THE NEW THINKING ON BREAST CANCER

The Smartest Drugs
The Gentlest Treatments
The Latest on Mammograms
THE CUTTING EDGE OF CANCER TREATMENT

Surgery, radiation and chemotherapy are still the first line of defense against breast cancer. But exciting new techniques are entering clinical trials and, if they work, may eventually replace the old standards with kinder, gentler treatments.

HOW IT'S DONE
Cancers can be frozen or vaporized with lasers or high-energy radio waves delivered by a probe through a tiny incision. In one technique, the probe opens like an umbrella inside the breast.

AVAILABILITY
Already used for liver tumors. Clinical trials for breast cancer are under way, but could take five years to complete.

ENDOSCOPY
Endoscopic camera

HOW IT'S DONE
Tumors can be examined with a miniature fiber-optic camera that is inserted through the nipple and into a milk duct. Eventually surgeons may be able to treat tumors through the same tiny probe.

AVAILABILITY
The fiber-optic scope was okayed by the FDA last summer. Using it for treatment may be less than five years away.

PREVENTION
Estrogen: A Villain and a Possible Savior

There is no single cause for breast cancer, but one major factor is estrogen. The same hormone that softens our skin, thickens our hair and fills out our hips and breasts also feeds disfiguring tumors. Rates of breast cancer are highest in developed nations, in part, scientists believe, because with better nutrition we reach menopause earlier and menopause later, allowing estrogen to course through our bodies for that much longer. Estrogen is now pointing the way to new breast-cancer treatments. A new class of drugs called aromatase inhibitors is already in use against late-stage tumors and may prove even more effective when tumors are caught early. Aromatase inhibitors block the action of an enzyme that these women need to produce estrogen. Two new studies suggest that the drugs can shrink tumors before surgery and also perhaps prevent breast cancer from recurring. More than 20,000 women are enrolled in clinical trials designed to show just how effective the aromatase inhibitors are. In a study presented at the European Breast Cancer Conference in March, women with early disease taking one such drug, Arimidex, reduced their risk of developing a new tumor in the other breast by more than 50% compared to those taking tamoxifen.

Tamoxifen is routinely given to women at high risk for recurring tumors, and raloxifene, a newer drug that was originally designed to prevent osteoporosis, also appears to block breast cancer. These drugs work by taking the place of the body's natural estrogen on the surface of breast-cancer cells, preventing the real thing from stimulating tumor growth.

Five years ago, doctors and their patients hailed tamoxifen, which was the first drug approved in the U.S. for reducing the risk of getting breast cancer. At the European Conference, experts were not prepared to recommend the drug to healthy women, as it remained unclear if tamoxifen's benefits outweighed the side effects. It increases the risk of uterine cancer and potentially fatal blood clots. Raloxifene appears to provide comparable results, compared with tamoxifen.

Men, who get the bulk of their estrogen from the aromatization of testosterone, benefit far less from tamoxifen than women. In a long-term study of 10 years, women taking tamoxifen proved more likely to develop lung cancer.