*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

EndoSTAT

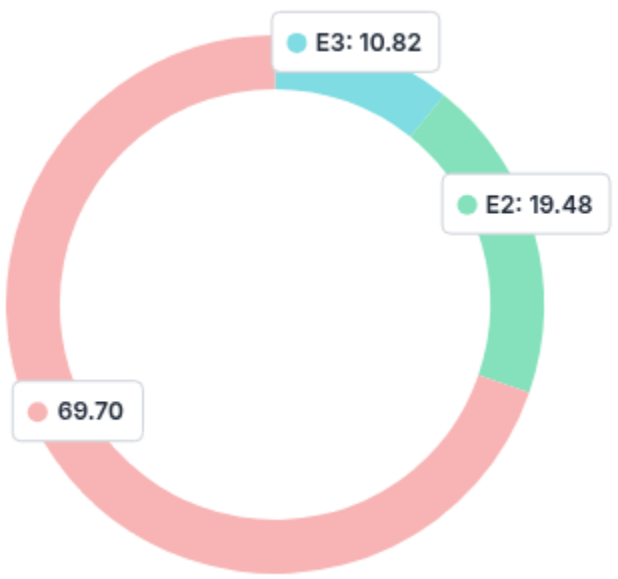
Specimen type - Urine, Dried

Collected
15-Jan-25 06.30am, 11.45am, 04.25pm, 08.40pm

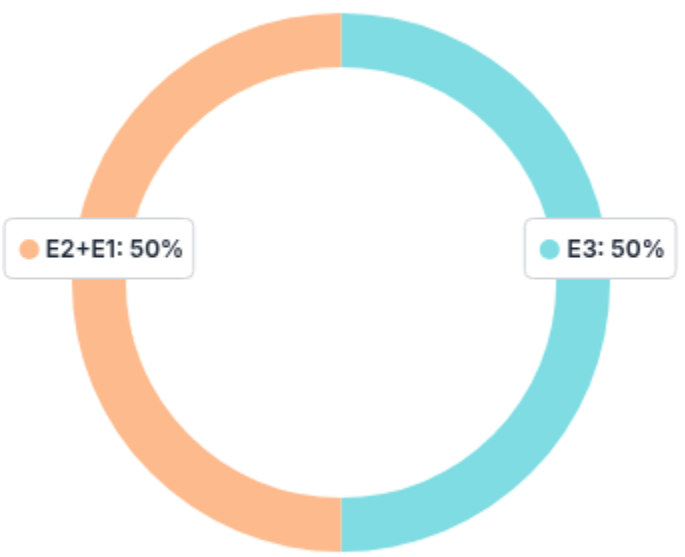
KEY STEROID HORMONES SUMMARY

SERVICE	RESULT	H/L	REFERENCE	UNITS
Estradiol (E2)	0.45		(0.10-0.80)	ug/gCR
Progesterone (serum equivalent)	0.14	L	(0.60-4.00)	ng/mL
Testosterone	1.40		(0.50-3.05)	ug/gCR

Estrogen Balance (as %)

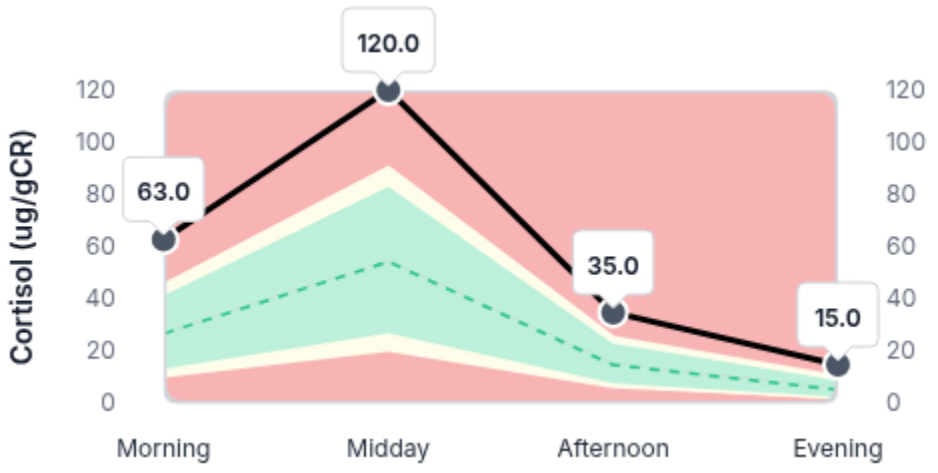


Healthy Estrogens Balance



Adrenal Function - Free Cortisol

SERVICE	RESULT	H/L	REFERENCE	UNITS
Cortisol, Morning	63.00	H	(10.00-45.00)	ug/gCR
Cortisol, Midday	120.00	H	(20.00-90.00)	ug/gCR
Cortisol, Afternoon	35.00	H	(6.00-25.00)	ug/gCR
Cortisol, Evening	15.00	H	(2.00-10.00)	ug/gCR



