

STAGES OF ADRENAL FATIGUE

Stage I

- Alarm Reaction “Fight or Flight”
- Stress → ↑cortisol
- Normal response
- Sustained stress response:
 - increased caffeine inTAKE
 - increased sugar inTAKE
 - “I can TAKE it”

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Stage II

- Resistance Response
- Adrenals still able to keep up—but at a cost
- Onset of serious symptoms:
 - fatigue
 - sugar/salt cravings
 - depression
 - weight gain
 - female hormonal irregularities
 - hypothyroidism
- Caffeine, sugar intake ↑↑
- Usual first presentation to physician

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Stage III

- Adrenal Exhaustion
- Adrenal hormone (HPAA) production declines
- Cortisol drops; aldosterone may, too
- Patient is no longer able to effectively function in life
- Extreme difficulty in arising from bed in AM
- Exercise Intolerance/ Chronic Fatigue
- Patients cannot deal with stress in any form

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Stage IV

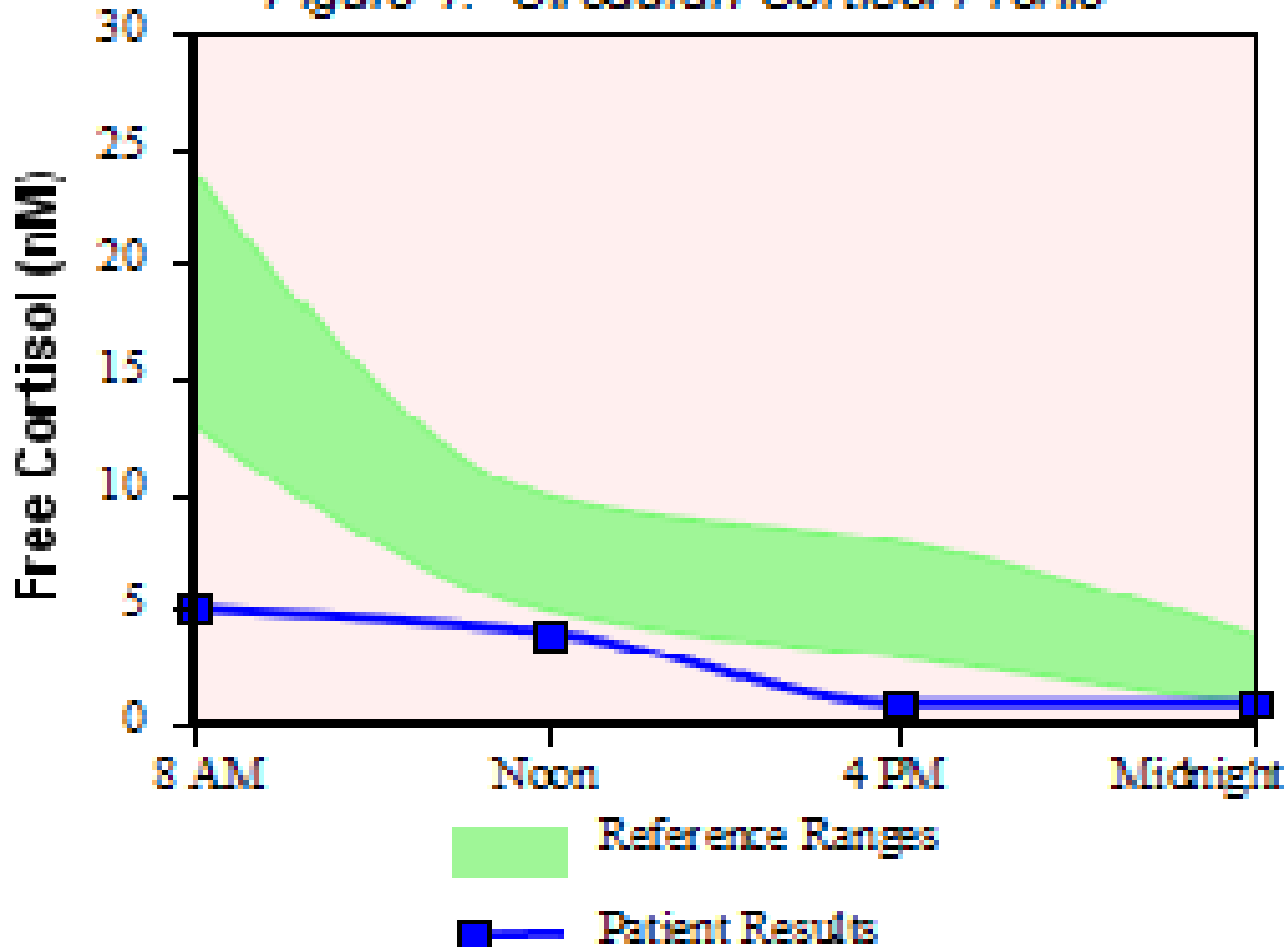
- Adrenal Failure
- Addison's Disease
- Death risk

LABORATORY TESTING

Saliva

- The best single laboratory test for AF
- Noninvasive
- Three or four samples during day
--8AM, noon, 5PM, 11PM
- Cortisone and PROG preparations can falsely elevate results
- Be careful of contaminating specimen
- Hydrate normally prior to test day

Figure 1. Circadian Cortisol Profile



TREATMENT

- “Tincture of Time”
- Stress relief
- Nutritional
- Sea salt (1/4-1/2tsp RO H2O BID)
- Hydrocortisone
- Florinef
 - when hypotensive
 - Tx for aldosterone deficiency

NUTRITIONAL SUPPORT

Vitamin C

- Intrinsic to adrenal hormone production cascade
- Boosts immune function
- Adrenal hormone production-> free radicals
- Humans cannot glucose -> Vit C
- MUST also include bioflavonoids (not just ascorbic acid)
- 1 gram BID

NUTRITIONAL SUPPORT

Vitamin E

- Works with enzymes in adrenal hormone cascade
- Making adrenal hormones -> free radicals
- d-alpha-tocopherol is NOT “natural Vit E”
 - easiest to manufacturer
 - most profitable
 - suppresses other forms
- Therefore must provide MIXED tocopherols
- 400iu BID MIXED tocopherols (alpha, beta, delta, gamma)

NUTRITIONAL SUPPORT

B Vitamins

- B-1 Thiamine BID
- B-2 Riboflavin BID
- B-3 Niacin 25-50mg BID
- B-5 Pantothenic acid 750mg BID
- B-6 Pyridoxine 50-100mg BID
- B-12 methyl cobalamin 100-200 mcgs BID

NUTRITIONAL SUPPORT

Minerals

- Mg⁺ magnesium 800mg QD (divided doses)
- Ca⁺
- Trace Minerals:
Iodine, zinc, copper, manganese, chromium,
selenium, molybdenum

NUTRITIONAL SUPPORT

Others

- **Phosphatidyl serine 300mg QHS (incr sensitivity of HPAA)**
 - **Adrenal extracts (HC, nutritional components)**
 - **Licorice root (and other Adaptogens)**
 - Glycyrrhizic acid component
 - many healthful benefits (immune function, indigestion, etc, etc, etc)
 - MAY raise BP—IF you eat a ton of it
 - ↑ adrenal hormone production
 - ↓ adrenal hormone metabolism
 - inhibition of 11 β -Hydroxysteroid Dehydrogenase (11 β -HSD), which converts cortisol → cortisone
- NOTE: this enzyme also affects other hormonal conversions!**