Deciphering Hormones with the Hormone Insights Test (HIT)

Charlotte Hunter
KBMO Diagnostics UK

What are we covering today?

- Recap of the FIT Test
- Why hormone testing?
- The Hormone Insights Test (HIT)
- Sample reports
- A note on support & education
- Please ask questions as we go…

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Meet the UK Team

Charlotte Hunter
Head of KBMO UK

Linette Petrillo
Customer Services

Kelly Hutson
Events

Clare Kennedy
Operations Manager

Natasha Khan
Sales

Emily Birch
Clinical Support

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The Food Inflammation Test (FIT)

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Summary of Tests

FIT22

22 of the most common food sensitivities including gluten, cow's milk and egg.

FIT176

176 foods including health foods such as honey, stevia and coconut oil plus the Gut Barrier Panel

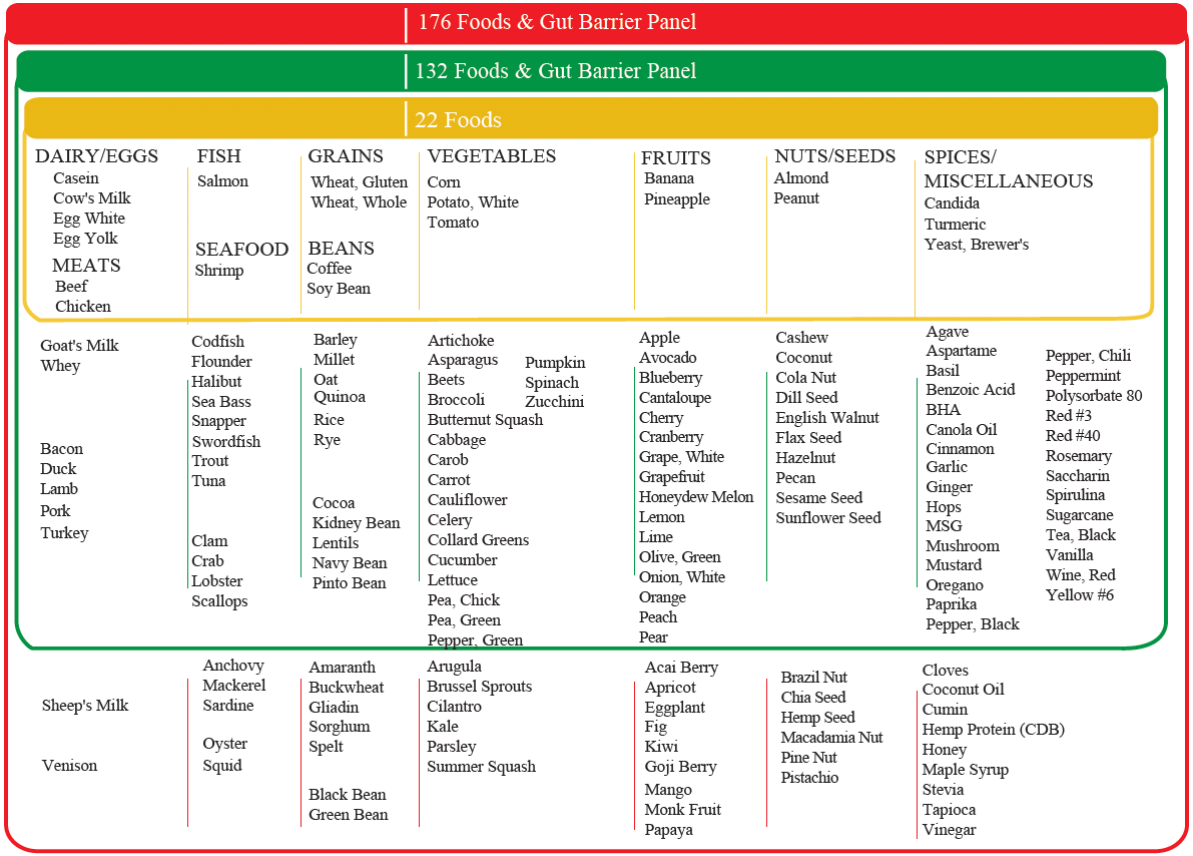
FIT132

132 foods and food additives plus the Gut Barrier Panel

GBP

Assess the integrity of the gut lining by measuring Candida, Zonulin, Occludin and Lipopolysaccharides (LPS)

Foods We Test



Food selection contains ‘real-world’ foods, encompassing raw and cooked.

