



Mr Kent B Twiname
14 Parramatta Street
Belgian Gardens QLD 4810

kenttwiname@bigpond.com

23/5/21

Dear Kent ,

Please find attached copy of results for your records.

Kindly contact my receptionist on 4721 2022 for an appointment if you wish to discuss any aspects of these results further with me.

Check our website [Click here](#) for practice news.

No reply is necessary for this email.

Yours sincerely,

Dr Raymond Mullen
MBBS , FRACGP ,DipRACOG ,MACNEM ,Cert IM

T: (07) 4721 2022

F: (07) 4721 2066

E: reception@nautilushealth.com.au

P: PO Box 1626, Townsville 4810

Diagnostic Results: Mr Kent B Twiname

Result IDs: (238416 238413 238406 238404 238403 238398 238392 238391 238387 238385 238383 238366 238363 238346 238328 238324)

APOLIPOPROTEIN A1 AND B,S

Collection Date: 07:38 21/05/2021

SERUM APOLIPOPROTEIN STUDIES

Apolipoprotein A1	1.9 g/L
Apolipoprotein B	1.3 g/L
Apolipoprotein B/A1 ratio	0.7

Guidelines from EAS and EFLM for apolipoproteins:

Parameter	Thresholds	Interpretative commenting
ApoB	>=1 g/L	<0.1 g/L: genetic abetalipoproteinaemia
ApoA-1	Men <=1.2 g/L Women <=1.4 g/L	<0.1 g/L: genetic hypoalphalipoproteinaemia

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT

Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B

Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D

Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER

Tests Pending :SE CAERULOPLASMIN

IRON STUDIES

Collection Date: 07:38 21/05/2021

CUMULATIVE IRON STUDIES

Date	21/05/21
Time	07:38
Lab No	29280225

Iron	17 umol/L	(10-33)
TIBC	48 umol/L	(45-70)
Saturation	36 %	(16-50)
Ferritin	226 ug/L	(30-320)

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT

Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B

Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D

Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER

Tests Pending :SE CAERULOPLASMIN

THYROID TEST

Collection Date: 07:38 21/05/2021

CUMULATIVE SERUM THYROID FUNCTION TESTS

P: (07) 4721 2022

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Date 30/03/17 21/05/21
Time 09:13 07:38
Lab No 58062100 29280225

TSH 1.7 2.1 mIU/L (0.50-4.00)

Euthyroid level. However if hypopituitarism (rare) is suspected, free T4 assay may be indicated.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B
Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D
Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER
Tests Pending :SE CAERULOPLASMIN

FERTILITY HORMONE

Collection Date: 07:38 21/05/2021

CUMULATIVE DEHYDROEPIANDROSTERONE-SULPHATE

Date	19/03/12	23/04/16	13/12/18	22/06/20	21/05/21	
Time	09:35	08:46	09:17	07:45	07:38	
Lab No	2534634	59461678	58062312	99534233	29280225	
DHEAS	11.4			5.2	6.0	umol/L (0.8-7.3)
DHEAS	4200			1900	2200	ng/mL (300-2700)
LH			7	3	3	IU/L (1-10)
E2			90	<43	pending	pmol/L (< 150)
Testo.	16	16	10	12	pending	nmol/L (10.0-33.0)
fTesto.	32					pmol/L (40.0-100.0)
fTesto.c		241	124	142		pmol/L (150-700)
SHBG	64	55	64	67	68	nmol/L (13-71)

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
Tests Completed:SE VIT D, SE HOMOCYSTEINE, SE HDL, PSA, ESR, DHEAS
Tests Completed:APOLIPOPROTEIN A1 AND B
Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC
Tests Pending :SE HIGH SENSITIVITY CRP, BL HBA1C, SE COPPER, SE CAERULOPLASMIN

E/LFT ()

