



## Type of Cancer May Affect Patients' Ability to Return to Work

If cancer is detected early, survivors are more likely to be able to return to work after treatment, a new study has found.

Researchers found that survivors of cancers that usually are detected early, such as breast, prostate, thyroid, and uterine cancer and melanoma, had the lowest risk of needing to quit work because of long-term problems related to the disease. However, survivors of cancers located in the brain, spinal cord, mouth, throat, and nasal cavity and those with late-stage lymphoma or leukemia had high rates of disability and unemployment following their treatment. About 20% of the patients in this study had problems working after cancer.

The study looked at more than 1,400 cancer survivors treated at four medical centers from 1997–1999. About 40% of the patients stopped working during treatment, but 84% of them returned to work once therapy was completed. About 20% reported experiencing disability in their jobs after treatment, but half of them continued to work regardless of difficulty.

Researchers noted that more patients who had solid tumors confined to an organ, which often were diagnosed at early stages and required localized treatment, were able to return to work. Survivors of cancers that affected whole body systems, which often were diagnosed at later stages and required chemotherapy, were more likely to stop working. They speculated that some cancers also cause damage that can prevent people from working, such as brain tumors that cause problems with patients' abilities to think or move.

The study was reported in *Cancer* (Vol. 103, pp. 1292–1301).

## Treatments That Block Estrogen May Increase Survival From Lung Cancer

Since 1930, the rate of lung cancer deaths in women has increased 600%, so some experts believe that women are more susceptible to lung cancer than men because of the effects of estrogen. The newest and most effective treatments for lung cancer may need to be able to block the effects of estrogen on lung cancer, two recent studies indicated.

The first study looked at the relationship between estrogen and lung cancer growth. The researchers compared the effect of blocking the estrogen receptor alone or with the epidermal growth factor receptor (EGFR) pathway. They combined gefitinib (an EGFR inhibitor) with fulvestrant (an

estrogen inhibitor); the combined treatment decreased tumor volume by 59% compared with 49% for gefitinib alone and 32% for fulvestrant alone.

The second study looked at how estrogen affected the expression of genes in lung cancer cells. The researchers used gene arrays to determine that growth genes induced by estrogen in breast cancer also were affected by estrogen in lung cancer. In this study as well, fulvestrant stopped estrogen from regulating lung cancer cell gene expression.

The studies were reported in *Cancer Research* (Vol. 15, pp. 1459–1470 and 1598–1605).

## Study Used Internet to Collect Geographically Diverse Samples

Researchers identified a gene mutation that causes three types of bone marrow cancer after using the Internet to collect blood and tissue samples for the study. The mutation was found in a tyrosine kinase gene, and its discovery may help scientists develop a treatment for these myeloproliferative disorders (MPDs). Currently, limited treatment options exist.

The researchers informed patients about the study through the Internet by using a



support group Web site for patients with MPDs. After sending in their consent forms, patients were given a test kit for taking blood and cheek-swab samples at their next visit to the doctor. The kits were mailed back to the researcher for rapid, large-scale DNA sequencing. In less than a year, 345 people had sent in samples.

The study was reported in *Cancer Cell* (Vol. 7, pp. 387–397).

## Personalized Medical Treatments May Be Near

A new study may bring the healthcare arena one step closer to medical treatments that can be tailored to each person's unique genetic make-up and medical condition. The study uncovered how researchers can obtain more consistent and reliable results when using microarrays or gene chips. This will help with earlier detection of diseases such as cancer.

The study was initiated in 2001 to assess what causes variation in gene expression experiments within and between laboratories and microarray platforms. Researchers systematically examined the processes involved

in most microarray or gene expression studies and found that using a standardized process led to more consistent results. They also found that commercially manufactured microarrays produced the best results that can be replicated more easily. Microarrays made in-house by each laboratory gave less consistent results.

The study was reported in *Nature Methods* (Vol. 2, pp. 351–356).