MALE Call™

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APCaP - Alliance for Prostate Cancer Prevention

Does a Common Plastic Additive Promote Prostate Cancer, and Other Serious Ailments?

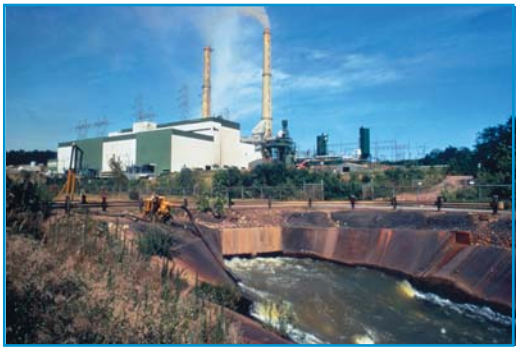
A Discussion about Links Between Environmental Toxins and Cancer

The National Cancer Institute (NCI) 2004 report entitled "Cancer and the Environment" discusses how a large number of cancers can be prevented. The report states that approximately more than **two-thirds of cancers are linked to natural and human-made agents in the environment.** NCI defines the "environment" as everything outside the body that interacts with humans.

Tobacco, foods such as red meats, alcoholic products, ultraviolet radiation, ionizing radiation, viruses and bacteria, medical drugs, synthetic hormones, fibers, fine particles and dust, diesel exhaust particles, toxins from fungi, vinyl chloride, benzidine, polycyclic aromatic hydrocarbons, dioxins, metals, pesticides, and solvents are all cited by NCI as either known to cause or likely to cause cancer.

Research results continue to reveal more information about the relationship between various forms of environmental toxins and cancers. In today's world, the level of chemical exposure to human beings is daunting. The NCI refers to estimates of over 100,000 chemicals commonly used by Americans in household cleaners, solvents, pesticides, food additives, lawn care, and other products. Each year, approximately 1,000 new chemicals are introduced.

Some chemicals may be more harmful to health than others. Recently reported research has focused increased public attention on a common plastic additive called bisphenol-A.



Bisphenol-A Explained

Bisphenol-A is added to plastics to make them hard. Baby and sports bottles, liners of soda and other tin cans, children's dental sealants, automobiles, and countless other consumer plastic products contain this additive. According to studies, bisphenol-A leaches out of plastics very easily. Heat, including from microwave ovens, acidic foods and drinks, as well as some detergents cause the bonds between the bisphenol-A and the plastics to breakdown.

Research results from animal studies indicate that bisphenol-A causes changes in the hormones and reproductive tracts of male and female animals. Lower sperm counts, decreased testosterone, and enlarged prostates have been observed in male animals. Early puberty and disrupted hormonal cycles have been seen in female animals. Recently published animal studies have also linked bisphenol-A with prostate cancer.

Bisphenol-A Exposure and Prostate Cancer

A study published in the June 2006 *Cancer Research* evaluated the relationship between prostate cancer and bisphenol-A, as well as estradiol, a sex hormone and hormonally active environmental estrogen. Researchers at the University of Illinois at Chicago and the University of Cincinnati found that exposure of newborn rats to low, environmentally relevant doses of bisphenol-A or estradiol caused genetic changes in the developing prostate glands that are precursors to prostate tumors.

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APCaP seeks the collaboration of public/private business leaders, legislators, health providers/administrators, researchers, federal/state/local health officials, and prostate cancer advocates into coordinated cohesive forums to enhance and promote prostate cancer awareness, education, research, and primary/secondary prevention programs. This diversified stakeholder group seeks to reach out to men in their 40s and 50s, and their wives or partners, to educate them about the basics of prostate cancer and what can aid in its prevention. APCaP accomplishes this through physician lectures, a newsletter, and website. APCaP also evaluates and implements ambitious plans that are designed to eliminate prostate cancer as a health threat in the United States by 2015.

Prostate Cancer Risk Calculator

The Prostate Cancer Risk Calculator is a new tool to help men predict their chances of developing prostate cancer.

