

OPTIMISING YOUR FERTILITY | INFORMATION

FOR THE | LADIES

WEIGHT I Ideally, aim to keep your weight between a BMI of 19 and 24 kg/m² because a BMI outside these limits has been linked to sub-fertility, poor IVF outcomes, and miscarriages. If you need to lose weight, regular exercise (minimum 30 min of moderately intense exercise at least three times a week) and low calorie diet (1000–1200 kcal/day) is recommended. However, losing weight while undergoing reproductive treatment is not recommended.

SMOKING I Smoking or inhalation of second-hand smoke is detrimental to fertility, it increases the risk of ectopic pregnancies and miscarriages, it reduces IVF success rates, it affects the menstrual cycle, and it reduces the reproductive lifespan by 1–4 years. Smoking is also linked to birth defects in the children of parents who smoke. Therefore, it is essential that you give up smoking and avoid exposure to second-hand smoke. Speak to your acupuncturist and/or family doctor if you need help with smoking cessation.

ALCOHOL I The research evidence on the effects of moderate alcohol intake and sub-fertility is at present mixed. Some studies suggest a detrimental effect with just one unit of alcohol a week, other studies have found a detrimental link with intakes of 7–14 units, and some have found no detrimental association. One large study found that women who consumed half to two units of alcohol a week conceived a little sooner compared with women who drank no alcohol. Therefore, it is probably not detrimental to have the occasional glass of wine. However, avoid binge drinking. Avoid alcohol completely in pregnancy. Speak to your acupuncturist and/or family doctor if you need help with reducing your alcohol intake.

CAFFEINE I Drinking caffeinated drinks (for example, coffee, tea, cola drinks) may reduce fertility and may also be linked to miscarriages. In the United Kingdom, the National Institute of

Clinical Excellence guidelines recommend that women who are trying to conceive should ideally avoid all caffeinated drinks. In the United States, the American Society for Reproductive Medicine advises that the equivalent of 1–2 cups of caffeinated beverages are not detrimental to fertility or pregnancy.

RECREATIONAL DRUGS I The use of recreational drugs is strongly linked to sub-fertility. If using drugs, speak to your family doctor or your acupuncturist who may be able to advise you on how to give up. The information will be treated in a highly confidential manner.

PRESCRIPTION/OVER THE COUNTER

MEDICATION I Prescription or over-the-counter medication may affect your chances of conception and cause miscarriages or birth defects. Always check with your doctor or pharmacist if your medication is safe to take when trying to conceive or during pregnancy. Non-aspirin non-steroidal anti-inflammatory medication such as diclofenac, naproxen, celecoxib, ibuprofen, or rofecoxib has been linked to increased risk of miscarriages, even in small dosages. Therefore, avoid taking this medication. Never dis-continue taking your medication without first checking with the doctor who prescribed it for you.

ENVIRONMENTAL TOXINS I Exposure to environmental toxins may affect reproductive health, although more research is needed to know exactly what types of chemicals are detrimental. In the meantime, minimise your exposure to as many toxins as possible. For example:

- Delay house decoration and renovations until after reproductive treatment is completed.
- Minimise the use of plastic containers, plastic food wrapping, and canned foods.
- Ideally, organic food should be eaten and fruits and vegetables thoroughly washed to reduce exposure to pesticides.
- Whenever possible, natural cosmetics and cleaning products should be used.



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- When preparing fish, trimming the fat, removing or puncturing the skin, and not frying it may help to reduce exposure to chemicals and metals.
- Reduce exposure to chemicals at work. Consider changing your job if exposure is unavoidable.

NUTRITION I A Mediterranean-type diet (with a high intake of vegetable oil, vegetables, fish, and legumes) has been shown to reduce the risk of sub-fertility and improve conception rates following IVF. Consuming a high-carbohydrate diet increases the risk of sub-fertility because it interferes with ovulation. Eating full-fat dairy products helps to reduce the risk of not ovulating. Seek specialist nutrition advice if you feel you need help with your nutrition. Your acupuncturist may also suggest other foods beneficial in your case, based on your acupuncture diagnosis.

