

SHINE Post-Conference



SHINE
CONFERENCE

with Dr. Ritamarie Loscalzo (MS, DC, CCN, DACBN)

SCIENTIFIC AND HOLISTIC INVESTIGATION
OF NUTRITIONAL ENDOCRINOLOGY

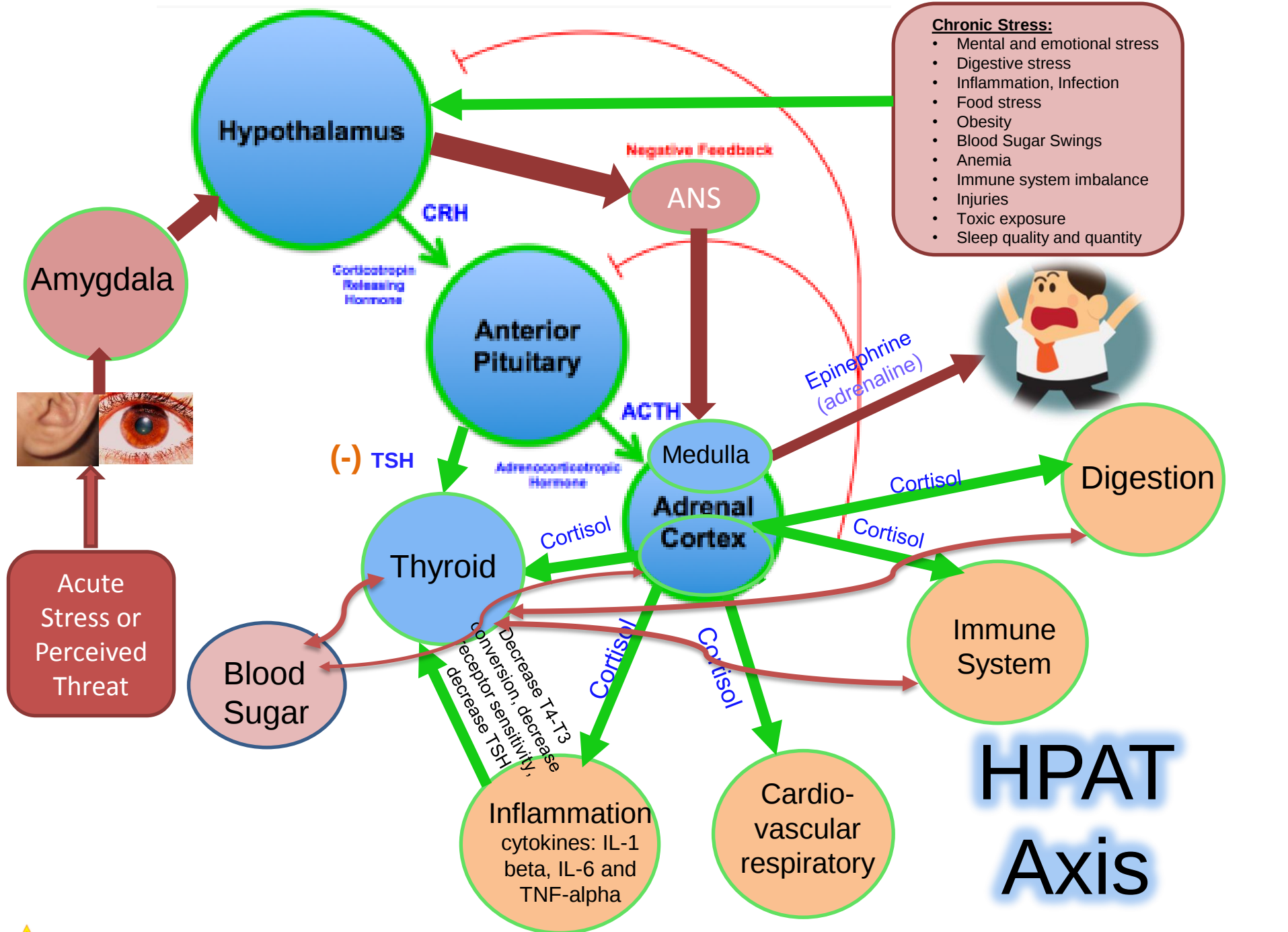
Continue the Glow!



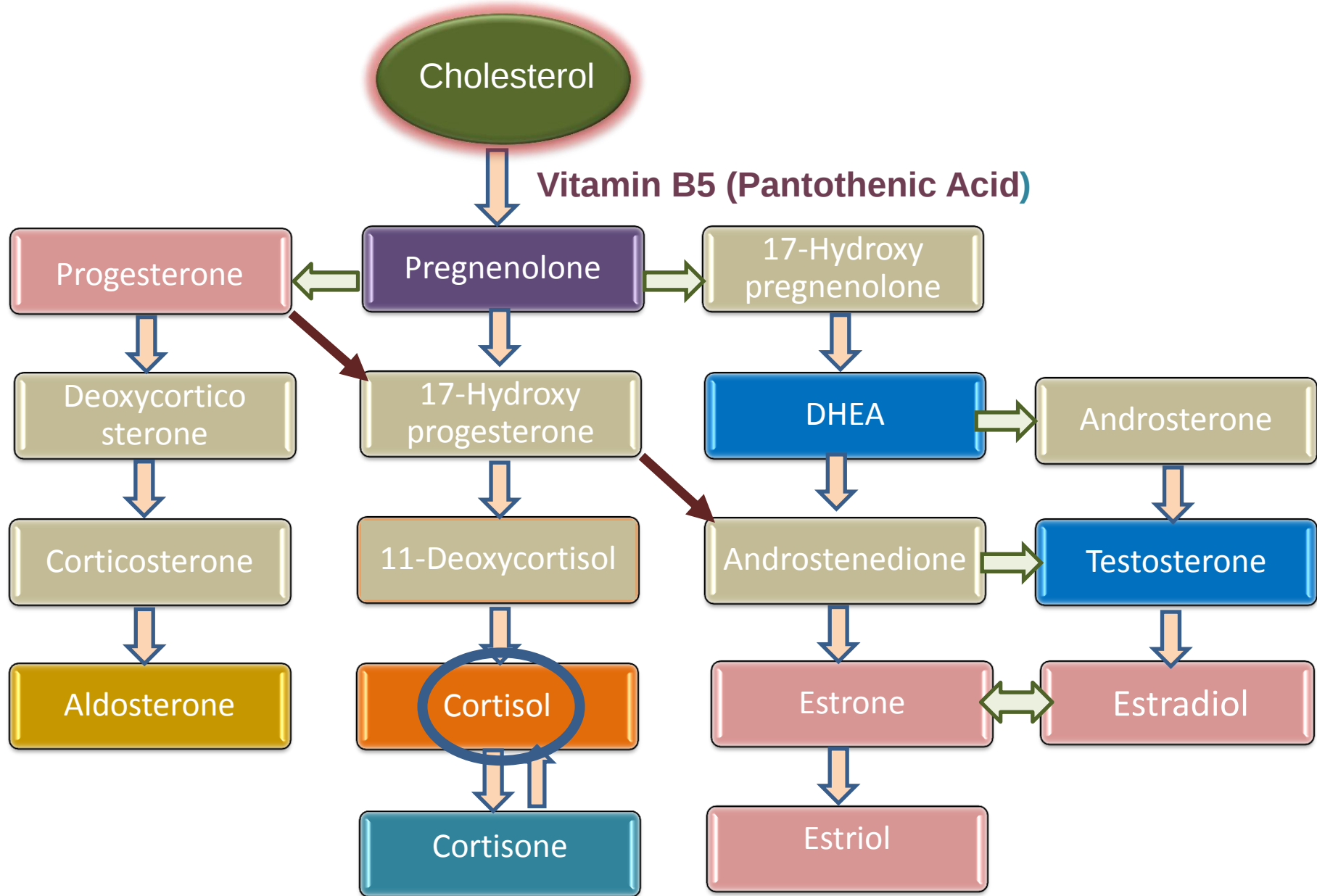


Medical Disclaimer: The information in this presentation is not intended to replace a one-on-one relationship with a qualified health care professional and is not intended as medical advice. It is intended as a sharing of knowledge and information from the research and experience of Dr. Ritamarie Loscalzo, drritamarie.com, and the experts who have contributed. We encourage you to make your own health care decisions based upon your research and in partnership with a qualified health care professional.





Cortisol Steal



HPAT Assessment Tools

✓ Asking the Right Questions

✓ Symptom Surveys

✓ Physical Exam

✓ Blood Chemistry

✓ Functional Assessments

- Adrenal Stress Index
- Fatty Acids
- Amino Acids
- Organic Acids
- Steroid Hormone Panels



✓ Home Testing

- Body Temperature
- Iodine Patch Test
- pH Testing
- Mineral Testing
- Konisberg
- Blood Sugar
- Postural Blood Pressure
- Pupillary Constriction
- Oxidata
- Vitamin C Urine/Flush
- HCl Challenge
- Raglan's



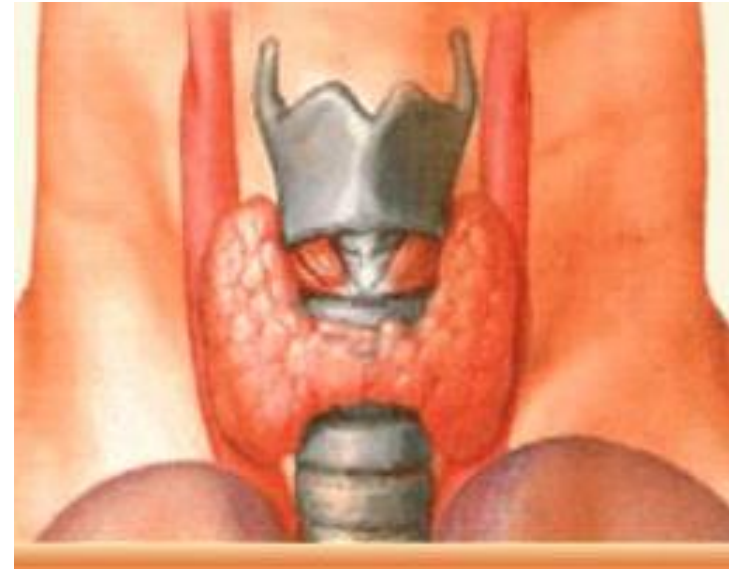
Adrenal vs. Thyroid Major Symptom Differentiations

Sign or Symptom	Hypothyroid Tendency	Hypoadrenal Tendency
Body temperature	Low and consistent	Low and fluctuates
Energy pattern	Generally sluggish	"Wired and tired"
Body type	Difficulty losing fat	Difficulty gaining muscle
Blood pressure	Normal to high	Low to normal
Total cholesterol	High	Low
Facial color	Reddish	Pale
Sweating	Scanty or none	Profuse
Bowels	Sluggish / constipated	Irritable or hyper functioning



Types of Thyroid Dysfunction

- ✓ Hypothyroidism
 - Primary
 - Pituitary/Hypothalamus
- ✓ Hyperthyroidism
- ✓ Autoimmune Thyroid Conditions
 - Graves' Disease
 - Hashimoto's Thyroiditis
- ✓ Subclinical Thyroid Conditions
 - Binding Protein Problems
 - Conversion Problems
 - Thyroid Receptor Resistance
 - Wilson's Temperature Syndrome
- ✓ Cancer



Complete Thyroid Lab Panel

Think Optimal Range!

- ✓ TSH (1-3)
- ✓ Total T4 (thyroxine) (6-12)
- ✓ Total T3 (triiodothyronine) (100-180)
- ✓ Free T4 (1-1.4), Free T3 (3-4)
- ✓ Thyroid Antibodies – all 0 or close to it
 - Thyroid Peroxidase
 - Antithyroglobulin
 - Thyroid-Stimulating Immunoglobulin
- ✓ Thyroid-Binding Globulin
- ✓ Reverse T3 (ration T3:rT3 at least 20)
- ✓ T3 uptake, Free Thyroxine Index **



***Done on routine thyroid panels as an estimate of free T4 an thyroid binding globulin status. It's an inexpensive estimate of free T4*



CATEGORIES	Units	LAB RANGE		RANGE		01/23/12	11/19/12	1/31/2013 quest	02/23/13	04/24/13	1/24/14 quest	02/04/14	8/4/2014 quest
		Min	Max	Min	Max	Results	Results	Results	Results	Results	Results	Results	Results
Lab Markers													
HDL Cholesterol	mg/dl	40.0	-	55.0	-	107		89		93	85		
LDL Cholesterol Calc	mg/dl	1.0	130.0	10.0	99.0	77		84		68	88		
T Cholesterol/HDL Ratio	-	0.1	3.7	0.1	3.0	1.9		2.1		1.9	2.2		
THYROID MARKERS													
TSH	mIU/L	0.3	5.7	1.5	3.0	5.99	2.93	2.2		3.12	5.09		3.16
Thyroxine (T4)	ug/d	4.5	12.5	6.0	12.0	8.5	9.4			8.9			
T3 Uptake	mg/dl	27.0	37.0	28.0	38.0	28	32			32			
Free Thyroxine Index	mg/dl	1.2	4.9	1.2	4.9	2.4	3			2.8			
Total Triiodothyronine (TT3)	ng/dL	100.0	180.0	100.0	180.0								
Free T4	ng/dL	0.7	2.0	1.0	1.5	1.08	1.18			1.25	1.1		1.3
Free T3	pg/mL	2.0	4.4	3.0	4.5	3.1	2.8	3			2.8		2.9
Reverse T3	pg/ml	90.0	350.0	90.0	350.0			17		22.6	18		15
Thyroid Binding Globulin	ug/dl	18.0	27.0	18.0	27.0								
Antithyroglobulin Antibody	a negative test is normal	0.0	1.0	0.0	1.0	46	46		38	49	40	31.9	22
Thyroid Peroxidase (TPO) Ab	IU/mL	0.0	34.0	0.0	2.0	1433	399	>1000	320	359	814	370	402



Dr. Bruce Rind's Thyroid Scale

Relative Scale																				
-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
Low										Optimal					High					

	Thyroid Scale Diagram													
Labs	-3		-2		-1		0		+1		+2		+3	
TSH	0.82	0.97	0.98	1.13	1.14	1.29	1.30	1.80	1.81	2.20	2.21	2.60	2.61	3.00
FT4	0.90	0.99	1.00	1.09	1.10	1.19	1.20	1.30	1.31	1.40	1.41	1.50	1.51	1.60
FT3	266	283	284	301	302	319	320	330	331	348	349	366	367	384



Dr. Bruce Rind's Thyroid Scale

Relative Scale																					
-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	
Low										Optimal						High					
Thyroid Scale Diagram																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH	0.10	0.17	0.18	0.25	0.26	0.33	0.34	0.41	0.42	0.49	0.50	0.65	0.66	0.81	0.82	0.97	0.98	1.13	1.14	1.29	1.30
FT4	0.30	0.34	0.35	0.39	0.40	0.49	0.50	0.59	0.60	0.69	0.70	0.79	0.80	0.89	0.90	0.99	1.00	1.09	1.10	1.19	1.20
FT3	140	157	158	175	176	193	194	211	212	229	230	247	248	265	266	283	284	301	302	319	320
	320	330	331	348	349	366	367	384	385	402	403	420	421	438	439	456	457	474	475	492	493
	500	501	6.00	6.01	8.00	8.01	10.0	10.01	15.00	15.01	39.0										
Thyroid Scale Diagram - Healthy																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH											150										
FT4											122										
FT3											326										
Thyroid Scale Diagram - Hypothyroid																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH																	5.50				
FT4							0.85														
FT3								294													
Thyroid Scale Diagram - Early Hashimoto's (Hyperthyroid)																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH							0.80														
FT4														1.65							
FT3												352									
Thyroid Scale Diagram - Adrenal Fatigue																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH								0.90													
FT4								0.95													
FT3								282													
Thyroid Scale Diagram - Adrenal Fatigue w/Support																					
Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH								0.90													
FT4							0.89														
FT3								290													



Determining Thyroid Pattern

	Units	Ideal Low	Ideal High	Primary Hypo Thyroid	Pituitary Hypo Thyroid	Auto Immune Hypo Thyroid	Auto Immune Hyper Thyroid	Under Conversion T4 to T3	Over Conversion T4 to T3	High Thyroid Binding Globulin	Low Thyroid Binding Globulin	Thyroid Resistance
TSH		1.8	3.0	H	L	N or H	L	N	N	N	N	N
Total T4	ug/d	6.0	12.0	N or L	N or L	N or L	N or H	N or H	N or L	N	N	N
Free T4	ng/dL	1.0	1.5	N or L	N or L	N or L	N or H	N or H	N or L	L	H	N
T3 Uptake	md/dl	28.0	38.0	N or L	N	N or L	N	L	HN or H	L	H	N
Free T3	pg/mL	300.0	450.0	N or L	N or L	N or L	N or H	L	HN or H	L	H	N
Reverse T3 (rT3)	pg/ml	90.0	350.0	N	N	N	N	L	N	N	N	N
Thyroid Antibodies		0	2	N	N	H	H	N or H	N	N	N	N
PLUS												
Cholesterol	mg/dl	0	200	N or H			N or L					
Triglycerides	mg/dL	35	160	H			L					
Calcium	mg/dL	8.7	10.5	N or H			N or L					
Possible Causes				deficiency of iodine or cofactors such as Se, Mg, Cu, niacin, riboflavin, B6 and zinc	serotonin or dopamine deficiency, excess cytokines (inflammation), excess cortisol (stress) excess prolactin	antibodies to thyroid peroxidase, thyroglobulin (binding protein), TSH, T3 or T4	antibodies to TSH, or viral	deficiency of cofactors, serotonin, dopamine, gut dysbiosis, inflammation (increased cytokines), excess cortisol (stress),	excess testosterone	excess estrogen	excess testosterone	inflammation (elevated cytokines), excess cortisol (stress), deficiency of Vitamin A, elevated homo cysteine



Exam Signs of Adrenal Problems

- ✓ Blood pressure goes down upon standing
- ✓ Pupils can't stay **constricted** with bright light
- ✓ Rib margin tenderness
- ✓ Brown or black **discoloration below eyelids**
- ✓ Dark gray or reddish back of tongue
- ✓ Ulcerations or **canker sores**
- ✓ Bad breath
- ✓ Rough, red, **flaky cuticles**
- ✓ Tongue signs



