

GENES, CANCER AND CAPITALISM

Over the last thirty years my patients have asked me, as their Family Physician, why they developed cancer. Now I can tell them.

There is no doubt that there is a cancer epidemic in The U.S.A. Cancer is the second cause of death and is rapidly gaining on cardiovascular disease as the leading cause of death. Cancer is a major Public Health Problem in the USA and worldwide. According to the World Cancer Report of 2014 issued by the World Health Organization (WHO), cancer is growing at “an alarming pace” worldwide. The statistics reported in the US are questionable, “Because no nationwide cancer registry exists, there is no way of knowing exactly how many new cases of cancer are diagnosed annually in the United States.”¹ The National Cancer Institute reported in 1996 that the incidence of cancer in children increased 10% between 1973 and 1991. *The New York Times* front page article on 1/8/03 reported that the incidence of cancer in children had increased 20% in the preceding 20 years, and for infants less than one year old the increase was 36%! (The children are the canary in the mine.) The International Agency for Research on Cancer, a United Nations Agency (IARC), recently issued a World Cancer Report of 2014. The report stated that cancer incidence worldwide is forecast to rise by 70% over the next two decades.

Over the last two decades the mass media has been filled with stories about the genetic basis of cancer. So much so that many people now believe that diabetes, cancer and obesity are mostly “Genetic

¹ Cancer Journal for Clinicians, Vol.46, No.1, Jan/Feb 1996

diseases”. Such misinformation is essentially blaming the victim for their disease. Yet most people would not say that Influenza, Pneumonia or Ebola are genetic diseases. They comprehend the dialectics of change, acknowledging the primacy of the internal forces over the external forces. There is a general understanding that external agents can overwhelm one’s internal natural defense. Not all of us will sicken or die in an epidemic. The major aspect of the “what causes cancer?” propaganda in the media is the fallacy that it is primarily genetic, not environmental in origin. This gross distortion of the reality of recent epidemics such as cancer and obesity, is explained in the article *Obesity Prevention Source, Genes Are Not Destiny-Harvard Public Health*². “Genetic changes are unlikely to explain the rapid spread of obesity (or Cancer, my comment) around the globe. That’s because the “gene pool”-remains fairly stable for many generations.... So if our genes have stayed largely the *same*, what has changed over the past 40 years of rising obesity? Our environment...”

The Center for Disease Control (CDC), also confirms the primacy of the environment as a cause of disease on its web site: “Indeed, some rare diseases....may be the result of a deficiency of a single gene product, but these diseases represent a very small proportion of all human disease. Common diseases, such as diabetes or *cancer*, are a result of the complex interplay of genetic and environmental factors.”³

The CDC position was clearly substantiated by a huge twin study of 53,666 identical twins, which concluded that the capacity of the

² <http://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/genes-and-obesity/>

³ CDC Gene-Environment Fact Sheet, August 2000

genome to predict illness is “not very informative”. The results were published in *The Journal of Translational Medicine*.⁴

Since World War II, our environment has become rapidly more contaminated with toxins. In the book “*The Politics of Cancer Revisited*, by Samuel S. Epstein, M.D., 1998, Dr. Epstein notes that the production of synthetic organic chemicals skyrocketed starting in 1940, and products from petroleum and natural gas around 1945. Plasticizers and the pesticides were introduced from 1945 through 1955. The CDC lists on its Web site 135 substances considered “to be potential occupational carcinogens”⁵. Very few of the now 80,000 chemicals in use have ever been tested for safety. According to *Scientific American*, July 2014, page 12, “The Toxic Substances Control Act, last updated in 1976 allows industry to use new chemicals *without first demonstrating that they are safe*. Instead it places the burden of proof on the EPA. Yet of the more than 50,000 chemicals used commercially, the EPA has tested just 300.”