Researchers at the University of Texas Health Science Center in San Antonio report in the April 2006 *Journal of the National Cancer Institute* that a man's risk of prostate cancer might be better calculated by incorporating other potentially contributing factors to the disease with PSA results. **In order to assess a man's risk before having a new biopsy, the calculator adds age, race, family history of prostate cancer, prior biopsy findings, and digital rectal exam (DRE) results to the prostate-specific antigen (PSA) exam.**

This new method to calculate prostate cancer risk resulted from data collected from more than 5,500 healthy men over the age of 55, who had participated in a large-scale prostate cancer prevention trial.

For seven years, all the men underwent annual PSA and DRE testing, as well as having at least one prostate biopsy conducted over the study period. During the seven-year period, approximately 22 percent of the men developed prostate cancer, and five percent were disgnosed with high-grade disease.

Researchers then calculated risk models using a combination of data; including biopsy findings, patient age, race, family history of prostate cancer, previous biopsy history, along with PSA levels and DRE results.

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Did You Know?

- 1 in 6 men will be affected by prostate cancer
- Only 50% of men over 50 have prostate cancer screening each year.
- When detected and treated in its early stages, the five year survival rate for prostate cancer is 100%.
- African American men have twice the incidence and mortality rate compared to Caucasians

The Biology of Belief: Myths Impact Prostate Cancer Treatment Decision-Making

If you or a loved one received a prostate cancer diagnosis, how would you plot a course of action to deal with the disease?

New research evaluating 20 prostate cancer patients indicates that **some treatment decisions are made quickly and are based on anecdotes or inaccurate impressions.** The men in the study also stuck with their decisions even when scientific information was contrary to their beliefs about treatments, side effects, and the disease course.

Published in the August 1, 2006 *Cancer* by researchers at the University of Colorado, this study suggests that men diagnosed with prostate cancer received their first choice of treatment based on the experiences of family or friends diagnosed with the same disease. Nineteen of the 20 patients reached their conclusions about treatment with reference to a friend or relative who had prostate cancer.

Almost all 20 men in the study identified prostate cancer as a slow-growing disease. Some also noted negative bone and CT scans and that their tumors were classified as low grade, which are indications that treatments might not be necessary. However, 12 of the 20 patients wanted treatments as soon as possible, and 8 were convinced that surgery was the best option.

The men who felt surgery was the best option considered it common sense. They believed that if the tumor was confined to the prostate, the treatment would be a success and a cure would be guaranteed. However, that belief is based on a misconception. Research indicates that those who undergo surgery and radiation have similar survival rates than those who don't with the latter offering slightly better five-year progression-free survival possibilities. In addition, even when the tumor is confined to the prostate, small metastases that can lead to disease recurrence are still possible.

Although these study results are based on interviews with a small group of men, the findings may be relevant to other men dealing with prostate cancer. More studies are needed. Until then, the take-home message is that the cancer treatment decision-making process should be more thoughtful. **Patients benefit from not making treatment decisions too quickly, and from ensuring they understand all available information before pursuing a course of action.**

Barbequed Meats Promote Prostate Cancer in Rats

Researchers at Johns Hopkins University in Baltimore fed rats a compound (called PhIP) that forms when meats are cooked at high temperatures. What happened after the rats ate food mixed with this compound? **The animals' prostates, intestines, and spleens all had genetic mutations after four weeks.**

This study linking meats with a higher risk of prostate cancer was conducted by researchers at Johns Hopkins University and presented at the American Association for Cancer Research meeting. **The research is consistent with other studies suggesting that cooking meat until it chars might cause cancer.**

How do these research findings impact men focused on prostate cancer prevention? Researchers noted the challenge of identifying exactly how much of the prostate cancer-promoting compound is produced from barbequeing. They emphasized that different amounts are formed depending on cooking conditions.

What is our recommendation? Think twice before the next family barbeque, and with all things that might cause harm, we recommend precautionary measures.

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Does a Common Plastic Additive Promote Cancer, and Other Serious Health Ailments?

A Discussion about Links Between Environmental Toxins and Cancer

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Scientists and health experts have debated about the potential implications of these research findings to understanding the cause of prostate cancer and other serious health ailments. According to the NCI, **prostate cancer rates have increased over the last few decades**, and the documented increase through NCI's Surveillance, Epidemiology and Results (SEER) program takes into account the aging U.S. population.

