
dutchcases

# DISCLAIMER

Please be aware that different healthcare providers may have varying approaches to lab testing and interpretation. The selection of specific tests, methodologies, and treatment recommendations can differ based on the provider's training, experience, and the individual needs of the patient. Providers should always use their best clinical judgment when making decisions for patient care.

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dutch cases

# Case 5: Anna

## Endometriosis and Dysmenorrhea

# Case 5: Anna, a 20-yo Female with Endometriosis & Dysmenorrhea

**Chief Complaints:**

- Dysmenorrhea
- Heavy bleeding
- High stress
- Headaches

**PMHx**

- Stress job x 7 months
- Regular 26-day cycles
- Menses increasingly more painful/heavier in the past 4 months
- Headaches day prior to menses lasting through days 1-2

**Medications**

- None

**Physical Exam**

- 5’5”; 157 lbs.; BMI 26.1
- BP 116/76 mm Hg
- Pulse 84 bpm

**Pertinent Serum Labs:**

- Iron deficiency anemia
- Day 3 Labs: FSH 5.2 mIU/ml, E2 58 pg/ng **(H)**
- Vitamin B12: 345 pg/mL **(L)**
- CRP-hs 3.2 mg/dL **(H)**

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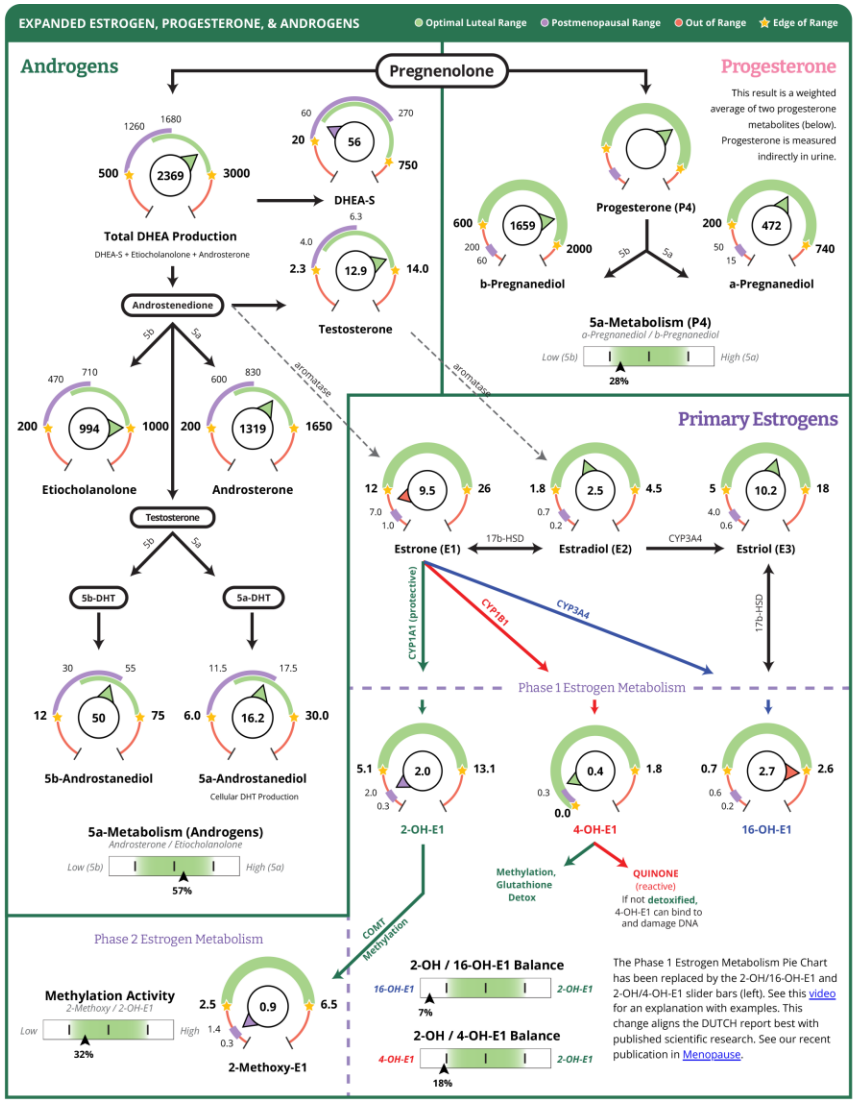


