
Topic: Estrogen and Progesterone (ER/PgR) Receptor Testing in Breast Cancer: ASCO/CAP 2020 Guideline Update

Date: January 13, 2020

Background: The CAP and the American Society of Clinical Oncology (ASCO) convened an expert panel to evaluate evidence to update the ER/PgR guideline. The guideline manuscript is now available as an early online release in the [Archives of Pathology & Laboratory Medicine](#).

Is the original guideline still valid?

Some of the original guideline recommendations were reaffirmed, but several were updated based on new evidence. Laboratories should refer to the 2020 guideline update for the most current information on ER/PgR testing in breast cancer.

What are the most notable changes in the guideline update?

The guideline update addresses what should be done in cases with low ER expression. In the event of weak stain intensity (1-10% of nuclear cell staining), the case should be reported as **ER Low Positive** with the following suggested comment:

The cancer in this sample has a low level (1-10%) of ER expression by IHC. There are limited data on the overall benefit of endocrine therapies for patients with low level (1-10%) ER expression but they currently suggest possible benefit, so patients are considered eligible for endocrine treatment. There are data that suggest invasive cancers with these results are heterogeneous in both behavior and biology and often have gene expression profiles more similar to ER-negative cancers.

The update also recommends that laboratories establish a specific standard operating procedure to ensure the validity of low positive (1-10%) or negative (0 or < 1%) interpretations and results. See Manuscript Figure 1 and Data Supplement Figure 1. Correlation of ER staining with the histologic features (as well as attention to other standard quality control measures) is also recommended, with workup of unusual/discordant results.

In addition, the update now recommends ER testing for ductal carcinoma in situ (DCIS) cases without invasion, a change from the original recommendations, which considered ER testing optional in such cases. The expert panel makes this recommendation based on its review of the growing clinical literature published since the original guidance, indicating that ER testing and appropriate adjuvant endocrine therapy can reduce the risk of future breast cancer in these cases.

Should laboratories report low ER expression for DCIS?

No. Low ER expression should be reported in invasive cancer only. Less is known about the implications in DCIS.

Most of the recommendations focus on ER testing, what about PgR?

Only ER has been shown in randomized adjuvant trials to be able to predict potential benefit from endocrine therapy. As such, the panel believes that only ER should be used as a marker to select patients likely to benefit from adjuvant endocrine therapy. Notwithstanding, PgR may provide prognostic information and so its use is still indicated.

The 2019 edition of the CAP Laboratory Accreditation Program (LAP) checklists use PgR as an example of a predictive marker. Should we continue to report it as such for accreditation purposes?

The CAP is aware that this change in the guideline update has caused a discrepancy between the guideline and checklists. The LAP is reviewing this new information and will publish changes in its 2020 checklist edition.

The existing checklist content on predictive markers broadly defines the predictive marker requirements to apply to immunohistochemical and in situ hybridization tests used to predict responsiveness to a specific treatment independent of other histopathologic findings. While PgR is currently listed as an example of a predictive marker, a laboratory defines if the test as offered by the laboratory meets the definition of a predictive marker.

Laboratories must follow requirements of their accrediting agency. Although following the guideline recommendations is highly encouraged, adherence is only optional.

Does the actual formalin time and cold ischemia time need to be included in the template/original pathology report?

The time the tissue is removed from the patient, the time it is placed in fixative, the cold ischemia time, the duration of fixation, and the fixative type must all be recorded. These can be recorded in the pathology report or in another suitable location that is available for review. Including the specific times in the pathology report is at the laboratory's discretion (note: the CAP Laboratory Accreditation Program requires accredited laboratories to specify the type of fixative used and the cold ischemia time in all ER, PgR and HER2 reports). The laboratory is also responsible for determining if the cold ischemia and fixation times meet the requirements specified in the latest version of the ASCO/CAP ER/PgR testing guidelines.

REFERENCES

1. Allison KH, Hammond EH, Dowsett M, et al. Estrogen and progesterone receptor testing in breast cancer: American Society of Clinical Oncology/College of American Pathologists guideline update [published online January 13, 2020]. *Arch Pathol Lab Med*. doi:10.5858/arpa.2019-0904-SA

For additional information about the guideline visit [CAP.org](https://www.cap.org).