Menstrual and sperm tests

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*please note that reference ranges can vary wildly even by NHS hospital. These references are for information only and you should clarify with your clinic

please read

the information in the document is not intended to be medical advice. please consult your primary health practitioner if you have any concerns around your health

Blood test	Timing	Why?	Range
FSH	Day 2-3	To measure ovarian reserve	<10 IU/L: normal ovarian reserve 10-20 IU/L poor ovarian reserve >20 IU/L may signify menopause
LH	Day 2-3	Plays a critical role in ovulation to trigger the release of an egg	1-4 - 7.8 IU/L
E2	Day 2-3	Should be tested alongside FSH as high E2 can have a negative effect on FSH.	>188 - 210 pmol/L
Progesterone	7 days before your period starts	Will tell us if ovulation has occured	>9.54 nmol/L (>3ng/mL) will indicate that ovulation has occurred <3 ng/mL ovulation has not occurred
Prolactin	Anytime in your cycle	Even mildly elevated prolactin should be investigated with an MRI to rule out prolactinoma.	Lower range: 71-98 mIU/L Upper range: 348-492 mIU/L

Blood test	Why?	Range
TSH	Will have an impact on fertility. People with a history of infertility or miscarriages	Below 2.5 is optimal Lower range: 0.4 Upper range: 4.5 µIU/mL
Free thyroxine (FT4)	Tested in conjunction with TSH	Lower range: 9 Upper range: 25 pmol/L
Free triiodothyronine (FT3)	Often not tested - but I wish it was!	Lower range: 3.5 Upper range: 7.8 pmol/L
Thyroiglobulin	Hashimotos (autoimmunity) which can be linked to miscarriage and implantation	0-40 IU/mL
TPO	Hashimotos (autoimmunity) which can be linked to miscarriage and implantation	0-35 IU/mL

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Blood test	Timing	Why?	Range
AMH	Anytime in your cycle	Higher no. of early follicles, will mean a higher level of AMH. A good predictor of ovarian stimulation.	*see separate page
Cortisol	Anytime in your cycle but ideally should be done close to waking	Chronic high cortisol levels can cause irregular periods	5 to 25 mcg/dL (140-690 nmol/L)
DHEA-S	Anytime in your cycle	Can often be high with PCOS and low with HPA dysfunction. This steroid hormone declines with age	25 - 35 years; 2.68 - 9.23 µmol/L 35 - 45 years: 1.65 - 9.15 µmol/L 45 - 55 years: 0.96 - 6.95 µmol/L
Iron	Anytime in your cycle	Iron deficiency could lead to ovulatory problems	Iron: 5.8 -34.5 umol/L Ferritin: 30-400 umol/L

AMH

Age	Range pmol/L	Range ng/mL
29	25	3.5
30	22.8	3.5
31	22.1	3.1
32	17.9	2.5
33	18.6	2.4
34	16.4	2.3
35	15	2.1
36	12.9	1.8
37	11.4	1.6

Age	Range pmol/L	Range ng/mL
38	10	1.4
39	9.3	1.3
40	7.9	1.1
41	7.1	1
42	6.4	0.9
43	5	0.7
44	4.3	0.6
45	3.6	0.5
46	2.9	0.4

Blood test	Timing	Why?	Range
Tesosterone	Day 2-3	Low testosterone may indicate low ovarian reserve. High testosterone may indicate PCOS	< 1.8nmol/L
Vitamin D	Anytime in your cycle	Low vitamin D is linked to endometriosis, lower clinical pregnancy rates following IVF and PCOS	Severely deficient: <25 nmol/L Deficient: 25-50 nmol/L Adequate: 50-75 nmol/L Optimal: >75 nmol/L
SHBG	Anytime in your cycle	Controls how many hormones (including testosterone, DHT and oestradiol) are free and can be transported by the body's tissues	60-80 nmol/L
Vitamin B12	Anytime in your cycle	Essential nutrient for DNA synthesis, energy production and central nervous system function	Above 148 pg/mL

Potential diagnosis	Blood tests	Signs and symptoms
Primary Ovarian Insufficiency	**High FSH, low E2**	Loss of periods
Hypothalamic amenorrhea	**Low FSH, low E2**	Loss of periods
Diminished ovarian reserve	**High FSH, high LH**	Difficulty getting pregnant, late or absent menstruation or menstrual cycles that are shorter than usual
PCOS	**Normal FSH, high LH, high free testosterone.** If total testosterone is only tested than sex-hormone binding globulin (SHBH) be tested also	Irregular periods, hirsutism and/or acne and polycystic ovaries
Adrenal PCOS	**High DHEAs, normal testosterone**	Irregular periods and polycystic ovaries