## Sex Hormones & Metabolites

| TEST | | RESULT | UNITS | LUTEAL* | POSTMENOPAUSAL |
|---|---|---|---|---|---|
| **Progesterone Metabolites (Urine)** | | | | | |
| b-Pregnanediol | Within luteal range | 1659.0 | ng/mg | 600 - 2000 | 60 - 200 |
| a-Pregnanediol | Within luteal range | 472.0 | ng/mg | 200 - 740 | 15 - 50 |
| **Estrogens and Metabolites (Urine)** | | | | | |
| Estrone (E1) | Below luteal range | 9.53 | ng/mg | 12 - 26 | 1.0 - 7.0 |
| Estradiol (E2) | Within luteal range | 2.50 | ng/mg | 1.8 - 4.5 | 0.2 - 0.7 |
| Estriol (E3) | Within luteal range | 10.2 | ng/mg | 5 - 18 | 0.6 - 4.0 |
| 2-OH-E1 | Below luteal range | 1.99 | ng/mg | 5.1 - 13.1 | 0.3 - 2.0 |
| 4-OH-E1 | Within luteal range | 0.38 | ng/mg | 0 - 1.8 | 0 - 0.3 |
| 16-OH-E1 | Above luteal range | 2.70 | ng/mg | 0.7 - 2.6 | 0.2 - 0.6 |
| 2-Methoxy-E1 | Below luteal range | 0.87 | ng/mg | 2.5 - 6.5 | 0.3 - 1.4 |
| 2-OH-E2 | Within luteal range | 0.86 | ng/mg | 0 - 3.1 | 0 - 0.52 |
| 4-OH-E2 | Within luteal range | 0.15 | ng/mg | 0 - 0.52 | 0 - 0.12 |
| Total Estrogen | Below range | 29.2 | ng/mg | 35 - 70 | 3.5 - 15 |
| **Metabolite Ratios (Urine)** | | | | | |
| 2-OH / 16-OH-E1 Balance | Below range | 0.74 | ratio | 2.69 - 11.83 | |
| 2-OH / 4-OH-E1 Balance | Below range | 5.24 | ratio | 5.4 - 12.62 | |
| 2-Methoxy / 2-OH Balance | Within range | 0.44 | ratio | 0.39 - 0.67 | |
| **Androgens and Metabolites (Urine)** | | | | **Range** | |
| DHEA-S | Within range | 55.6 | ng/mg | 20 - 750 | |
| Androsterone | Within range | 1318.8 | ng/mg | 200 - 1650 | |
| Etiocholanolone | Within range | 994.2 | ng/mg | 200 - 1000 | |
| Testosterone | Within range | 12.87 | ng/mg | 2.3 - 14 | |
| 5a-DHT | Within range | 2.0 | ng/mg | 0 - 6.6 | |
| 5a-Androstanediol | Within range | 16.2 | ng/mg | 6 - 30 | |
| 5b-Androstanediol | Within range | 50.0 | ng/mg | 12 - 75 | |
| Epi-Testosterone | Within range | 12.6 | ng/mg | 2.3 - 14 | |

* The Luteal Range represents the expected premenopausal luteal range, collected menstrual cycle days 19-22 of a 28-day cycle. If your patient noted taking oral progesterone, the reference range represents the expected range on 100 - 200 mg of oral micronized progesterone (OMP). The ranges in the table below represent ranges in other times of the cycle your patient may have collected, such as follicular or ovulatory phases.

| ADDITIONAL NORMAL RANGES | FOLLICULAR | OVULATORY | ON ORAL PG |
|---|---|---|---|
| b-Pregnanediol | 100 - 300 | 100 - 300 | 2000 - 9000 |
| a-Pregnanediol | 25 - 100 | 25 - 100 | 580 - 3000 |
| Estrone (E1) | 4.0 - 12.0 | 22 - 68 | N/A |
| Estradiol (E2) | 1.0 - 2.0 | 4.0 - 12.0 | N/A |