Routine Blood Screen: Adrenal Analysis

Low Adrenal

- ✓ Potassium +
- ✓ Sodium -
- ✓ Glucose -

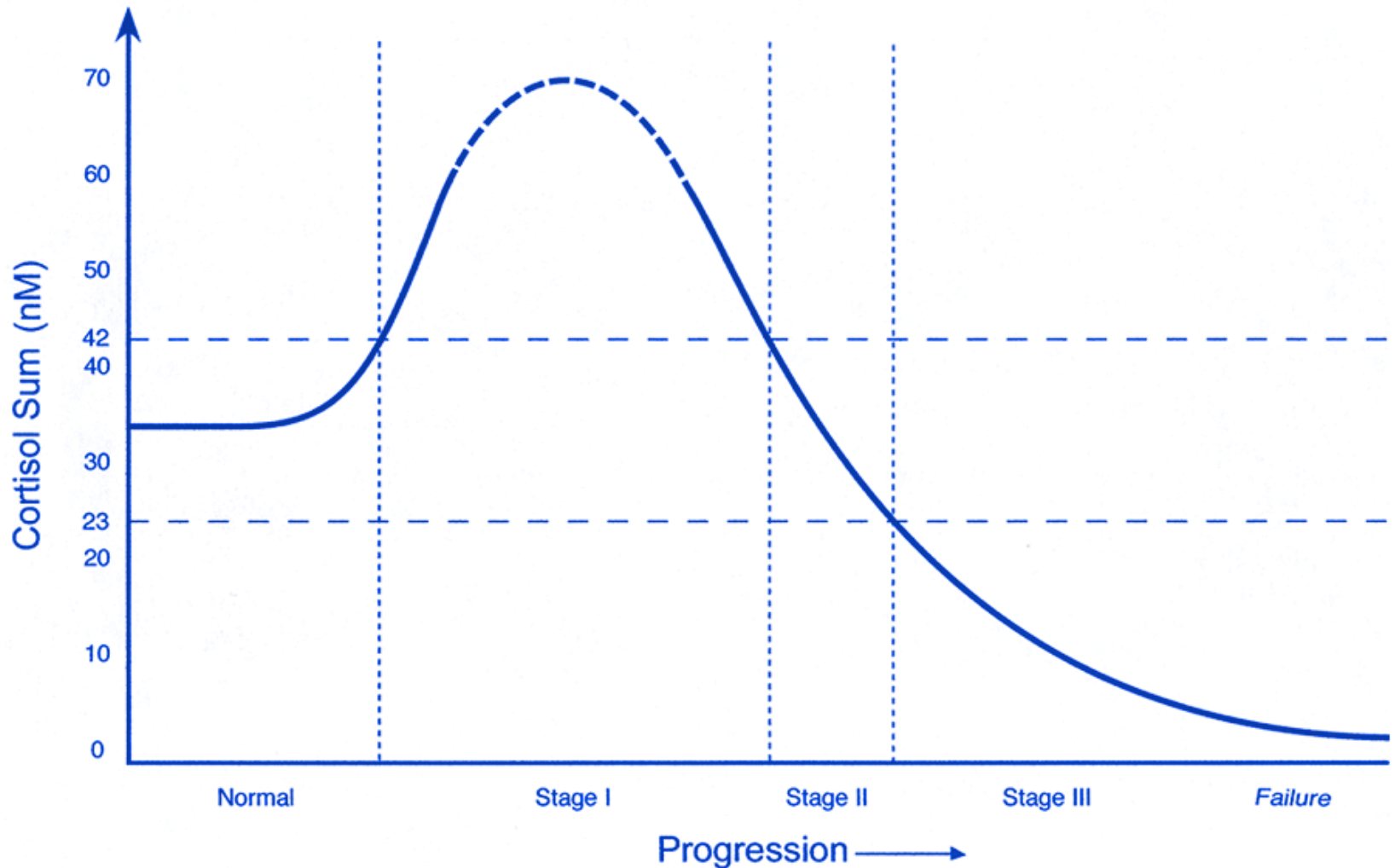


Hyper Adrenal

- ✓ Potassium -
- ✓ Sodium +
- ✓ Glucose +
- ✓ Triglycerides +



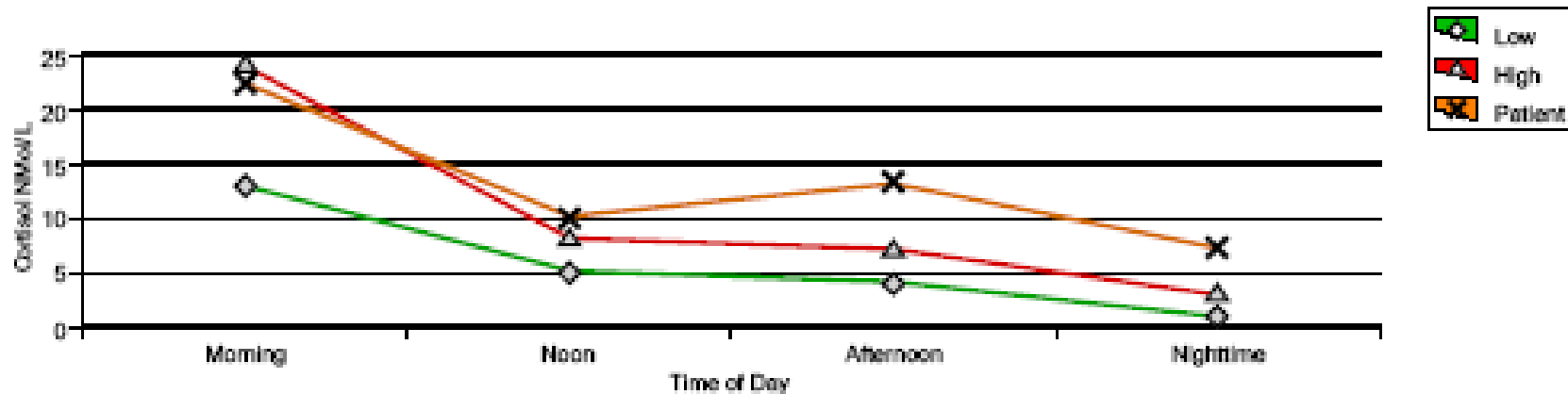
Progression of Stages in Adrenal Exhaustion – per BioHealth



BioHealth Example – Stage 1

Functional Adrenal Stress Profile - 201

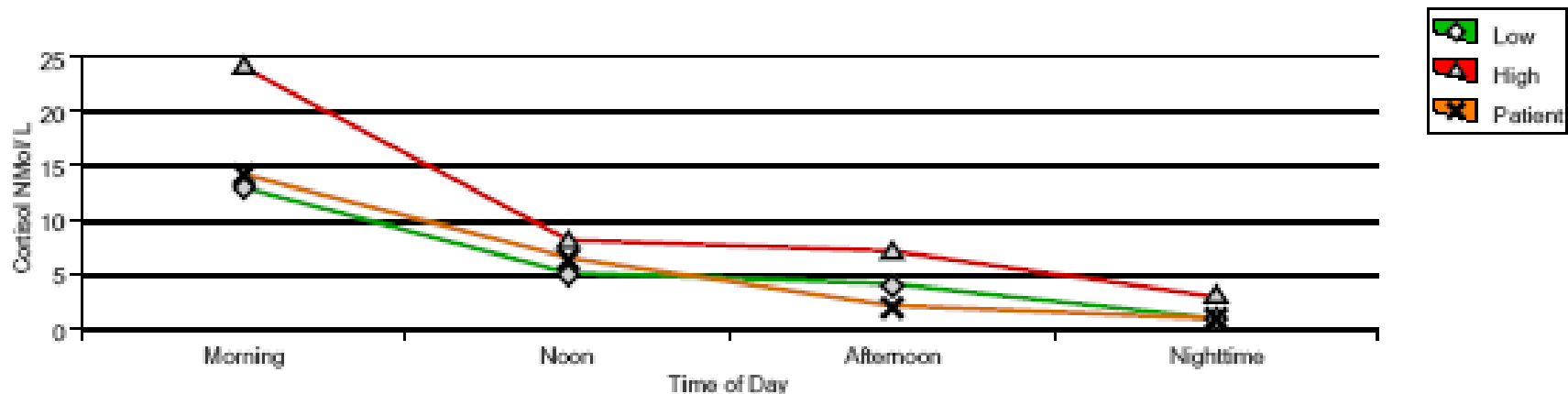
Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	22.4	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	10.0*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	13.4*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	7.3*	1.0 - 3.0	nM/L
Cortisol Sum	53.1*	23.0 - 42.0	nM/L
DHEA-S Average	2.00	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	26.6*	5.0 - 6.0	Ratio



BioHealth – Stage 2

Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	14.2	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	6.4	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	2.0*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.0	1.0 - 3.0	nM/L
Cortisol Sum	23.6	23.0 - 42.0	nM/L
DHEA-S Average	2.60	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	9.1*	5.0 - 6.0	Ratio