Adrenal Function - Key Markers

SERVICE	RESULT	H/L	REFERENCE	UNITS
Total Cortisol	46.30	H	(13.00-44.00)	ug/gCR
Tetrahydrocortisol (THF)	295		(150-860)	ug/gCR
DHEA Prod'n (DHEA+Androst+Etioch)	410.30	L	(500.00-3000.00)	ug/gCR
Metabolised Cortisol (THF + THE)	1096		(700-1700)	ug/gCR

*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

PRIMARY ESTROGENS

SERVICE	RESULT	H/L	REFERENCE	UNITS
Estradiol (E2)	0.45		(0.10-0.80)	ug/gCR
Estrone (E1)	1.61		(0.50-2.70)	ug/gCR
Estriol (E3)	0.25		(0.20-1.30)	ug/gCR
Estrogen Quotient - E3/[E2+E1]	0.12	L	(>0.25)	ratio

ESTROGEN METABOLISM - Phase 1

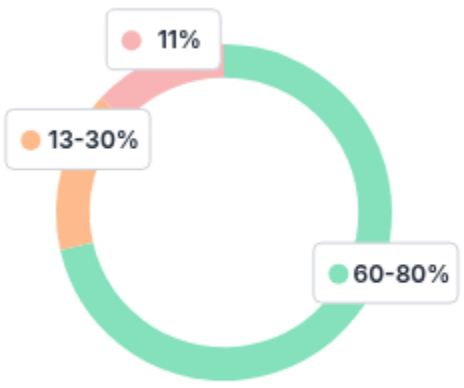
SERVICE	RESULT	H/L	REFERENCE	UNITS
2-OH Estradiol	0.73	H	(0.05-0.45)	ug/gCR
2-OH Estrone	1.45	H	(0.20-1.10)	ug/gCR
4-OH Estradiol	0.13		(0.02-0.20)	ug/gCR
4-OH Estrone	0.20		(0.06-0.22)	ug/gCR
16-OH Estrone	0.36		(0.05-0.45)	ug/gCR
2-OH(E1+E2)/16-OHE1	6.06		(1.40-8.20)	ratio

ESTROGEN METABOLISM - Phase 2

SERVICE	RESULT	H/L	REFERENCE	UNITS
2-MeOH Estradiol	0.12	H	(0.01-0.08)	ug/gCR
2-MeOH Estrone	0.57	H	(0.05-0.35)	ug/gCR
2-MeOH E1/2-OH E1	0.39		(0.15-0.40)	ratio
4-OH Estradiol	0.13		(0.02-0.20)	ug/gCR
4-OH Estrone	0.20		(0.06-0.22)	ug/gCR
4-MeOH E2/4-OH E2	0.54		(0.10-0.80)	ratio
4-MeOH E1/4-OH E1	0.15		(0.02-0.40)	ratio

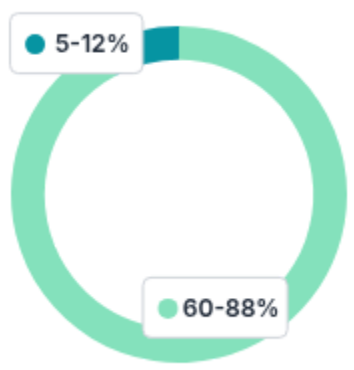
Metabolism Ph1 % (Hydroxylation)

Healthy Ph1 % Metabolism



Metabolism Ph2 % (Methylation)