The world is awash in toxic chemicals. Industrial and agricultural chemicals have been polluting ground water serving millions of Californians for at least 50 years. Millions of tons of cancer causing pesticides have been poured onto agricultural land in the USA and around the world contaminating both food grown at home and that imported from abroad.⁶ In the US, the Allied Signal Company produced the insecticide Kepone, related to DDT, and dumped it into the James River Estuary for years in the 1960’s and 70’s. The James River was closed for fishing for 13 years. The product was banned worldwide in

⁴ The Predictive Capacity of Personal Genome Sequencing, March 26, 2014, published April 24, 2012

⁵ 24/7:saving lives, protecting people, Occupational Cancer Web site 8/114/14

⁶David Wir, Mark Schapiro, Circle of Poison, 1981

1990, but the Banana plantation owners lobbied for another 3 years use. Kepone can persist for hundreds of years. In 2003, the Island of Guadalupe restricted the growing of crops due to persistent kepone contamination. Guadalupe has one of the highest prostate cancer rates in the world. More recently, The Duke Energy Company was found guilty of dumping devastating toxic coal ash into the Day River on February 2, 2014. Daily toxic dumping or the so called periodic “accidents” in the US, the European Union and Japan have shown no significant reduction over the last 40 years.

Many toxins have been long known to cause cancer. The link between environmental contaminants and the development of cancer dates back to 1775, when Percival Pott published a study of English chimney sweeps that developed cancer of the scrotum due to soot and coal tar. Some of the more common agents known to cause cancer are: arsenic, asbestos, benzene, formaldehyde, ionizing radiation, soot, radon, hair dyes, non-arsenical pesticides and polychlorinated biphenyls.⁷ A 2006 study on Hiroshima and Nagasaki Atomic bomb survivors 55-58 years after radiation exposure showed a linear radiation dose response for thyroid tumors and cancer.⁸

Bob Marley’s song *So Much Things to Say*, on his *Exodus Album*, summed up our social problem when he sang “When the rain falls it don’t fall on one man’s house.”

The President’s Cancer Panel reported that “the true burden of environmentally induced cancers has been grossly underestimated.”⁹ Dozens of environmental chemicals are regularly detected in people. It

⁷ Scientific American, September 1996, What Causes Cancer, page 84

⁸ Journal of the American Medical Association, March 1, 2006, Vol. 295, page 1011

⁹ Cone, Marla Environmental Health News, May 6, 2010

has been found that women with high levels of PCBs, (polychlorinated biphenyls) or DDT in their blood immediately after giving birth have an increased risk of developing breast cancer.¹⁰ Furthermore, environmental contaminants have been shown to permanently affect the function of genes. This area of knowledge known as **epigenetics** has also demonstrated in animals that DDT can cause negative effects in offspring: Harmful chemicals and other agents can permanently alter which genes are turned on without changing any of the genes' code, known as epigenetic changes. "Today, no one doubts that epigenetic effects play a crucial role in development, aging and even cancer."¹¹

Industrial interests have a long history of obscuring the long standing scientific knowledge regarding the cancer-environment connection. One glaring example is the issue of ionizing radiation and cancer. In face of overwhelming evidence that nuclear radiation causes cancer, the US Government resisted acknowledging that nuclear plant workers who developed cancer had environmental cancer caused by their exposure to ionizing radiation at work. "After decades of denials, the government is conceding that since the dawn of the atomic age, workers making nuclear weapons have been exposed to radiation and chemicals that have produced cancer and early death."¹² It is presumed that the denials by the Government were the result of pressure by the nuclear industry, and capitalist business in general, to deny any links between Cancer and the Environment. The revolving door of Government

¹⁰ Nature, May 29, 2014 Vol.509, No. 7502, page s17

¹¹ Scientific American, August 2014, page 47

¹² New York Times, Jan 29, 2000, page one

officials (E.P.A., F.D.A., etc,) who are later employed by contaminating industry is well documented in the book "*Toxic Deception*".¹³

Even more dangerous for the Future of Public Health is the collusion between the World Health Organization (WHO) and the International Atomic Energy Agency (IAEA). "The WHO has steadfastly resisted conducting studies on the health effects of exposure to uranium 238 following Desert Storm, Bosnia, and Kosovo. The reason for this refusal is an agreement forged in 1959 between the IAEA, which actively promotes nuclear power worldwide, and the WHO, stating that if one agency wishes to carry out a study that affects the work of the other, mutual agreement is required. The IAEA has never agreed to such studies."¹⁴

Such agreements which preclude study and responsibility go to the heart of Capitalist Industry. It is part of an active disinformation policy. When the Government did act to curb pollution, it created the EPA and Clean Air Act. The practical functioning of these regulatory organizations is often weakened, underfunded and under-enforced at the urging of industry. As stated in *Occupational Health*, edited by Barry S. Levy, M.D. and David H. Wegman, MD, "...the workers' desire for comfort, income, safety, and leisure is continually counterbalanced by the employer's need for PROFIT." The worldwide competition for profit and survival is the dominant practice of business under the present economic order. The consequences are short term profit over the long term safety of the workers and the community at large. Corporate heads regularly respond to criticism of their polluting practices by saying that perhaps business practices could be interpreted as immoral