SUPPLEMENTS I Advice in this section is provided for general information only. Always seek specialist advice from a nutritionist regarding specific micronutrients. The following micronutrients are important for optimal reproductive health:

- Folate (not folic acid): take 0.4 mg/day for 3 months before conception and up to 3 months post conception. A higher dose of 5 mg/day is recommended for women who have previously had a baby with a neural tube defect, women who take anti-epileptic medication, and diabetic women. Women with hyperhomocysteinaemia (elevated homocysteine) should also take a higher dose of folic acid together with vitamins B6 and B12. Good sources of folate include dark green leafy vegetables, fruits, nuts, beans, peas, dairy, poultry, eggs, seafood, and grains. The best sources of vitamin B12 are beef liver and clams, fish, meat, poultry, and dairy.

- Vitamin D: women who are pregnant or lactating should take a minimum of 600 IU (15 mg) of vitamin D per day, but may require an even higher dose of 1500–2000 IU (37.5–50 mg) per day. Do not take more than 4000 IU (100 mg) without medical supervision. Spend as much time in the sun as possible because sunlight helps the

body to make vitamin D. Food sources of vitamin D include fish-liver oil, oily fish, egg yolks, and mushrooms.

- Iodine: it is recommended that all women who are trying to conceive should take 250 mg of iodine supplement in addition to eating foods rich in iodine (cow's milk, yoghurt, eggs, cheese, white fish, oily fish, shellfish, meat, poultry). Ideally, iodine should be taken a few hours apart from iron supplements. If you have a diagnosed thyroid disease or take thyroid medication, you must check with your doctor regarding iodine supplementation.

- Vitamin A: too much vitamin A may be harmful in pregnancy. Avoid taking supplements high in vitamin A or foods rich in vitamin A (e.g. crustaceans and liver) from ovulation (egg retrieval) to the beginning of your next menstrual cycle and throughout pregnancy.

- Vitamin E: doses 400–500 IU/day have been shown to improve the endometrial lining. Foods naturally rich in vitamin E include nuts, seeds, and vegetable oils.

- Omega-3: DHA and EPA are two types of omega-3 that have been shown to have a beneficial effect on reproductive health. Ensure that you consume at least 200–300 mg of DHA plus EPA per day. The best source of omega-3 is oily fish (salmon, sardines, herring, catfish, halibut, canned tuna). Avoid fish high in mercury (tilefish, shark, swordfish, king mackerel, fresh or frozen tuna steaks (not canned), orange roughy, marlin, Spanish mackerel). Alternatively, purified fish oil supplements with sufficiently high EPA and DHA levels can be taken. Avoid supplements made of cod livers because they are high in vitamin A. If you follow a vegan diet, you can take algal oil supplements. Fish feed on algae, which is what makes fish a rich source of omega-3. Omega-3 can thin your blood. If you take blood thinning medication (for example, low molecular weight heparin (Clexane) or aspirin), speak to your doctor or nutritionist before increasing your omega-3 intake.

- Selenium: if you have a history of recurrent miscarriages, selenium supplements may help to reduce the risk of further pregnancy loss, especially if you have high thyroid antibody levels.



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Speak to a nutritionist to see if you are deficient in selenium.

- Iron: women of reproductive age are at high risk of iron deficiency anaemia. Ensure that you eat iron-rich foods (good-quality organic lean red meat, canned oysters, turkey, lentils, kidney beans) and take an iron supplement.

EXERCISE I If you are overweight (BMI 25 kg/m), intensive exercise is likely to significantly improve your fertility. If your BMI is normal (< 25 kg/m but 19 kg/m), moderate exercise is adequate. If you are underweight (BMI <19 kg/m), ensure you do not over-exercise because this may lead to sub-fertility.

STRESS I If possible, reduce your stress levels. Engage in stress reducing activities such as hobbies, positive visualisation, meditation, and exercise. If you find it difficult to manage your stress levels, speak to your acupuncturist, who may be able to help.