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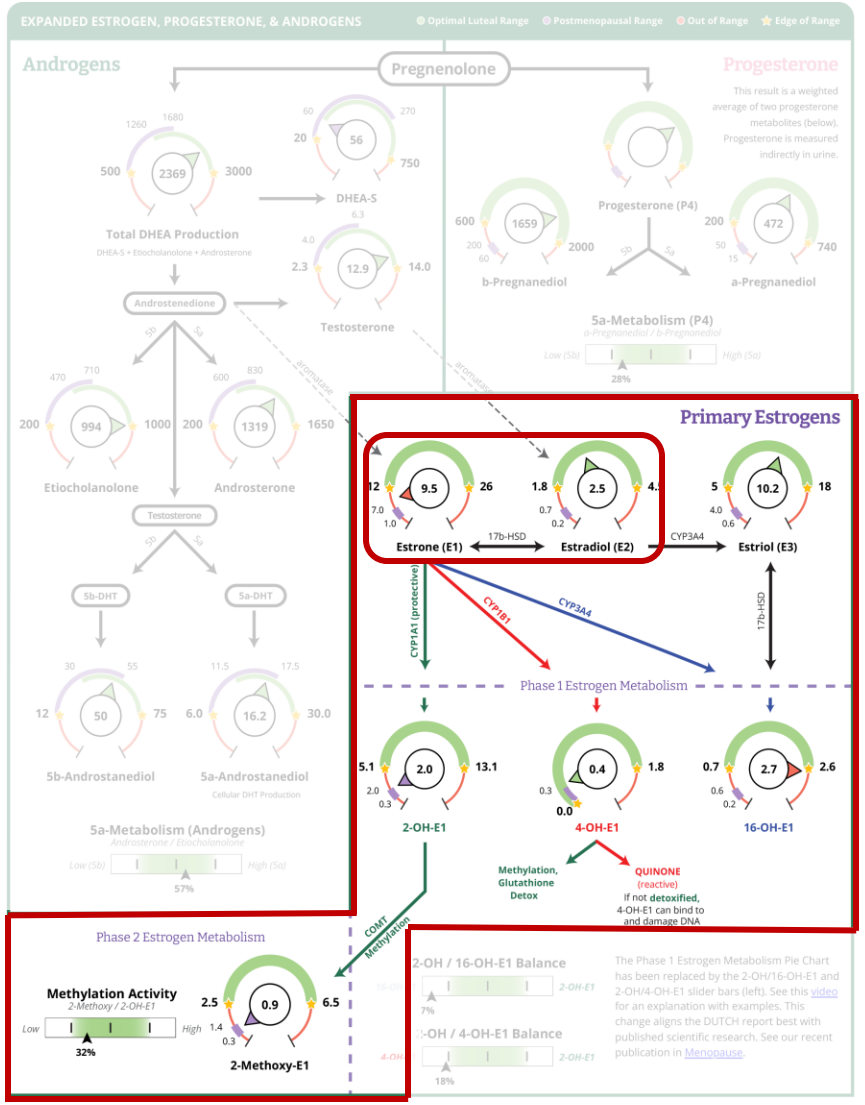


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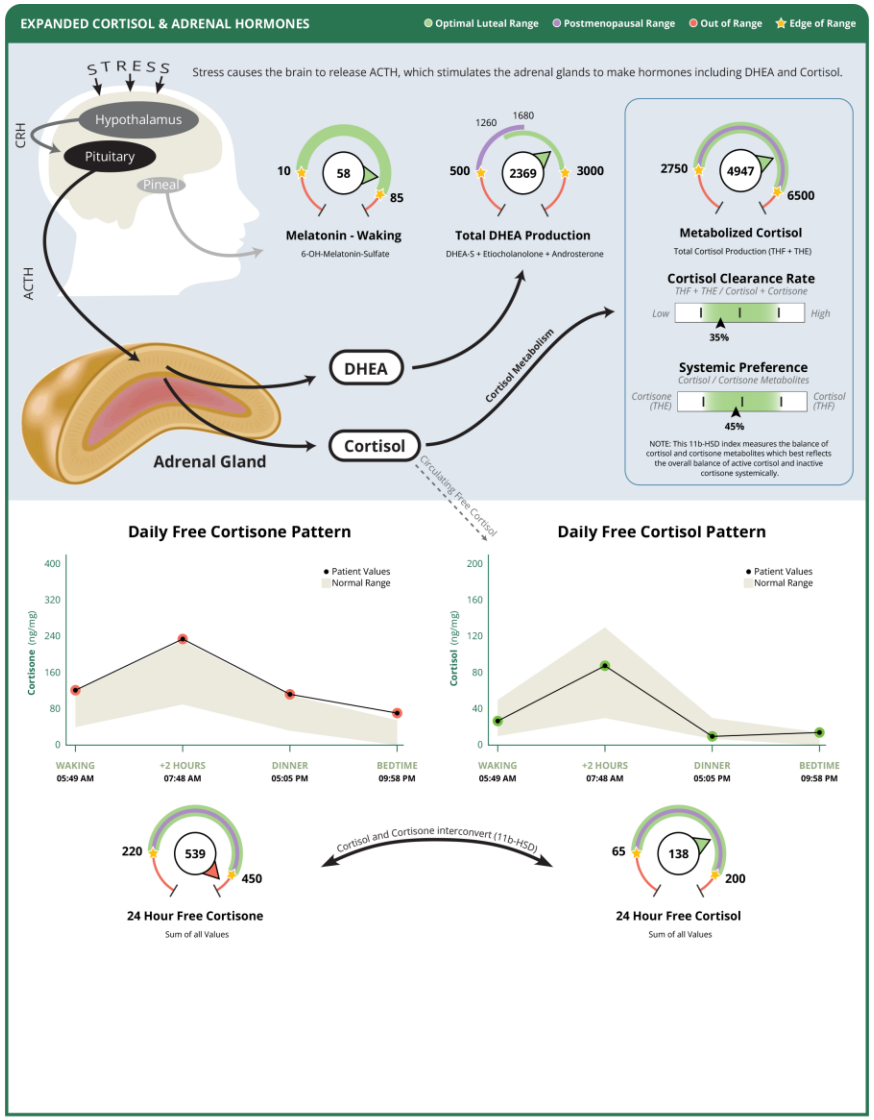