The FIT132 and FIT176 both include the Gut Barrier Panel.

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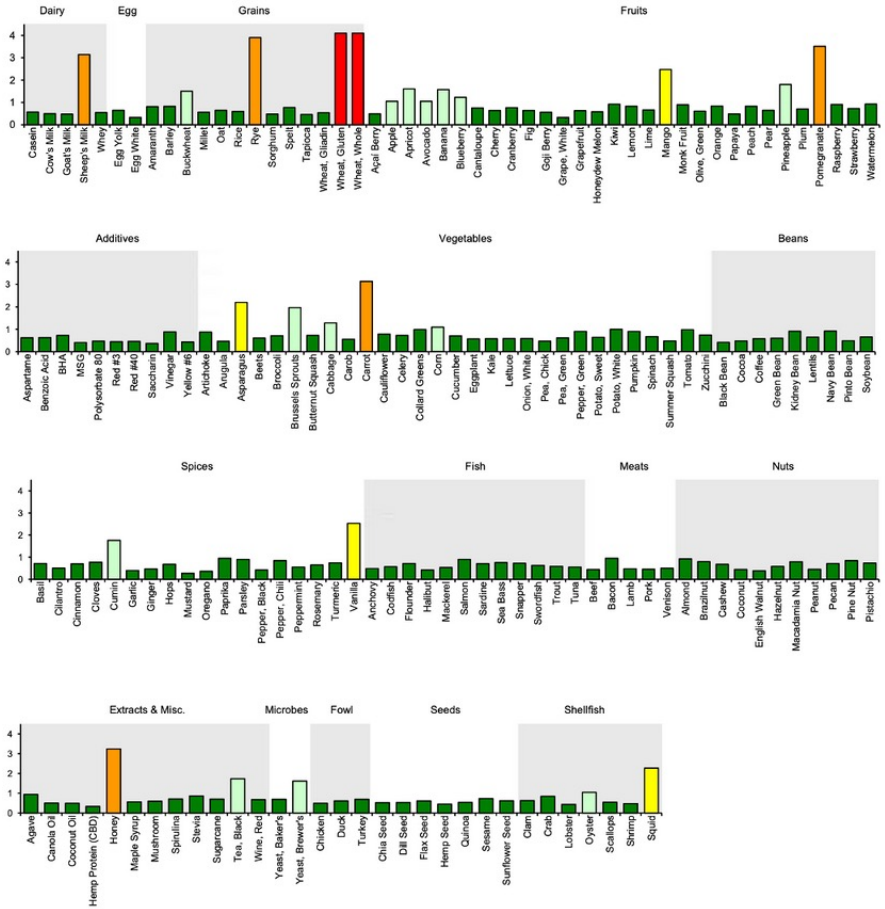
The Food Inflammation Test (FIT) Report



4+ Reactions:	Wheat, Gluten Wheat, Whole
3+ Reactions:	Sheep's Milk Rye Pomegranate Carrot Honey
2+ Reactions:	Mango Asparagus Vanilla Squid

- Easy to read
- Colour coded
- Client-friendly
- Easy interpretation
- Efficient practice
- Easy to repeat tests

