ALCOHOL, CAFFEINE, AND IVF SUCCESS

Alcohol and caffeine have often been the focus of dietary research studies on fertility. Results of these studies have been inconsistent, some show benefits while others show no effect or possibly reduced fertility. In the EARTH Study, we found that low to moderate consumption of alcohol and caffeine in the year prior to infertility treatment was not associated with IVF outcomes. Our results suggest that women’s alcohol intake of less than one alcoholic beverage per day and caffeine intake below 200mg/day (less than one 12oz cup of coffee per day) in the year prior to IVF did not affect their chances of successful fertility treatment. We also found that men’s caffeine and alcohol consumption did not affect their semen quality (Abadla et al., Human Reproduction 2017; Karmon et al., Andrology 2017).

PESTICIDE RESIDUES IN SOME FRUITS AND VEGETABLES MAY INCREASE PREGNANCY LOSS

Fruits and vegetables are an essential part of a healthy diet. However, they are also a main source of exposure to some pesticides. In the EARTH Study, we found that women who ate more fruits and vegetables that typically have high pesticide residue had a greater risk of pregnancy loss compared to women who ate fewer high pesticide residue fruits and vegetables. We also showed that men who ate more fruits and vegetables that typically have high pesticide residue had lower semen quality. This is the first time an association between pesticide residue from food and IVF treatment outcomes has been reported; therefore it is important that our findings are replicated in other studies. Individuals wanting to decrease their exposure can select organic versions of fruits and vegetables known to have high levels of pesticide residues in the US food supply, such as strawberries, apples, pears, spinach, celery, and peppers. An extended list can be found in the graphic on the following page (Chiu et al., JAMA Internal Medicine; 2018; Chiu et al., Human Reproduction 2015).

FISH INTAKE, MERCURY, AND SEMEN QUALITY

Although seafood consumption has been related to a wide variety of health benefits, including improved semen quality measurements, it is also the main source of exposure to methylmercury in the general population. It is unclear if exposure to this heavy metal affects semen quality. Using data from the EARTH Study, we found that among men who ate nearly 2 servings of fish per week, higher levels of mercury measured in hair were associated with improved semen quality, including higher motility, concentration, and count. These findings suggest that hair mercury may serve as a proxy of fish intake and results likely reflect the known beneficial effect of fish intake on semen quality and not a beneficial effect of mercury (Minguez-Alarcón et al., International Journal of Hygiene and Environmental Health 2018).
EXPOSURE TO FLAME RETARDANTS AND INFERTILITY OUTCOMES

Flame retardants are a large group of chemicals widely used in furniture and household products. The EARTH Study found that higher concentrations of some urinary flame retardant metabolites in women were associated with lower fertilization, implantation, clinical pregnancy, and live birth. In men, urinary concentrations of some flame retardants were associated with lower fertilization success, but not with other reproductive outcomes. Given widespread exposure to flame retardants in the general population, these results highlight the importance of understanding the impact of these chemicals on fertility and reproduction in men and women alike (Carignan et al., Environmental Health Perspectives 2017; Carignan et al., Environment International 2018).

EXPOSURE TO TRICLOSAN DECREASES OVARIAN RESERVE

Triclosan, which is used as an antibacterial in personal care products, may influence fertility, but there are limited studies in this area. Among women enrolled in the EARTH Study, we investigated whether triclosan concentration measured in urine had an effect on the number of follicles (or eggs) measured during ultrasound before women began fertility treatment. We found that women with higher triclosan in their urine had a slightly lower number of follicles, and results were most pronounced among leaner and younger women. More research is needed to confirm these findings since this was the first study to report a potential negative effect of triclosan exposure on ovarian reserve (Mínguez-Alarcón et al., Fertility & Sterility. 2017).

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT US AT:

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