## Organic Acid Tests (OATs)

| TEST | | RESULT | UNITS | NORMAL RANGE |
|---|---|---|---|---|
| **Nutritional Organic Acids (Urine)** | | | | |
| Vitamin B12 Marker - May be deficient if high | | | | |
| Methylmalonate (MMA) | High end of range | 2.4 | ug/mg | 0 - 2.5 |
| Vitamin B6 Markers - May be deficient if high | | | | |
| Xanthurenate | Above range | 1.34 | ug/mg | 0.12 - 1.2 |
| Kynurenate | Above range | 4.7 | ug/mg | 0.8 - 4.5 |
| Biotin Marker - May be deficient if high | | | | |
| b-Hydroxyisovalerate | Within range | 8.5 | ug/mg | 0 - 12.5 |
| Glutathione Marker - May be deficient if high | | | | |
| Pyroglutamate | Within range | 40.0 | ug/mg | 28 - 58 |
| Gut Marker - Potential gut putrefaction or dysbiosis if high | | | | |
| Indican | Above range | 103.4 | ug/mg | 0 - 100 |
| **Neuro-Related Markers (Urine)** | | | | |
| Dopamine Metabolite | | | | |
| Homovanillate (HVA) | Within range | 7.8 | ug/mg | 3 - 11 |
| Norepinephrine/Epinephrine Metabolite | | | | |
| Vanilmandelate (VMA) | Within range | 4.2 | ug/mg | 2.2 - 5.5 |
| Neuroinflammation Marker | | | | |
| Quinolinate | Within range | 4.1 | ug/mg | 0 - 9.6 |
| **Additional Markers (Urine)** | | | | |
| Melatonin - Waking | | | | |
| 6-OH-Melatonin-Sulfate | Within range | 57.8 | ng/mg | 10 - 85 |
| Oxidative Stress / DNA Damage | | | | |
| 8-Hydroxy-2-deoxyguanosine (8-OHdG) | Above range | 5.9 | ng/mg | 0 - 5.2 |

- Both the xanthurenate and kynurenate are above the range. This may indicate vitamin B6 deficiency. B6 is important for phase 2 methylation (estrogen detox), neurotransmitter synthesis, and other key processes. Tryptophan taken within 72 hours before testing can also raise these markers without indicating a true B6 deficiency.
- The indican is above the range. This can indicate gut dysbiosis. Gut dysbiosis can affect estrogen metabolism, inflammation, and malabsorption of nutrients. Further GI testing may be indicated.
- The 8-hydroxy-2'-deoxyguanosine (8-OHdG) is above the normal range. This can result from oxidative damage to DNA. This may indicate a need for reducing oxidative damage, reactive oxygen species, and improving antioxidant status.

