

Cancer Education: Relieving the Silence & Fear

Robert Moss

CANCER touches nearly every family at some time or another. This disease is now the leading cause of death for women in the U.S. and will likely be the leading cause of death overall by the year 2000 (Henderson et al. 1991). One person in every three will develop this dread disease during his/her lifetime, yet most Americans know relatively little about this disease.

Silence, ignorance and fear have always surrounded the word "cancer." This silence breeds more fear and costs lives as well. Far too many people die from curable cancers because they fail to detect their disease until it's too late. If we can initiate more open discussion of cancer in the classroom, perhaps we can save some of those lives.

More often than not, our fear of cancer creates images significantly worse than the reality. Most people immediately associate the word cancer with death, a belief that may be far from the truth in many cases.

An 18-year-old woman was diagnosed with neuroblastoma, a tumor of a nerve cell, while away at college. She was given only the name of the disease; the physician chose to tell her nothing about her treatment or prognosis until her parents arrived from their home a thousand miles away. Naturally, the three days until the woman and her family saw the doctor again were sheer hell. She had taken her physician's silence as a death sentence, and no one was telling her otherwise. In fact, her prognosis was quite good, and she was cured without the need for chemotherapy.

Unfortunately, I can empathize with her initial feelings. While in my 20s, I detected a lump in my testicle and knew enough to have it checked immediately. When the urologist gazing at the video display of the ultrasound confirmed that it was a tumor, my immediate reaction was to inquire as to the average mortality from these tumors. The

physician's only response was, "You shouldn't worry about that yet." When pressed, he confirmed my belief that most testicular tumors are malignant, yet he didn't bother telling me that the average cure rate for testicular cancers among white males was 88 percent; 96 percent if the tumor hadn't spread (Boring et al. 1991). These figures suggested a far better prognosis than my imagination had devised.

A little knowledge here can mean much hope, and even relief. A little bit of knowledge can also save many lives. Had I ignored the slight enlargement of one of my testicles—as another young man I know did—my prognosis would have worsened significantly. The use of simple, easy detection techniques, such as breast self-exam and mammography, has been clinically shown to reduce the mortality from cancer (Costanza 1990).

Biology teachers thus have the ability not only to ease the minds of their students by placing this disease in a more realistic perspective, but also to save lives by affecting students' attitudes towards cancer and altering their future behavior with respect to cancer detection and medical treatment.

Thus, I wish to present some fairly current information and statistics to convey to your students.

Common Cancers in Young People

The most common cancers in young men, ages 15 to 34, are leukemia, lymphomas and testicular cancer (Boring et al. 1991). Early detection is quite important for testicular cancer; the 96 percent five-year survival rate for localized cancer drops to 53 percent once the cancer has spread to distant sites (see Table 1). Thus, cancer specialists have recommended that testicular self-exam be taught in high school to all young men (Garnick et al. 1990).

The most common cancers in young women of the same age group are leukemia, lymphomas and cancer of the breast, uterus and cervix (Boring et al. 1991). Early detection for breast cancer is extremely important. This disease has a very good five-year survival rate (91 percent for whites, 86 percent for blacks) if the tumor is found while it is still localized, but this drops to less than 20

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Table 1: "Cure" (5-year survival) rates for various cancers, by stage at diagnosis (Cancer Facts & Figures 1991).

| Cancer Site | Localized (early diagnosis) | Diagnosed After Distant Metastasis | Total, All Stages Combined |
|------------------------|-----------------------------|------------------------------------|----------------------------|
| Colon-Rectum | 85% | 6% | 52% |
| Lung | 37% | 1% | 13% |
| Melanoma (skin) | 90% | 14% | 81% |
| Breast | 91% | 18% | 75% |
| Cervix | 88% | 13% | 67% |
| Uterus | 93% | 26% | 85% |
| Ovary | 85% | 18% | 38% |
| Prostate | 85% | 29% | 71% |
| Testis | 96% | 54% | 88% |
| Bladder | 88% | 9% | 76% |
| Leukemia | N.A. | N.A. | 34% |
| Non-Hodgkin's Lymphoma | N.A. | N.A. | 49% |
| Hodgkin's Lymphoma | N.A. | N.A. | 74% |

percent once the tumor has spread to distant sites. The story for uterine and cervical cancer is similar: an encouraging prognosis for tumors found early; poor prognosis for tumors that have spread (see Table 1).

There are a number of tests women may do to increase their chances of surviving breast or cervical cancer by detecting the tumors early. With the trend towards "lumpectomy" and away from radical mastectomy for localized breast cancer, early detection may mean avoiding disfigurement as well.