PCBs and Prostate Cancer

Separate research studies have identified other chemicals that may be contributing factors to increasing cancer rates. A study published in the July 2006 *Journal of Occupational & Environmental Medicine* analyzed fat tissue in men with and without prostate cancer. The study indicates **that men with PCBs (PolyChlorinated Biphenyls) in their body's tissues have an increased prostate cancer risk.** Although this study was conducted on tissue samples from a small group of men, the research results suggest further investigation is warranted.

In examining the potential relationship between environmental toxins and cancer, researchers are investigating chemicals that were created in the twentieth century. PCBs were widely used as lubricants, heat-transfer fluids, and fire-resistant dielectric fluids in transformers and capacitors in the 1930s and 1940s. However, **the manufacture of PCBs was stopped in the United States in 1977 after it became associated with serious health problems.** PCBs have been linked to cancer, liver dysfunction, skin conditions, as well as immunological and neurological changes.

PCBs enter the air, water, and soil during their manufacture, use, and disposal. They have no known smell or taste. According to the Agency for Toxic Substances and Disease Registry, PCBs are still released into the environment from hazardous waste sites, illegal or improper disposal of industrial wastes and consumer products, leaks from old electrical transformers containing PCBs, and burning of some wastes in incinerators. They do not easily break down and may remain in the environment for many years. PCBs can also travel long distances in the air and be deposited in areas far from where they were released.

Bisphenol-A's Prevalence

Bisphenol-A has only been used for about fifty years, but ranks among the planet's most widely used industrial chemicals. Studies from both Asia and the United States reveal that up to 90 percent of the estrogen-mimicking compounds leaching from landfills is bisphenol-A. **Data from the Center for Disease Control (CDC) indicates that 95 percent of human bodies carry bisphenol-A at levels used in experiments that linked prostate cancer to the plastic additive.** The CDC estimates median exposure to bisphenol-A in the United States at 1.3 parts per billion. However, laboratory studies on breast cancer cells show bisphenol-A stimulates growth at 0.02 parts per billion.

Despite these research studies, statistics, and calculations, not everyone agrees on the level of threat to public health posed by bisphenol-A. Many parties believe that human risk from compounds such as bisphenol-A cannot be derived from animal study results. No research studies have evaluated the long-term exposure in humans. Industry-sponsored research has not identified a health risk from bisphenol-A.

CHE's View

The Collaborative on Health and the Environment (CHE), founded in 2002, is a diverse partnership of individuals and organizations working collectively to advance knowledge and action regarding growing concerns about the links between human health and environmental factors. CHE features Working Groups committed to various areas of public health. Among other goals, CHE's Cancer Working Group discusses and brings attention to emerging science that links environmental chemicals to cancer.

CHE's "Prostate Cancer: What We Know" web page refers to new research suggesting that the conditions for prostate cancer, and even the initiation of the cancer itself, may begin early in life. According to CHE, evidence comes from autopsies of young men who died of other causes with microscopic evidence of prostate cancer, as well as animal experiments indicating that abnormalities in adult prostate cancer characteristics are associated with conditions experienced by the fetus in the womb.

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Environmental Toxins and Cancer

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Precautionary Principle

In response to growing evidence of increased prostate cancer rates and the disease state initiating early in life, how can people begin to reduce risk? When research indicates a potential risk to human health or the environment, and yet scientific evidence is unclear, **CHE believes in taking precautionary measures toward exposure prevention. This approach is referred to as the Precautionary Principle.**

As explained by Ted Schettler, M.D., M.P.H., Science Director of the Science and Environmental Health Network, and Coordinator of CHE's Science Working Group, the Precautionary Principle includes three elements: credible threats of harm, scientific uncertainty, and precautionary action. The Precautionary Principle originated in German environmental law in the 1970s and is based on the notion of taking care, of prevention of harm, and of foresight. **The Precautionary Principle refers to what we know, what we don't, and what we do with our knowledge. It combines science and ethics and values**. According to Dr. Schettler, the Precautionary Principle is based on observations that human activity has caused changes of unprecedented proportions in the world. Many ecosystems are on the verge of collapse or at thresholds of fundamental change. The Precautionary Principle is a guide for acting under conditions of uncertainty. It does not explicitly tell you what to do in any particular case except that you should act with care and precaution.

