



# Health Bits & Pieces

By Dan Kenner, Ph.D., LAC



◆ **Chemotherapy Spreads Cancer.** The chemotherapy drug Taxol causes cancer cell “micro-tentacles” to grow longer and tumor cells to reattach to a new site more rapidly. If treated with taxol before surgery to shrink the primary tumor, the number of circulating tumor cells increases by a factor of 1,000 to 10,000. This can potentially increase the likelihood of metastasis. Researchers at the University of Maryland Marlene and Stewart Greenebaum Cancer Center have discovered that these “microtentacles” appear to play a vital role in how cancer cells spread to distant locations in the body. For the reasons mentioned above, the research team found the popular chemotherapy drug to be counter-productive. [University of Maryland Medical Center (2010, March 15), “Microtentacles’ on tumor cells appear to play role in how breast cancer spreads,” *Science Daily*, retrieved September 5, 2010, from <http://www.sciencedaily.com>]

◆ **Biopsy Can Spread Cancer.** Needle biopsies are widely used and accepted as a safe and reliable diagnostic procedure for cancer. New research indicates that they may not be so safe after all. The technique may cause malignant cells to break away from a tumor and spread to other areas of the body. A study at the John Wayne Cancer Institute indicates that a needle biopsy of a breast tumor may increase the chance of metastasis by 50% compared to patients who received lumpectomies. Other research reported in the *British Medical Journal* suggests that the procedure is equally dangerous for needle biopsy of malignant liver cells. [Hansen N, Xing Y, Grube B, Giuliano A, “Manipulation of the Primary Breast Tumor and the Incidence of Sentinel Node Metastases From Invasive Breast Cancer,” *Archives of Surgery* 2004;139:634-640; Metcalfe M, Bridgewater F, Mullin E, Maddem G, “Lesson of the week: Useless and dangerous—fine needle aspiration of hepatic colorectal metastases,” *British Medical Journal* 2004;328:507-508 doi:10.1136/bmj.328.7438.507 (Published 26 February 2004)]

◆ **Pain Killers Spread Cancer.** Opiate-based painkillers can stimulate the growth and spread of cancer cells according to a growing body of research. It was first noticed in a 2002 clinical trial wherein patients who received spinal rather than systemic pain relief had a longer survival time. Morphine has also been found to directly accelerate tumor-cell proliferation and inhibit the immune response in laboratory cell line studies. Researchers at the University of Chicago Medical Center found that opiates also promote angiogenesis, new blood-vessel growth that brings nutrients to sustain cancer cell growth. Increased angiogenesis also helps cancers thrive in a new location. [University of Chicago Medical Center (2009, November 19). “Common pain relief medication may encourage cancer growth,” *Science Daily*, retrieved September 5, 2010, from <http://www.sciencedaily.com/releases/2009/11/091118143209.htm>]

◆ **Radiation Treatment Damages the Bones.** The discovery at Clemson University that a single therapeutic dose of radiation can cause appreciable bone loss has shocked the medical world. This can lead to the eventual development of osteoporosis, bone necrosis (bone death,) or bone cancer may develop. A dose of only two

Gy (two gray, a radiation dosage formerly designated as 200 rads), administered to mice destroyed between 29 and 39 percent of their interior bone mass. It was known that radiation caused some bone loss and patients were put at a greater risk of fractures, but it was not known that a single dose of radiation could trigger such extensive bone loss. Chemotherapy (often given with radiation) can also cause bone loss. The additive effects of radiation and chemotherapy upon a patient could be significantly more damaging. [Hamilton S, Travis J, Willey J, Bateman T, “A murine model for bone loss from therapeutic and space-relevant sources of radiation,” Department of Bioengineering, Clemson University, Clemson, South Carolina; M.J. Pecaut, D.S. Gridley and G.A. Nelson, Department of Radiation Medicine, Loma Linda University and Medical Center, Loma Linda, California, appears in the online edition of the *Journal of Applied Physiology*, published by The American Physiological Society; University of Montreal (November 17, 2008). See also “Cancer Treatment May Result In Bone Loss, Study Finds,” *Science Daily*, retrieved September 5, 2010, from <http://www.sciencedaily.com/releases/2008/11/081113140425.htm>]

◆ **Go Figure.** THC (tetrahydrocannabinol), the active ingredient in marijuana, cuts tumor growth in half and significantly reduces the possibility of metastasis in lung cancer, according to researchers at Harvard University, who tested the chemical in both lab and animal studies. The only previous clinical trial testing THC as a treatment against cancer growth was a recently completed British pilot study in human glioblastoma, a type of brain cancer. The researchers also speculated that THC may also inhibit angiogenesis, which would therefore interfere with cancer growth. The researchers cautioned that some animal studies have shown that THC can stimulate certain types of cancer and further research is necessary. [American Association for Cancer Research (2007, April 17), “Marijuana Cuts Lung Cancer Tumor Growth In Half, Study Shows,” *Science Daily*, retrieved September 5, 2010, from <http://www.sciencedaily.com/releases/2007/04/070417193338.htm>]

◆ **Industrial Food Additives Can Promote Cancer Development.** The number-one cause of cancer deaths in the World is lung cancer. Although smoking is known to cause 90% of lung cancers, only about 8% of smokers actually develop the disease. Like many forms of cancer, there is subset of the population that is genetically predisposed to lung cancer. New research indicates that inorganic phosphates, which are added to processed foods, especially meats, seafood, cheese and bakery products to preserve flavor and texture, may add to the effects of smoking and promote the development of the disease. The researchers also found that the activity of anti-cancer genes is reduced by these chemicals. This effect may not be limited specifically to lung cancer. Consumers should be aware that the amount of inorganic phosphates added to processed foods has more than doubled since the 1990s. [Jin H, Xu C-X, Lim H-T, et al., “High Dietary Inorganic Phosphate Increases Lung Tumorigenesis and Alters Akt Signaling,” *American Journal of Respiratory and Critical Care Medicine* 179: 59-68, 2009] 