Diagnostechs Example – Stage 3

Figure 1. Circadian Cortisol Profile

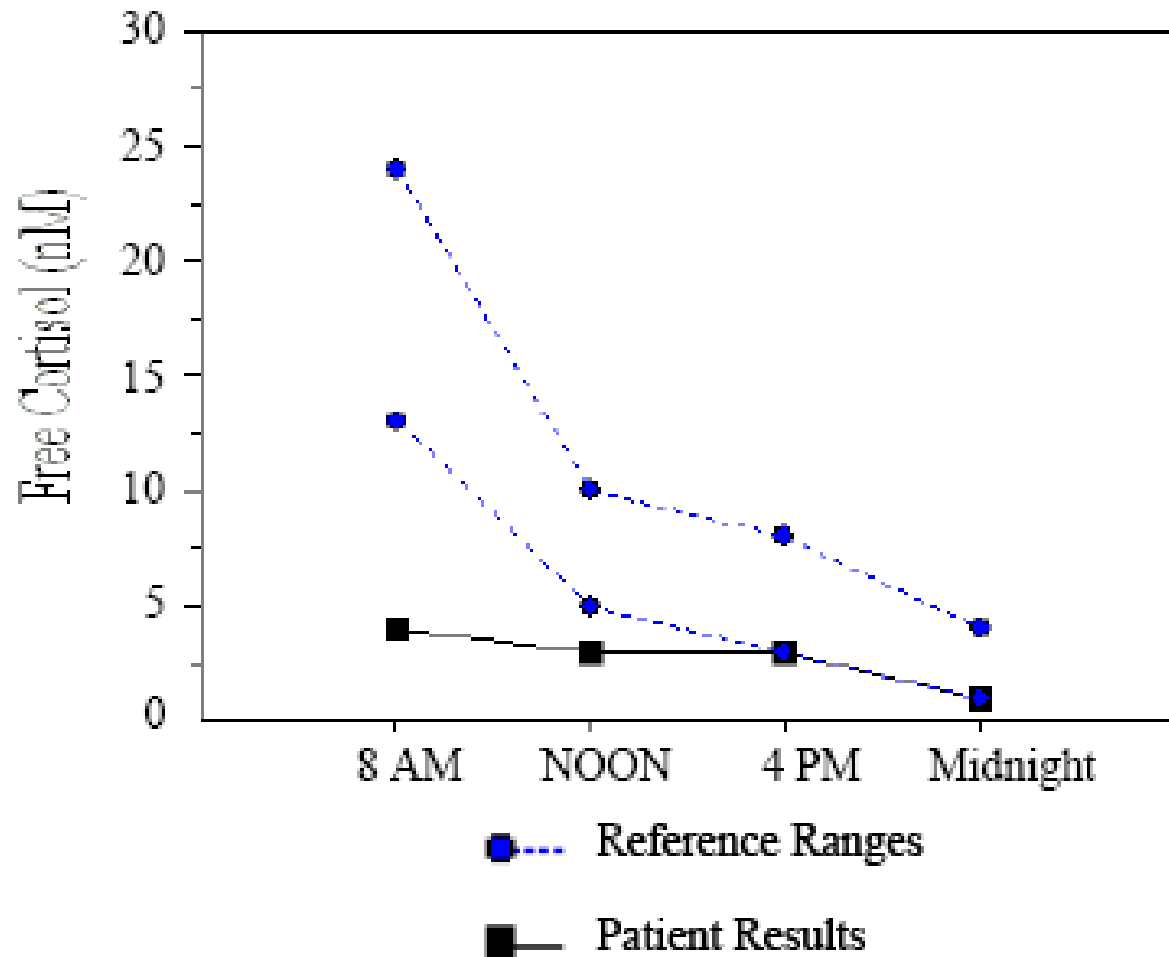


Figure 1. Circadian Cortisol Profile

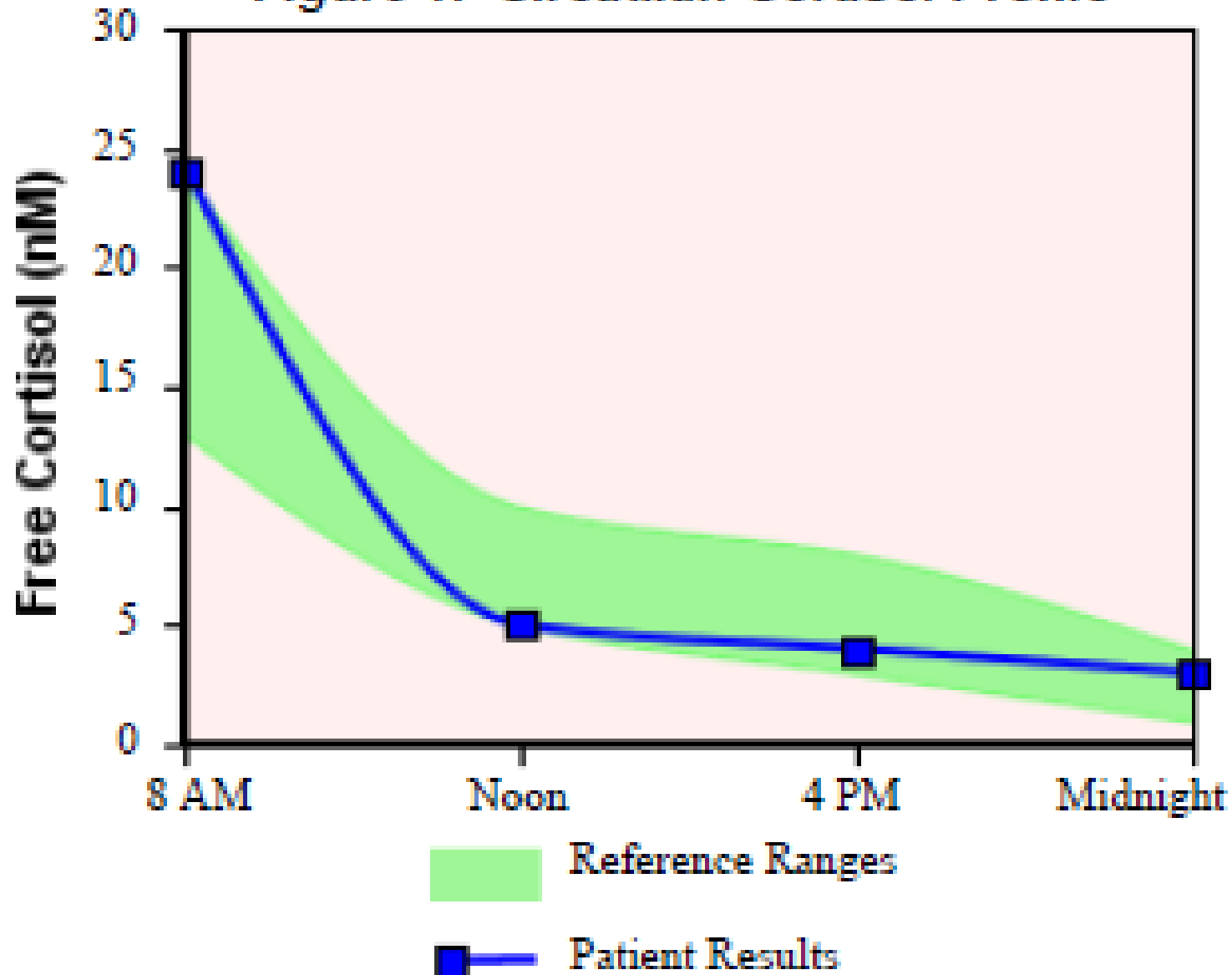


Figure 1. Circadian Cortisol Profile

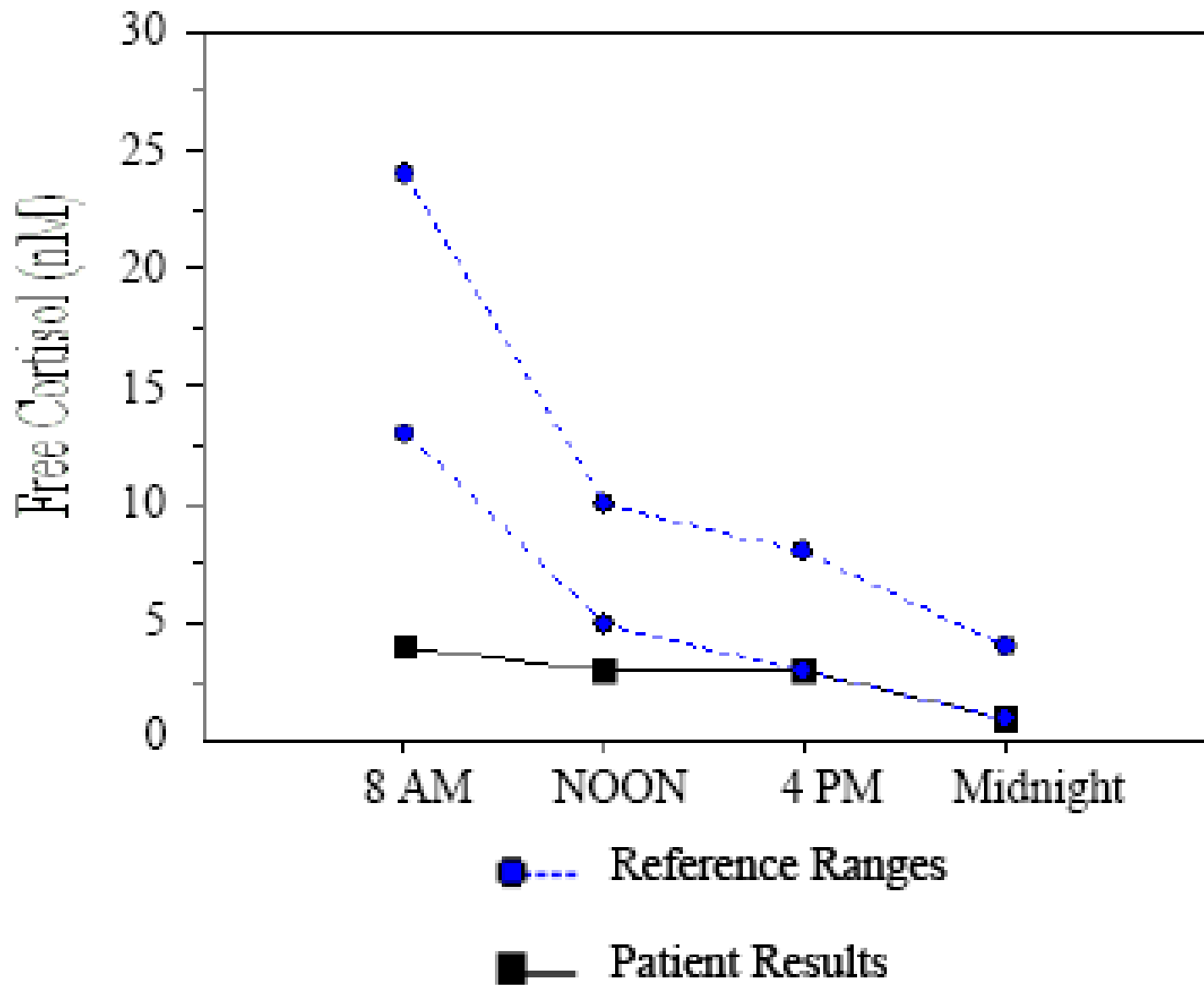


Figure 1. Circadian Cortisol Profile

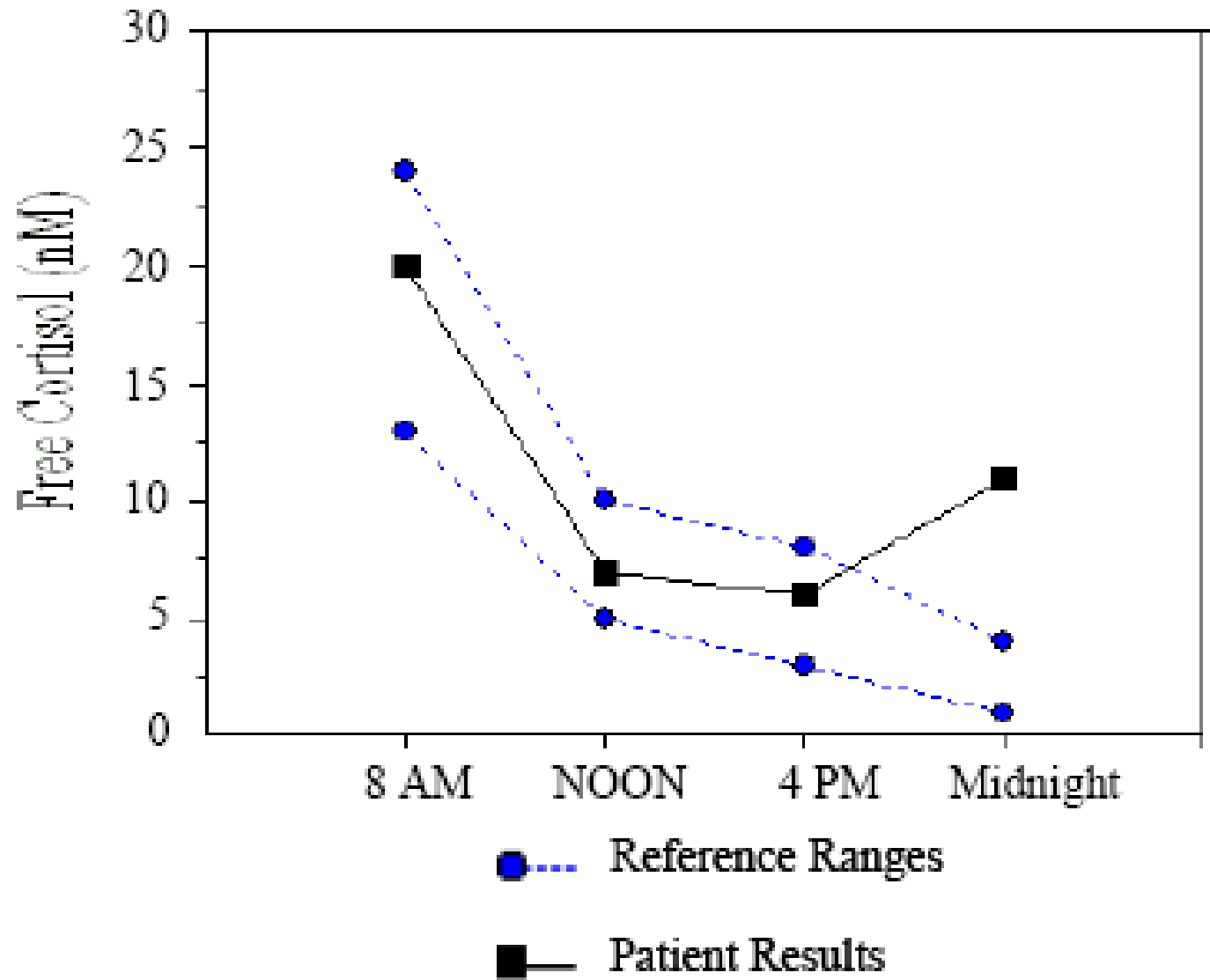


Figure 1. Circadian Cortisol Profile

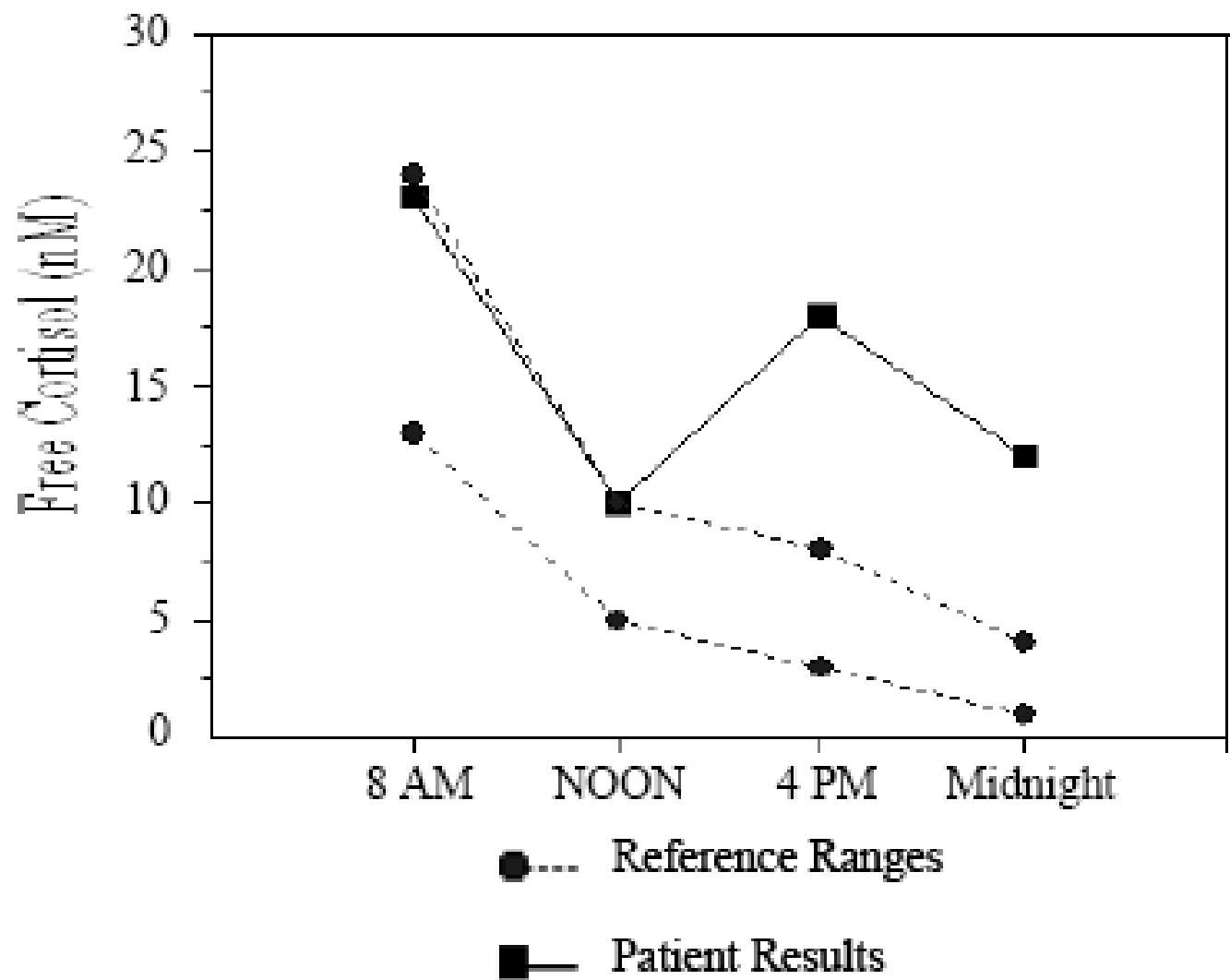


Figure 1. Circadian Cortisol Profile

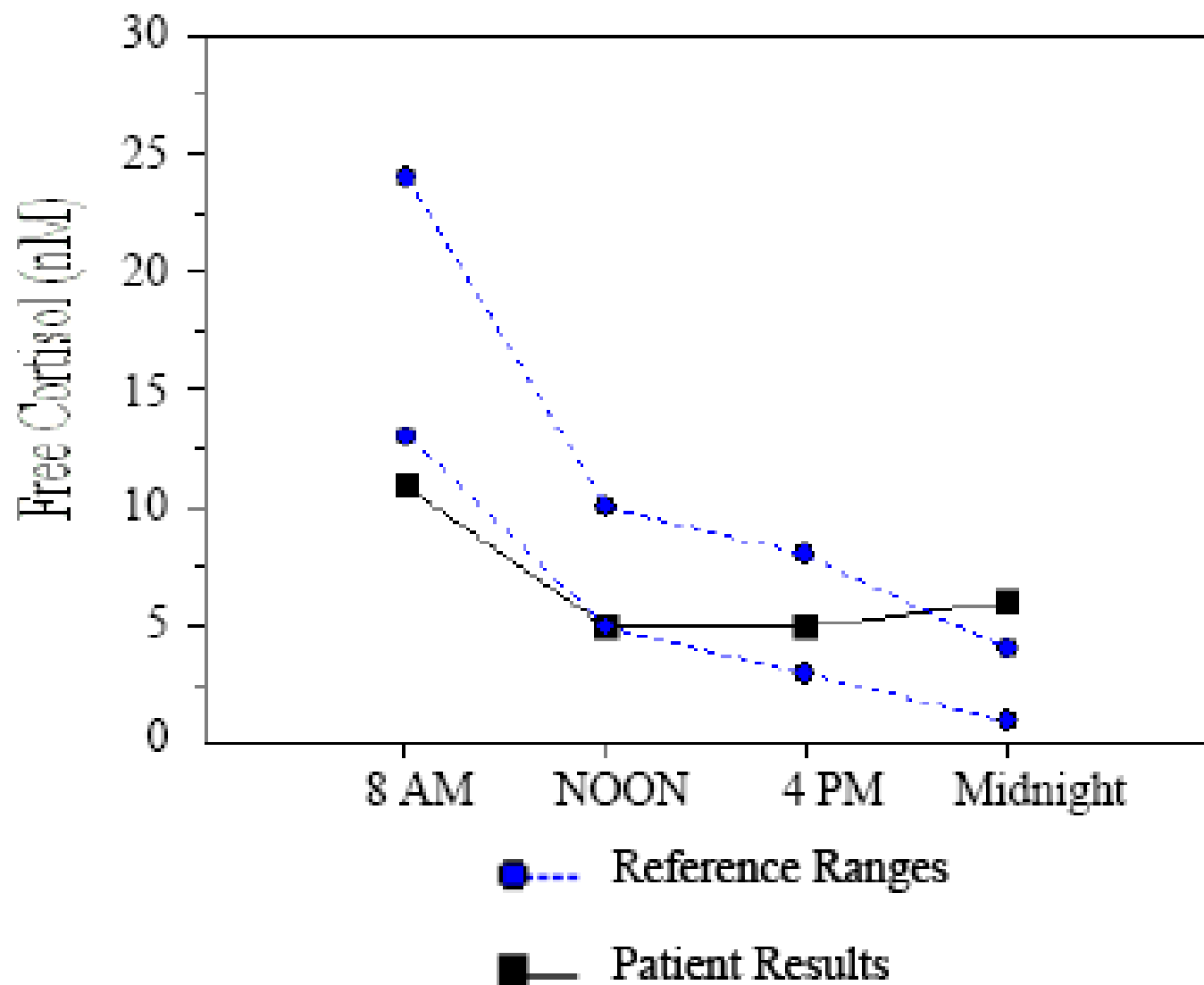


Figure 1. Circadian Cortisol Profile

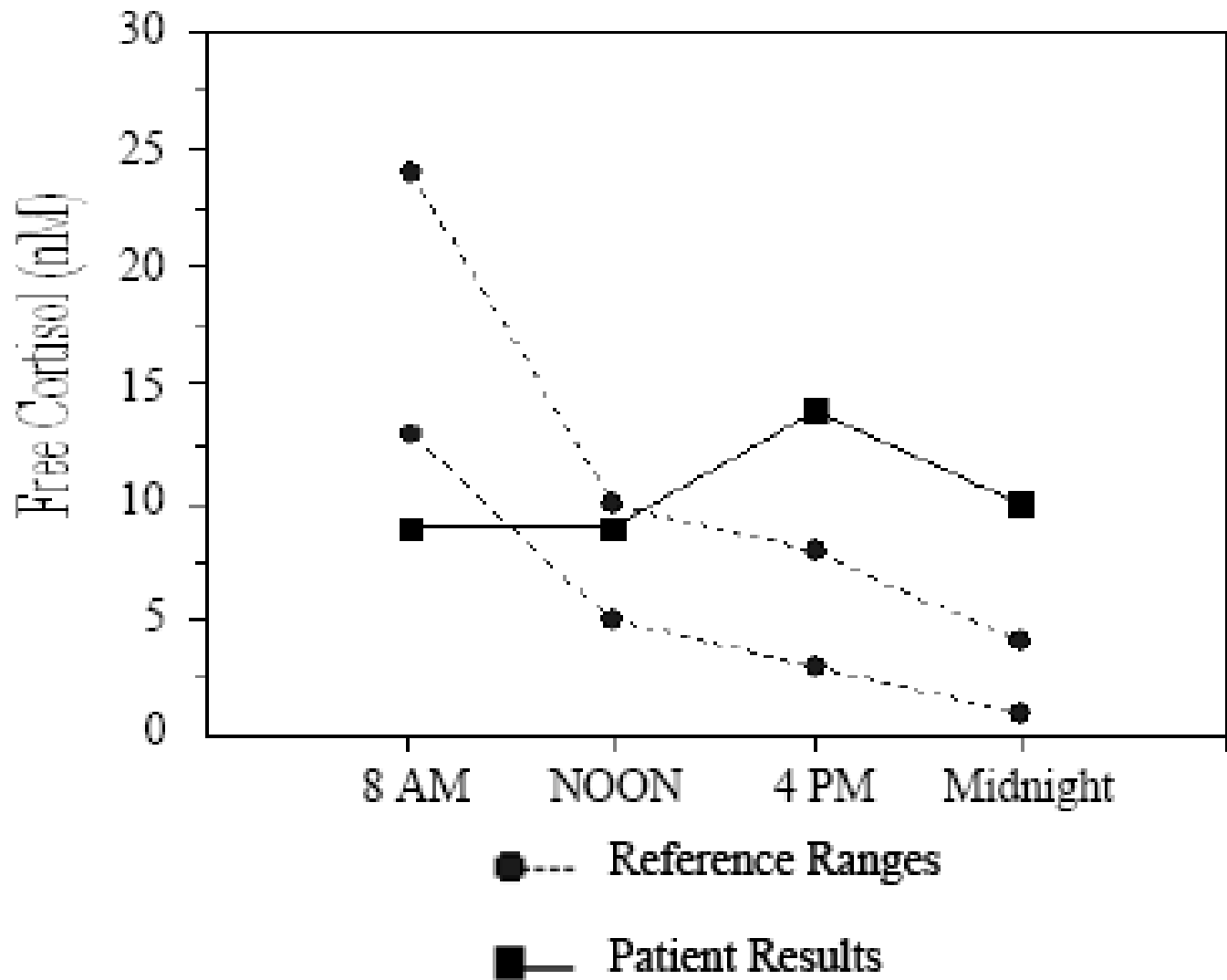


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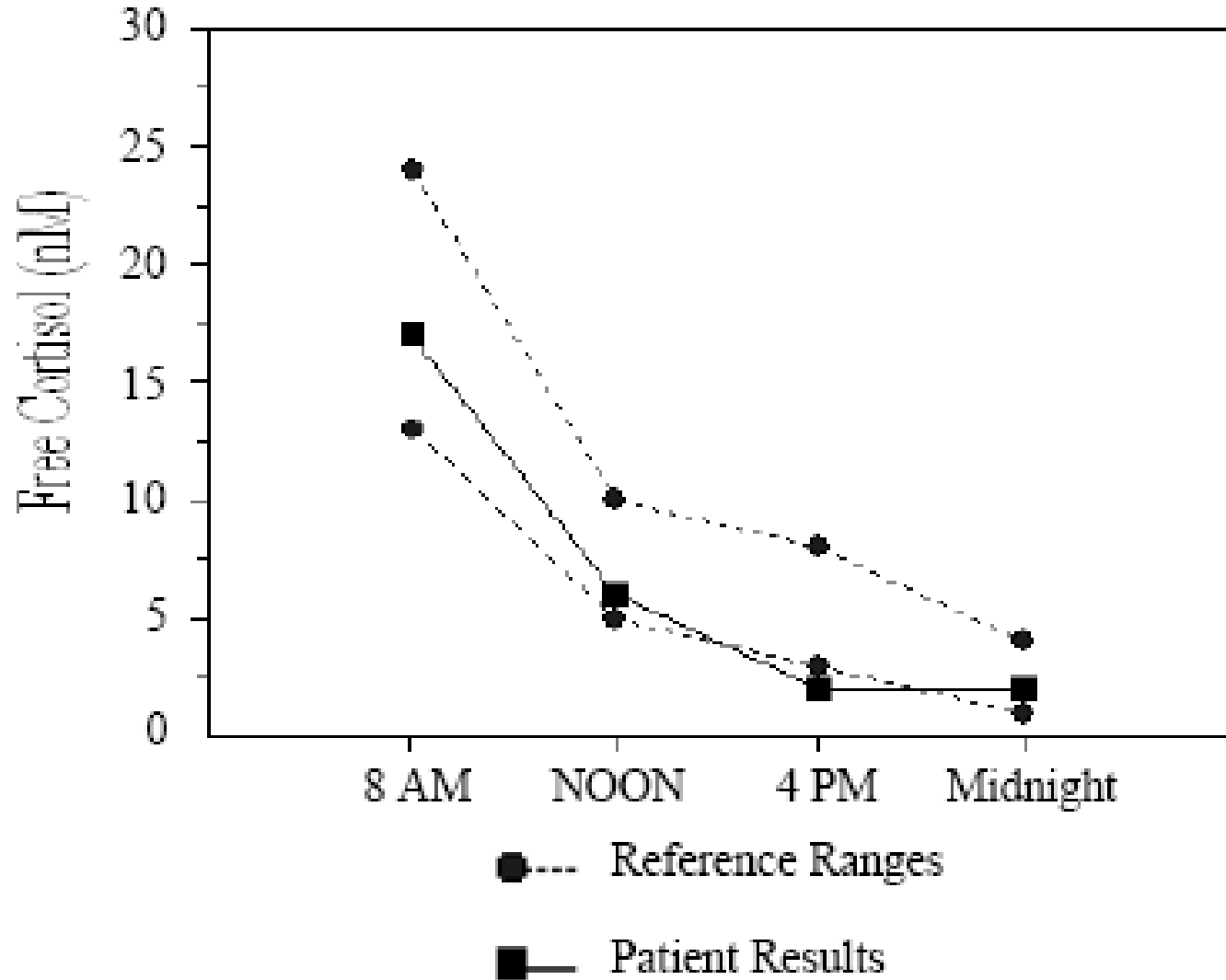