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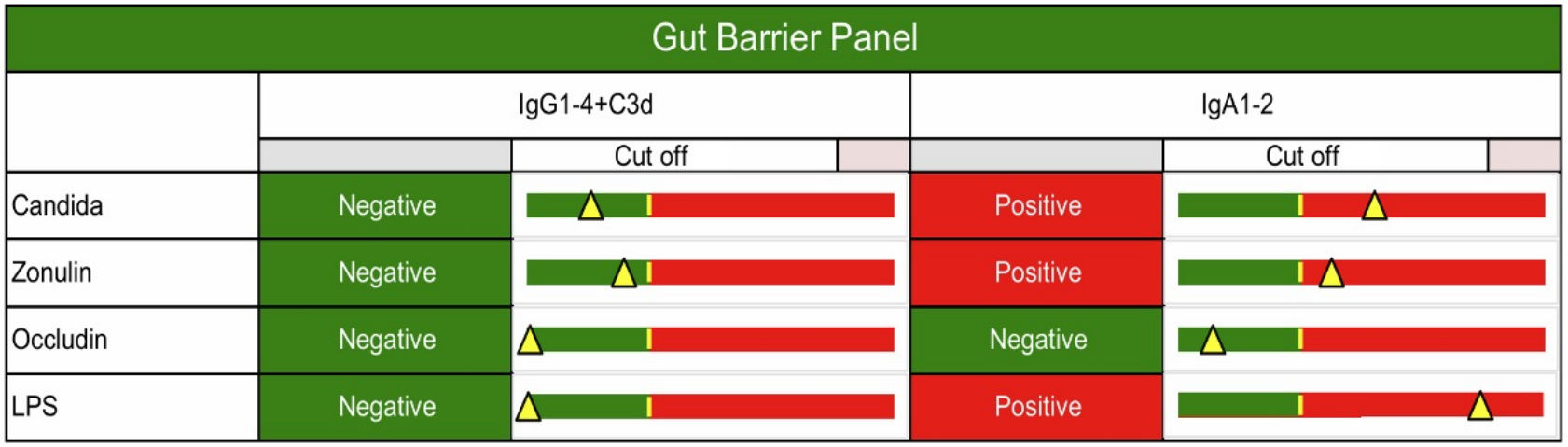
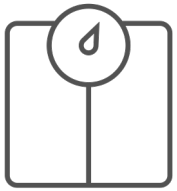
The Gut Barrier Panel

Gut Barrier Panel

KBMO has created a unique Gut Barrier Panel which in recognition that leaky gut occurs across a spectrum we have included the following gatekeeper markers: Candida, Zonulin and Occludin and LPS. For each marker, we measure IgG 1-4 /C3d in addition to IgA 1 and 2.



Why test food sensitivities?



Weight Loss & Thyroid Issues

Digestive & Skin

Fibroids, Endometriosis & PCOS

Digestive & Skin

Brain Fog, Fatigue & Migraines

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Hormone Testing

- Are your current hormone tests giving you what you need?

- Many hormone tests are:
  - Complicated to interpret
  - Expensive for clients
  - Less clear since report updates
  - Confusing and often contain errors in their algorithm-generated interpretations

