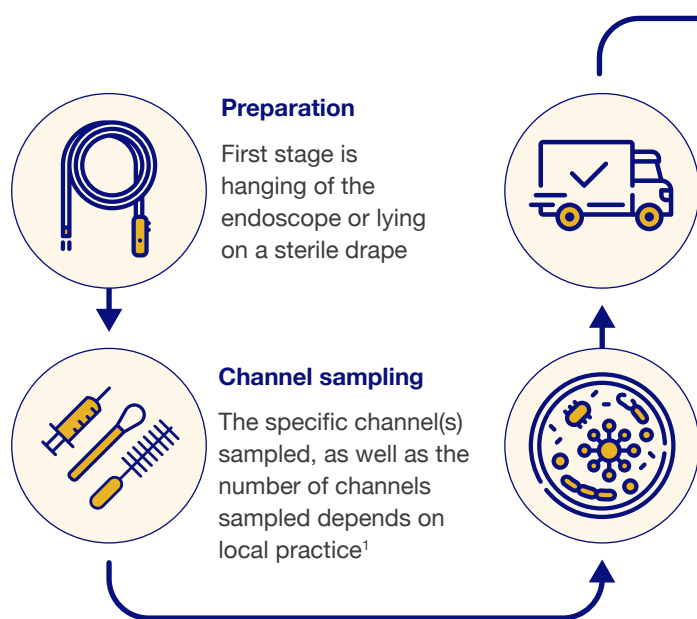


Sampling and culturing of flexible endoscopes: Stage two – the culturing process

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.¹

Stage one: the sampling process^{2,3}



Stage two: the culturing process^{2,3}

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

Evaluating culturing results

Evaluation of culturing results and decision on further actions

Culturing essentials^{2,3}



Samples must not be older than 24hrs



Validation of culture methods according to national guidelines and laws, e.g., EN ISO 11737-1



Only use certified laboratories




The remaining sample volume can be used as enrichment culture

Further information can be found:

- [Tips, Tricks and Insights for Endoscope Sampling and Culturing](#)
- [US Endoscopy Study: Sampling, Culturing, and Evaluating Correctly](#)
- [Understanding the Differences in Sampling and Culturing of Flexible Endoscopes: Why we Need a Unified Approach](#)



Culturing process

 Where this symbol appears, please click for further information

As national guidelines and laws on hygiene and infection control vary, certain stages of the culturing process may differ. However, regardless of the approach taken, further processing of samples within the laboratory is required.¹⁻³

1. Sample collection at lab arrival^{2,3}

Sample collection of distal end and/or critical areas



AND/ OR



Sampling fluid collection of channel(s)

AND/ OR



Sampling fluid collection including brush head with flush-brush-flush (F-B-F) method

2. Sample processing^{2,3}

Swabs of the distal end must be wiped directly onto an agar* plate



Filtration** takes place and the filter is placed directly onto an agar plate



Direct inoculation, placing a defined sample volume onto an agar plate



Centrifugation** takes place before sample pellet is resuspend in a defined volume and then placed onto an agar plate

3. Incubation of agar plate^{2,3}



Depending on agar plate and national guidelines and laws one of the following:

- 35° for 72hrs
- 35° for 48 hrs up to 5 days
- 30° up to 5 days
- 28° for 48hrs up to 5 days
- 35-27° for 72 hrs

4. Colony count^{2,3}



Number of grown microorganisms / presence or absence of microorganisms

5. Identification of microorganisms^{2,3}



Example techniques are:

- Selective agar plates
- DNA-based approaches
- MADLI-TOF mass spectrometry

6. Documentation at laboratory^{2,3}



Report of culturing result(s)

7. Evaluation at healthcare provider^{2,3}



Evaluation of culturing results and decision on further action needed

*Examples of agar plates: blood, R2A, PCA, TSA and MacConkey

**For sample containers containing a cut bush, prior to centrifugation or filtration samples must be vortexed for 30-minutes followed by aseptic removal of the brush head.

Disclaimer: Any content or information ("Content") presented herein is illustrative in nature and does not guarantee or represent specific information, outcomes, or results. Olympus Europa SE & CO, KG and its parents, subsidiaries, affiliates, directors, officers, employees, agents, and representatives (collectively "Olympus") does not represent to or warrant the accuracy or applicability of the Content. Under no circumstances shall Olympus be liable for any costs, expenses, losses, claims, liabilities, or other damages (whether direct, indirect, special, incidental, consequential, or otherwise) that may arise from, or be incurred in connection with the Content or any use thereof. This Advertorial is for information purposes only. All data on file.

References

1. Olympus. Understanding the Differences in Sampling and Culturing of Flexible Endoscopes: Why we Need a Unified Approach. Available online at <https://infectionprevention.olympos.com/en-us/scientific-evidence/publications/understanding-differences-sampling-culturing>. Accessed March 2023; 2. Olympus. Tips, Tricks and Insights for Endoscope Sampling and Culturing. Available online at: <https://infectionprevention.olympos.com/en-us/scientific-evidence/publications/sampling-and-culturing>. Accessed March 2023; 3. Olympus. US Endoscopy Study: Sampling, Culturing, and Evaluating Correctly. Available online at: <https://infectionprevention.olympos.com/en-us/scientific-evidence/publications/endoscopes-sampling-culturing>. Accessed March 2023

OLYMPUS EUROPA SE & CO. KG

Postbox 104908, 20034 Hamburg, Germany | Phone: +494023773-0 | www.olympos-europa.com