Semen Testing

WHO semen analysis criteria 1992-2010

	1992	1999	2010
Volume	≥ 2mL	≥ 2mL	≥ 1.5mL
Concentration millions/mL	≥ 20	≥ 20	≥ 15
Total sperm count (millions)	≥ 40	≥ 40	≥ 39
Motility (%Progressive)	≥ 50%	≥ 50%	≥ 32%
Vitality (%Alive)	≥ 75%	≥ 75%	≥ 58%
Morphology	≥ 30%	≥ 15%	≥ 4%

*Note that morphology criteria in particular has reduced significantly.

*Semen tests can vary so test every 3-4 weeks.

Infertility Risk Factors

- Semen Quality (see semen testing above).
- Paternal age > 35.
- Sexually related problems: low libido, infrequent intercourse, erectile dysfunction, premature ejaculation, retrograde ejaculation.
- Environmental pollutants:
    - Bisphenol A (BPA)
    - Benzene & solvents
    - Organophosphate pesticides
    - Parabens
    - PCB's
    - Phthalates
    - Lead etc etc
    - Book: It Starts with the Egg, Rebecca Fett, Franklin Fox ISBN 978-0-9996761-8-9
- Varicocele – abnormal dilation of testicular veins.
- DNA Fragmentation.
- Seminal tube blockage – sporting injury, reversed vasectomy, prostatitis.
- Surgery.
- Anti-sperm antibodies (ASAB) – caused by injury, surgery, infection.
- Infection & Fever.
- Stress & Depression – decrease testosterone.
- Alcohol – damage sperm morphology & spermatogenesis.
- Smoking – decreases motility & morphology.
- Recreational & prescribed drugs – Eg. Cannabis decreases motility, count, morphology and viability; Citalopram (SSRI) decreases testosterone.

Optimisation

- **Improve nutrition**
    - High intake of chicken, fish, fruit and vegetables (preferably organic) improves sperm morphology.
    - High saturated fat and salt ready-meals deplete sperm count, concentration and morphology.
- **Micronutrients**
    - Omega 3
    - Vitamins A, C, E, D, B complex
    - Selenium, Zinc, Magnesium
    - Folate
    - Coenzyme Q10
    - Reservatrol
    - L Arginine, Carnitine, Taurine
- **Weight**
    - BMI of 20-25.
    - Both high and low BMI cause poor sperm quality.
    - Obese men have high scrotal temperature.
- **Keep testicles cool (optimal 34°C)**
    - No phones in pockets, no laptops on lap.
    - Steer clear of saunas and hot tubs.
    - Avoid prolonged sitting & driving.
    - Avoid excessive cycling.

Ten simple strategies for improving sperm quality

1. Regular acupuncture – improves sperm count, morphology and motility. Also supports good energy levels and a strong libido. (Nb. needles will not go anywhere near your genitals!)
2. Improved nutrition – including a high intake of chicken, fish, fruit and vegetables (preferably organic) improves sperm morphology. Avoid high fat and salt ready-meals.
3. Optimise weight to a BMI of between 20 and 25.
4. Keeping testicles cool improves sperm morphology – avoid phones in pockets, laptops on lap, saunas and hot tubs. (Acupuncture treatment decreases scrotal temperature.)
5. Taking a good quality preconception supplement for at least 3 months will improve both semen quality and general health – Antioxidants, Vit C & E, Zinc and Selenium are especially effective at improving sperm quality.
6. Chinese herbs improve sperm quality.
7. Stop smoking and all recreational drugs to improve sperm quality.
8. Stop or reduce alcohol – even as little as 5 units/week has an effect on sperm quality.
9. Get checked for Chlamydia and other low-level infections as these reduce sperm quality.
10. Check medicinal drugs are not contraindicated (eg. Citalopram (SSRI) causes sperm abnormalities).