Figure 1. Circadian Cortisol Profile

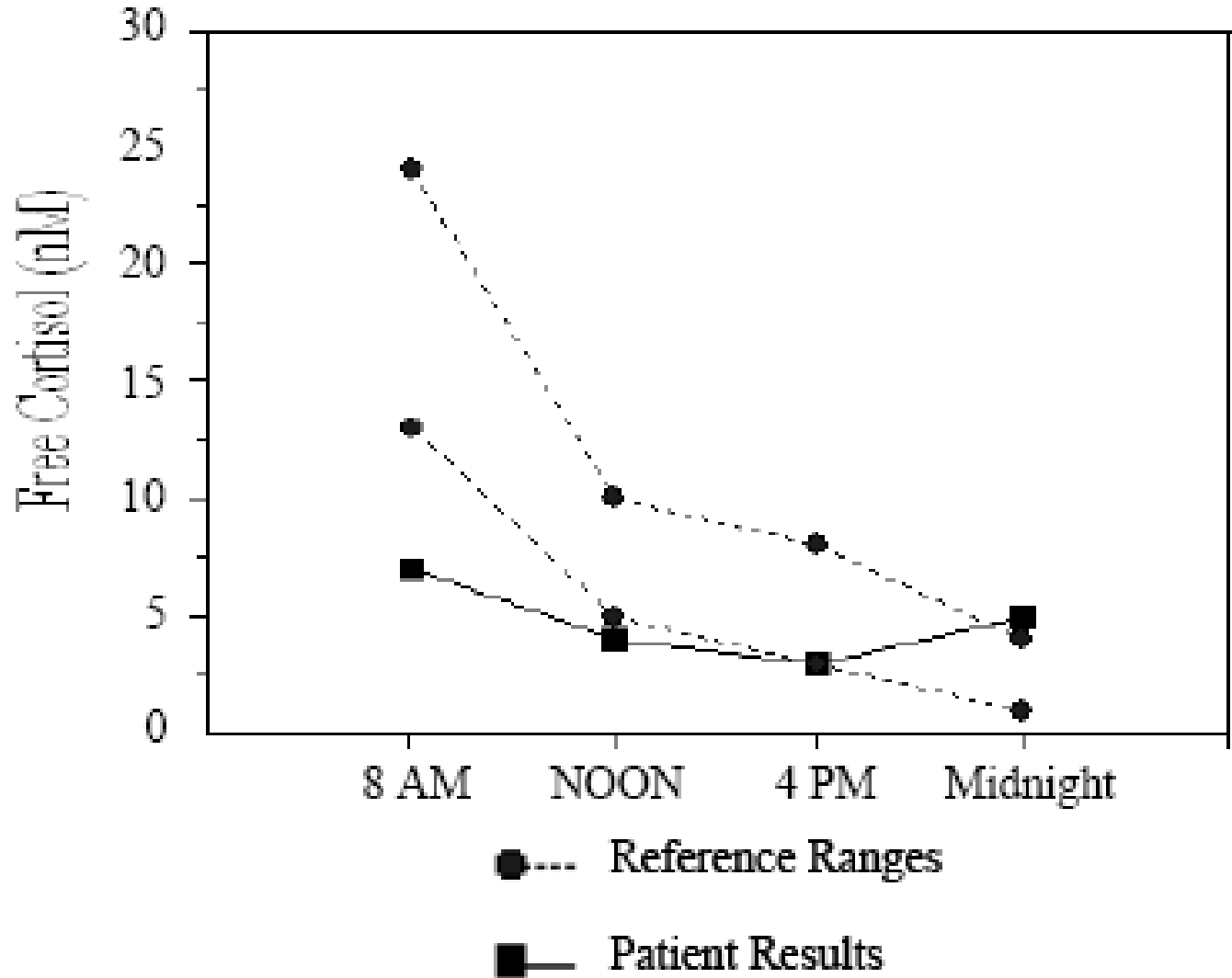


Figure 1. Circadian Cortisol Profile

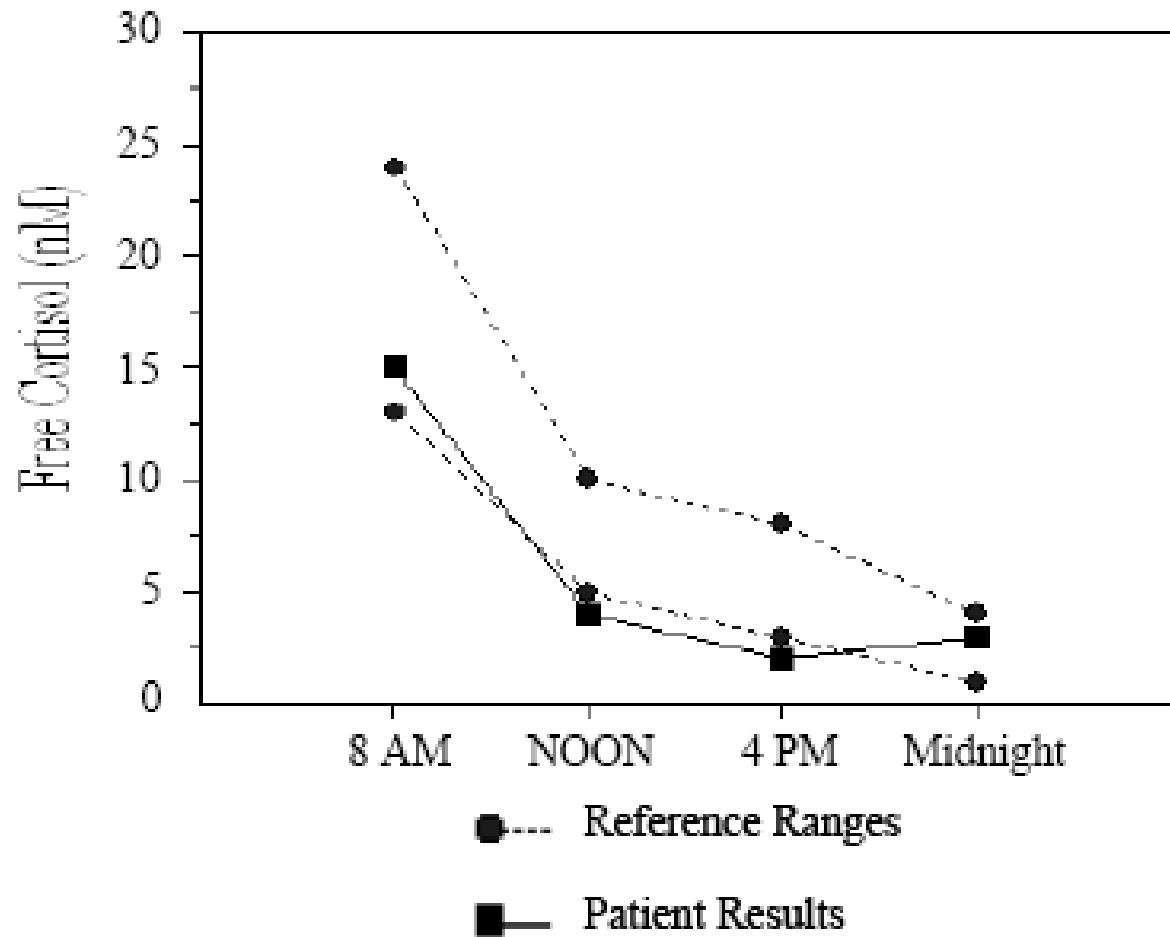


Figure 1. Circadian Cortisol Profile

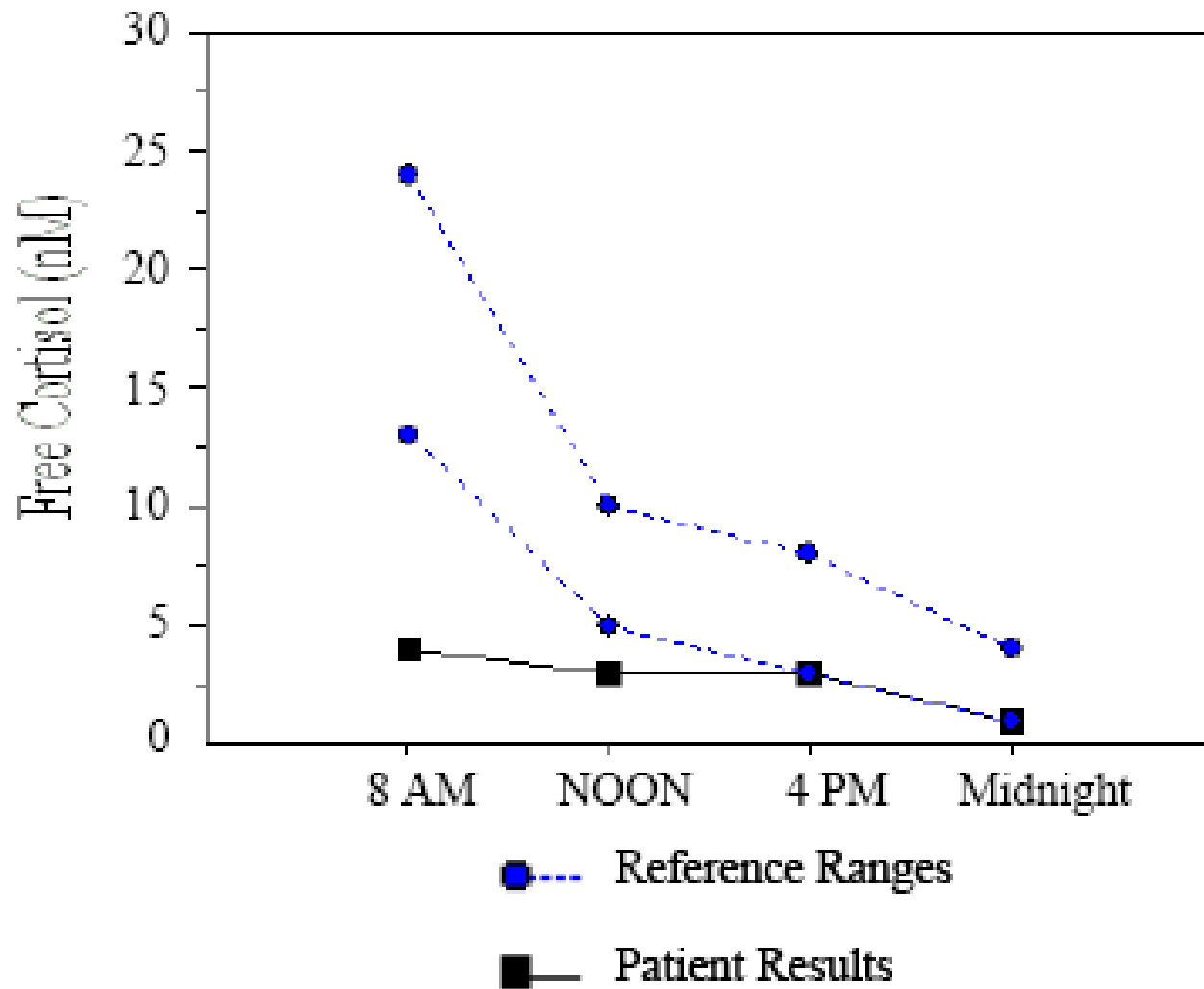
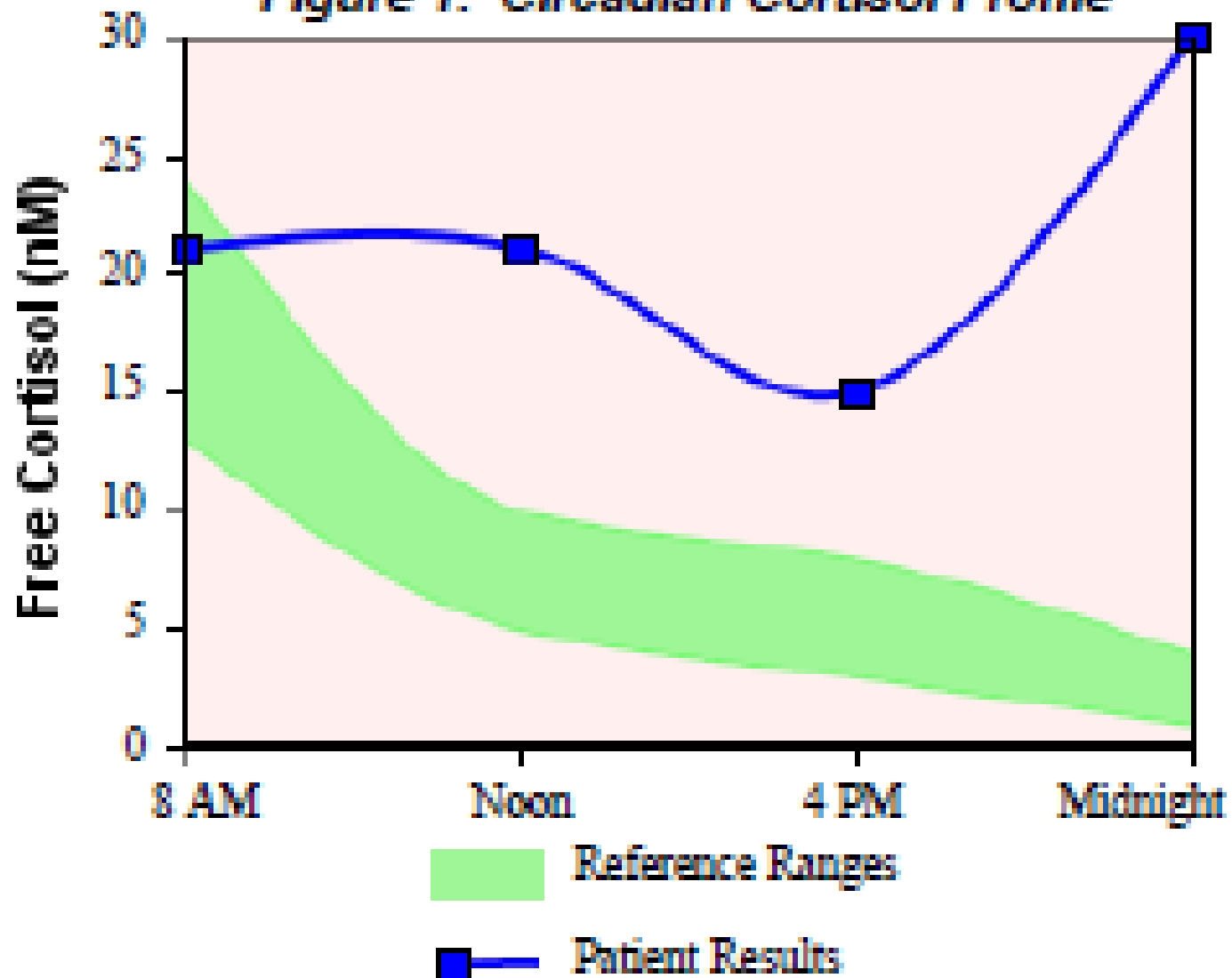
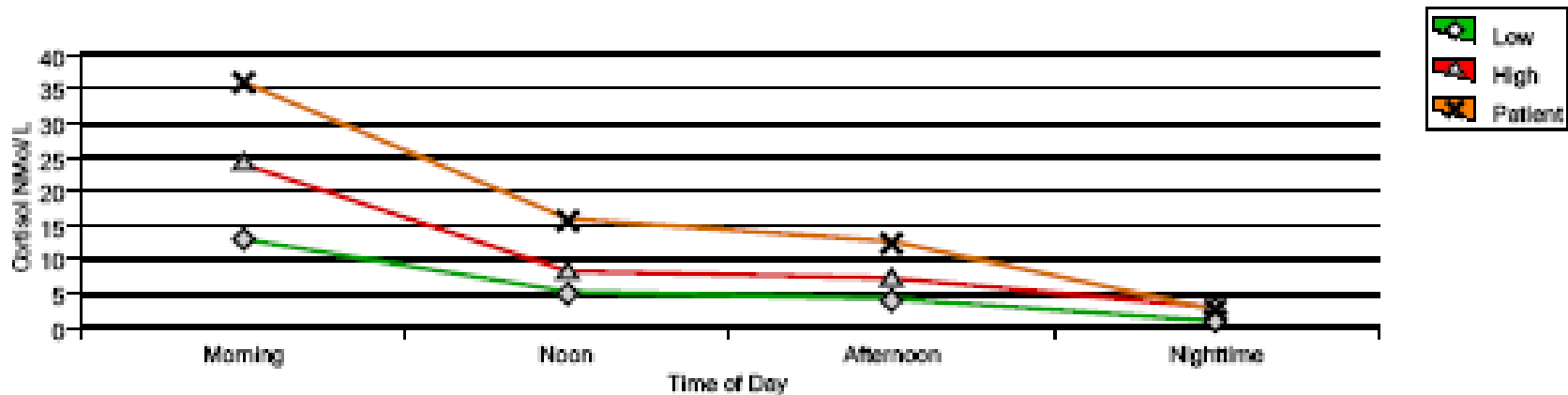