Healthy Ph2 % Metabolism



*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

ENDOCRINE DISRUPTORS

SERVICE	RESULT	H/L	REFERENCE	UNITS
Bisphenol A (BPA)	2.00		(<4.00)	ug/gCR
Polyfluoroalkyl Substances (PFAS)	0.40		(<0.70)	ug/gCR
Perfluorooctanoic Acid (PFOA)	0.00		(<0.10)	ug/gCR
Perfluorooctane Sulphonic Acid (PFOS)	0.00		(<0.60)	ug/gCR
Aluminium	1.90		(<14.00)	ug/gCR
Arsenic	32.00	H	(<26.50)	ug/gCR
Cadmium	0.50		(<0.60)	ug/gCR
Chromium	2.60		(<4.60)	ug/gCR
Lead	3.80		(<38.60)	ug/gCR
Mercury	29.0	H	(<17.9)	ug/gCR
Nickel	0.70		(<1.23)	ug/gCR

PROGESTERONE METABOLISM

SERVICE	RESULT	H/L	REFERENCE	UNITS
Pregnanediol	57		(50-225)	ug/gCR
Allopregnanolone	0.86		(0.20-1.40)	ug/gCR
Allopregnanediol	4.00		(1.00-6.90)	ug/gCR
3a-Dihydroprogesterone	0.55		(0.15-1.00)	ug/gCR
20a-Dihydroprogesterone	1.79		(0.30-5.50)	ug/gCR
Deoxycorticosterone	1.16		(0.30-2.10)	ug/gCR
Corticosterone	2.77		(2.20-10.50)	ug/gCR
Pregnanediol/Estradiol	127	L	(500-1500)	ratio

PRIMARY ANDROGENS

SERVICE	RESULT	H/L	REFERENCE	UNITS
DHEA	20.30		(8.00-39.00)	ug/gCR
DHEA-S				ug/gCR
Androstenedione	1.60	L	(1.80-8.50)	ug/gCR
Androsterone	155		(145-550)	ug/gCR
Etiocholanolone	235		(220-800)	ug/gCR
Testosterone	1.40		(0.50-3.05)	ug/gCR
Epi-Testosterone	1.84	H	(0.30-1.45)	ug/gCR
DiHydroxyTestosterone (DHT)	0.81		(0.25-1.05)	ug/gCR
5a-Androstanediol	1.00	L	(2.20-9.00)	ug/gCR

*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

KEY ANDROGEN RATIOS

SERVICE	RESULT	H/L	REFERENCE	UNITS
DHEA Prod'n (DHEA+Androst+Etioch)	410.30	L	(500.00-3000.00)	ug/gCR
5a-Reductase Activity (Androst/Etioch)	0.66		(0.60-2.20)	ratio
Testosterone/Epi-Testosterone	0.76		(0.40-5.50)	ratio

URINE CREATININE VALUES

SERVICE	RESULT	H/L	REFERENCE	UNITS
Creatinine, Urine Pooled	1.20		(0.30-2.20)	mg/ml
Creatinine, Urine Morning	0.70		(0.30-2.20)	mg/ml
Creatinine, Urine Midday	0.60		(0.30-2.20)	mg/ml
Creatinine, Urine Afternoon	1.10		(0.30-2.20)	mg/ml
Creatinine, Urine Evening	1.70		(0.30-2.20)	mg/ml