Potential diagnosis	Blood tests	Signs and symptoms
Endometriosis	Blood tests not applicable	Pain in your lower tummy or back usually worse during your period, pain during or after sex, pain when peeing or pooing during your period, feeling sick, constipation, diarrhoea, or blood in your pee or poo during your period, difficulty getting pregnant
Perimenopause	Blood tests can be unreliable due to the fluctuations of hormones	See symptom checker here
Fibroids	**Low iron**	Heavy periods, Painful periods/pelvic pain, Infertility, Irregular bleeding, Constipation, Frequent/urgent urination, Pain with intercourse
Uterine polyps	Blood tests not applicable	Irregular bleeding between periods or after menopause Periods that vary in length and heaviness Very heavy periods Difficulty getting pregnant
HPA Dysregulation	**Low DHEAS**	Fatigue, anxiety, insomnia, low libido, low blood pressure, salt cravings, poor immunity, brain fog, PMS, irregular periods

Potential diagnosis	Blood tests	Signs and symptoms
Low progesterone	**Progesterone**	Spotting during your luteal phase, Difficulty falling or staying pregnant, PMS, Premenstrual headaches/migraines, Heavy periods, Irregular or frequent cycles, Bloating/water retention, Restless legs at night, Insomnia
Oestrogen dominant	**E2**	Heavy periods, Painful periods, Clotty periods Cyclical migraines, PMS symptoms like bloating, cramping, breast tenderness, and mood swings, Fibrocystic breasts, Uterine fibroids, Endometriosis, Polyps, Fatigue, Depression/anxiety
Hyperthyroidism	**TSH level is low** and **Free T4 is high**. Free T3 may also be tested and may also be high	Absent or infrequent periods, weight loss, anxiety, insomnia, sensitivity to heat, heartbeat irregularities
Hypothyroidism	**TSH level is high** and the **Free T4 result is low**	Feeling tired, Weight gain, Irregular menstrual cycles:, Heavy periods, Higher sensitivity to cold, Swelling and oedema, Dry skin and hair, Thinning hair on the head, Constipation, Trouble becoming or staying pregnant, Goiter (abnormal growth/enlargement of the thyroid)

Test	Why?	Range
LH	Stimulates testicles to make testosterone (with FSH) which is important for producing sperm. Low levels may result in infertility, low testosterone, low sperm count, low muscle mass, low libido	1.24-7.8 IU/L
FSH	Stimulates testicles to make testosterone (with LH). Increased FSH may predict male infertility due to abnormal spermatogenesis	1.5-12.4 IU/L Optimal range is <4.5 IU/L
Progesterone	Influences spermiogenesis and testosterone biosynthesis	0.3-3.8 nmol/L
Oestradiol	Critical role in male sexual function	Optimal range is 77-91 pmol/L
SHBG	Attaches to sex hormones (inc testosterone, DHT and oestradiol) and controls how many of these are “free” to be transported to the body’s tissues	15-64 nmol/L

Test	Why?	Range
Testosterone	Primary male hormone	10-30 nmol/L
Androstenedione	Steroid hormone which plays a key role in the production of oestrogen and progesterone	1.4-9.1 nmol/L
DHEAS	Oestrogen and testosterone depend on DHEAS	• 20-25 years: 5.73-13.40 umol/L (this is a funny ‘u’ which my keyboard cannot replicate • 25-35 years: 4.34-12.20 umol/L • 35-45 years: 2.41-11.60 umol/L • 45-55 years: 1.20-8.98 umol/L
DHT	Critical role in male characteristics	0.4-1.9 nmol/L

Test	Why?	Range
Sperm concentration	How many sperm in the ejaculate	• 20 million or more per mL is considered a healthy concentration. • 5-20: possible to conceive naturally, but may take a bit longer • <5: difficult to conceive naturally
Total sperm count	concentration multiplied by your sample volume	39 million or more.
Motility	Sperm need strong, progressive motility to navigate the female reproductive tract and reach the egg. Poor motility (asthenozoospermia) can significantly reduce the chances of fertilization. Research published in Fertility and Sterility found a correlation between low sperm motility and decreased pregnancy rates during in vitro fertilization (IVF) cycles	• Total motility: 42% is considered healthy • Progressive motility: 30%

Test	Why?	Range
Morphology	This refers to the size and shape of the sperm. Ideally, sperm should have a head with an oval shape, a midpiece with a connecting piece, and a long, whip-like tail. Abnormal morphology (teratospermia) can hinder a sperm's ability to swim effectively or penetrate the egg. A study published in the Asian Journal of Andrology found a significant association between abnormal sperm morphology and decreased fertilization rates	normal range: 4% or higher “normal” forms
pH	An acidic environment can damage sperm and hinder their ability to fertilize the egg. Several factors, including infections and certain medications, can alter semen pH.	A healthy semen pH should be slightly alkaline, ranging from 7.35 to 7.45.

References

Acupuncture for IVF and Assisted Reproduction: Irina Szmelskyj & Lianne Aquilina

Blood Labs 2: A guide to interpresting blood test results for hormones: Kate Knowler

Hi! I am Andrea The Acupuncturist

I am here to help you get to the bottom of your period problems

07876224566

andrea@thechannelproject.co.uk

www.thechannelproject.co.uk