Figure 1. Circadian Cortisol Profile



Functional Adrenal Stress Profile - 201

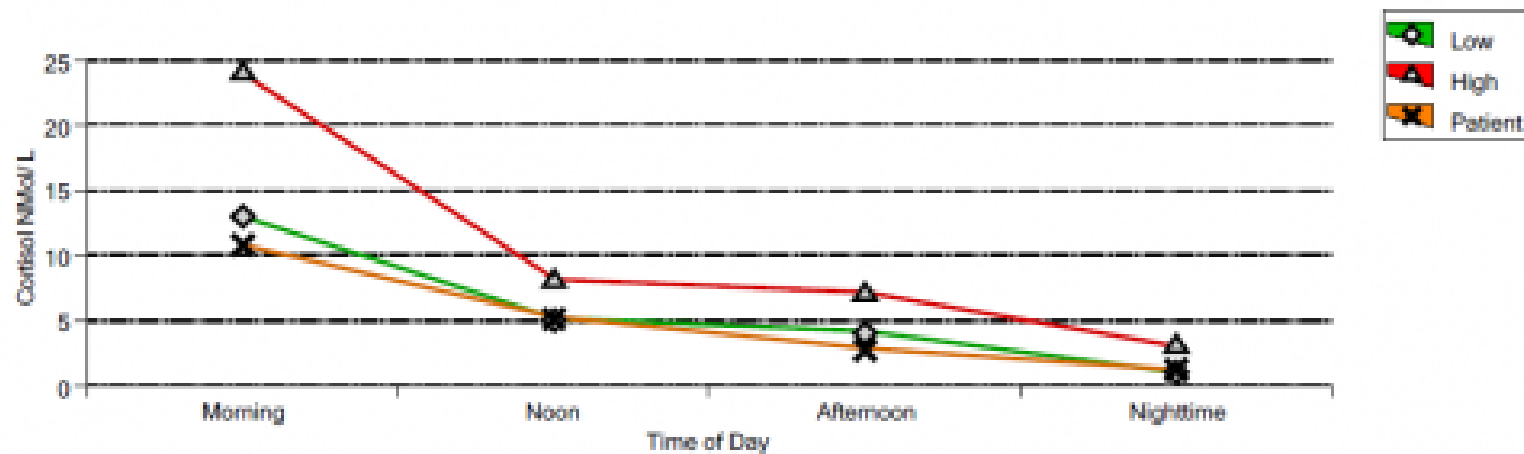
Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	36.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	15.7*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	12.4*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	2.7	1.0 - 3.0	nM/L
Cortisol Sum	66.8*	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	51.4*	5.0 - 8.0	Ratio



BioHealth – Stage 3

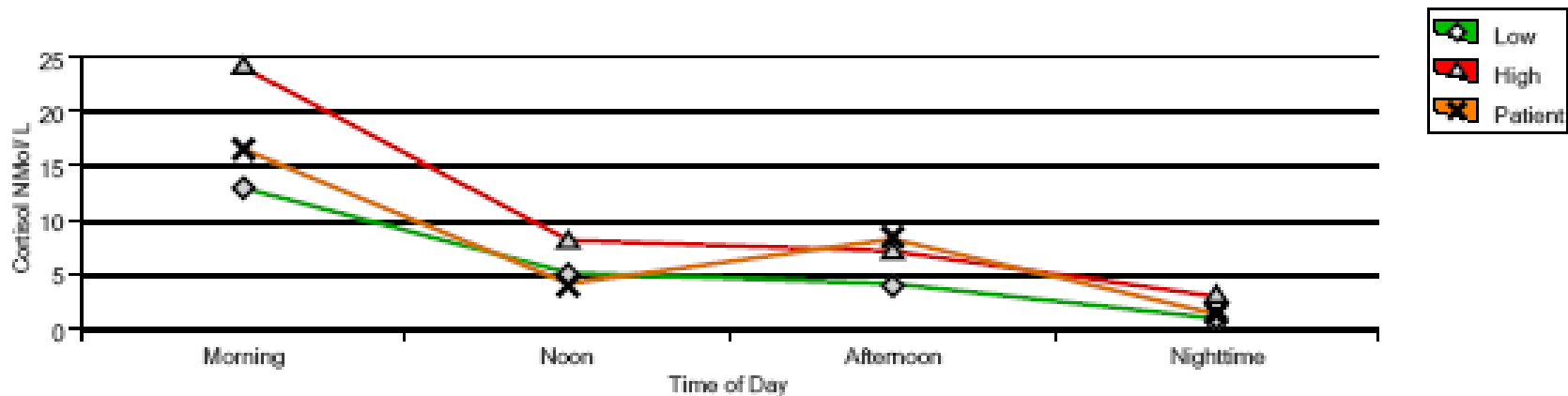
Functional Adrenal Stress Profile plus V - 205

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	10.8*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	5.1	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	2.7*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.2	1.0 - 3.0	nM/L
Cortisol Sum	19.8*	23.0 - 42.0	nM/L
DHEA-S Average	2.22	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	8.9*	5.0 - 6.0	Ratio



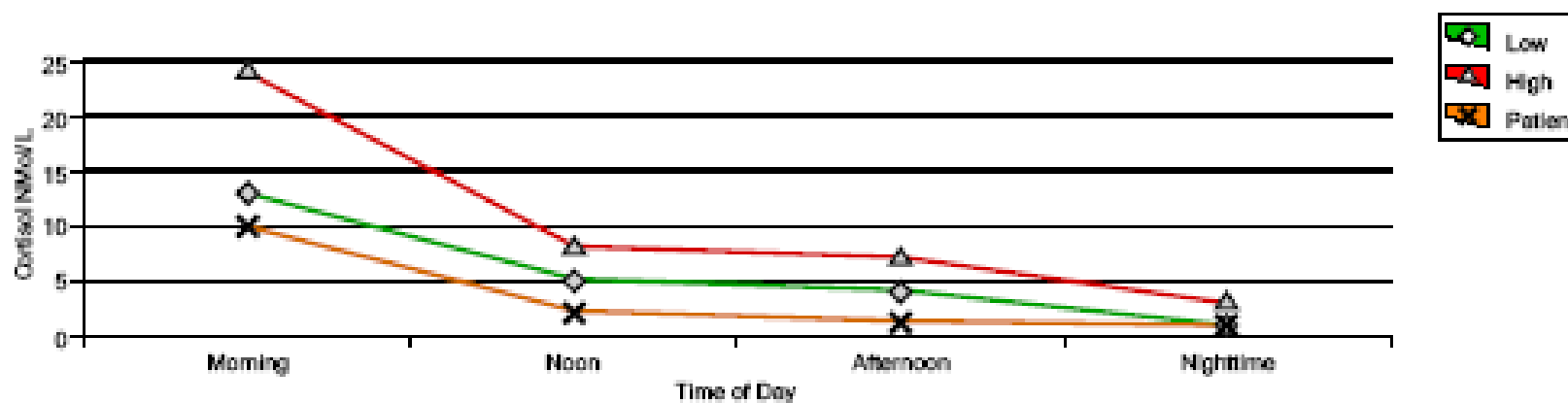
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	16.5	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	4.0*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	8.5*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.4	1.0 - 3.0	nM/L
Cortisol Sum	30.4	23.0 - 42.0	nM/L
DHEA-S Average	0.70*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	43.4*	5.0 - 6.0	Ratio



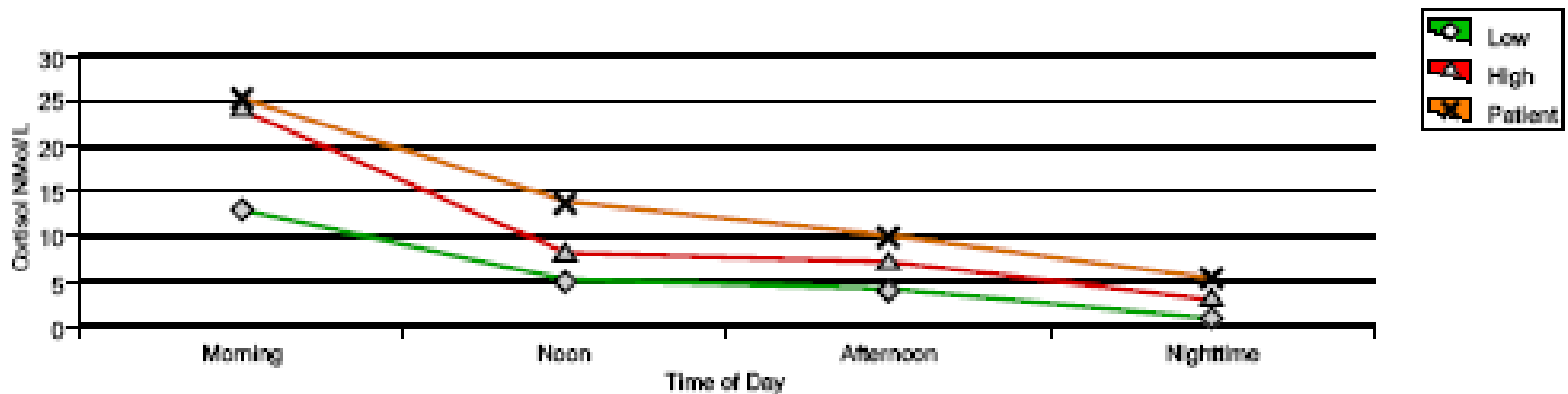
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	10.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	2.1*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	1.2*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.0	1.0 - 3.0	nM/L
Cortisol Sum	14.3*	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	11.0*	5.0 - 6.0	Ratio



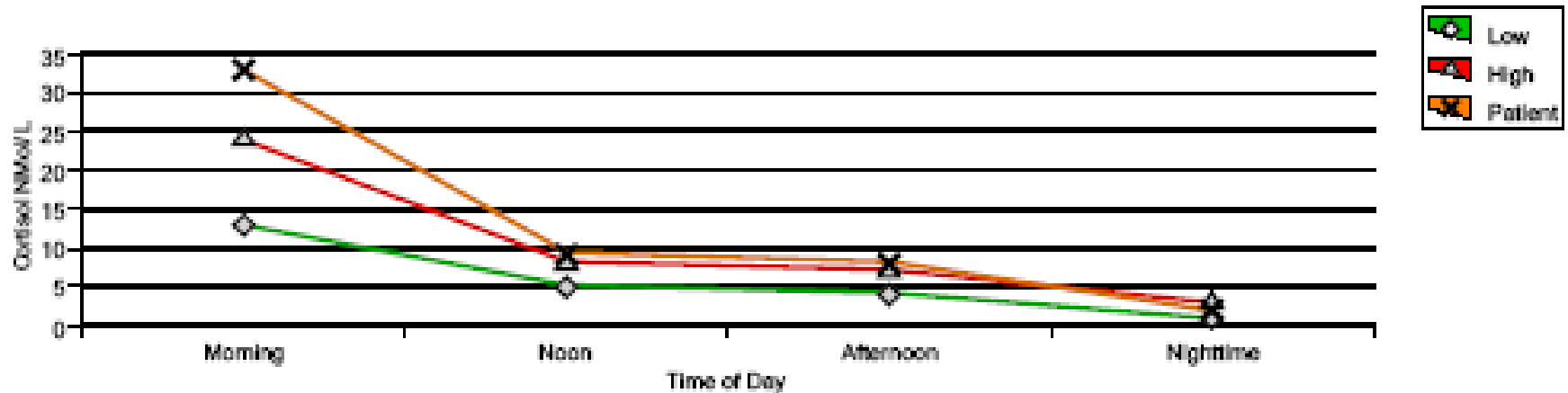
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	25.3*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	13.7*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	9.9*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	5.4*	1.0 - 3.0	nM/L
Cortisol Sum	54.3*	23.0 - 42.0	nM/L
DHEA-S Average	4.30	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	12.6*	5.0 - 8.0	Ratio



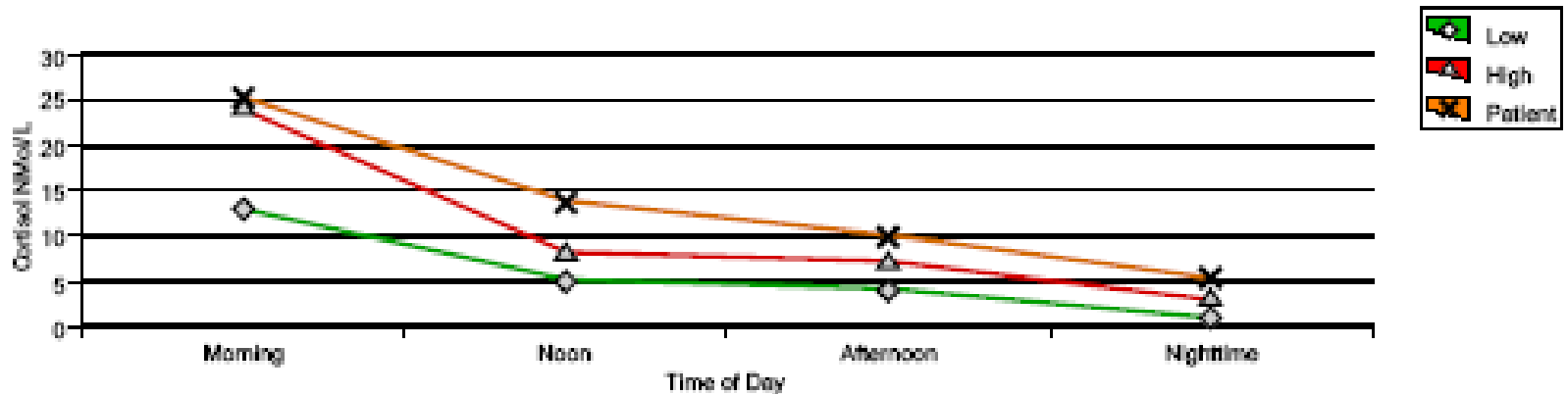
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	33.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	9.2*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	8.0*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	2.0	1.0 - 3.0	nM/L
Cortisol Sum	52.2*	23.0 - 42.0	nM/L
DHEA-S Average	1.80*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	29.0*	5.0 - 8.0	Ratio



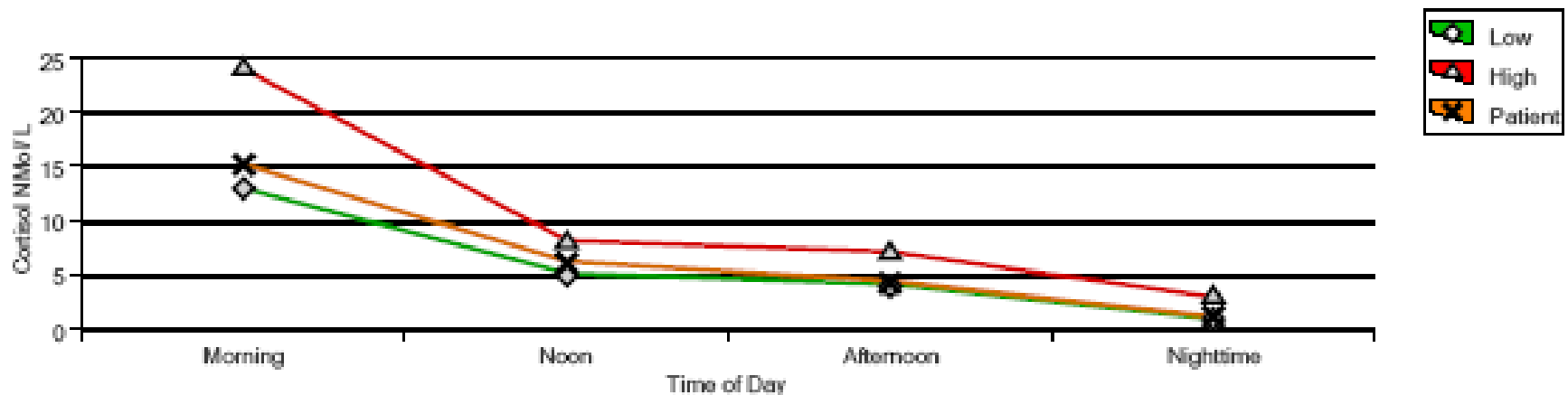
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DHEA-S Average	4.30	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	12.6*	5.0 - 8.0	Ratio