Collection Date: 07:38 21/05/2021

CUMULATIVE SERUM BIOCHEMISTRY

Date	13/12/18	02/03/20	22/06/20	21/05/21	
Time	09:17	07:35	07:45	07:38	
Lab No	58062312	74685355	99534233	29280225	
	FASTING	FASTING	FASTING	FASTING	FASTING
Sodium	140	145	143	141	mmol/L (137-147)

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Potass.	4.7	4.4	4.2	4.0 mmol/L (3.5-5.0)
Chloride	105	109	107	108 mmol/L (96-109)
Bicarb	30	30	28	29 mmol/L (25-33)
An.Gap	10	10	12	8 mmol/L (4-17)
Gluc	4.3	5.1	4.7	5.1 mmol/L (3.0-6.0)
Urea	6.1	6.5	+ 8.9	5.9 mmol/L (3.0-8.5)
Creat	91	89	84	85 umol/L (60-140)
eGFR	78	80	86	85 mL/min (over 59)
Urate	0.34	0.39	0.35	+ 0.46 mmol/L (0.12-0.45)
T.Bili	13	13	9	11 umol/L (2-20)
Alk.P	46	55	50	53 U/L (30-115)
GGT	11	12	12	13 U/L (0-70)
ALT	20	14	41	34 U/L (0-45)
AST	28	22	34	27 U/L (0-41)
LD	172	191	158	157 U/L (80-250)
Calcium	2.38	2.32	2.28	2.34 mmol/L (2.15-2.60)
C.Ca	2.34	2.33	2.32	2.30 mmol/L (2.15-2.60)
Phos	1.1	1.1	1.2	1.2 mmol/L (0.8-1.5)
T.Prot	65	66	62	67 g/L (60-82)
Alb	44	42	41	44 g/L (35-50)
Glob	21	24	21	23 g/L (20-40)
Chol	6.5	6.1	6.8	+ 7.7 mmol/L (3.6-7.3)
Trig	0.6	0.9	1.3	1.0 mmol/L (0.3-2.2)
Lab No	58062312	74685355	99534233	29280225
Date	13/12/18	02/03/20	22/06/20	21/05/21

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B
Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D
Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER
Tests Pending :SE CAERULOPLASMIN

CAERULOPLASMIN, SERUM

Collection Date: 07:38 21/05/2021

Serum Caeruloplasmin 0.17 g/L (0.15-0.35)

As caeruloplasmin is an acute phase reactant and rises in the presence of infection, inflammation, oestrogen therapy or pregnancy, levels in the low normal range may not absolutely exclude Wilson disease.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
Tests Completed:SE VIT D, SE HOMOCYSTEINE, SE HDL, PSA, ESR, DHEAS, SE CAERULOPLASMIN
Tests Completed:APOLIPOPROTEIN A1 AND B
Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC

Tests Pending :SE HIGH SENSITIVITY CRP, BL HBA1C, SE COPPER

VITAMIN B12 FOLATE
Collection Date: 07:38 21/05/2021

CUMULATIVE VITAMIN B12 AND FOLATE ASSAYS

Date 21/05/21
Time 07:38
Lab No 29280225

B12 Total	838	pmol/L	(162-811)
S.Fol.	10.3	nmol/L	(8.4-55.0)

Comment:
29280225

Serum Folate Assay:
Likely Normal Folate status.
These levels may be falsely normal if there has been inadequate fasting.

If there is clinical suspicion of folate deficiency such as malabsorption conditions, or macrocytic anaemia in the absence of B12 deficiency, a repeat fasting serum Folate and a Red Cell Folate is indicated to resolve the folate status.

Serum Vitamin B12 Assay:
Essentially normal B12 levels, although liver disease if present may falsely elevate the level.

Methodology:

B12 assay performed on Siemens Diagnostics Atellica analyser.
Active B12 (HoloTC) assay performed on the Abbott Alinity analyser.

