



Referrer Dr Emma Scott

Address GENERAL PRACTICE CREMORNE 414 MILITARY ROAD
MOSMAN NSW 2088

Phone 0289695000

Your ref. 210012

Address UNIT 11/51 MCDONALD STREET
FRESHWATER NSW 2096

Phone 0405164214

Copy to Ms Alexandra Middleton (0410503376)

Requested 04/08/2021

Collected 07/08/2021 10:51 AEDT

Received 07/08/2021 10:53 AEDT

Reproductive Hormones (Abbott Method)

Test Name	Result	Units	Reference Interval
FSH	5.0	IU/L	
LH	5.0	IU/L	
Oestradiol	203	pmol/L	
DHEAS	6.7	umol/L	2.4 - 13

Comments

FSH	Basal Mid cycle peak Post-menopausal	1.5 - 10 7.0 - 22 25 - 130
LH	Basal Mid cycle peak Post-menopausal	2.0 - 12 8.0 - 90 5.0 - 62
Oestradiol	Follicular phase Preovulatory phase Luteal phase Post-menopausal	<320 450 - 2000 125 - 1300 <170

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Caeruloplasmin (Abbott Architect Method)

Caeruloplasmin	0.32	g/L	0.17 - 0.43
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Biochemistry

Test Name	Result	Units	Reference Interval
Status	Fasting		
Sodium	140	mmol/L	135 - 145
Potassium	4.4	mmol/L	3.5 - 5.5
Chloride	107	mmol/L	95 - 110
Bicarbonate	22	mmol/L	20 - 32
Urea	2.8	mmol/L	2.5 - 7.0
Creatinine	60	umol/L	45 - 85
eGFR	>90	mL/min/1.73m2	>59
Total Bilirubin	8	umol/L	3 - 15
Alk Phos	63	U/L	20 - 105
Gamma GT	10	U/L	5 - 35
LDH	142	U/L	120 - 250
AST	18	U/L	10 - 35
ALT	15	U/L	5 - 30
● Total Protein	67 L	g/L	68 - 85
Albumin	46	g/L	37 - 48
● Globulin	21 L	g/L	23 - 39
Cholesterol	4.3	mmol/L	3.9 - 5.5

Comments

eGFR (mL/min/1.73m2) calculated by CKD-EPI formula - see www.kidney.org.au

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Iron Studies

Test Name	Result	Units	Reference Interval
● Iron	3.4 L	umol/L	5.0 - 30.0
Transferrin	2.1	g/L	2.0 - 3.6
TIBC (Calculated)	48	umol/L	46 - 77
● Saturation	7 L	%	10 - 45
Ferritin	57	ug/L	15 - 200

Comments

Serum iron may be reduced in the presence of an intercurrent illness. Increased CRP noted. In the presence of inflammation, a normal ferritin may not exclude reduced iron stores. Recommend follow up iron studies after inflammation has resolved.

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FINAL REPORT

C Reactive Protein (High Sens)

Test Name	Result	Units	Reference Interval
● CRP	46.6 H	mg/L	0.0 - 5.0

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25-OH Vitamin D

Test Name	Result	Units	Reference Interval
Vitamin D	91	nmol/L	50 - 140

Comments

According to the Position Statement 'Vitamin D and health in adults in Australia and New Zealand' MJA, 196(11):686-687, 2012, Vitamin D status is defined as:

Mild Deficiency	30	-	49 nmol/L
Moderate Deficiency	12.5	-	29 nmol/L
Severe Deficiency	<12.5		nmol/L

Vitamin D adequacy can be defined as a level >49 nmol/L at the end of winter - the level may need to be 10 - 20 nmol/L higher at the end of summer, to allow for seasonal decrease.

From 1st November 2014, Medicare rebates for vitamin D testing will apply to patients at risk of Vitamin D deficiency such as chronic lack of sun exposure.