Bottom-Line

The link between bisphenol-A, other environmental chemicals, and cancer requires more serious investigation. As noted by the NCI, some chemical substances may not cause genetic alterations, but may cause cancer through some immune system activity. These research experiments are complex and costly. With huge amounts of time and money needed for more research, **APCaP recommends that the public take precautionary measures to reduce potentially harmful chemical exposures**.

NCI's report "Cancer and the Environment" can be viewed in their Publications section at www.cancer.gov. More information about the Collaborative on Health and the Environment is located at www.healthandenvironment.org. More information about the Science and Environmental Health Network can be found at www.sehn.org.

Targeting Genes, Not Organs

On April 16, 2006, a Wall Street Journal article entitled "Defining Cancer Care by Genes, Not Organs, Suggests New Treatments" by award-winning reporter Amy Dockser Marcus discussed how cancer has been traditionally defined by where it is found in the body. **"In a significant shift, researchers are coming to believe that cancer comprises hundreds of subgroups based more on genetic makeup than location,"** wrote Marcus.

The new approach to cancer diagnosis impacts cancer treatments. **Instead of cancer treatments being selected based on the organ, Marcus reports that new drugs will target the specific genetic changes driving a person's cancer**. In a hypothetical example, men with certain types of prostate cancer might be treated with the same drug as women with certain types of breast cancer due to common genetic mutations.

In the past, cancer has been diagnosed, and treatments have been defined, through the results of a pathology analysis focusing on the shape and pattern of cells under a microscope. Now, sophisticated technologies are used to explore each cancer's unique gene pattern. Marcus wrote, "With advances such as sequencing the DNA of a tumor, they can look for changes or mutations that might then be targeted with drugs. The goal is to develop tests to identify such variations in patients, and treat them, no matter what organ the cancer is in."

The new approach involves many challenges. There aren't yet new drugs available for some genetic mutations that have already been identified. The technologies are also costly. In addition, large amounts of both money and time are required to develop new drugs that might help only a small group of people. And limiting clinical trial enrollment to patients with a particular genetic subtype would prevent some patients without the subtype, but with the same diseased organ, from pursuing treatment options.

Although there are more questions than answers involved in cancer drug development, cancer care is undoubtedly an evolving system. The work of researchers and clinicians, along with the demands of people affected by cancer, will continue to shift the cancer care paradigm in the quest for safer and more effective treatments.

Prevent Prostate Cancer by 2015

All About Prostate Health

Do you want to learn more about prostate health? Check out the May/June 2006 cover story in FDA Consumer Magazine entitled, "Prostate Health: What Every Man Needs to Know." This informative article discusses **prostate changes, both surgical and non-surgical treatments, as well as the PSA test**. The following content was excerpted from the article and formatted into questions and answers.

What is the prostate?
The prostate is a walnut-shaped gland found only in men. It lies in front of the rectum, sits just below the bladder where urine is stored, and surrounds the tube that carries urine from the body (urethra). The gland functions as part of the male reproductive system by making fluid that becomes part of semen, the white fluid that contains sperm.

What problems can occur in the prostate?
Three main problems can occur in the prostate gland: inflammation or infection, called prostatitis; enlargement, called benign prostatic hyperplasia (BPH); and cancer.

What is benign prostatic hyperplasia?
BPH, or benign prostatic hyperplasia, is the second main problem that can occur in the prostate. "Benign" means "not cancerous"; "hyperplasia" means "too much growth." The result is that the prostate becomes enlarged. The galnd tends to expand in an area that doesn't expand with it, causing pressure on the urethra, which can lead to urinary problems. The urge to urinate frequently, a weak urine flow, breaks in urine stream, and dribbling are all symptoms of an enlarged prostate. Because the prostate normally continues to grow as a boy matures to manhood, **BPH is the most common prostate problem for men older than 50. Older men are at risk for prostate cancer as well, but it is much less common than BPH.**

Is there an association between BPH and prostate cancer?
It is true that some men with prostate cancer also have BPH, but the two are not automatically linked. Most men with BPH do not develop prostate cancer. But because the early symtpoms for both conditions could be the same, a doctor would need to evaluate them.

