Conclusion This study indicates that DNA methylation analysis in urine samples, self-collected cervicovaginal swabs, and clinician-taken cervical scrapes allows endometrial cancer detection with high accuracy. Our results demonstrate the potential of methylation testing in self-collected material as a novel diagnostic strategy to detect endometrial cancer.

Introduction/Background The estrogen receptor (ER) expression in endometrial cancer (EC) is known to be associated with prognosis. However, its role was not included in the latest molecular risk classification system. The aim of this study is to assess the impact of ER profile on oncological outcomes in the new EC risk classification.

Methodology Retrospective IHC analyses were conducted in a large series of ECs, studying the presence/absence of hormone receptors and other molecular (i.e p53 and mismatch mutational status), histopathological and clinical outcomes. The ER status was correlated with molecular, histological, clinical and prognostic data.

Results 891 EC-patients were included in the study (211 ER-negative and 680 ER-positive). The ER-negative phenotype was linked with an unfavorable pathologic-clinical profile (grading, histotype, LVI, stages, etc) and with high and advanced risk class (64.5vs 27%) (p<0.05). Molecular analysis in ER-negative compared to ER-positive showed greater p53-mutation rate (39% vs 10%), similar MMR-deficiency (20% vs 23.5%), fewer MMR-stability (38% vs 63%) (table1). Noteworthy, simple regression demonstrated that ER-negativity was related to worse OS and DFS, regardless of p53 status; whereas for ER-positive, the prognosis was strongly associated to molecular status (p<0.05). When associated to risk classes, ER-negative EC patients had the worst outcomes compared to the ER-positive counterparts, especially for intermediate, high-intermediate and high-risk classes (p<0.05) (figure1).

Conclusion We demonstrated that the ER status has a significant impact on oncological outcomes, regardless of risk class and p53/MMR status. On these bases, we advise to include ER assessment in featured EC risk classification system.