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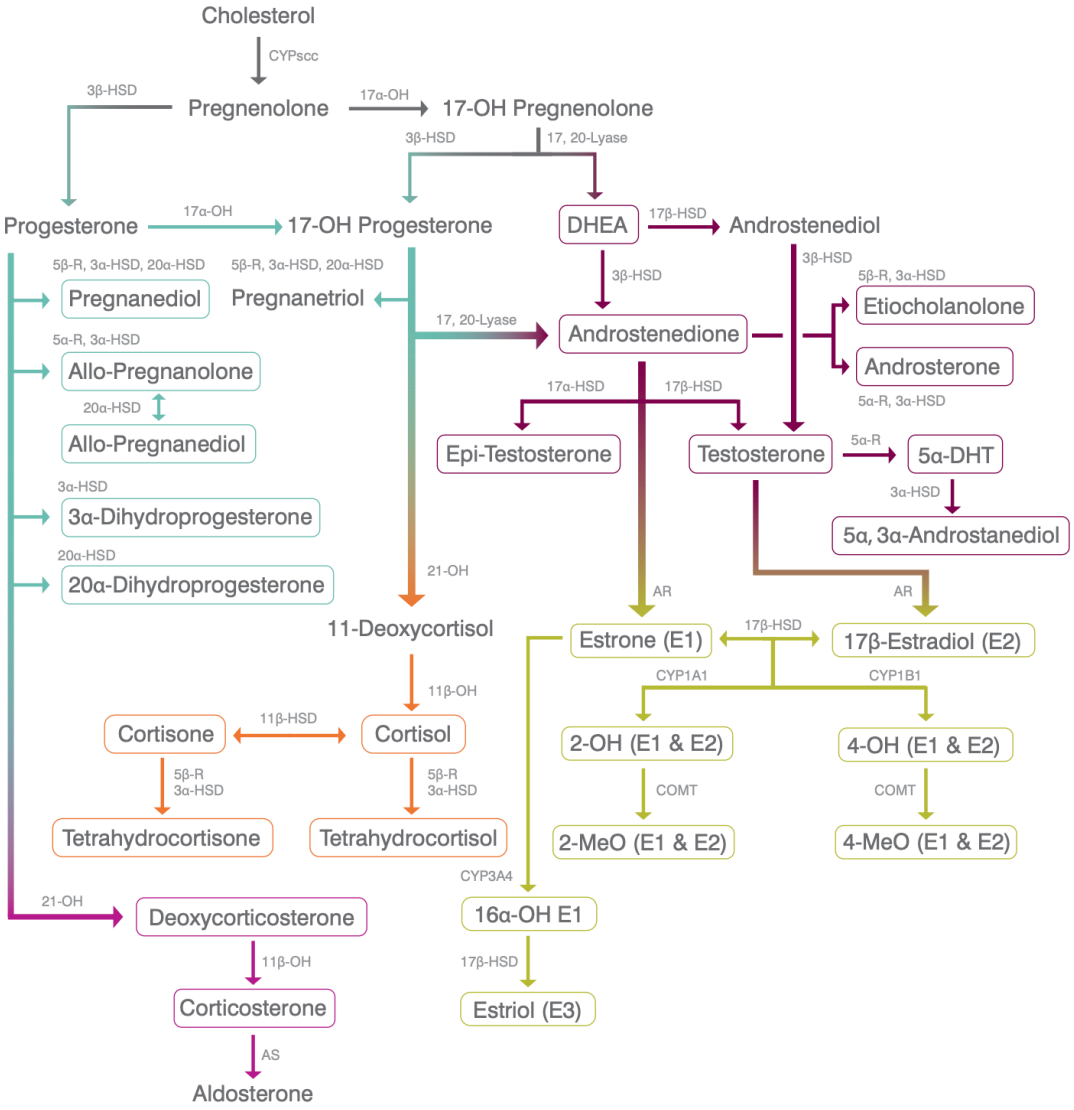
There IS Another Way!

- The Hormone Insight Test (HIT): Powered by the *Advanced Urine Hormone Metabolites Test by ZRT*
- Measures **44 hormone-related markers**
- 13 oestrogens, 8 androgens
- Diurnal cortisol & melatonin patterns
- Includes **BPA** (rarely assessed endocrine disruptor)

The Hormone Insights Test (HIT)

- Developed by ZRT laboratory – pioneers in hormone testing
- The ORIGINAL urine metabolites test
- Built on decades of research and clinical use
- The HIT Test combines ZRT's scientific credibility with KBMO's practitioner-first support model.

The Steroid Hormone Cascade



Why Does the HIT Measure?

- More Tests:
  With 44 unique markers, ZRT's urine hormone profiles are more comprehensive than any other lab.

- More Oestrogens:
  ZRT assesses a total of 13 oestrogens, including 2-Methoxy and 2-Hydroxy, 4-Hydroxy and 4-Methoxy and 16a-Hydroxy oestrogens. We test more 4-Hydroxy metabolites than any other lab.