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Glucose

Test Name	Result	Units	Reference Interval
Glucose Fasting	4.8	mmol/L	3.6 - 6.0

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Thyroid Function

Test Name	Result	Units	Reference Interval
TSH	1.18	mIU/L	0.40 - 3.50

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Prolactin (Roche Method)

Prolactin (Total)	315	mIU/L	85 - 500
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Insulin (Abbott Architect Method)

Insulin, Fasting	9	mU/L	0 - 20
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Comments

In a non-pregnant patient, serum insulin(s) >80 mU/L following a 75g oral glucose load and/or fasting insulin(s) >14 mU/L (in the absence of insulinoma) are consistent with insulin resistance. Post-load insulin(s) of 60 - 80 mU/L and/or fasting insulin(s) of 10 - 14 mU/L are suggestive of insulin resistance and follow-up may be indicated in the presence of risk factors such as obesity or a positive family history.

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Biomarkers

Cancer Antigen 125	42 H	U/mL	<36
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Comments

Elevated CA 125. Causes include ovarian tumours of epithelial type and endometrial carcinoma as well as lung, breast, pancreatic and colorectal carcinoma. The level of CA 125 usually correlates with tumour size and stage. CA 125 also may be raised in physiological states such as early pregnancy, the follicular phase of the menstrual cycle and non-malignant conditions such as endometriosis, uterine fibroids, cirrhosis, hepatitis and pericarditis. CA 125 levels should not be interpreted as indicating malignant disease without other corroborative evidence.

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Androgens

Testosterone	1.3	nmol/L	0.2 - 1.8
SHBG	129 H	nmol/L	30 - 110
Free Androgen Index	1.0	%	0.3 - 4.0
Calculated Free Testosterone	9	pmol/L	1 - 34

Comments

Free testosterone calculated using the Vermeulen equation.

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IGF-1 (Liaison)	24	nmol/L	11 - 39
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Comments

IGF-1 testing performed on Diasorin Liaison XL.

Reported by Sullivan and Nicolaides Pathology, a member of the Sonic Healthcare Group.

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Thyroid Autoantibodies

Thyroglobulin Ab	1.0	IU/mL	<4.1
Thyroid Peroxidase Ab	0.7	IU/mL	<5.6

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Haemoglobin A1c

Test Name	Result	Units	Reference Interval
HbA1c (IFCC)	31	mmol/mol	20 - 38
HbA1c	5.0	%	4.0 - 5.6

Comments

HbA1c less than 48 mmol/mol (6.5%) does not exclude a diagnosis of diabetes mellitus based upon elevated glucose results. The existing diagnostic criteria for fasting and random glucose levels and for oral glucose tolerance testing remain valid, and are the diagnostic tests of choice for gestational diabetes, type 1 diabetes and in the presence of conditions that interfere with HbA1c measurement. Conditions which may affect the measured HbA1c value include any of the haemolytic anaemias, anaemia of chronic disease, severe liver disease, vitamin B12 and/or folate deficiency, the haemoglobinopathies and regular phlebotomy performed for medical indications or for blood donation.

It also should be noted that further investigation is required for any inexplicably low HbA1c level or significant discrepancy between HbA1c and glucose results.

Please note that in August 2021, HbA1c measurement will change from the Biorad D-100 to the Sebia Capillarys 3 method.

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Anti-Mullerian Hormone (AMH)

Anti-Mullerian Hormone (Roche Plus) 24.0 pmol/L 4.1 - 58.0

Comments

The reference interval quoted above for the Roche AMH Plus assay is the age-related 2.5 - 97.5 percentile.

Generally accepted fertility criteria (not age-related):

- <11.0 pmol/L: Suggestive of reduced ovarian reserve
- >24.0 pmol/L: Indicates the possibility of
 1. Polycystic Ovarian Syndrome
 2. In post-menopausal females - granulosa cell tumour
 3. Increased risk of Ovarian Hyperstimulation

Syndrome in a stimulated cycle

AMH is produced by the granulosa cells of developing follicles, and provides an estimate of the number of primordial follicles. Particularly in younger women, a low AMH level does not exclude the possibility of fertility.

Levels may be decreased in the latter part of the menstrual cycle and by the OC pill.

High dose biotin (Vitamin B7) can interfere in the AMH Plus assay, causing a falsely low result. High dose biotin may be used in the treatment of Multiple Sclerosis, and is present in certain vitamin supplements, particularly those for hair and nails. If the patient is taking high dose biotin supplementation (>5 mg/day) this result may not be accurate, please repeat this test after at least 3 days off biotin

Please note change in test method from 10/9/2018 from Beckman Access to Roche AMH Plus, with results now approximately 20% lower. Analytical results and percentile cutoffs may not be directly comparable between these methods. For further information please contact Drs Price or Kanowski on 07 3377 8670.