How Dangerous Are These Cancers?

Since one out of every three people will eventually be diagnosed with cancer (Cancer Facts & Figures 1991), we are all introduced to cancer at a young age, whether the victim might be a relative, friend or neighbor. It is thus important that we convey to our students that cancer is *not* automatically fatal.

Table 1 shows the five-year survival rate, based upon cases diagnosed between 1974 and 1985, for various types of cancer. Students can learn from this table that there is often a great deal of hope for a patient with certain types of cancer, especially if the tumor is detected early.

What Should Students Do To Lower Their Risk?

Young people are at relatively low risk of developing cancer, which is why so little attention is usually given to cancer prevention in this group. But since their current behaviors may contribute to their future cancers, it is certainly worthwhile to teach students how to lower their risk.

As we all know, *the single most important thing someone can do to lower their risk of dying from cancer is not to smoke, or to quit smoking.* Tobacco accounts for about one out of every three cancer cases occurring in the U.S. today (Henderson et al. 1991). Nearly all of these cancers come from cigarette smoking; but other forms of tobacco are also carcinogenic. There were approximately 12 million users of smokeless tobacco in the U.S. in 1985, and a substantial number of these users were adolescents (Henderson et al. 1991).

Lung cancer kills more men than any other cancer; lung and breast cancer are tied for that place of honor in women (Silberberg et al. 1990). More than 150,000 people die of lung cancer each year. It is estimated that 138,000 (92 percent) of these could have been saved by eliminating smoking (Costanza et al. 1990).

The alteration of other behaviors, although not nearly as beneficial as eliminating smoking, may also reduce a person's risk. Exposure to sunlight is linked to the development of malignant melanoma, an often fatal skin cancer. Limiting one's exposure to the sun, and/or using sunscreens that limit ultraviolet rays can help reduce one's risk of developing this dangerous cancer (Cancer Facts & Figures 1991).

Table 2: ACS Guidelines for Early Detection of Cancer in Asymptomatic Patients (partial list) (Costanza et al. 1990).

| Test or Procedure | Age | Frequency |
|-------------------------|--|---|
| Sigmoidoscopy | Over 50 | After 2 negative yearly exams, every 3-5 years |
| Stool guaiac slide test | Over 50 | Every year |
| Pap test | All women who have been sexually active, or age 18 and older | Ask your gynecologist |
| Breast self-exam | Women 20 and older | Monthly |
| Mammography | Over 35 | 1 baseline prior to age 40; every 1-2 years from 40-49; every year after 50 |
| Testicular self-exam | Males from puberty | Although no specific guideline has been developed, the procedure is recommended, particularly in young men. |

Table 3W. Early Detection Checklist for Women (Costanza et al. 1990).

How recently have you had these recommended tests? Find your age; then go down that column and check off the tests that you have had within the period indicated. Ignore shaded areas, as you do not yet need to do those tests.

| AGE → EXAM & FREQUENCY | 18–20; <i>earlier if sexually active</i> | 20–34 | 35–39 | 40–49 | 50+ |
|--|--|--|--|--|---|
| PAP test & Pelvic exam: (cervical and uterine cancer) | If not within past year, ask your physician _____ |
| Breast self-exam (breast cancer) | | Within past month _____ | Within past month _____ | Within past month _____ | Within past month _____ |
| Breast physical exam (breast cancer) | | Within past 3 years _____ | Within past 3 years _____ | Within past year _____ | Within past year _____ |
| Mammography (breast cancer) | | | One mammogram between 35–40 _____ | Within past 2 years _____ | Within past year _____ |
| Digital Rectal Exam (cancer of colon and rectum) | | | | Within past year _____ | Within past year _____ |
| Sigmoidoscopy (cancer of colon and rectum) | | | | | Within past year initially; within 3–5 if your doctor OK'd it _____ |
| Stool blood test (cancer of colon and rectum) | | | | | Within past year _____ |

Diet also appears to play a role in the development of many cancers, but our knowledge of dietary factors remains limited. A number of studies have found a relationship between fat intake and cancer risk, particularly for cancers of the colon and rectum. There also may be a correlation between certain types of fat and cancer of the breast, prostate, ovary and uterus, although these connections are less clear (Henderson et al. 1991). Even for colon cancer, where some connection between dietary fat intake and cancer risk is reasonably clear, what types of fat increase the risk the most, and by how much, is still controversial.