- More Androgens:
  ZRT assesses a total of 8 androgens, which is more than most labs offer.

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Why Does the HIT Measure?

- BPA:
  One of few labs to include an assessment of BPA in its urine hormone testing.

- Diurnal Cortisol:
  ZRT provides diurnal patterns for both cortisol and cortisone, which help get to the root of stress-related issues. It's also ideal for those unable to collect a saliva sample for diurnal cortisol.

- Diurnal Melatonin:
  Diurnal Melatonin: ZRT is the only lab to include a diurnal pattern for melatonin, which helps evaluate sleep-related issues.

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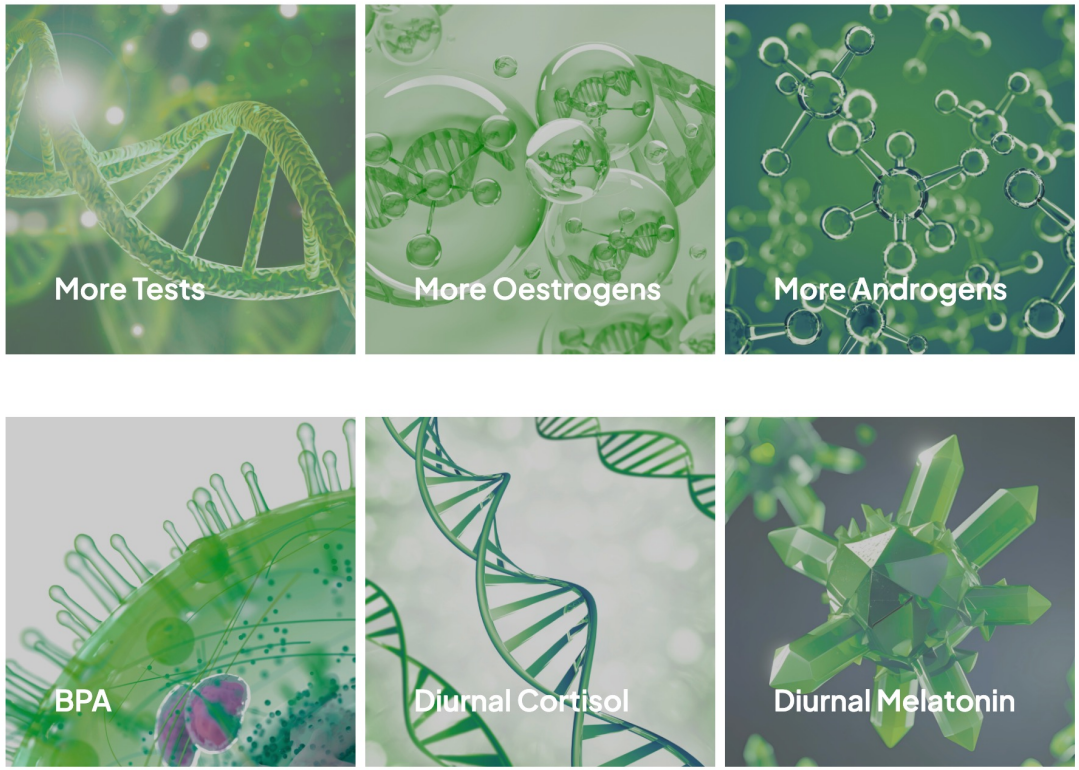
The ZRT Difference



- More Markers
- More Insight
- More clinical value

Why is HIT Different?

- Why should you be excited about the HIT?
- Relevant data - especially around progesterone which is notoriously under-assessed in other tests)
- Clarity – simple reference range bars and easy-to-read graphs
- At-home convenience – competitive pricing for clients with good margins for practitioners

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Why Use Urine – and Why Dried?

- Dried urine testing is a simple, non-invasive way to evaluate hormone activity and detoxification.
- Unlike other methods, it shows both levels and pathways. In other words, it reveals how hormones are used and cleared.
- *ZRT pioneered this science-backed method and continues to lead the field with clinical precision and innovation.*

When to Consider the HIT?