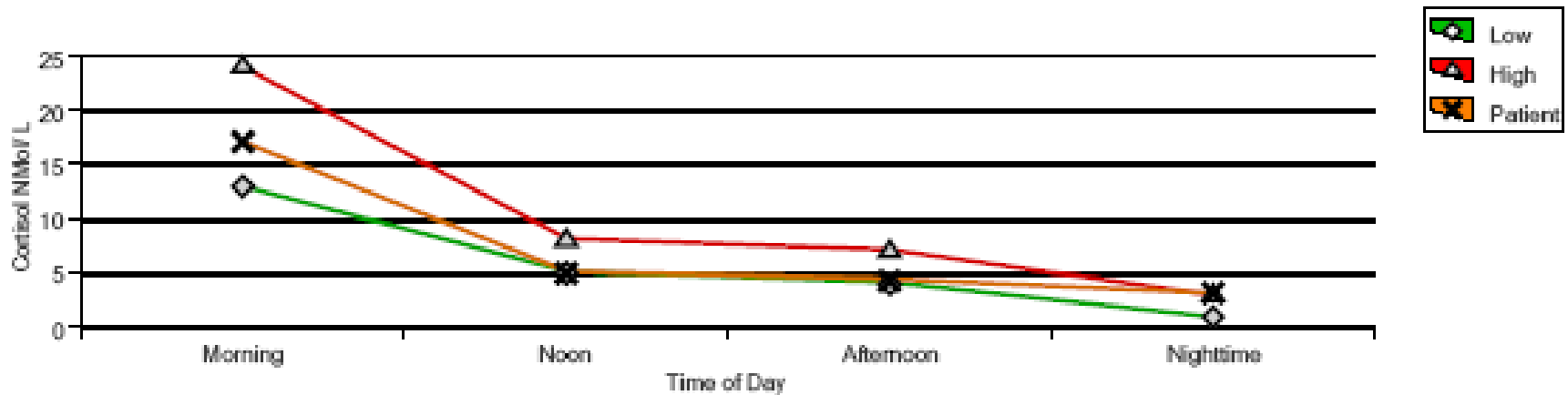
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	15.2	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	6.1	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.3	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.2	1.0 - 3.0	nM/L
Cortisol Sum	26.8	23.0 - 42.0	nM/L
DHEA-S Average	1.20*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	22.3*	5.0 - 6.0	Ratio



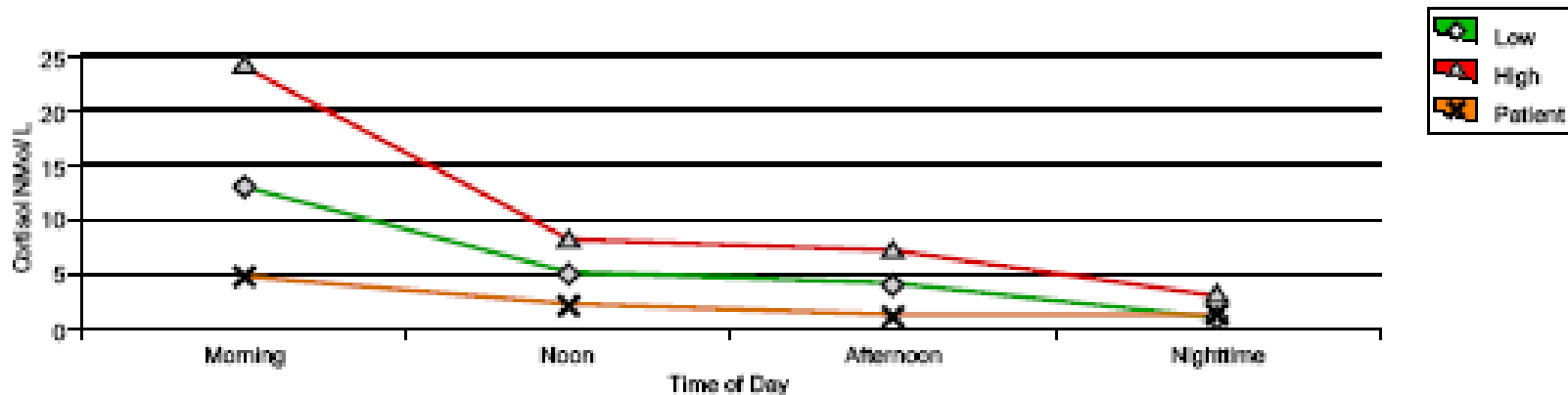
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	17.1	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	5.0	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.3	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	3.2*	1.0 - 3.0	nM/L
Cortisol Sum	29.6	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	22.8*	5.0 - 6.0	Ratio



Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	4.8*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	2.1*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	1.1*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.3	1.0 - 3.0	nM/L
Cortisol Sum	9.3*	23.0 - 42.0	nM/L
DHEA-S Average	0.10*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	93.0*	5.0 - 6.0	Ratio



Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	5.3*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	4.4*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.7	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	0.9*	1.0 - 3.0	nM/L
Cortisol Sum	15.3*	23.0 - 42.0	nM/L
DHEA-S Average	3.10	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	4.9*	5.0 - 6.0	Ratio

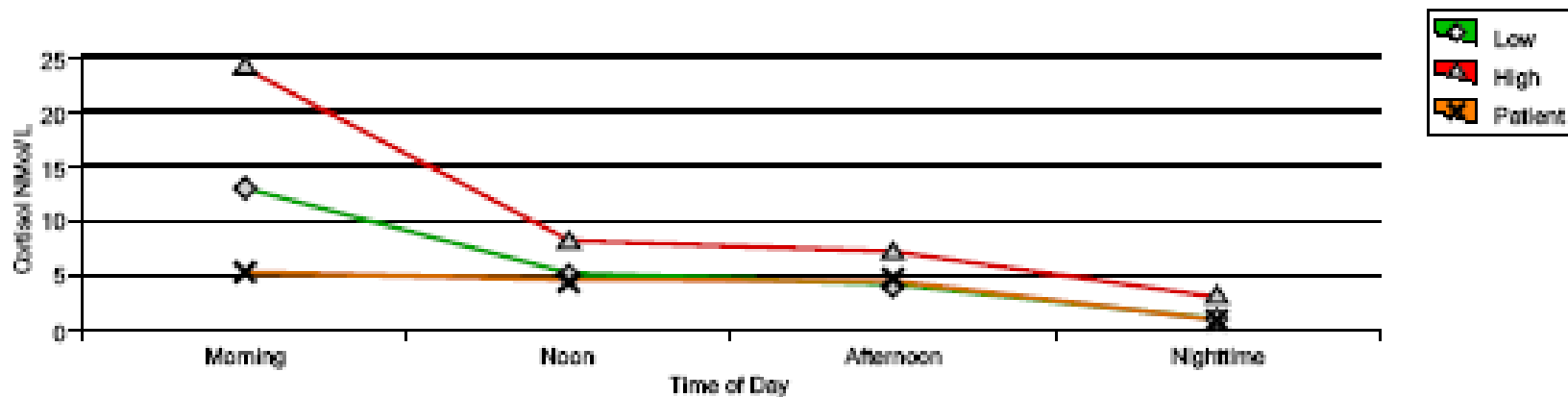


Figure 1. Circadian Cortisol Profile

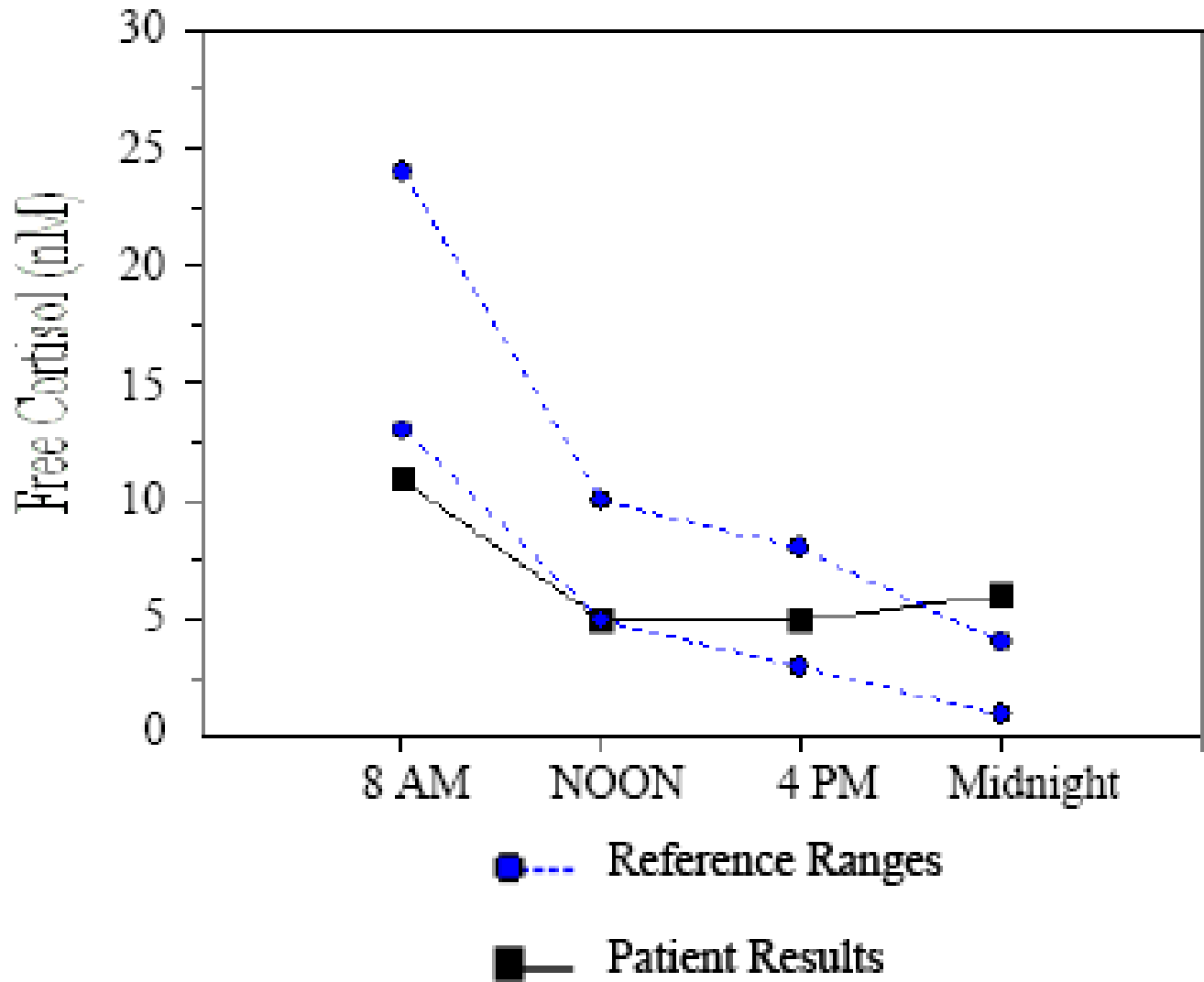
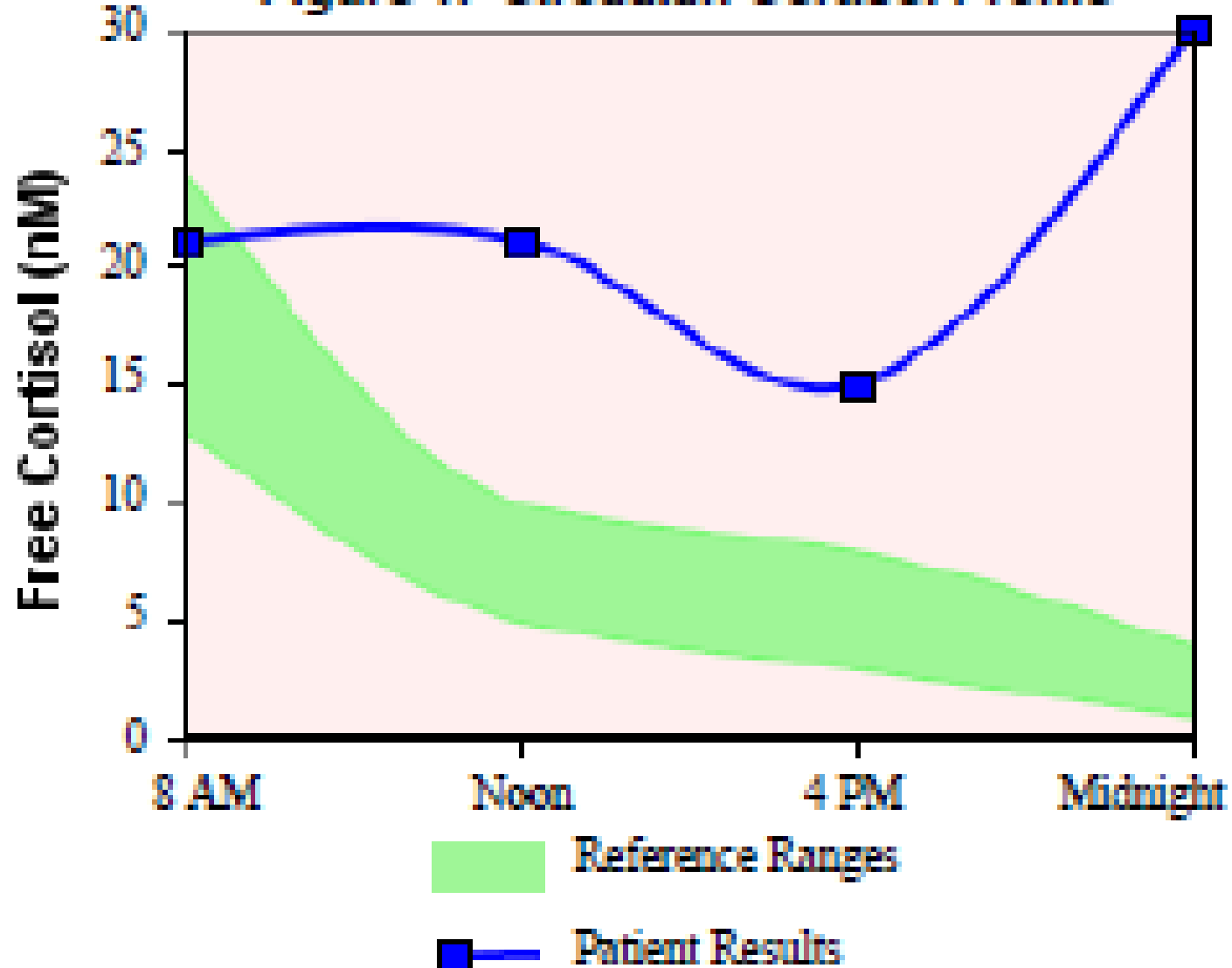
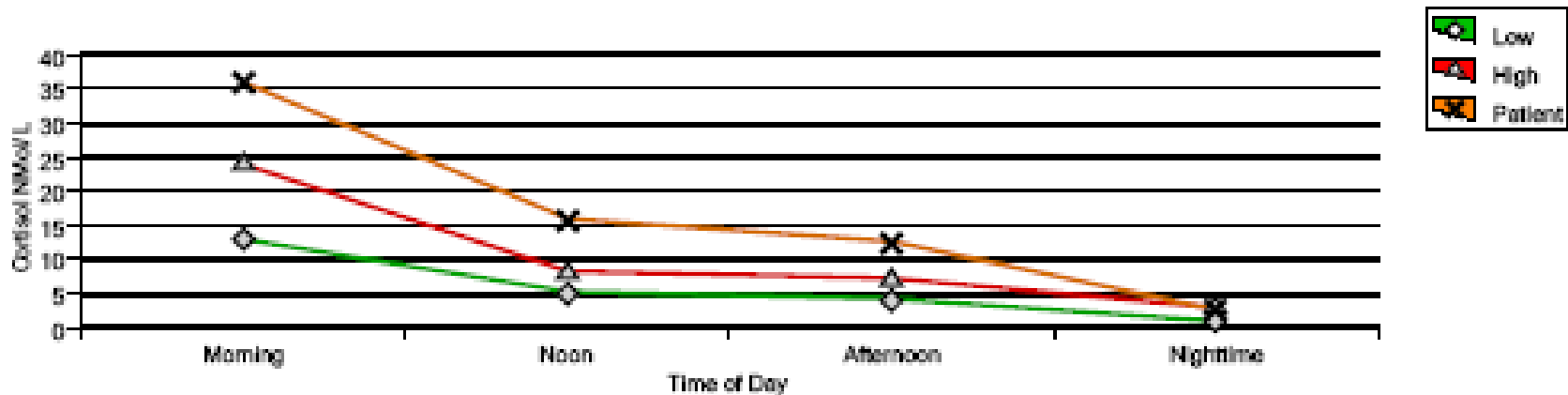


Figure 1. Circadian Cortisol Profile



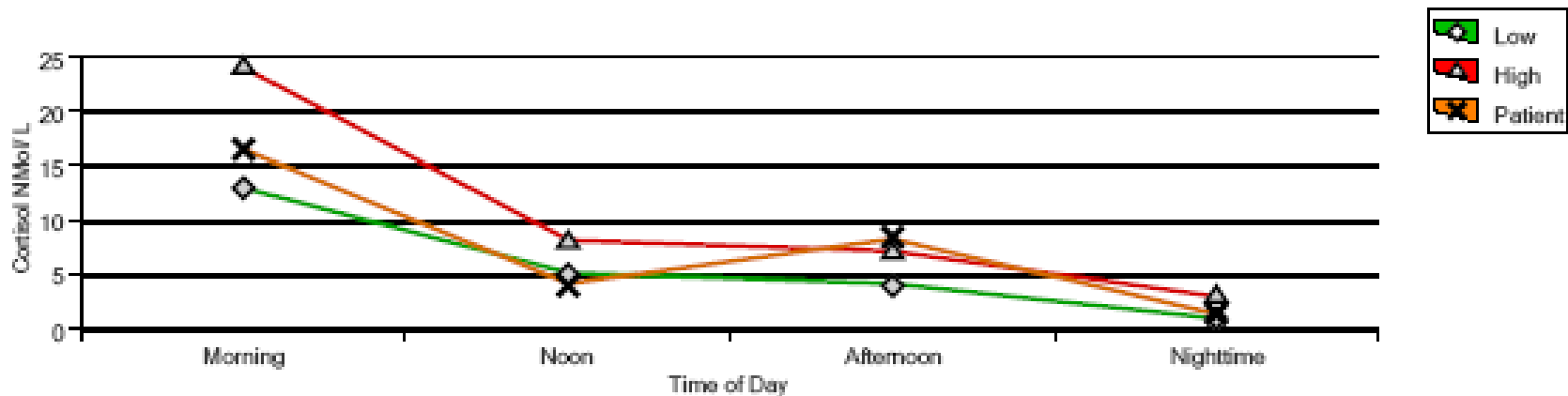
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	36.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	15.7*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	12.4*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	2.7	1.0 - 3.0	nM/L
Cortisol Sum	66.8*	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	51.4*	5.0 - 8.0	Ratio