For Doctor clinical enquiries, please contact Dr Peter Davidson on number 07 3121 4605.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT

Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B

Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D

Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER

Tests Pending :SE CAERULOPLASMIN

HDL CHOLESTEROL, SERUM
Collection Date: 07:38 21/05/2021

CUMULATIVE LIPID RISK REPORT

Date	02/03/20	21/05/21
Time	07:35	07:38
Lab No	74685355	29280225
	FASTING	FASTING

Total Cholesterol	6.1	7.7 mmol/L	Target if HIGH RISK (below 4.0)
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Triglycerides	0.9	1.0 mmol/L (below 2.0)
CHOLESTEROL FRACTIONS		
HDL	1.77	1.79 mmol/L (above 1.0)
LDL (direct)*	3.81	4.81 mmol/L (below 2.5)
Non-HDL cholesterol*		5.91 mmol/L (below 3.3)
Total/HDL ratio**	3.4	4.3

* Secondary prevention LDL and non-HDL cholesterol targets are lower.

** The ratio is for use with the cardiovascular risk calculator.

Web-search: "Australian cardiovascular risk calculator"

29280225 Treatment is recommended if clinically indicated or if calculated risk exceeds 15% absolute risk of CVD events over 5 years.

NVDPA 2012 Target ranges refer to HIGH RISK PATIENTS.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
 Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B
 Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D
 Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER
 Tests Pending :SE CAERULOPLASMIN

ERYTHROCYTE SEDIMENT RATE

Collection Date: 07:38 21/05/2021

Erythrocyte Sedimentation Rate	2 mm/hr	(1-20)
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Tests Completed:FBC, ESR
 Tests Pending :TSH, IRON STUDIES, SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE
 Tests Pending :SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT, SE ZINC, SE VIT D
 Tests Pending :SE HOMOCYSTEINE, SE HDL, SE HIGH SENSITIVITY CRP, BL HBA1C, PSA, DHEAS
 Tests Pending :SE COPPER, SE CAERULOPLASMIN, APOLIPOPROTEIN A1 AND B

VITAMIN D, SERUM

Collection Date: 07:38 21/05/2021

CUMULATIVE SERUM VITAMIN D

Date	21/05/21
Time	07:38
Lab No	29280225
Vitamin D3	88 nmol/L (> 49)

29280225

** Progress report.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
 Tests Completed:SE VIT D, SE HOMOCYSTEINE, SE HDL, PSA, ESR, DHEAS
 Tests Completed:APOLIPOPROTEIN A1 AND B

P: (07) 4721 2022

F: (07) 4721 2066

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Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC
Tests Pending :SE HIGH SENSITIVITY CRP, BL HBA1C, SE COPPER, SE CAERULOPLASMIN

HAEMOGLOBIN A1C,BLOOD

Collection Date: 07:38 21/05/2021

CUMULATIVE GLYCATED HAEMOGLOBIN

Date	02/03/20	21/05/21
Time	07:35	07:38
Lab No	74685355	29280225
HbA1c Fraction	5.0	5.2 %
in SI units	31	33 mmol/mol

Note: Caution is needed in interpreting HbA1c results in the presence of conditions affecting red blood cell survival times, which may lead to either falsely high or falsely low HbA1c results.

HbA1c diagnostic levels - RCPA 2014

< 6.1% (<43 mmol/mol) - current diabetes is excluded
6.1-6.4% (43-47 mmol/mol) - high risk for future diabetes
> 6.4% (>48 mmol/mol) - diabetes is likely

Unless patient has supportive symptoms or elevated plasma glucose values, repeat test is recommended.

Currently, Medicare will fund only one diagnostic test per year.

Sample may be collected at any time - fasting is not required.

Note - diabetes tolerance may be impaired by chronic illness, use of certain drugs including steroids, Cushing syndrome, etc. We would advise considering secondary forms in newly-diagnosed patients.