If you'd like to read more from this article, it is available online at www.fda.gov/fdac.

Rating Health Care Journalism in News Articles

The Foundation for Informed Decision Making (FIMDM) has created a website that rates health care journalism. HealthNewsReview.org exists to improve the accuracy of news stories about medical treatments, tests and procedures and help consumers to evaluate the evidence for and against new ideas in health care.

HealthNewsReview.org reviews news stories that make a therapeutic claim about specific treatments, procedures, investigational drugs or devices, vitamins or nutritional supplements, and disgnostic and screening tests. A multi-disciplinary team of reviewers from journalism, medicine, health services research and public health assess the quality of the stories using a standardized rating system.

Stories are graded and critiques appear on their website. A news story receives a rating based on how well it covers the 10 criteria of the standardized rating system. Rating criteria includes novelty of treatment, availability of treatment, treatment options, disease mongering, quality of evidence, quantifying treatment benefits, treatment harms, treatment costs, sources of information, and whether or not the story relies on a press release.

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"It's a baby. Federal regulations prohibit our mentioning its race, age, or gender."

Rating Health Care Journalism *(from Page 6)*

A number of new stories on cancer have been reviewed by FIMDM, including several articles regarding prostate cancer. The FIMDM review system provides high quality consumer education about evaluating medical research reports in the news. You may wish to visit their website at www.healthnewsreview.org and search for reviews about prostate cancer as well as other health topics.

FIMDM's mission is to assure that people understand their choices and have the information they need to make sound decisions affecting their health and well being.

Herbs at a Glance

The National Center for Complementary and Alternative Medicine (NCCAM), a part of the National Insitutes of Health, has produced **Herbs at a Glance**, a series of fact sheets that provides basic information about specific herbs and botanicals. The fact sheets feature common names of herbs, uses, potential side effects, and resources for more information.

These fact sheets, as well as others, are available on the NCCAM website at www.nccam.nih.gov/health. Information Specialists at the NCCAM Clearinghouse are available to answer questions about the Cneter and complementary and alternative medicine. NCCAM's Clearinghouse can be reached by telephone at 1-888-644-6226, or online through their Live Help Service at www.nccaminfo.org/livehelp.

Prostate Cancer Risk Calculator

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The University of Texas Health Science Center researchers found that **a family history of prostate cancer, as well as an abnormal result from the PSA or DRE test, were strongly associated with an increased risk for prostate cancer. African Americans and older men were also at relatively high risk for prostate cancer**. However, a prior negative biopsy result was found to be associated with a decreased risk for the disease.

The risk model has limitations. Some have said that the calculator's current design fails to distinguish between slow-growing cancers and more life threatening varieties, which might lead to unnecessary biopsies.

And researchers caution that the risk calculator isn't appropriate for everyone. The calculator is only applicable to men age 55 or older, with no previous diagnosis of prostate cancer, and who have DRE and PSA results less than 1 year old.

The calculator is available online at www.compass.fhcrc.org/edrnnci/bin/calculator/main.asp. The website emphasizes that **the calculator is designed to provide a preliminary assessment of risk of prostate cancer if a prostate biopsy has been performed**. Additional clinical information may modify this risk. In addition, there is no specific level risk at which a prostate biopsy is recommended, and the decision to have a biopsy is an individual choice made by a man in consultation with his health care provider.

APCaP welcomes donations from the public to support our efforts toward prostate cancer education, awareness, research, and prevention programs. We are grateful for your support!
Tax deductible donation to APCaP, a not-for-profit 501(c)(3) organization

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Fort Myers, FL 33908
1888-50-APCAP or 1-888-502-7227
Email: info@apcap.org

PSA RECOMMENDATIONS:

As a reminder, current recommendations suggest healthy men over 50 have an annual PSA blood test. However, African Americans and people with a family history of prostate cancer should begin testing at age 45.

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