

Hormonal Status Evaluation

The vaginal/cervical squamous epithelium responds to systemic levels of estrogen by progressively “maturing”. This observation is the basis of the old “Maturation Index”. The MI however, is not particularly sensitive or specific and has largely been supplanted by serum hormonal assays. Furthermore, the maturation index may only be performed on specimens obtained directly from the lateral vaginal walls (not cervix). Because the vast majority of Pap Test specimens are from cervical sampling and many are liquid based, a general statement about “estrogen effect” may be given, if indicated, rather than a formal maturation index. This information is obtained by evaluating the overall degree of maturation and correlating it with the patient’s age and history and expressed as an “Estrogen Effect” statement:

- Estrogen effect consistent with patient age and/or history
- Low estrogen effect for patient age and/or history
- High estrogen effect for patient age and/or history

Specifically Requested Maturation Index

The Maturation Index (MI) is a ratio obtained by performing a random cell count of the three major cell types shed from the vaginal squamous epithelium: parabasal, intermediate, and superficial cells. The MI will be reported as relative percentages of these cells and written as a ratio: parabasal %: intermediate %: superficial %.

The response of the squamous epithelium of the vagina to various hormonal stimuli can show great variations from patient to patient and day to day in an individual patient. The only two absolute cell patterns are (1) a predominance of superficial cells that indicates the presence of estrogen and (2) a predominance of parabasal cells that indicates absence of estrogenic stimulation.

A scraping of the mid-third layer lateral area of the vaginal wall mucosa, where the degree of maturation is hormone dependent, produces the best specimen.

Many factors can influence the accuracy of the MI including endocervical cell contamination, presence of microorganisms or large numbers of inflammatory cells. Patient history, especially menstrual status, and information about medications that the patient is taking at the time of the Pap smear, is very important in providing an accurate hormonal evaluation.

Formal Maturation Index will only be performed upon specific request and on specimens collected from the vaginal wall not showing confounding inflammation, atypical cells or endocervical contamination.