For clinical enquiries, please contact Dr Appleton, Chang or Marshall

Tests Completed:TSH, IRON STUDIES, SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE

Tests Completed:FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT, SE VIT D

Tests Completed:SE HOMOCYSTEINE, SE HDL, SE HIGH SENSITIVITY CRP, BL HBA1C, PSA, ESR

Tests Completed:DHEAS, SE CAERULOPLASMIN, APOLIPOPROTEIN A1 AND B

Tests Pending :SE ZINC, SE COPPER

HOMOCYSTEINE,SERUM

Collection Date: 07:38 21/05/2021

CUMULATIVE SERUM HOMOCYSTEINE

Date	22/06/20	21/05/21
Time	07:45	07:38
Lab No	99534233	29280225
	+ 15.8	+ 16.4 umol/L (0.0-15.0)

29280225

** Progress report.

Homocysteine Related Risk

P: (07) 4721 2022

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Plasma level (umol/L)	Risk Average
Below 9.0	No increase
9.0 - 14.9	x 2
15.0 - 19.9	x 3
20.0 or greater	x 4.5

Risks approximated from New Eng J Med 1997 (337:230-236)

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
 Tests Completed:SE VIT D, SE HOMOCYSTEINE, SE HDL, PSA, ESR, DHEAS
 Tests Completed:APOLIPOPROTEIN A1 AND B
 Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC
 Tests Pending :SE HIGH SENSITIVITY CRP, BL HBA1C, SE COPPER, SE CAERULOPLASMIN

PROSTATE SPECIFIC ANTIGEN

Collection Date: 07:38 21/05/2021

CUMULATIVE PROSTATIC SPECIFIC ANTIGEN

Date	23/04/16	30/03/17	13/12/18	02/03/20	21/05/21
Time	08:46	09:13	09:17	07:35	07:38
Lab No	59461678	58062100	58062312	74685355	29280225

PSA 0.92 0.57 0.82 0.47 0.27 ug/L (< 4.50)

In response to enquiries, we list decade ranges which replace the previous age-related ranges. Decade ranges are as follows:

Age	Range
<50	<2.5
<60	<3.5
<70	<4.5
>=70	<6.5

However, for monitoring cancer treatment response, decade ranges are not relevant.

Note there has been no change to the assay and so results are directly historically comparable.

29280225 Progress value.

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
 Tests Completed:SE HDL, PSA, ESR, APOLIPOPROTEIN A1 AND B
 Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, SE VIT D
 Tests Pending :SE HOMOCYSTEINE, SE HIGH SENSITIVITY CRP, BL HBA1C, DHEAS, SE COPPER
 Tests Pending :SE CAERULOPLASMIN

HIGH SENSITIVITY CRP,S

Collection Date: 07:38 21/05/2021

CUMULATIVE SERUM HIGH SENSITIVITY C-REACTIVE PROTEIN (CRP)

Date	21/05/21
Time	07:38
Lab No	29280225

P: (07) 4721 2022

F: (07) 4721 2066

E: reception@nautilushealth.com.au

CRP

0.6 mg/L (0.0-6.0)

C-reactive protein (CRP) is a non-specific indicator of tissue damage. Common causes of markedly increased CRP include infection, trauma, myocardial infarction, malignancy and inflammation.

In apparently healthy men and women who have an intermediate risk of cardiovascular disease, as assessed by major risk factors, CRP can identify a higher risk subgroup with CRP > 3 mg/L.

Range(mg/L)	Risk Estimate
Up to 1.0	Low
1.0 to 3.0	Average
3.1 to 10.0	High
Over 10.0	Assess for acute inflammation

In known, stable, coronary disease a CRP > 1 mg/L has shown increased risk.

Reference: Circulation 2003;107:499-511 & 2007;115:1528-1536

Tests Completed:TSH, IRON STUDIES, FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT
Tests Completed:SE VIT D, SE HOMOCYSTEINE, SE HDL, SE HIGH SENSITIVITY CRP, PSA, ESR
Tests Completed:DHEAS, SE CAERULOPLASMIN, APOLIPOPROTEIN A1 AND B
Tests Pending :SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE, SE ZINC, BL HBA1C
Tests Pending :SE COPPER