- Family history of hormone-dependent conditions or cancers
- Adrenal issues or hormonal imbalance such as weight gain and insomnia
- Symptoms of PCOS, such as acne and excess facial hair
- Symptoms of menopause and/or ready to begin hormone replacement therapy
- Symptoms of oestrogen dominance while on physiological replacement dosages of therapy

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Sample Reports

TEST REPORT

8605 SW Creekside Place
Beaverton, OR 97008
Phone: 503-466-2445 Fax: 503-466-1636

ZRT LABORATORY

 # 2018 07 01 007 U

Ordering Provider:
Getuwell Clinic
Jim Getuwell, DO

Samples Received
07/31/2018

Report Date
08/05/2018

Samples Collected
Urine - 07/26/18 08:00
Urine - 07/26/18 10:00
Urine - 07/26/18 19:20
Urine - 07/26/18 22:30

Patient Name: Advanced Metabolites
Patient Phone Number: 555 555 5555

Gender	Last Menses	Height	Waist
Female	Unspecified	5 ft 3 in	Unspecified
DOB	**Menses Status**	**Weight**	**BMI**
3/4/1960 (58 yrs)	Postmenopausal	165 lb	29.2

TEST NAME	RESULTS | 07/26/18	RANGE
Urinary Estrogens		
Estradiol	0.68 L	0.78-1.79 µg/g Cr Premeno-luteal or ERT
Estrone	2.85	2.27-5.22 µg/g Cr Premeno-luteal or ERT
Estriol	0.83	0.78-1.98 µg/g Cr Premeno-luteal or ERT
E3/(E1+E2)	0.24 L	>0.3 (> median value)
2-OH Estradiol	0.21	0.17-0.70 µg/g Cr Premeno-luteal or ERT
2-OH Estrone	1.09	0.70-2.54 µg/g Cr Premeno-luteal or ERT
4-OH Estradiol	0.15	0.10-0.18 µg/g Cr Premeno-luteal or ERT
4-OH Estrone	0.47	0.17-0.47 µg/g Cr Premeno-luteal or ERT
16α-OH Estrone	0.31 L	0.35-1.07 µg/g Cr Premeno-luteal or ERT
2-OH (E1 + E2)/16-α-OH E1	4.19	1.29-5.49 Premeno-luteal or ERT
2-MeO Estradiol	0.06	0.03-0.08 µg/g Cr Premeno-luteal or ERT
2-MeO Estrone	0.51	0.26-0.68 µg/g Cr Premeno-luteal or ERT
2-MeO E1/2-OH E1	0.47 H	0.21-0.38 Premeno-luteal or ERT
4-MeO Estradiol	0.05 H	<0.04 µg/g Cr
4-MeO Estrone	0.12 H	<0.04 µg/g Cr
4-MeO E1/4-OH E1	0.26 H	0.05-0.13 Premeno-luteal or ERT
4-MeO E2/4-OH E2	0.33 H	0.10-0.29 Premeno-luteal or ERT
Bisphenol A	<dl L	1.5-4.5 µg/g Cr Postmenopausal

David T. Zava, Ph.D.
Laboratory Director

Alison McAllister, ND.
(Ordering Provider unless otherwise specified on page 1)