Reported by Sullivan and Nicolaides Pathology, a member of the Sonic Healthcare Group.

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Genotyping for Coeliac Disease

Specimen type
Method

EDTA blood
Real-time PCR

Result: Coeliac susceptibility genotype DETECTED
(DQA1*05-, DQA1*02+, DQB1*02+, DQB1*03:02/05-)

Interpretation: Genotype consistent with the presence of HLA-DQ2.2 antigen. This result is associated with increased risk of coeliac disease.

However, >50% of the general population has an at-risk genotype, and <1% of these individuals will develop biopsy-confirmed coeliac disease. Supportive evidence from coeliac serology and small intestinal biopsy is therefore necessary to make a diagnosis of coeliac disease.

Comments

Test Information:

Qualitative detection of HLA-DQA1*02:01, HLA-DQA1*05:XX, HLA-DQB1*02:XX, HLA-DQB1*03:02/03:05 and HLA-DRB1*04:XX alleles is performed using the GeneFinder HLA-DQ2/DQ8 RealAmp kit (Osang Healthcare). This assay is designed to identify DQ2 (2.2 and 2.5) and DQ8 antigens that are present in more than 95% of individuals with coeliac disease. Some additional rare genotypes consistent with HLA-DQ8 antigen may be detectable by this assay though indistinguishable from HLA-DQB1*03:02/05. False positive results due to cross-reactivity with rare subtypes are possible. Rare subtypes, the presence of additional heterodimers, and zygosity of detected alleles cannot be determined by this assay. A full list of alleles to 4-digit HLA nomenclature detectable by this assay is available on request. References: PMID 25827511; 23981538.

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Haematology

Test Name	Result	Units	Reference Interval
Haemoglobin	122	g/L	119 - 160
Red cell count	4.4	$\times 10^{12}/L$	3.8 - 5.8
Haematocrit	0.39		0.35 - 0.48
MCV	90	fL	80 - 100
MCH	28.0	pg	27.0 - 32.0
MCHC	312	g/L	310 - 360
RDW	13.2		10.0 - 15.0
• White cell count	3.0 L	$\times 10^9/L$	4.0 - 11.0
• Neutrophils	1.23 L	$\times 10^9/L$	2.0 - 7.5
Lymphocytes	1.17	$\times 10^9/L$	1.0 - 4.0
Monocytes	0.50	$\times 10^9/L$	0.0 - 1.0
Eosinophils	0.06	$\times 10^9/L$	0.0 - 0.5
Basophils	0.03	$\times 10^9/L$	0.0 - 0.3
NRBC	<1.0	/100 WBC	<1
Platelets	205	$\times 10^9/L$	150 - 450
ESR	11	mm/h	1 - 22

Comments

Red Cell Morphology: Normal
Moderate neutropenia
Drug effect, viral illness or an autoimmune disorder are possible causes.

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Antinuclear Antibodies

ANA
Titre, Pattern
Detected: Mixed Pattern
320 Homogeneous
320 Speckled

Comments

(Screened at a titre of 80)

HOMOGENEOUS staining patterns occur with autoantibodies to single and double-stranded DNA (characteristic of lupus) as well as with anti-histone antibodies (characteristic of drug-induced lupus).

SPECKLED staining patterns occur with Sjogren's syndrome, lupus, mixed connective tissue disease, scleroderma and occasionally other inflammatory disorders. ENA testing may be useful.

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Antibodies to Extractable Nuclear Antigen (ENA)

SS-A 60	Not detected
SS-B	Not detected
Ro-52	Not detected
Scl-70	Not detected
Jo-1	Not detected
Cenp-B	Not detected
Sm	Not detected
RNP	Not detected
Ribo-P	Not detected

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Coeliac Serology

Deamidated Gliadin IgA	6	U/mL	<15
Deamidated Gliadin IgG	<1	U/mL	<15
Tissue Transglutaminase IgA	<1	U/mL	<15
Tissue Transglutaminase IgG	<1	U/mL	<15

Comments

Performed on Bioplex 2200. This detects selective IgA deficiency (<0.07 g/L), an additional comment will be attached if detected.

