**STD Linked to Prostate Cancer**

*Trichomonas vaginalis*, the world's most common nonviral sexually transmitted disease, can infect the prostate and be a source of inflammation. Inflammation is a risk factor for prostate cancer. Jennifer R. Stark and colleagues affiliated with Harvard School of Public Health reported a positive association between antibodies against *Trichomonas vaginalis* and incidence of prostate cancer on September 9, 2009. The study compared blood samples from 673 men with prostate cancer to blood from 673 controls without cancer. The blood samples were collected in 1982, a decade (on average) before cancer diagnosis. The correlation between antibodies to the protozoan and overall prostate cancer risk was not statistically significant. However, the association between antibody presence and aggressive prostate cancer was significant: extraprostatic prostate cancer (OR = 2.17) and prostate cancer-specific death (OR = 2.69). The researchers are unsure whether *Trichomonas*, in itself, increases prostate cancer risk or if the protozoan is simply a marker for another sexually transmitted organism. They call for more research to confirm an association between *Trichomonas* and aggressive prostate cancer.


**Hormone Therapy for Men Safer than Presumed**

Total testosterone and bioavailable testosterone levels tend to decline as men age. For most men, however, testosterone levels stay within normal range. In addition to aging, illness, malnutrition, obesity, smoking, and some medications can reduce testosterone levels. A deficiency of male hormones is characterized by decreased bone density and increased risk of fracture and osteoporosis, decreased muscle mass, increased body fat, mild anemia, mood changes, and changes in sexual potency and libido. Hormone replacement therapy can help relieve androgen deficiency symptoms in men who have below-normal serum testosterone. Men with low-normal levels are less likely to benefit, according to Rebecca Z. Sokol, MD, MPH.

Until recently, doctors seldom prescribed testosterone replacement therapy because of worries that the hormone would promote prostate cancer. In an excerpt from his book *Testosterone for Life*, Abraham Morgentaler, MD, a specialist in male infertility and sexual problems, tells how he realized that this fear was unfounded. From the beginning of his practice in the 1980s, Morgentaler has observed definite clinical benefits from testosterone replacement therapy in men with low serum levels. A former mentor recommended that Morgentaler perform prostate biopsies, in addition to the PSA test that he already required, to screen for cancer before prescribing hormones – just to be on the safe side. So he did. Contrary to the widespread belief that high testosterone levels promote prostate cancer and low levels prevent cancer, Morgentaler discovered an unusually high number of prostate cancers in men with low testosterone – the exact opposite of what he had been taught. He and his colleagues reported the results in the *Journal of the American Medical Association* (1996;276:1904–1906). Fourteen percent of 77 men in this study had a cancer-positive biopsy. All of the men had normal PSA levels.

Curious about genesis of the belief that high testosterone causes prostate cancer, Morgentaler tracked down the original research by Charles B. Huggins and a later 1981 article by Willet Whitmore. Huggins won a Nobel prize in 1966 for his work on prostate cancer and testosterone, and Whitmore was a recognized prostate cancer expert. Morgentaler discovered, “All the reports of testosterone causing rapid growth of prostate cancer occurred in men who already had extremely low testosterone levels, due to castration or estrogen treatment. Once we get beyond the near-castrate range, it is hard to find any evidence that changes in T concentrations matter at all to prostate cancer.” Men who receive treatments for metastatic prostate cancer that drop their serum testosterone levels to nearly zero might
have an increased risk of cancer recurrence. Otherwise, no evidence supports the belief that testosterone increases prostate cancer risk. Morgentaler refers to a 2008 article in the Journal of the National Cancer Institute that “included more than 3,000 men with prostate cancer and more than 6,000 men without prostate cancer, who served as controls in the study. No relationship was found between prostate cancer and any of the hormones studied, including total testosterone, free testosterone, or other minor androgens.”

Known side effects of testosterone replacement therapy include skin irritation from a skin patch that delivers the hormones, acne, decrease in testicular volume, suppression of spermatogenesis, breast tenderness (particularly with older men using injectible forms of testosterone replacement therapy), and increased hemotocrit (particularly in smokers and older men). In addition, edema, experienced by men with conditions like congestive heart failure or hepatic cirrhosis, can worsen. Long-term risks of androgen replacement therapy are still unknown, according to Sokol.

**Technology Affects Brain and Social Relationships**

Several years ago, I remember reading a Townsend Letter article by Tim Batchelder about a study that looked at the effects of television on society and health in Brazil. Instead of evening walks and stopping to chat with friends and neighbors, people became aware of time. They wanted to be home to see their favorite TV shows. Social interaction began to erode.

Now we have access to hundreds of television channels, the Internet, Blackberries, cell phones, text messaging, and more. If simply adding a television to the home changed social interactions and affected health, we’d be naive to think that widespread computer interaction does not have an effect – both on relationships and social interaction and on brain circuitry.

Neuroscientist Gary Small, MD, director of UCLA’s Memory & Aging Research Center and coauthor of *iBrain: Surviving the Technological Alteration of the Modern Mind*, told Energy Times that the brain enters “a state of continuous partial attention” while surfing the net and rushing through messages. A type of stress that Small calls “ techno-brain burnout” results. The adrenal glands respond by producing cortisol and adrenaline as if the person were encountering an emergency. These hormones tell the brain to become more alert and direct the body to prepare to fight or run. Prolonged secretion of these hormones, however, leads to fatigue, anxiety, depression, and chronic stress-related illness.

In addition to evoking a stress response, repeated interaction with technology – like any activity – targets and strengthens certain areas and neuropathways in the brain. Activities literally change the way a brain works. For example, both sides of the frontal cortex are more active in musicians – a sign of creative thinking – than nonmusicians. Right now, the effect of high-tech communication on brain pathways is largely unknown.

While the Internet is great for grassroots activism and spreading information, what about social interaction? As social networks spawned by Facebook, e-mails, and other Internet technologies increase, direct contact with other humans is decreasing. People report significantly fewer confidantes with whom they can discuss important matters, says Aric Sigman in his article for *Biologist*. In 1998 – before text messaging, Facebook, and Twitter – R. Kraut et al. wrote about the Internet Paradox: “greater use of the Internet was associated with declines in communication between family members in the house, declines in the size of their social circle, and increases in their levels of depression and loneliness.”

The need for meaningful social interaction is hardwired into our DNA. In 2007, researchers at UCLA School of Medicine reported finding “the first evidence that social isolation is actually linked to global alterations in human gene transcription in leukocytes.” Feeling isolated correlated to more activity in gene transcription control pathways that promote inflammation and to impaired transcription in genes that govern anti-inflammatory reactions to illness and stress. Some social scientists say that technological networking can decrease the feeling of social isolation among people who are housebound. But does online communication have the same power as in-person communication that involves voice tone, body language, energetics, and sometimes touch? It would be interesting to see if high-tech interaction has the same biological effects as social interaction that have already been documented.

No one questions that high-tech communications give us access to information we would not have otherwise. The question becomes, how can we manage these new tools without becoming enslaved, addicted, or losing the heart of social relationship?

**Prostate Cancer Screening May Pose Risk**

In recent years, questions about the benefit/risk of mammography have arisen. Now, some researchers are voicing similar concerns about the prostate specific antigen (PSA) test that screens for prostate cancer. PSA is a protein produced in low amounts by healthy prostate cells. Elevated PSA levels are viewed as a sign of prostate cancer but may also occur with noncancerous prostate disorders. Recent studies indicate that PSA testing cannot differentiate between aggressive cancer and slow-growing prostate cancer that does not require treatment.