¹³ Dan Fagin, and Marianne Lavelle and the Center for Public Integrity, *Toxic Deception* 1999

¹⁴ Helen Caldicott, *The New Nuclear Danger*, 2002, page 156

but they are not illegal. Publicly traded corporations are required by law, to place the financial interest of their owners above everything else including the public good. Clearly the present capitalist economic system is amoral. Lawrence Summers, a Chief economist of the World Bank, encapsulated the ideology of the Captains of modern Capitalism in a memo he sent Dec 12, 1991. “I think the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable and we should face up to that.” [Editor’s note: one source for this is at <http://www.whirledbank.org/ourwords/summers.html> .] The present economic system, Capitalism, is “a system that fouls its own nest, both the human-social conditions and the wider natural environment on which it depends.”¹⁵ This truly is the very nature of the beast.

The present cancer epidemic brings to mind a passage from Karl Marx: “When a great social revolution shall have mastered the results of the bourgeois epoch, the market of the world and the modern powers of production, and subjected them to the common control of the most advanced peoples, then only will human progress cease to resemble that hideous, pagan idol, who would not drink the nectar but from the skulls of the slain.”¹⁶

The Propaganda system not only blames the victim for their deficient genetic code but now tells us that cancer is “an unstoppable Killer”. The American Medical Association has a mass mailing of news entitled *AMA Morning Rounds*. The following is a recent quotation from August 22, 2014: “New Research suggests cancer can’t be eradicated.” They go on to quote from an evolutionary biologist who states “our

¹⁵ John Bellamy Foster, Capitalism and the Accumulation of Catastrophe, Monthly review, December 2011, Vol. 63, No. 7

¹⁶ Karl Marx, The first Indian War of Independence 1857-1859

cells ability to develop cancer is an intrinsic property". Scientific American May 21, 2010, in an article entitled *How Many Cancers are Caused by the Environment?*, states: "But scientists most likely will never be able to tease out the true role of environmental contaminants because environmental exposures, genetics and lifestyle seem to all intertwine." The article then quotes Dr. Clapp of Boston University School of Public Health: "it's an erroneous exercise to try to assign each chemical or exposure a specific fraction of cancer." The acceptance of the epidemic of children's cancer is increasingly entering the cultural domain as TV shows, movies and books are appearing, perhaps to help the public accept the reality of children with cancer.

The Medical Establishment's response to the cancer epidemic is primarily limited to encouraging screening and life style changes. Such screening does not "prevent" cancer. Mammograms and colonoscopy for example are designed to detect early cancer or precancerous changes. They do not prevent the development of cancer in the population in general. Lifestyle changes are unlikely to have a significant ability to combat the cancer epidemic. The government's public health activities received only 3% of the over two trillion dollars the US spent on Health Care in 2009. The famous medical doctor, Rudolph Carl Virchow (1821-1902), is reported to have stated that "Medicine is a social science, and politics is nothing more than medicine writ large."

Cancer cannot be prevented under the present economic system of profits before people. In *Capitalism a Ghost Story*, Arundhati Roy writes, "We are not fighting to tinker with reforming a system that needs to be replaced." Only under a system which has as one of its most primary directives, the maximum health of the people, will we be

able to prevent cancer. The possibility of defeating the cancer epidemic can exist when society operates under the precautionary principle. “The precautionary principle will be used to evaluate and make decisions on new procedure, production systems, and material as well as to evaluate any chemical used by society- to prove safety for humans and the rest of the environment before introduction.”¹⁷

Ending the obfuscation is imperative. We must demand action founded on the scientific knowledge that the environment is the critical factor producing the cancer epidemic. Public health organizations, whose responsibility is to protect the health of the entire population by preventing disease, and *all* health professionals, should be vociferously demanding action today, and every day. Tragically, they are largely silent.

October 18, 2014

Nayvin Gordon, M.D.

627 Montclair Avenue

Oakland, California, 94610

My Curriculum Vitae is available upon request.

gordonnayvin@yahoo.com

¹⁷ Fred Magdoff, An Ecologically Sound and Socially Just Economy, Monthly Review, September 2014, Vol. 66, No.4