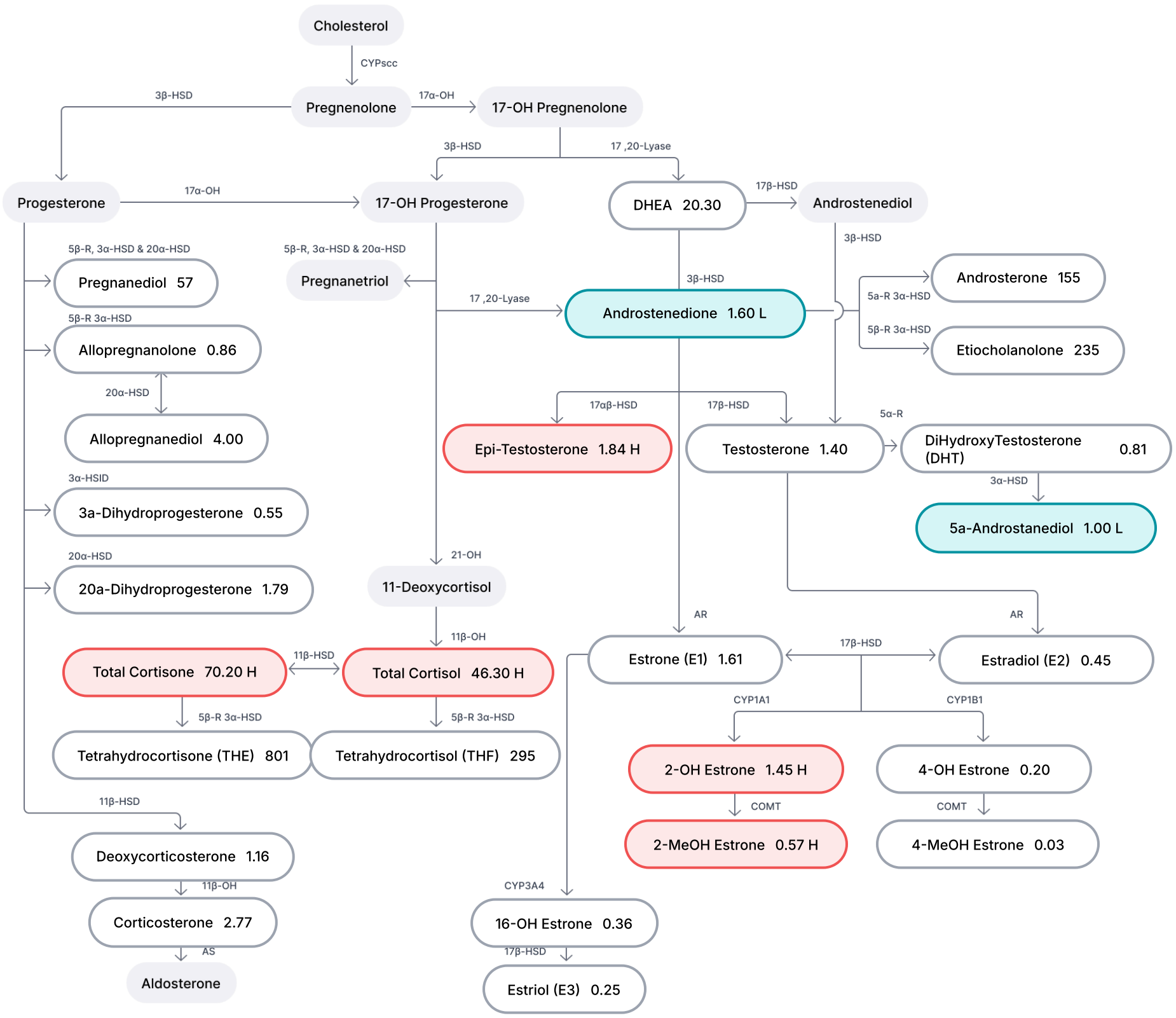
*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25



Legend

Hormone not tested | Within range | Out of range - Low | Out of range - High

Enzyme Abbreviations

5α-R	5a-Reductase	**3α-HSD**	3α-Hydroxysteroid dehydrogenase	**AR**	Aromatase
5β-R	5β-Reductase	**3β-HSD**	3β-Hydroxysteroid dehydrogenase	**AS**	Aldosterone Synthase
11β-oH	11β-Hydroxylase	**11β-HSD**	11β Hydroxysteroid dehydrogenase	**CYP**	Cytochrome p450 (scc, 1A1, 1B1 & 3A4)
17α-OH	17α-Hydroxylase	**17α-HSD**	17α-Hydroxysteroid dehydrogenase	**COMT**	Catechol-O-Methyl-Transferase
17,20-Lyase	Same enzyme as 17α-OH	**17β-HSD**	17β-Hydroxysteroid dehydrogenase		
21-OH	21-Hydroxylase	**20α-HSD**	20α-Hydroxysteroid dehydrogenase		