Sexual intercourse If you and your partner have not been diagnosed with complete sterility (for example, absence of fallopian tubes or an early onset menopause, very poor sperm parameters), you should carry on trying to conceive naturally. Daily or every other day intercourse is most likely to result in conception. Timing intercourse to the fertile window is necessary. The most reliable methods of ovulation detection are fertile mucus days or E3G-based ovulation detection kits. Speak to your acupuncturist for more advice on this. Intercourse should be fun with emphasis on foreplay, visual stimulation, and high and prolonged arousal.

FOR THE | MEN

WEIGHT I Ideally, aim to keep your weight between a BMI of 19 and 24 kg/m² because a BMI outside these limits has been linked to sub-fertility, poor IVF outcomes, and miscarriages. If you need to lose weight, regular exercise (minimum 30 min of moderately intense exercise at least three times a week) and a low calorie diet (1000–1200 kcal/day) is

recommended. However, losing weight while undergoing reproductive treatment is not recommended.

SMOKING I Semen parameters in smokers are poorer. Smoking reduces the fertilisation rate when undergoing IVF or ICSI treatment. Smoking is also linked to birth defects in the children of parents who smoke. Therefore, it is essential that you give up smoking and avoid exposure to second hand smoke. Speak to your acupuncturist and/or your family doctor if you need help with smoking cessation.

ALCOHOL I The research evidence on the effects of moderate alcohol intake and sub-fertility is at present mixed. There is no strong evidence to suggest that low to moderate alcohol intake (40–80 g or 4–8 units/week) in a man harms his fertility. Excessive alcohol intake (20 units/week) by a man has been shown to significantly increase how long it takes to conceive. Therefore, limit your alcohol intake and avoid binge drinking. Speak to your acupuncturist and/or your family doctor if you need help with reducing your alcohol intake.

CAFFEINE I There is no strong evidence that moderate caffeine intake reduces fertility in men. However, you may choose to limit your caffeine intake for general health reasons or as a way of supporting your female partner, who may be asked to stop drinking all caffeinated drinks.

RECREATIONAL DRUGS I The use of recreational drugs is strongly linked to sub-fertility. If using drugs, speak to your family doctor and/or your acupuncturist who will advise you on how to give up. The information will be treated in a highly confidential manner.

PRESCRIPTION/OVER THE COUNTER MEDICATION I

Prescription or over-the-counter medication may negatively affect your sperm production and ejaculation, cause erectile difficulties, produce changes in hormone levels, and affect libido. Always check with your doctor or pharmacist if



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your medication is safe to take when trying to conceive. Never discontinue taking your medication without first checking with the doctor who prescribed it for you.

ENVIRONMENTAL TOXINS | Exposure to environmental toxins may affect reproductive health, although more research is needed to know exactly what types of chemicals should be avoided. In the mean time, minimise your exposure to as many toxins as possible. For example:

- Delay house decoration and renovations until after reproductive treatment is finished.
- Minimise the use of plastic containers, plastic food wrapping, and canned foods.
- Ideally, organic food should be eaten and fruits and vegetables thoroughly washed to reduce exposure to pesticides.
- Whenever possible, use only natural cleaning products.
- When preparing fish, trimming the fat, removing or puncturing the skin, and not frying it may help to reduce exposure to chemicals and metals.
- Reduce exposure to chemicals or heat when at work. Consider changing your job if exposure is unavoidable.
- Heat in the scrotal area may be damaging to sperm. Therefore, avoid situations that would cause an increase in scrotal temperature (for example, sauna use, sitting down for prolonged periods of time, hot baths, use of electric blankets or heated car seats, use of a laptop on your lap)

NUTRITION | To improve your fertility:

- Eat a diet rich in vegetables, fruits, grains, poultry, and seafood.
- Reduce processed meats, reduce high sugar foods, and avoid a high amount of carbohydrate foods.
- Replace full-fat dairy with low-fat dairy. Seek specialist nutritionist advice if you feel you need help with your nutrition. Your acupuncturist may also suggest other foods beneficial in your case, based on your acupuncture diagnosis.