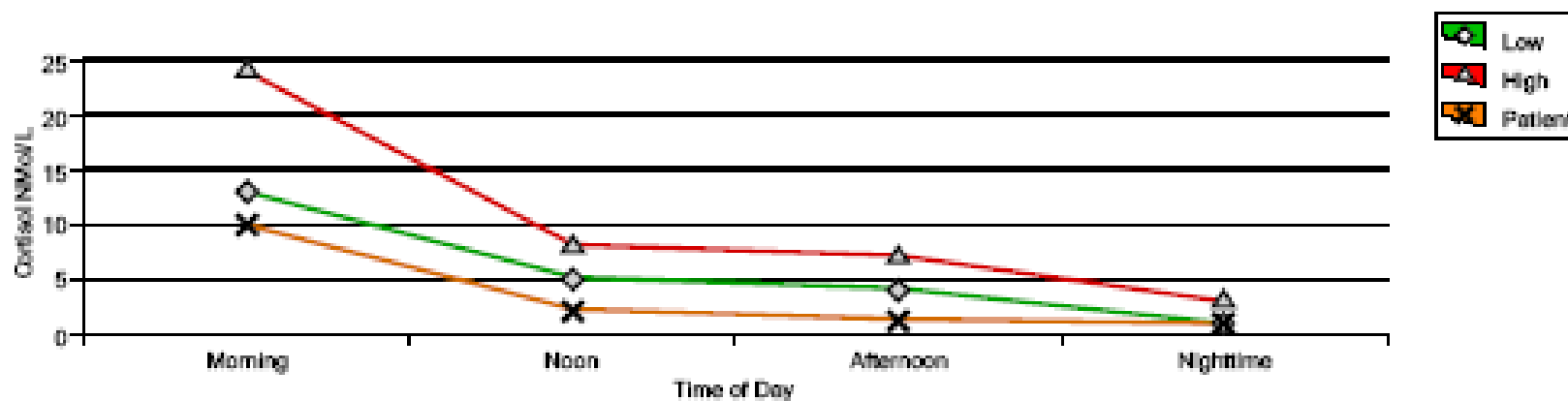
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	16.5	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	4.0*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	8.5*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.4	1.0 - 3.0	nM/L
Cortisol Sum	30.4	23.0 - 42.0	nM/L
DHEA-S Average	0.70*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	43.4*	5.0 - 6.0	Ratio



Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	10.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	2.1*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	1.2*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.0	1.0 - 3.0	nM/L
Cortisol Sum	14.3*	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	11.0*	5.0 - 6.0	Ratio



Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	25.3*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	13.7*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	9.9*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	5.4*	1.0 - 3.0	nM/L
Cortisol Sum	54.3*	23.0 - 42.0	nM/L
DHEA-S Average	4.30	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	12.6*	5.0 - 8.0	Ratio

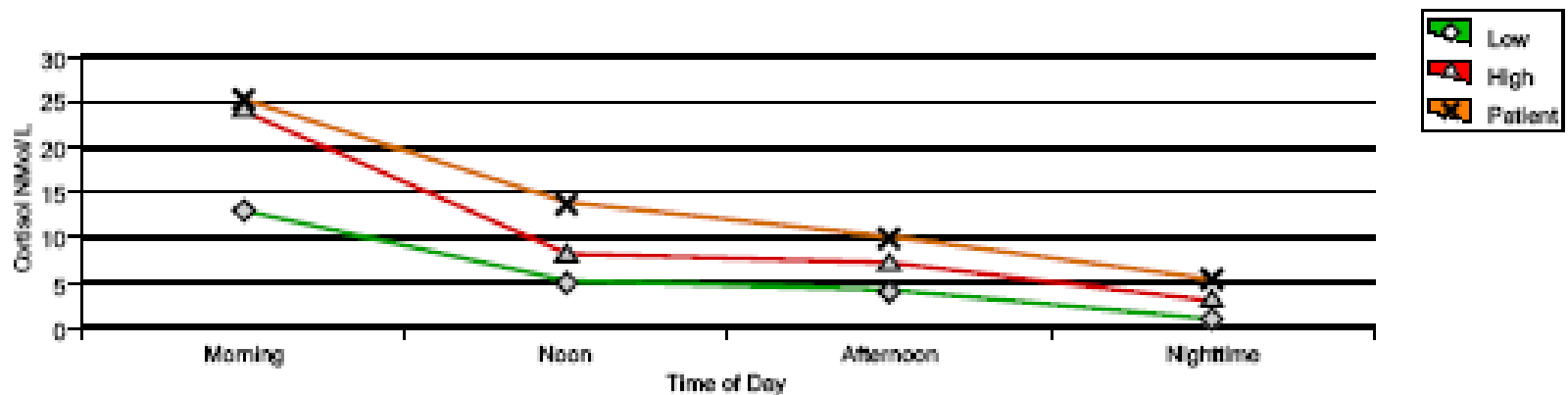
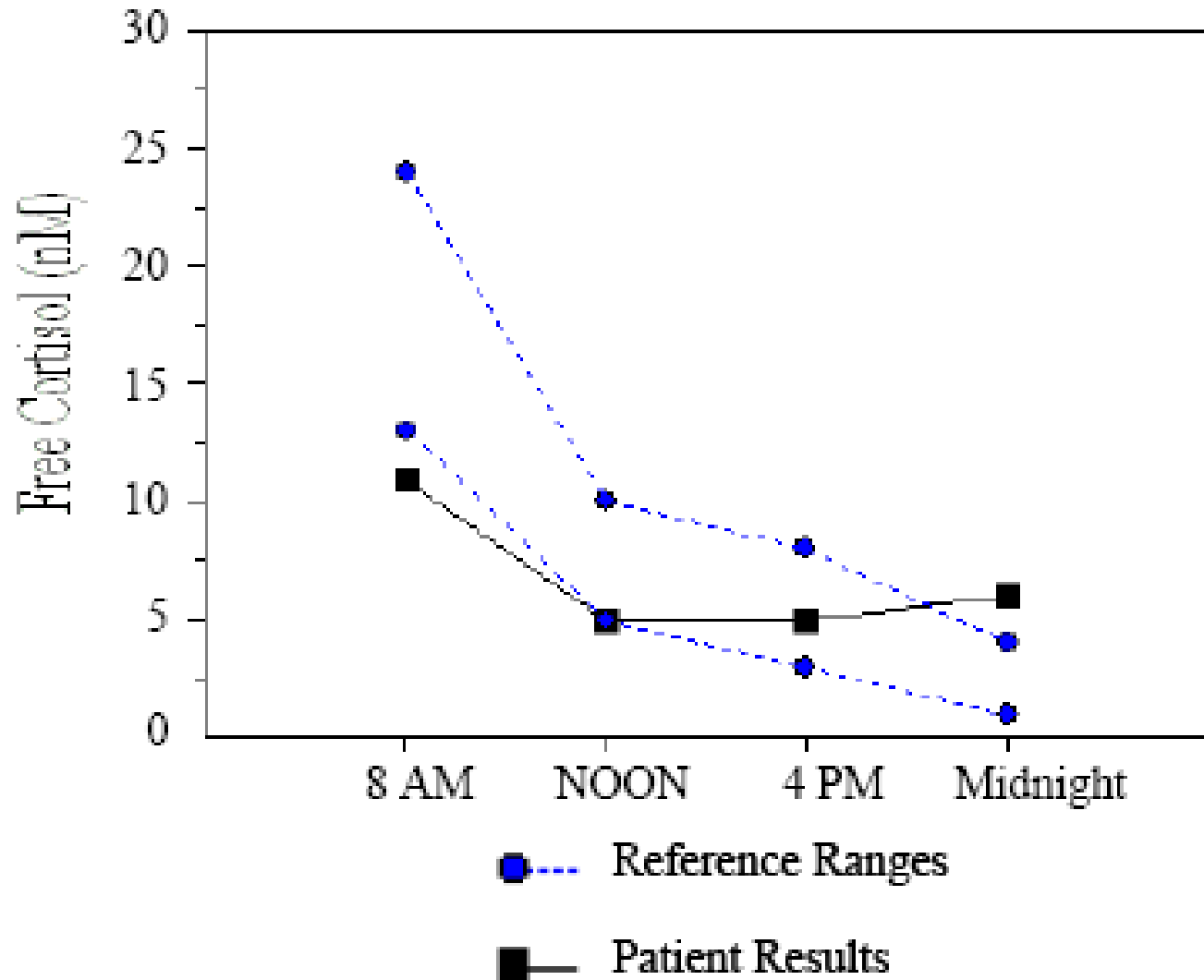
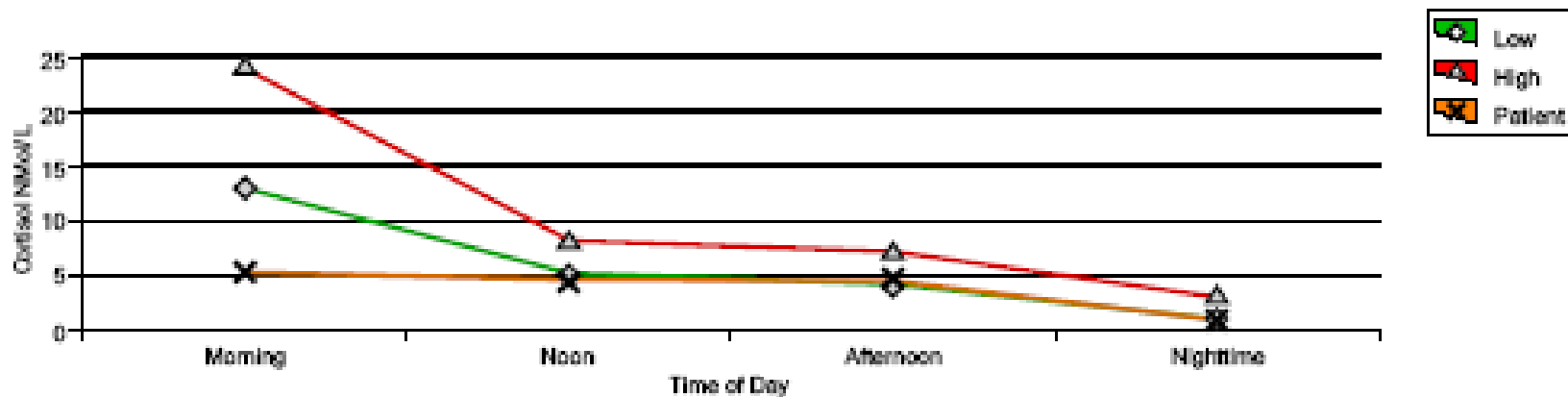


Figure 1. Circadian Cortisol Profile



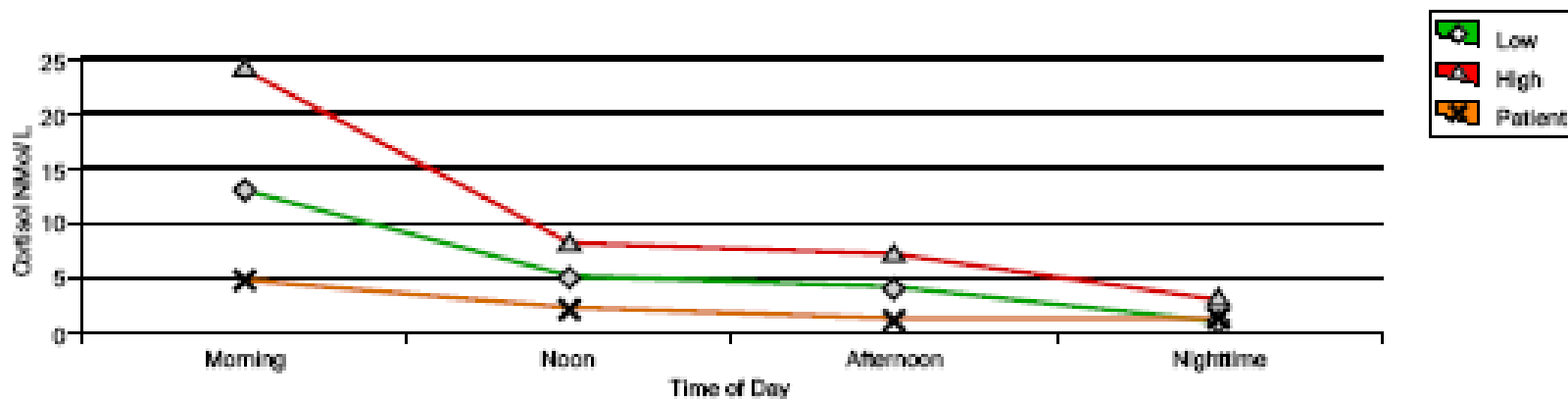
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	5.3*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	4.4*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.7	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	0.9*	1.0 - 3.0	nM/L
Cortisol Sum	15.3*	23.0 - 42.0	nM/L
DHEA-S Average	3.10	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	4.9*	5.0 - 8.0	Ratio



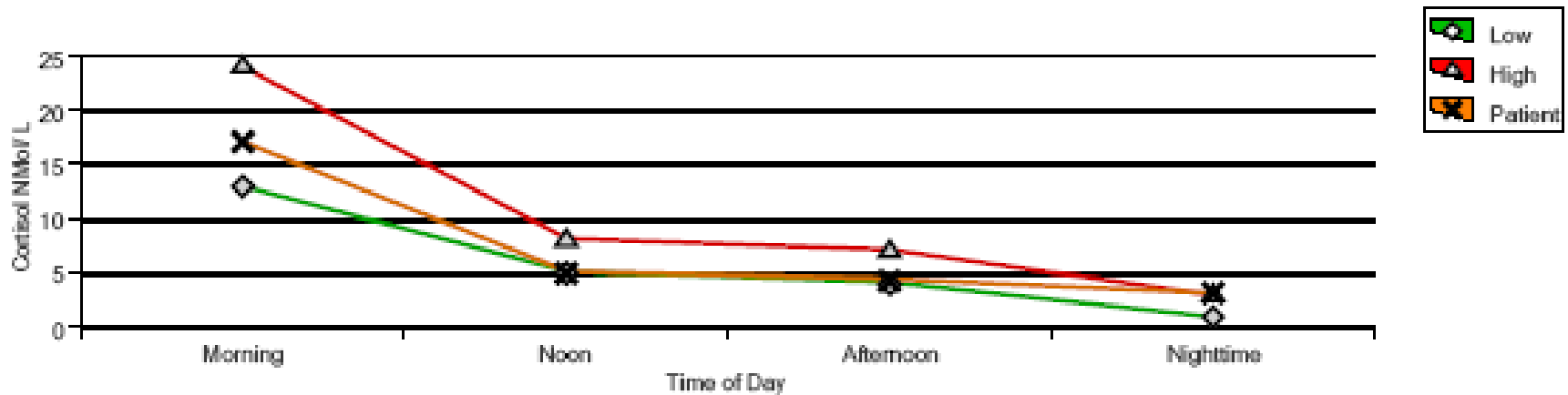
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	4.8*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	2.1*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	1.1*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.3	1.0 - 3.0	nM/L
Cortisol Sum	9.3*	23.0 - 42.0	nM/L
DHEA-S Average	0.10*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	93.0*	5.0 - 6.0	Ratio



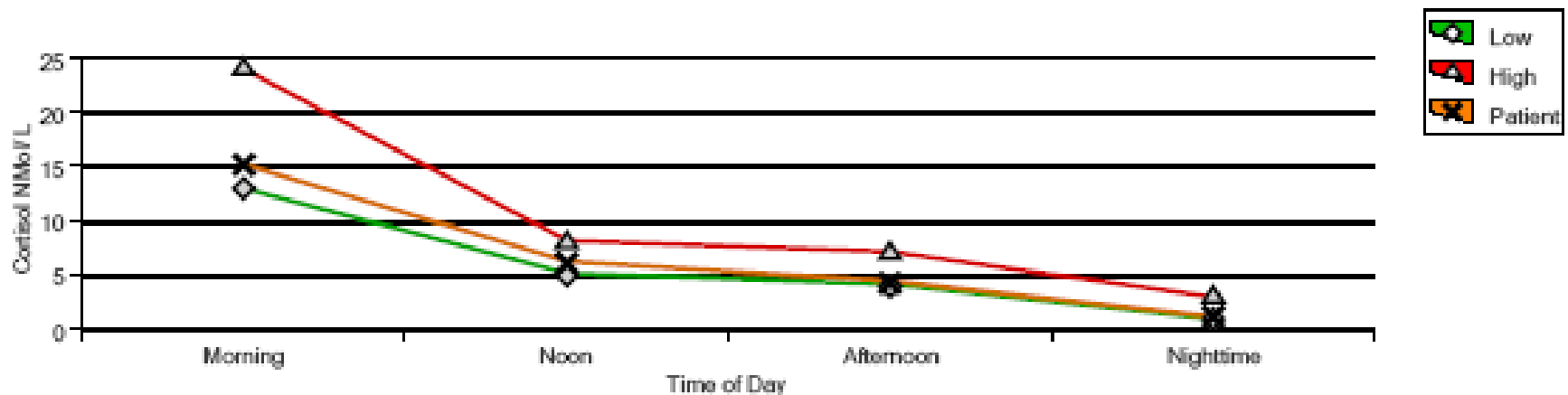
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	17.1	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	5.0	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.3	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	3.2*	1.0 - 3.0	nM/L
Cortisol Sum	29.6	23.0 - 42.0	nM/L
DHEA-S Average	1.30*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	22.8*	5.0 - 6.0	Ratio



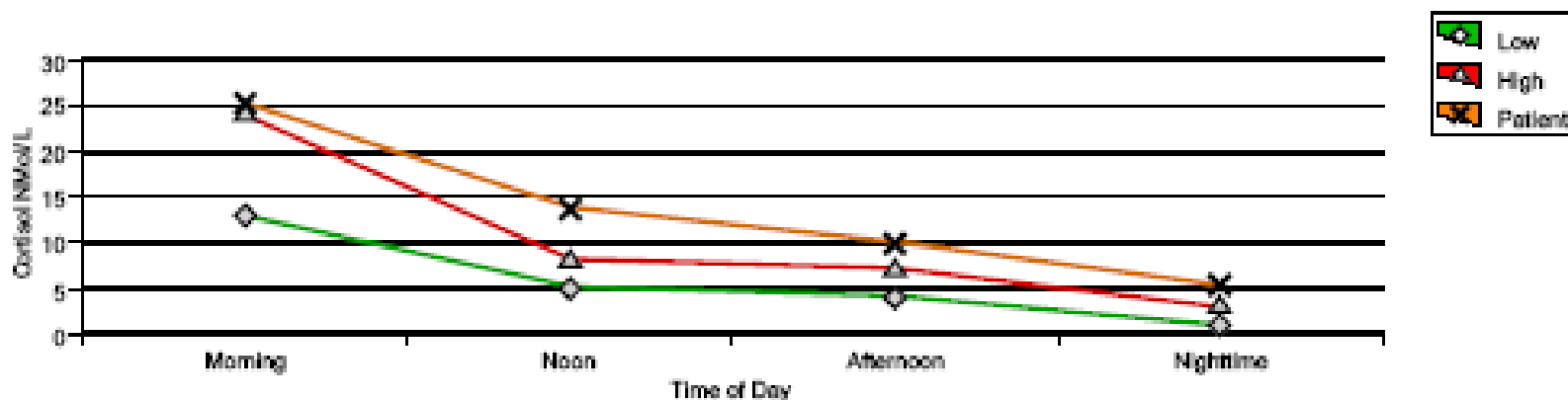
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	15.2	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	6.1	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	4.3	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	1.2	1.0 - 3.0	nM/L
Cortisol Sum	26.8	23.0 - 42.0	nM/L
DHEA-S Average	1.20*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	22.3*	5.0 - 6.0	Ratio