TEST NAME	RESULTS | 07/26/18	RANGE
Urinary Progestogens		
Pregnanediol	8071 H	465-1609 µg/g Cr Premeno-luteal or PgRT
Allopregnanolone	35.33 H	2.23-14.87 µg/g Cr Premeno-luteal or PgRT
Allopregnanediol	148.31 H	14.65-76.71 µg/g Cr Premeno-luteal or PgRT
3α-Dihydroprogesterone	3.29 H	0.67-2.03 µg/g Cr Premeno-luteal or PgRT
20α-Dihydroprogesterone	15.13 H	3.93-11.62 µg/g Cr Premeno-luteal or PgRT
Deoxycorticosterone	1.72	0.69-2.23 µg/g Cr Premeno-luteal or PgRT
Corticosterone	1.48 L	3.19-9.59 µg/g Cr Premeno-luteal or PgRT
Pgdiol/E2	11869.12 H	1000-1500 (Optimal Luteal Only)
Urinary Androgens		
DHEA	6.44 L	8.63-37.28 µg/g Cr Postmenopausal
Androstenedione	1.95 L	2.07-7.94 µg/g Cr Postmenopausal
Androsterone	212	152-482 µg/g Cr Postmenopausal
Etiocholanolone	195 L	239-777 µg/g Cr Postmenopausal
Testosterone	0.91	0.66-2.89 µg/g Cr Postmenopausal
Epi-Testosterone	0.78	0.39-1.32 µg/g Cr Postmenopausal
T/Epi-T	1.17	0.5-3.0
5α-DHT	0.24 L	0.26-0.98 µg/g Cr Postmenopausal
5α,3α-Androstanediol	3.87	2.32-8.17 µg/g Cr Postmenopausal
Urinary Glucocorticoids		
Total Cortisol	11.88 L	13.23-39.26 µg/g Cr Postmenopausal
Total Cortisone	13.04 L	23.32-59.61 µg/g Cr Postmenopausal
Cortisol/Cortisone	0.91 H	0.5-0.7
Tetrahydrocortisol	192 L	281-711 µg/g Cr Postmenopausal
Tetrahydrocortisone	530 L	551-1474 µg/g Cr Postmenopausal
Urinary Free Diurnal Cortisol		
Free Cortisol	1.49 L	7.8-29.5 µg/g Cr (1st Morning)
Free Cortisol	15.28 L	23.4-68.9 µg/g Cr (2nd Morning)

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The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practitioner for diagnosis and treatment.

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TEST NAME	RESULTS | 07/26/18	RANGE
Urinary Free Diurnal Cortisol		
Free Cortisol	2.51 L	6.0-19.2 µg/g Cr (Evening)
Free Cortisol	1.62 L	2.6-8.4 µg/g Cr (Night)
Urinary Free Diurnal Cortisone		
Free Cortisone	5.27 L	31.6-91.6 µg/g Cr (1st Morning)
Free Cortisone	51.45 L	63.3-175.8 µg/g Cr (2nd Morning)
Free Cortisone	8.68 L	30.6-88.5 µg/g Cr (Evening)
Free Cortisone	4.56 L	15.5-44.7 µg/g Cr (Night)
Urinary Diurnal Melatonin MT6s		
Melatonin	7.19 L	18.0 - 40.9 µg/g Cr (1st Morning)
Melatonin	3.39 L	7.3 - 31.9 µg/g Cr (2nd Morning)
Melatonin	0.85	0.7 - 2.2 µg/g Cr (Evening)
Melatonin	1.03 L	1.7 - 11.1 µg/g Cr (Night)
Urinary Creatinine		
Creatinine (pooled)	1.34	0.3-2.0 mg/mL
Creatinine	1.23	0.3-2.0 mg/mL (1st morning)
Creatinine	1.98	0.3-2.0 mg/mL (2nd morning)
Creatinine	2.49 H	0.3-2.0 mg/mL (Evening)
Creatinine	1.80	0.3-2.0 mg/mL (Night)

<dL = Less than the detectable limit of the lab. N/A = Not applicable; 1 or more values used in this calculation is less than the detectable limit. H = High. L = Low.