SUPPLEMENTS | Advice in this section is provided for general information only. Always seek specialist advice from a nutritionist regarding specific micronutrients. The following micronutrients are important for optimal reproductive health:

- Vitamin D: take a minimum of 600 IU (15 mg) vitamin D per day, but you may require an even higher dose 1500–2000 IU (37.5–50 mg) per day if you are deficient in vitamin D. Do not take more than 4000 IU (100 mg) without medical supervision. Spend as much time in the sun as possible because sunlight helps the body to make vitamin D. Food sources of vitamin D include fish-liver oil, oily fish, egg yolks, mushrooms, and liver.

- Omega-3: DHA and EPA are two types of omega-3 that have been shown to have beneficial effect on reproductive health. Ensure you consume at least 200–300 mg of DHA plus EPA per day. The best source of omega-3 is oily fish (salmon, sardines, herring, catfish, halibut, canned tuna). Avoid fish high in mercury (tilefish, shark, swordfish, king mackerel, fresh or frozen tuna steaks (not canned), orange roughy, marlin, Spanish mackerel). Alternatively, purified fish oil supplement with sufficiently high EPA and DHA levels can be taken. If you follow a vegan diet, you can take algal oil supplements. Fish feed on algae, which is what makes fish a rich source of omega-3. Omega-3 can thin your blood. If you take blood-thinning medication (for example, low molecular weight heparin (Clexane) or aspirin), speak to your doctor or nutritionist before increasing your omega-3 intake.

- Zinc: is important for testosterone and sperm production and sperm motility. In one study, taking 200 mg zinc twice daily improved sperm motility and reduced sperm DNA damage. Food sources of zinc are oysters (the richest source of zinc), red meat, poultry, seafood (crab, lobster).

- Vitamin B12: dosages between 1000 and up to 6000 mg/day taken for 2–3 months have been shown to improve sperm count. The best sources of vitamin B12 are beef liver and clams, fish, meat, poultry, and dairy.



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- Antioxidants: help to repair sperm DNA damage. More research needs to be done to establish exactly which antioxidants and at what dosages are beneficial. However, there is some evidence that vitamin C and E are important. In one study it was found that taking 1 g vitamin C and 1 g vitamin E daily for 2 months significantly reduced sperm DNA damage. Selenium is another important antioxidant. Foods naturally rich in vitamin E include nuts, seeds, and vegetable oils. Vitamin C-rich foods are citrus fruits, red and green peppers, kiwifruit, broccoli, strawberries, cantaloupe, baked potatoes, and tomatoes.

to improve sperm, especially in men with suboptimal sperm parameters.

EXERCISE | Exercise is important for general health and fertility. In one study it was found that men who exercised for more than 5 h a week had 73% higher sperm concentrations compared to men who exercised less than 5 h a week. However, bicycling 5 h/week is associated with low sperm concentrations and therefore must be avoided.

STRESS | If possible, keep your stress levels down. Engage in stress-reducing activities such as hobbies, positive visualisation, meditation, and exercise. If you find it difficult to manage your stress levels, speak to your acupuncturist, who may be able to help.

SEXUAL INTERCOURSE | If you and your partner have not been diagnosed with complete sterility (for example, absence of fallopian tubes or an early onset menopause in your partner, or if you have very poor sperm parameters), you should carry on trying to conceive naturally. Daily or every other day intercourse is most likely to result in conception. Timing intercourse to the fertile window is necessary. Your female partner may need to use ovulation detection methods such as tracking fertile mucus days or using E3G-based ovulation detection kits. Speak to your acupuncturist for more advice on this. Intercourse should be fun with emphasis on foreplay, visual stimulation, and high and prolonged arousal. Ensure that you ejaculate regularly (that is, have an ejaculation every 2–5 days) outside of the fertile window because this has been shown



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