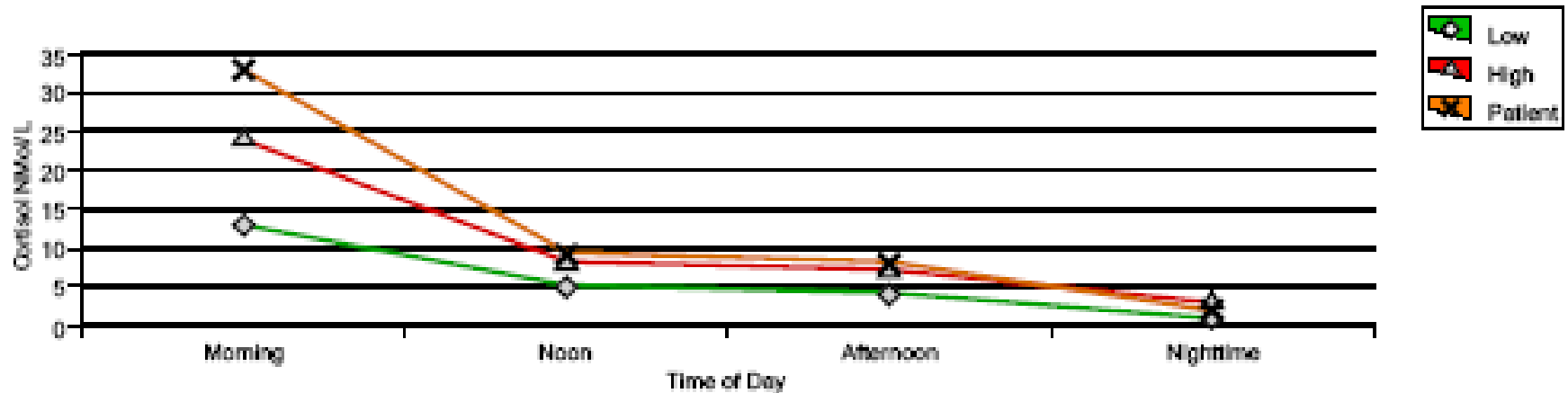
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (6 - 8 AM)	25.3*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	13.7*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	9.9*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	5.4*	1.0 - 3.0	nM/L
Cortisol Sum	54.3*	23.0 - 42.0	nM/L
DHEA-S Average	4.30	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	12.6*	5.0 - 8.0	Ratio



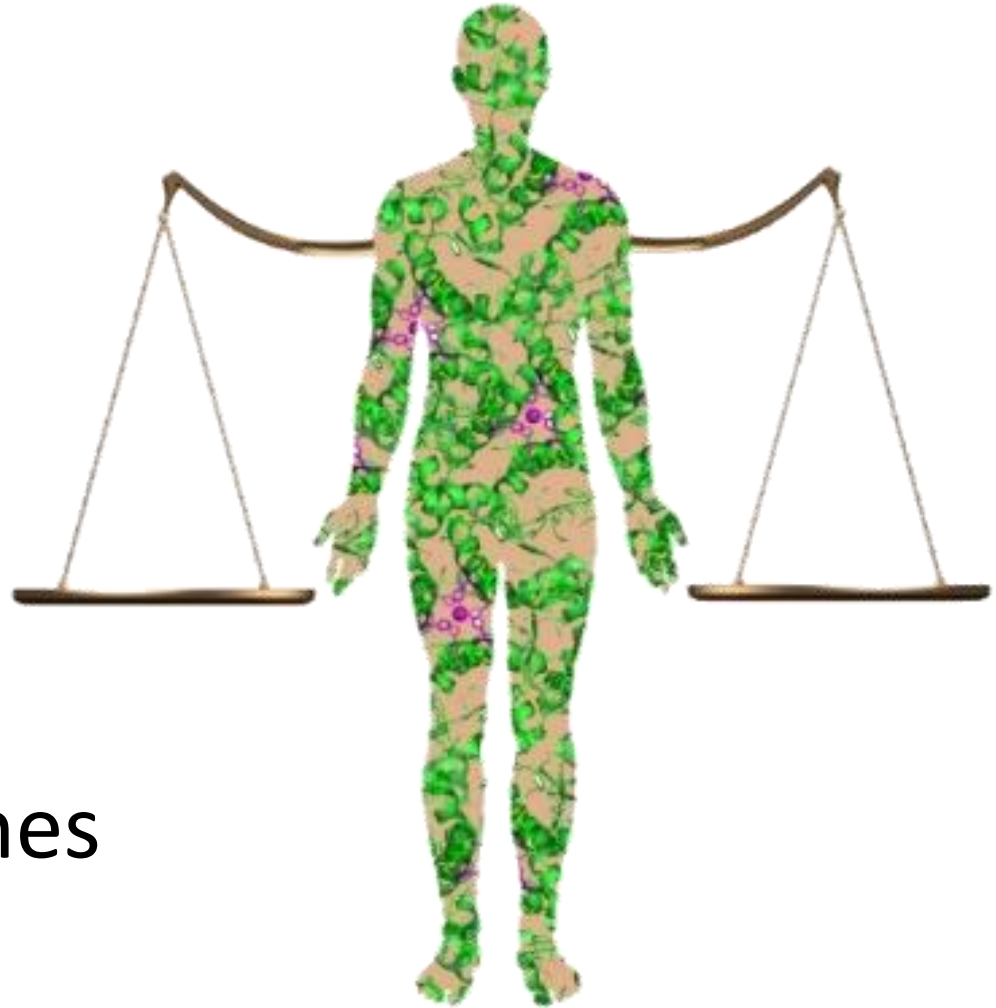
Functional Adrenal Stress Profile - 201

Parameter	Result	Reference Range	Units
Cortisol - Morning (8 - 8 AM)	33.0*	13.0 - 24.0	nM/L
Cortisol - Noon (12 - 1 PM)	9.2*	5.0 - 8.0	nM/L
Cortisol - Afternoon (4 - 5 PM)	8.0*	4.0 - 7.0	nM/L
Cortisol - Nighttime (10 PM - 12 AM)	2.0	1.0 - 3.0	nM/L
Cortisol Sum	52.2*	23.0 - 42.0	nM/L
DHEA-S Average	1.80*	2.00 - 10.00	ng/mL
Cortisol/DHEA-S Ratio	29.0*	5.0 - 8.0	Ratio

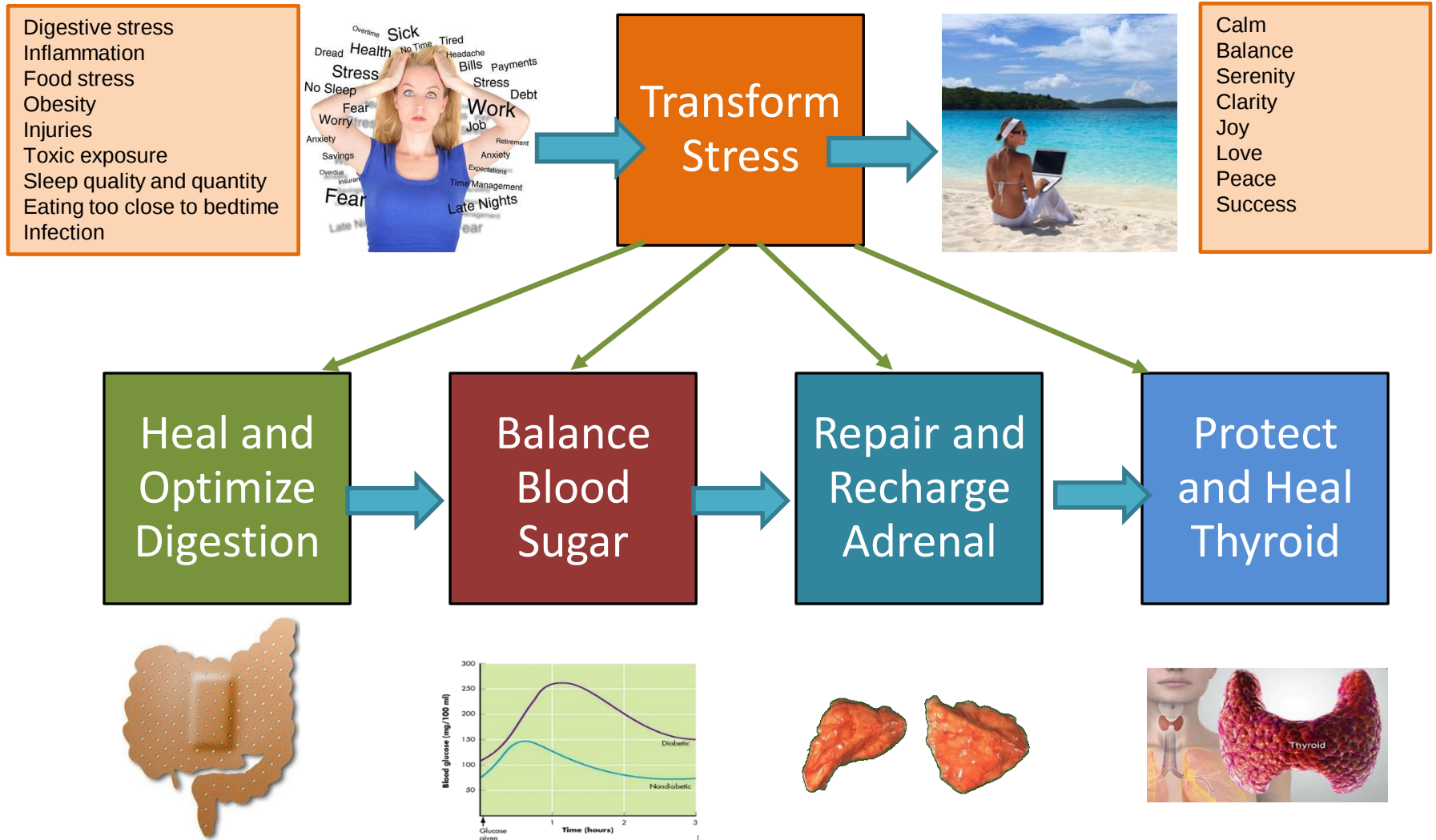


Tools to Balance HPAT Axis

- ☐ Nutrients
- ☐ Foods
- ☐ Stress
- ☐ Environment
- ☐ Digestion
- ☐ Sleep
- ☐ Other Hormones



Order Matters!



Lifestyle Support of the Thyroid Gland

- ✓ **Drink purified water:** avoid halides, fluoride, chlorine, bromine
- ✓ **Grow your own vegetables:** fertilize with seaweeds or grow in sea water
- ✓ **Minimize thyroid inhibitors:** avoid pesticides, synthetic colorings and flavorings, and environmental toxins
- ✓ **Adhere to an alkaline diet**
- ✓ **Balance estrogen levels:** high estrogen increases thyroid-binding globulin
- ✓ **Massage thyroid**
- ✓ **Exercise:** rebounder, T-Tapp



Thyroid Nourishing Diet



- ✓ **Gluten-free**
- ✓ **Green leafy vegetables**
- ✓ **Sea vegetables:** kelp, bladderwrack, dulse, nori, more
- ✓ **Garlic and onions**
- ✓ **Low-glycemic fruits**
- ✓ **Coconut**
- ✓ **Omega-3 rich foods:** hemp seeds, chia seeds, flax seeds, algae, and deep ocean fish
- ✓ **Probiotic and prebiotic rich foods:** kefir, rejuvelac, sauerkraut, coconut yogurt, seed yogurt, Jerusalem artichoke, chicory - improves T3 production
- ✓ **Eliminate dietary stressors:** caffeine, alcohol, sugar, refined foods



Overview of Thyroid Nutrition

- ✓ **Vitamins:** Vitamin A, Vitamin B, Vitamin D
- ✓ **Trace Minerals:** Iodine, Selenium, Zinc, Iron, Magnesium
- ✓ **Antioxidants:** Glutathione, SOD
- ✓ **Amino Acids:** Tyrosine, Phenylalanine, Arginine
- ✓ **Herbs:** Ashwagandha, Guggulu, Rosemary, Sage
- ✓ **Foods:** Bladderwrack, Kelp (Digitata), Avoid Gluten



Key Thyroid Herbs

- ✓ **Ashwagandha:** stimulates T3 and T4 synthesis and increase antioxidants, including SOD
- ✓ **Guggulu:** supports thyroid function through its role in conversion of T4 to T3 in the liver
- ✓ **Rosemary:** contains carnosic acid that supports pituitary-thyroid signaling
- ✓ **Coleus Forskohlii:** supports the production and release of thyroid hormones
- ✓ **Mushrooms:** regulates the immune system, controls inflammation
- ✓ **He Shou Wu:** overall endocrine balance



Primary Hypothyroid Nutrition

- ✓ **Vitamins:** Vitamin A, Vitamin B, Vitamin D
- ✓ **Trace Minerals:** Iodine, Selenium, Zinc
- ✓ **Antioxidants:** Glutathione, SOD
- ✓ **Amino Acids:** Tyrosine, Phenylalanine
- ✓ **Herbs:** Ashwaganda, Guggulu
- ✓ **Foods:** Bladderwrack, Kelp (Digitata),
Avoid Gluten



Pituitary/Hypothalamus Hypothyroidism

Causes:

- Stress: adrenal
- Post partum
- Shut down from over medication
- Neurotransmitter imbalances:
especially dopamine
and serotonin



Nutritional Support:

- Sage Leaf
- L-arginine
- Zinc
- Magnesium
- Manganese
- Phosphatidylserine
- Antioxidants
- B Vitamins



Thyroid Under Conversion & Increased TBG

Under Conversion from T4 to T3:

- Causes Hypo type symptoms

Causes:

- Deficiency 5'deiodinase cofactors
- Gut Dysbiosis
- Elevated Cytokines
- Elevated Cortisol
- Elevated Estrogen

Nutritional Support:

- Insulin Resistance Diet
- Healing Leaky Gut, Dysbiosis
- Detoxification Program for Liver
- Iron
- Iodine
- Selenium
- Guggulu
- Anti-inflammatories, EFAs
- Antioxidants
- Phosphatidylserine
2000 mg/day



Thyroid Over Conversion & Decreased TBG

Over Conversion from T4 to T3:

- Causes Receptor Burnout

Causes:

- Increased Testosterone
- Insulin Resistance / Diabetes
- PCOS



Nutritional Support:

- Insulin Resistance Diet
- Detoxification Program for Liver
- Selenium
- Guggulu
- Antioxidants
- Phosphatidylserine 2000 mg/day



Increased Thyroid-Binding Globulin

Causes:

- Oral Contraceptives
- Estrogen



Nutritional Support:

- MSM, Trimethylglycine
- Choline
- Beet
- Betaine HCl
- Vitamin C
- Taurine
- Liver Detox Support
- Phosphatidylcholine



Autoimmune Hypothyroid

Causes:

- ✓ Leaky gut
- ✓ Food allergies
- ✓ Gluten and dairy
- ✓ Stress



Nutritional Approaches:

- ✓ Balance blood sugar
- ✓ Repair gut
- ✓ Support adrenals
- ✓ Support T-regulatory cells
 - Vitamin D
 - Glutathione cream, precursors or Protandim
 - Essential fatty acids
- ✓ Balance T-cells: TH1 & TH2



Thyroid Resistance

Causes:

- ✓ Cortisol
- ✓ Homocysteine
- ✓ Inflammation
- ✓ Deficiency of Vitamin A

Nutritional Support:

- ✓ Adrenal Support
- ✓ Stress Management
- ✓ B Vitamins (methyl)
- ✓ Vitamin A
- ✓ Anti-inflammatories



Kitchen Wisdom for HPAT Hormone Balancing









Hormone Nourishing Meal Ideas

- ✓ **Large veggie salad** with omega-3 rich salad dressing and seed toppings
- ✓ Green blender soups
- ✓ **Wraps using green leaves** and nori sea vegetable, filled with greens, sprouts, and sauerkraut, and topped with an omega-3 rich dressing or spread
- ✓ Steamed vegetables
- ✓ **“Big Bowl”** – filled with steamed and/or raw veggies and a blended vegetable sauce, made from the steam water, vegetables, and a fat to thicken: chia seed, avocado, tahini, nut butter, coconut, or raw nuts or seeds



Photo by Annette Nolan
<http://www.itsallaboutyou.ca>



Foods That Disrupt HPAT

- ✓ Charred meat: heterocyclic amines
- ✓ Processed high glycemic foods: flour, sugar, grains
- ✓ Chemical-laden foods
- ✓ Foods in cans and plastic
- ✓ Hydrogenated and oxidized fats
- ✓ Caffeine
- ✓ Dairy
- ✓ Gluten
- ✓ Excess alcohol



Foods That Support HPAT

- ✓ Coconut oil
- ✓ Omega-3 fats
- ✓ Brassicas
- ✓ Sea vegetables
- ✓ Brazil nuts
- ✓ Cumin
- ✓ Pomegranate
- ✓ **Adaptogenic herbs**: ashwagandha, eleuthero, medicinal mushrooms
- ✓ Probiotic foods: yogurt, kimchi, kefir



Step-By-Step to Phenomenal Results

Values and goals – connect to what matters most

Ask the right questions to assess where they are now, *what brought them here*, and what's getting in the way

Labs and exams to determine the current state of health and identify imbalances

Orders of correction protocols need to be decided in advance

Restore balance with diet, lifestyle, and supplementation

Reassess and adjust at regular intervals to make sure you are on the right track



