush air channel by closing air/water valve AND flush water channel by fully depressing the air/water valve

### 1. Distal end\* (e.g., duodenoscopes or linear EUS scopes)

Swabbing OR flushing and brushing

### 2. Instrument channel(s)

Flush with sampling solution **OR** flush-brush-flush

#### 2a. Instrument/suction channel(s)

Put suction valve on control body and install adequate adapter, then choose from one of the following:

- Flush instrument/suction channel with sampling solution
- Flush-brush-flush\*\* suction channel
- Suction instrument/suction channel
- \* To reach all surfaces around the forceps elevator, move the elevator up and down
- \*\* The brush head can be put into the corresponding sample/ collection container

### Sampling essentials<sup>2,3</sup>



Endoscope must first be reprocessed and dry



Aseptic technique always required



Flushing sampling fluid is followed by air to make sure that the **sample volume recovered is as close as possible to the volume injected** 



#### Sample collection considerations

- There should be sufficient properties for recovering microorganisms (surfactant activity)
- If not using a neutralizer to stop residual activity of the disinfectant during channel flushing, neutralizing of the sampling solution must be as fast as possible
- Sampling solution (including neutralizer) must not influence the viability and the growth of microorganisms
- All collection containers must be clearly labelled
- All collection containers must be refrigerated if not transported to laboratory within 4 hours
- Also note remaining sample volume can be used as enrichment culture



Use only **sterile sampling materials** such as: sample/collection containers, syringes, brushes, endoscope valves and adapters



# Both quality assurance and monitoring needed:

- Description of methods
- Who is carrying out the sampling,
  e.g. two qualified persons
- Which endoscope models, channels and critical areas should be sampled
- Frequency of sampling
- Evaluation of laboratory report and potential actions

Further information can be found:

Tips, Tricks and Insights for Endoscope Sampling and Culturing US endoscopy study: Sampling, culturing, and evaluating correctly









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#### References

1.Olympus. Understanding the Differences in Sampling & Culturing of Flexible Endoscopes: Why we need a unified approach. Available online at: https://infectionprevention.olympus.com/en-us/scientific-evidence/publications/understanding-differences-sampling-culturing. Accessed February 2023 2.Olympus. Tips, Tricks and Insights for Implementation and Management of an Endoscope Sampling and Culturing Program. Available online at: https://infectionprevention.olympus.com/en-us/scientific-evidence/publications/sampling-and-culturing. Accessed February 2023; 3. Olympus. US endoscopy study: Sampling, culturing, and evaluating correctly. Available online at: https://infectionprevention.olympus.com/en-us/scientific-evidence/publications/endoscopes-sampling-culturing. Accessed February 2023