DHE-S

Collection Date: 07:38 21/05/2021

CUMULATIVE FERTILITY HORMONES

Date	19/03/12	23/04/16	13/12/18	22/06/20	21/05/21	
Time	09:35	08:46	09:17	07:45	07:38	
Lab No	2534634	59461678	58062312	99534233	29280225	
LH			7	3	3	IU/L (1-10)
E2			90	<43	90	pmol/L (< 150)
Testo.	16	16	10	12	22	nmol/L (10.0-33.0)
fTesto.	32					pmol/L (40.0-100.0)
fTesto.c		241	124	142	293	pmol/L (150-700)
SHBG	64	55	64	67	68	nmol/L (13-71)
FAI	24	29	16	17	33	(18-90)
DHEAS		11.4		5.2	6.0	umol/L (0.8-7.3)
DHEAS		4200		1900	2200	ng/mL (300-2700)

Tests Completed:TSH, IRON STUDIES, SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE

Tests Completed:FBC, SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT, SE VIT D

Tests Completed:SE HOMOCYSTEINE, SE HDL, SE HIGH SENSITIVITY CRP, PSA, ESR, DHEAS

Tests Completed:SE CAERULOPLASMIN, APOLIPOPROTEIN A1 AND B

Tests Pending :SE ZINC, BL HBA1C, SE COPPER

P: (07) 4721 2022

F: (07) 4721 2066

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FULL BLOOD COUNT

Collection Date: 07:38 21/05/2021

CUMULATIVE FULL BLOOD EXAMINATION

Date	02/03/20	22/06/20	07/09/20	21/05/21
Time	07:35	07:45	07:30	07:38
Lab No	74685355	99534233	27260206	29280225

	144	130	143	137	g/L	(130-180)
Hb	4.9	4.1	4.6	4.3	x10 ¹² /L	(4.0-6.0)
RCC	0.43	0.37	0.41	0.39		(0.36-0.52)
Hct	89	90	90	89	fL	(80-98)
MCV	30	32	31	32	pg	(27-35)
MCH	206	181	194	188	x10 ⁹ /L	(150-450)
Plats	3.7	3.7	3.9	3.2	x10 ⁹ /L	(4.0-11.0)
WCC	2.0	2.1	2.1	56 % 1.8	x10 ⁹ /L	(2.0-7.5)
Neuts	1.2	1.2	1.3	33 % 1.1	x10 ⁹ /L	(1.1-4.0)
Lymphs	0.4	0.4	0.5	10 % 0.3	x10 ⁹ /L	(0.2-1.0)
Monos	0.00	0.00	0.00	0 % 0.00	x10 ⁹ /L	(0.04-0.40)
Eos	0.04	0.04	0.04	1 % 0.03	x10 ⁹ /L	(< 0.21)
Basos						
E.S.R.				pending	mm/hr	(1-20)

29280225 Automated Comment:

As per ISLH guidelines - Film not reviewed. If a film review is truly indicated, contact the laboratory within 24 hours of collection. Otherwise investigate any highlighted abnormalities as clinically appropriate.

Neutropenia may be a transient effect of an acute viral infection. Persistent neutropenia may be seen as a result of certain infections, hypersplenism, SLE/Rheumatoid, drug side effect, and sometimes as an ethnic familial disorder, or in older patients an early myelodysplasia. Correlate Clinically as well as with E+LFTs, Viral Serology, Lymphocyte Markers, ANA/RF if clinically appropriate. Otherwise, suggest repeat at a later date.

** FINAL REPORT - Please destroy previous report **

Tests Completed:FBC

Tests Pending :TSH, IRON STUDIES, SHBG, TOTAL TESTOSTERONE, E2, LH, FREE TESTOSTERONE

Tests Pending :SERUM FOLATE, SERUM VITAMIN B12, SE E/LFT, SE ZINC, SE VIT D

Tests Pending :SE HOMOCYSTEINE, SE HDL, SE HIGH SENSITIVITY CRP, BL HBA1C, PSA, ESR

Tests Pending :DHEAS, SE COPPER, SE CAERULOPLASMIN, APOLIPOPROTEIN A1 AND B