

## Male Factor Information

At least 40% of the time, infertility is at least partially due to problems in the male partner. The initial evaluation of the male partner includes a history and semen analysis. If abnormalities are revealed by either the history or semen analysis, the male partner should be evaluated by a fertility specialist. Other tests may also be performed on the male. These include physical exam, hormone levels, genetic testing and specialized andrology tests.

Many factors may be involved in male subfertility. Studies have shown that exposure to heat, such as from a hot tub, sauna or even a fever, can cause a change in semen analysis results, at least temporarily. It has also been suggested that wearing tight fitting clothing, like underwear and jeans, can also change semen analysis results. Therefore, it is recommended that men with sub-optimal semen analyses wear loose fitting clothing and boxer shorts.

Some environmental and industrial factors can also contribute to fertility problems. Lower sperm parameters, lower pregnancy rates and/or increased miscarriage rates are associated with the following types of **employment**: Agricultural/ herbicidal, pesticide, construction, dry cleaners, machinists, military, plastic production (styrene and acetone), printing industry, service station mechanics, smiths, taxi drivers, tobacco processing and welding. The specific toxins involved in these semen impairments include at least those agents included in the next paragraph, but other factors may also be responsible.

**Exposure** to any of the following workplace toxins can also lead to lower sperm parameters, lower pregnancy rates and/or increased miscarriage rates (the most common are in bold): aromatic hydrocarbons, carbaryl (sevin), DBCP, ethylene dibromide, ethylene glycol ether, ethylene oxide, impregnants of wood, lead, manganese, metals, organic solvents, **paint**, pesticides, petrochemicals, radiation, rubber chemicals, solvents and TDA and DNT. Also, benzene, bromide vapor, cadmium, carbon disulfide, chromium, dibenzofurans, **diesel exhaust**, **heat**, high voltage, hydrocarbons, kepone, methylene chloride, paint shop solvents, PCB, perchloroethylene (dry cleaning), phthalate esters, radar, **smoking**, **spray paint**, toluene, vibrations and xylene. Obviously, this is a very detailed and technical list, and you should ask your OSHA representative or manager to check on your possible exposure to these agents if you are suspicious.

**What can be done?** Automobile fumes should be properly vented and mechanics mandated to wear protective gloves when handling degreasing agents such as trichloroethylene. Workers exposed to solvent fumes should be fitted with activated charcoal filtered masks, which reduce the concentration of toxins

inhaled by these workers. Pesticides should not be used for cosmetic lawn care. Agricultural workers need to be warned with simple clear labeling to minimize exposure to toxins by use of protective clothing, gloves and careful application techniques- including the routine use of enclosed tractor-covered cabs- during pesticide/herbicide application. Environments exposing workers to very high levels of ambient heat need to be properly ventilated or air conditioned.

Please contact the staff of Dr. Jeffrey Keenan at 865-218-6600 with any questions.