In one study, Dr. Robyn MacFarlane of the University of British Columbia, Vancouver, reported that 30 of 160 patients (19%) had changes in estrogen receptor (ER), progesterone receptor (PR), or human epidermal growth factor receptor 2 (HER2) receptor status when their repeat or metastatic tumor was compared with their primary tumor.

In the second study, Dr. Cornelia Liedtke of the Westfälische Wilhelms-Universität Münster (Germany) reported that change in receptor status was associated with a much shorter survival after recurrence, as compared with no change.

In her study, 176 patients with triple-negative breast cancer had recurring tumors with the same receptor status as their primary tumors. They had a mean overall survival of 43 months, compared with just 16 months for 51 patients whose tumors were from original triple-negative tumors converted to positive receptor status when they recurred.

Dr. MacFarlane said she and her coauthors were prompted to conduct their study by three earlier reports that suggested a significant proportion of relapsed lesions may have changes in hormone-receptor and HER2 receptor status from the original tumor.

When the researchers analyzed their tissue samples from primary tumors from patients who were positive for hormone receptor and/or HER2 status, they found that 34% of tumors tested positive for hormone receptor and/or HER2 status and that the finding illustrated the need for a relapse. If feasible, at the time of relapse or recurrence to determine if there has been any change in the hormone receptor and HER2 receptor status, she said. Dr. Liedtke, a fellow at the University of Texas M.D. Anderson Cancer Center in Houston, and her co-investigators performed a retrospective chart review of 789 patients enrolled in M.D. Anderson’s institutional breast cancer database between 1982 and 2006. The researchers identified 231 patients who had triple-negative breast cancer (defined as no ER, PR, or HER2 expression). Of these triple-negative patients, 15 developed non-triple-negative tumors (defined as positive for at least one ER, PR, or HER2 receptor) at recurrence. These patients overall survival was significantly worse than that of their counterparts who recurred with triple-negative status tumors.

In a discussion of the studies, Dr. Paul E. Goss commented Dr. MacFarlane and Dr. Liedtke for introducing a topic of extreme importance to physicians who care for breast cancer patients. Dr. Goss, professor of medicine at Harvard Medical School and director of breast cancer research at Massachusetts General Hospital, both in Boston, noted that both studies showed about a 20% rate of migration of receptors from primary to recurrent lesions, which is a change that made us wonder of outcomes. He asked that the clinicians in the audience start to consider metastatic biopsies prospectively. “We need planned metastatic biopsies in ongoing clinical trials,” he said.