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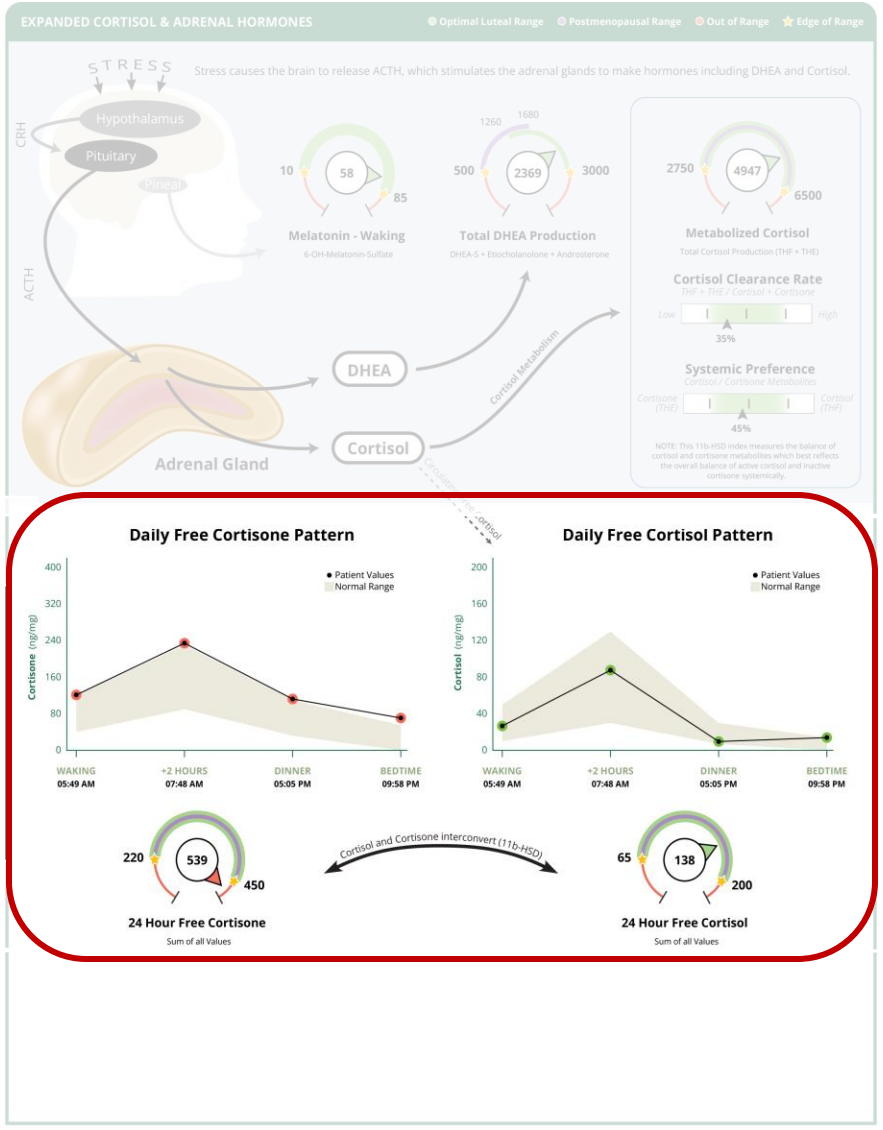


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## Goals of Treatment

### DUTCH Test Goals

- Improve 2/16 and 2/4 balance
- Support for low B6
- Address dysbiosis
- Reduce oxidative stress