*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

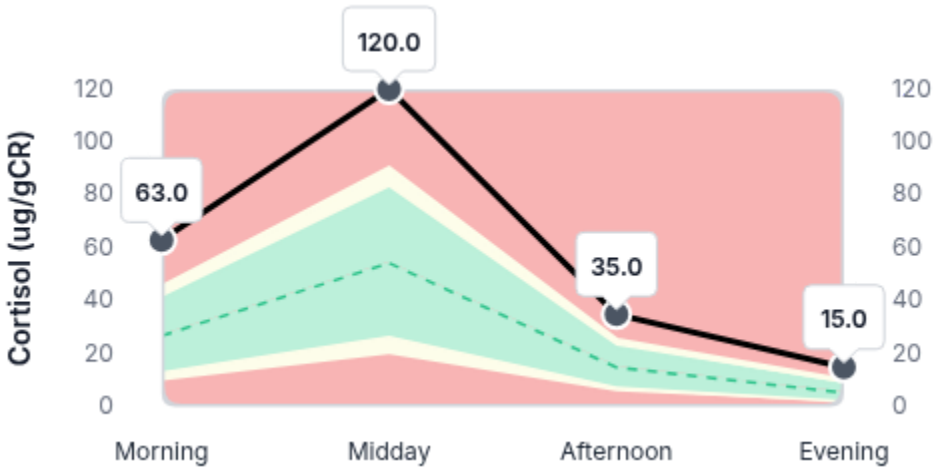
RECEIVED
24-Jan-25

URINARY GLUCOCORTICOIDS

SERVICE	RESULT	H/L	REFERENCE	UNITS
Total Cortisol	46.30	H	(13.00-44.00)	ug/gCR
Total Cortisone	70.20	H	(22.00-62.00)	ug/gCR
Total Cortisol/Cortisone	0.66		(0.20-0.70)	ratio
Tetrahydrocortisol (THF)	295		(150-860)	ug/gCR
Tetrahydrocortisone (THE)	801		(540-1550)	ug/gCR
Metabolised Cortisol (THF + THE)	1096		(700-1700)	ug/gCR
11b-HSD-Index (THF/THE)	0.37	L	(0.59-1.42)	ug/gCR

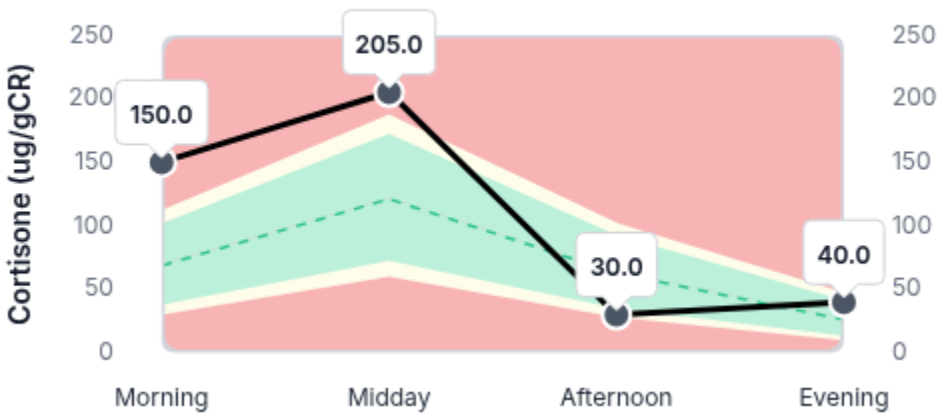
Free Cortisols

SERVICE	RESULT	H/L	REFERENCE	UNITS
Cortisol, Morning	63.00	H	(10.00-45.00)	ug/gCR
Cortisol, Midday	120.00	H	(20.00-90.00)	ug/gCR
Cortisol, Afternoon	35.00	H	(6.00-25.00)	ug/gCR
Cortisol, Evening	15.00	H	(2.00-10.00)	ug/gCR



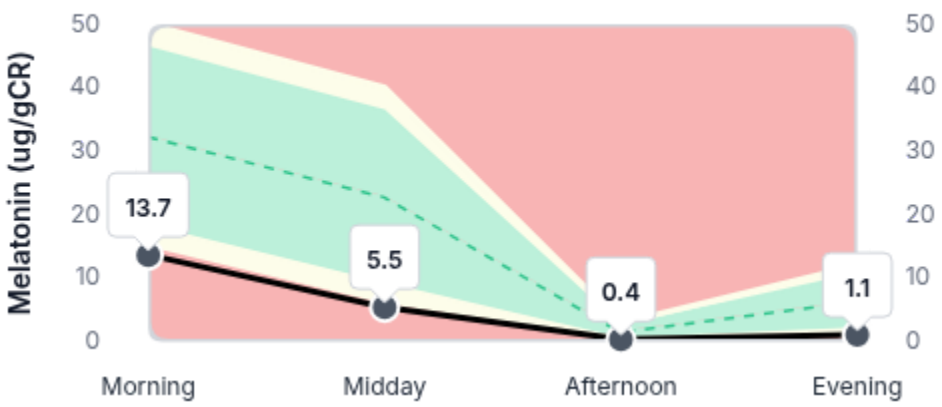
Free Cortisones

SERVICE	RESULT	H/L	REFERENCE	UNITS
Cortisone, Morning	150.00	H	(30.00-110.00)	ug/gCR
Cortisone, Midday	205.00	H	(60.00-185.00)	ug/gCR
Cortisone, Afternoon	30.00		(28.00-100.00)	ug/gCR
Cortisone, Evening	40.00		(10.00-45.00)	ug/gCR