The role of dietary fiber is also quite controversial. Since dietary fiber decreases the time that food, and potential carcinogens, spend in the intestine, a preventive role for fiber seems reasonable, and there are a number of studies suggesting that a high fiber diet

may be protective according to the American Cancer Society.

Certain foods, such as those high in vitamin A, C and E, as well as cruciferous vegetables (such as cabbage, broccoli, brussels sprouts and cauliflower) may also give some protection (American Cancer Society, Henderson et al. 1991).

Conflicting studies and recommendations relating to diet make it difficult to decide what dietary modifications may be worthwhile. For the moment, most physicians, as well as the National Institutes of Health, recommend that people adopt a lower fat, higher fiber diet according to the American Cancer Society and the National Cancer Institute. Although higher vitamin intake may also help, a lower fat, high fiber diet will certainly be beneficial to a person's general health.

Table 3M. Early Detection Checklist for Men (Costanza et al. 1990).

How recently have you had these recommended tests? Find your age; then go down that column and check off those tests that you have had within the period indicated. Ignore shaded areas, as you do not yet need to do those tests.

| AGE → EXAM & FREQUENCY | Puberty—39 | 40—49 | 50+ |
|--|----------------------------|----------------------------|--|
| Testicular self exam (testicular cancer) | Within past month _____ | Within past month _____ | Within past month _____ |
| Digital rectal exam (prostate cancer, and cancer of colon and rectum) | | Within past year _____ | Within past year _____ |
| Sigmoidoscopy (cancer of colon and rectum) | | | Within past year initially; within 3–5 if your doctor OK'd it _____ |
| Stool blood test (cancer of colon and rectum) | | | Within past year _____ |

Last, but not least, we can help lower the risk of our students dying from cancer by instilling in them the fact that the earlier a cancer is caught, the better the prognosis, as clearly demonstrated in Table 1. The American Cancer Society has developed a set of guidelines for cancer screening; a partial list is presented in Table 2.

One major contribution a biology or health teacher can make is to teach students the techniques of breast and testicular self-exam. For breast exam, you might want to invite a physician or local American Cancer Society representative to come to your classes to teach the technique. For testicular self-exam, it may be sufficient to teach male students the difference between the testicle and scrotum, and instruct them to be aware of the size of their testes and the need to have any change in one of their testicles checked by a urologist or family physician. There are many free publications available which demonstrate how to do these simple exams (see references).

With the exception of breast exams, testicular exams and Pap smears, most students are too young to begin the American Cancer Society's testing regime. However it is important to plant the seeds for future behavior. In addition, it is quite possible that more than a few lives would be saved if even a small percentage of our students went home and asked their parents when they last had a Pap smear, breast exam, mammogram or sigmoidoscopic exam. Tables 3W and 3M should assist with this task.

From the attitudes and practices of the general population in this country, it is clear we are not providing

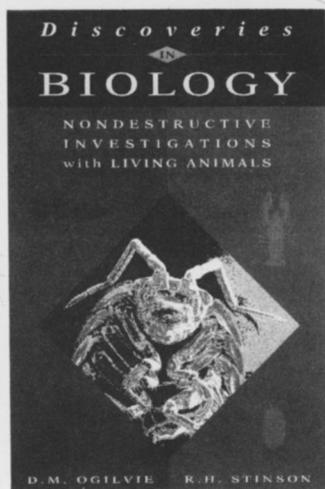
our students with sufficient education regarding cancer. Teachers have the power to save thousands of lives every year. One out of every five people in America dies of cancer; behavioral changes and early detection can lower that figure significantly. The American Cancer Society estimates that if everyone underwent current screening and self-examination techniques, 100,000 more cancer patients would be saved each year, because their cancers would be detected in a localized stage. In addition, the 155,000 lives currently lost each year to cancer due to tobacco smoking could be saved if the current changes in attitudes about smoking continue to their logical conclusion, the elimination of smoking.

These are not unreasonable goals. Just as the Pap smear is now a regular part of nearly every woman's gynecologic exam, mammography, stool blood test and sigmoidoscopy can be made a common part of every person's regular exam. And just as most patients would question physicians who failed to check their blood pressure or listen to their chest in a checkup, the public can be educated to expect the cancer early detection tests as well. All it takes is an educated public.

References

NOTE: All American Cancer Society (ACS) publications are available through your local ACS Division office, which can be found in your phone book. Most ACS publications are free of charge. All publications of the National Cancer

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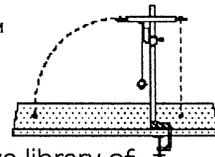
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