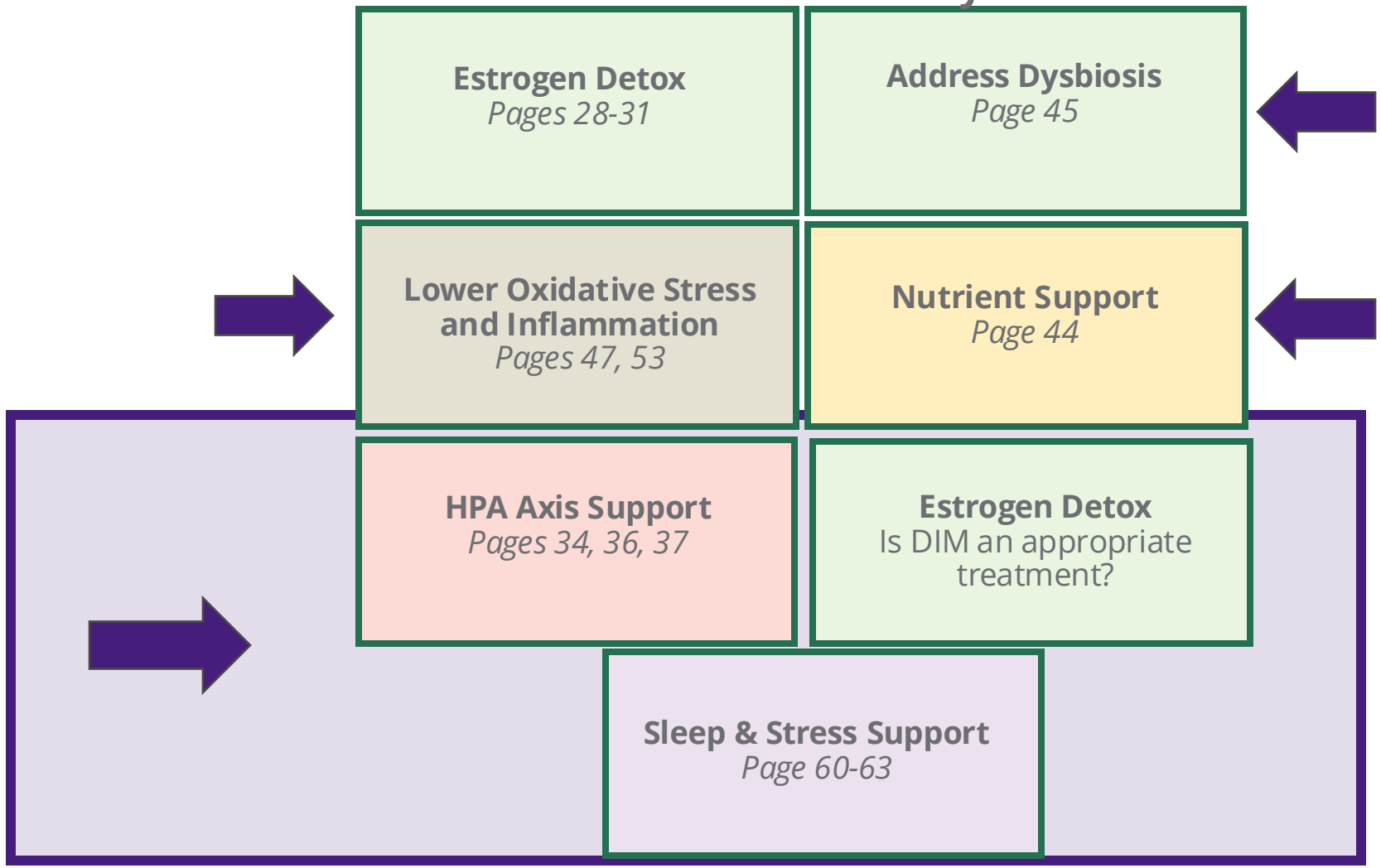
### Blood Lab Goals

- Improve anemia
- Improve underlying inflammation/elevated CRP

### Lifestyle Goals

- Improve diet and hydration
- Start exercise program

## Treatment Guide Key:




HPO Axis Support | HPA Axis Support | Other Hormone support | OATs Support | Symptom Support | Detox Support | Lifestyle Support | Other Support

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## Sample Treatment Options:

**Supplements**

- **Consider Beef liver** capsules, 2 capsules BID
  - **To address iron-deficiency anemia**
- **Consider herbal pain and inflammation relief supplement** containing rosemary, turmeric, ginger, holy basil, green tea, hu zhang, goldthread, barberry, oregano, skullcap
  - **To support phase 1 estrogen detox, decrease inflammation & oxidative stress, pain relief**
- **Consider Broccoli seed extract blend** that contains glucoraphanin and myrosinase – one capsule daily
  - **To support phase 1 estrogen detox**

**Diet**

- **Consider** dietary intake of healthy fats/proteins daily, increase cruciferous veggie and broccoli sprout intake, add ground flaxseeds daily
  - **To help weight loss efforts, decrease insulin resistance, improve sleep, improve estrogen detoxification**
  - **To support balances E1 to E2 conversion**

**Lifestyle**

- **Consider** 4-5 days a week of moderate intensity exercise – incorporating weight/resistance training
  - **To improve weight loss and help lower estrogens, improve insulin resistance, decrease inflammation and stress**
- **Consider** meditation and mindfulness program of choice **to optimize cortisol levels, if indicated.**
- **Referral** Functional GI Health eval
  - **To address for underlying gut dysbiosis and inflammation, which can in turn improve estrogen metabolism and high estrogen levels**

■ DUTCH Dozen ■ Advanced Insights

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Polling Question

# Polling Question:

## What was the key finding that influenced your treatment plan the most?

A. Poor phase 1 estrogen detox

B. Dysbiosis

C. Oxidative stress

D. B6 and B12 deficiencies

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## Reflection:

**How does her slow estrogen clearance in the context of her dysbiosis influence your original treatment plan?**

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1. How do you know your treatment plan is working?

2. When would you retest?

3. Which DUTCH panel would you order?

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# Thank You!

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