URINARY DIURNAL MELATONINS

SERVICE	RESULT	H/L	REFERENCE	UNITS
Melatonin, Morning	13.70	L	(15.00-50.00)	ug/gCR
Melatonin, Midday	5.50	L	(6.00-40.00)	ug/gCR
Melatonin, Afternoon	0.40	L	(0.50-3.00)	ug/gCR
Melatonin, Evening	1.10	L	(1.20-12.00)	ug/gCR



*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

Symptom Categories

Estrogen & Progesterone Deficiency	66.67%	
Estrogen Dominance/Progesterone Deficiency	66.67%	
Low Androgens	52.22%	
High Androgens	55.56%	
Low Cortisol	58.73%	
High Cortisol	47.37%	
Hypometabolism	50.00%	
Metabolic Syndrome	33.33%	

Symptom Score

0. NONE	1. MILD	2. MODERATE	3. SEVERE
Rapid aging	Elevated triglycerides	Decreased flexibility	Cold body temperature
Headaches	Sensitivity to chemicals	Decreased libido	Decreased stamina
Rapid heartbeat	Nails breaking or brittle	Decreased urine flow	Bone loss
Depressed	Low blood sugar	Swelling or puffy eyes/face	Developmental delays
Decreased erections	Apathy	Oily skin or hair	Neck or back pain
High blood pressure	Anxious	Panic attacks	Slow pulse rate
Burned out feeling	Ringing in ears	Decreased muscle size	Autism Spectrum Disorder
Hair dry or brittle	Increased urinary urge	Sugar craving	Difficulty sleeping
Eating disorders	Hearing loss	Stress	Goiter
Weight gain - Waist	Acne	Thinning skin	Irritable
ADD/ADHD	Hot flashes	Mania	Prostate problems
	Decreased sweating	Infertility problems	
	Decreased mental sharpness	Nervous	
	Morning fatigue	Mental fatigue	
	Weight gain - Breasts/hips	Heart palpitations	
	High cholesterol	Low blood pressure	
	Constipation	Allergies	
	OCD	Hoarseness	
	Addictive behaviours	Night sweats	
	Dizzy spells	Evening fatigue	

*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

Urinary Estrogens Comment

ESTROGEN QUOTIENT LOW:

A low ratio suggests reduced E3 formation relative to E1 and E2. This may indicate altered estrogen metabolism and reduced protective weak estrogen effects. Further investigations may include TFT's.

2-HYDROXY-ESTRADIOL ELEVATED:

2-Hydroxyestradiol is a metabolite that suggests increased Phase I estrogen hydroxylation. High levels indicate an enhanced metabolism of estrogen into less estrogenic metabolites, potentially lowering estrogen-related cancer risks. However, excessive 2-OH estradiol could signal a disrupted estrogen clearance process, leading to other metabolic imbalances.

2-HYDROXY-ESTRONE ELEVATED:

Elevated 2-hydroxyestrone levels indicate an upregulation of detoxification pathways and enhanced hydroxylation at the 2-position. This could signify a healthier estrogen metabolism profile, yet elevated levels might also suggest alterations in how the body processes estrogen, potentially disrupting the estrogen balance.

2-METHOXY-ESTRADIOL ELEVATED:

2-Methoxyestradiol is a metabolite of estradiol that generally suggests a protective metabolism of estrogen. High levels indicate that the body is effectively clearing estrogen and mitigating oxidative damage. This is typically a favorable sign, although persistently elevated levels may indicate an alteration in estrogen metabolism.

2-METHOXY-ESTRONE ELEVATED:

Elevated 2-MeO Estrone reflects enhanced methylation of 2-OH Estrone, a protective mechanism against reactive estrogen intermediates.

4-METHOXY-ESTRADIOL ELEVATED:

4-Methoxyestradiol levels indicate active detoxification of 4-hydroxyestradiol, a genotoxic estrogenic metabolite. Elevated levels suggest the body is actively reducing oxidative damage, which may decrease the long-term risk of estrogen-induced cancers.