In persons eating wheat (most days, last six weeks), negative serology effectively excludes coeliac disease/dermatitis herpetiformis. One elevated marker may occur without disease whereas two or more elevated (at four times the cutoff level) markers strongly predict coeliac disease which can be confirmed by biopsy.

Serology becomes negative on gluten free diet (6-9 months for IgA-deam gliadin and IgA-tTG, 9-15 months for IgG-deam gliadin and IgG-tTG). Without compliance, coeliac markers rise. Coeliac tissue-typing excludes coeliac disease risk by excluding HLA-DQ2 or DQ8 in persons with discordant serology or discordant serology-biopsy findings.

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LAB ID 863663359 DOB 20/10/1986 (34Y Female)

Referring Doctor Dr Emma Scott

Your ref. 210012

Address Unit 11/51 McDonald Street
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Phone 0405 164 214

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Received 07 Aug 2021 10:53 am

Reported 13 Aug 2021 12:00 pm

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General Practice Cremorne
414 Military Road
MOSMAN NSW 2088

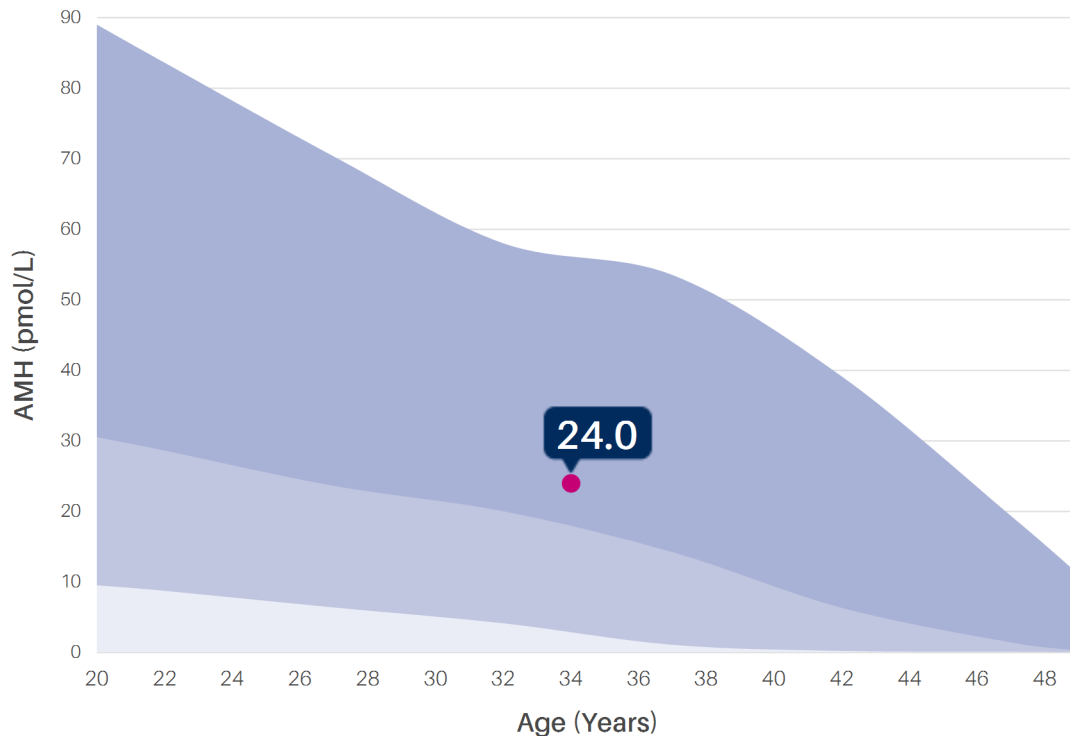
S15073
NSR/NSR/NSR/---/MSM

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Anti-Mullerian Hormone (AMH)

Marker of Ovarian Follicle Reserve

Collected	Test	Result	Units
07 Aug 2021 10:51 am	AMH	24.0	pmol/L



Assay used: Anti Mullerian H Snp

Specimen collected: Serum

REFERENCE: ☐ < 2.5th percentile ☐ 2.5th-50th percentile ☐ 50th-97.5th percentile ☐ >97.5th percentile