Progesterone Metabolites Comment

PREGNANEDIOL/ESTRADIOL RATIO LOW:

The ratio of pregnanediol (Pgdiol) to estradiol (E2) provides valuable insights into progesterone and estrogen balance, particularly relevant in post-menopausal women, where the balance between these hormones is critical for overall health. A low Pgdiol/E2 ratio may indicate insufficient progesterone levels, which can exacerbate symptoms of estrogen dominance, including mood swings, weight gain, and an increased risk of estrogen-driven conditions such as breast cancer. This ratio can help assess the effectiveness of hormone replacement therapy (HRT) and guide treatment to restore hormonal equilibrium and reduce the risk of complications associated with estrogen dominance.

Urinary Androgens Comment

ANDROSTANEDIOL LOW:

5α,3α-Androstanediol is a metabolite of 5α-DHT and serves as a marker for the breakdown of active androgenic metabolites. In postmenopausal women, low levels of 5α,3α-androstanediol may indicate reduced 5α-DHT activity or metabolism, potentially leading to diminished androgenic effects. This can manifest as reduced vitality, libido, and hair health. Monitoring 5α,3α-androstanediol levels can help assess androgen metabolism in postmenopausal women and provide insights into symptoms of androgen deficiency.

*** NutriPATH Pathology** NutriPath. 16 Harker Street, Burwood VIC 3125

Lab ID 250920005
Patient ID P000063
Ext ID 25092-0005

Test Patient

Sex: Female • 55yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
24-Jan-25

ANDROSTENEDIONE LOW:

Androstenedione is a precursor hormone involved in the synthesis of both testosterone and estrogen, playing a central role in steroidogenesis. In postmenopausal women, low levels of androstenedione may indicate adrenal insufficiency, ovarian dysfunction, or a natural decline in hormone production due to aging. Clinically, reduced levels of androstenedione are associated with decreased androgenic activity, which can manifest as symptoms such as fatigue, reduced muscle mass, diminished libido, and overall hormonal imbalance.

TESTOSTERONE/EPI-TESTOSTERONE RATIO ELEVATED:

A elevated ratio indicates increased testosterone production relative to epi-testosterone, suggesting heightened androgenic activity.

Urinary Glucocorticoids Comment

URINE CORTISOLS INTERPRETATION:

Elevated urinary cortisol levels at multiple time points throughout the day suggest hypercortisolism, reflecting chronic stress, adrenal hyperactivity, or conditions such as Cushing's syndrome or pseudo-Cushing's states (e.g., due to obesity, alcohol use, or severe stress). This state results in prolonged activation of the hypothalamic-pituitary-adrenal (HPA) axis, contributing to symptoms like anxiety, sleep disturbances, fatigue, abdominal weight gain, insulin resistance, hypertension, and immune suppression. Chronic hypercortisolism may also lead to muscle catabolism, bone loss, and impaired wound healing.

Management strategies include addressing underlying causes, such as evaluating for Cushing's syndrome through confirmatory tests (e.g., A salivary 4 point cortisol including a 12am sample). Nutritional support can help modulate cortisol levels, including adaptogenic herbs like ashwagandha and rhodiola, magnesium, vitamin C, and B vitamins. Anti-inflammatory and low-glycemic diets are beneficial, while minimising stimulants like caffeine. Stress management techniques and consistent sleep-wake cycles are important interventions.

Urine Melatonin Comment

URINE MELATONINS INTERPRETATION:

Consistently low or low-normal melatonin levels across all time points suggest potential circadian rhythm disruption or poor pineal gland function. This can be indicative of insufficient sleep quality or quantity, excessive exposure to artificial light (especially blue light from screens), or stress-related dysregulation. Symptoms may include difficulty falling asleep, poor sleep quality, or insomnia. Treatment strategies include improving sleep hygiene, minimising light exposure before bedtime, and promoting relaxation through dietary support such as magnesium or melatonin supplementation in the evening. Lifestyle changes such as reducing caffeine intake and managing stress levels are also beneficial. If melatonin supplementation is warranted, daily doses of 0.5 mg to 5 mg with 2mg being the most common dose shows similar effectiveness, although sleep onset may be quicker at the higher dose.

Methodology

Liquid Chromatography-Mass Spectrometry (LC-MS/MS/MS), Inductively Coupled Plasma Mass Spectrometry (ICP-MS)