Therapies

0.5mg topical Divigel (Estradiol) (Pharmaceutical) (1 Days Last Used)125mg oral Progesterone (compounded) (1 Days Last Used)

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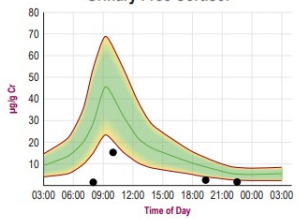
Graphs

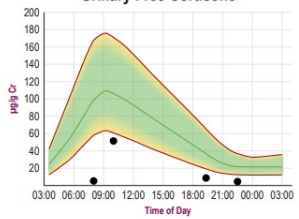
Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

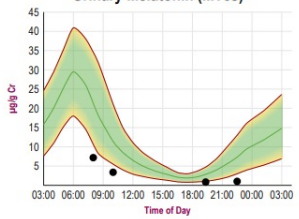
Urinary Free Cortisol



Urinary Free Cortisone



Urinary Melatonin (MT6s)



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Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES	RESULTS | 07/26/18
Estrogen / Progesterone Deficiency	18%
Estrogen Dominance / Progesterone Deficiency	20%
Low Androgens (DHEA/Testosterone)	30%
High Androgens (DHEA/Testosterone)	11%
Low Cortisol	29%
High Cortisol	28%
Hypometabolism	30%
Metabolic Syndrome	40%

SYMPTOM CHECKLIST	MILD	MODERATE	SEVERE
Aches and Pains	■		
Acne	■		
Allergies	■		
Anxious	■		
Bleeding Changes	■		
Blood Pressure High	■		
Blood Pressure Low	■		
Blood Sugar Low	■		
Body Temperature Cold	■		
Bone Loss	■		
Breast Cancer	■		
Breasts - Fibrocystic	■		
Breasts - Tender	■		
Chemical Sensitivity	■		
Cholesterol High	■	■	
Constipation	■	■	
Depressed	■	■	
Fatigue - Evening	■	■	
Fatigue - Morning	■	■	
Fibromyalgia	■	■	■
Foggy Thinking	■		
Goiter	■		
Hair - Dry or Brittle	■		
Hair - Increased Facial or Body	■		
Hair - Scalp Loss	■		
Headaches	■	■	
Hearing Loss	■		
Heart Palpitations	■		
Hoarseness	■		
Hot Flashes	■		
Incontinence	■		
Infertility	■		
Irritable	■		
Libido Decreased	■	■	
Memory Lapse	■		
Mood Swings	■		
Muscle Size Decreased	■		
Nails Breaking or Brittle	■		
Nervous	■		
Night Sweats	■		
Numbness - Feet or Hands	■		

SYMPTOM CHECKLIST	MILD	MODERATE	SEVERE
Pulse Rate Slow	■		
Rapid Aging	■		
Rapid Heartbeat	■		
Skin Thinning	■		
Sleep Disturbed	■	■	
Stamina Decreased	■		
Stress	■	■	■
Sugar Cravings	■		
Sweating Decreased	■		
Swelling or Puffy Eyes/Face	■		
Tearful	■		
Triglycerides Elevated	■	■	
Urinary Urge Increased	■		
Uterine Fibroids	■		
Vaginal Dryness	■		
Water Retention	■		
Weight Gain - Hips	■	■	
Weight Gain - Waist	■	■	

Lab Comments

PARENT ESTROGENS (ESTRADIOL-E2, ESTRONE-E1, ESTRIOL-E3)

The parent estrogens are within/near the expected median to 90 percentile of the reference ranges seen in postmenopausal women supplementing with topical estrogen replacement therapy (Note: transdermal and topical estrogens raise urinary estrogens very little as these estrogens are excreted predominately in bile and feces by this route of administration) . This is commonly seen in postmenopausal women taking low dose topical estrogens (usually a topical estradiol or biestrogen containing estradiol + estriol). Topically delivered estrogens increase saliva and capillary blood levels of the supplemented estrogens, but increase urinary and serum levels much less. Topically delivered hormones are more likely to be excreted in bile/feces than in urine.

HYDROXYLATED (CATECHOL) ESTROGENS (2-OH E2 & E1, 4-OH E2 & E1, 16-OH E1) and 2-OH/16-OH RATIO

The hydroxylated estrogens are all within/near normal reference ranges for a postmenopausal woman supplementing with topical estrogen(s). Levels of the down-stream hydroxylated estrogens are usually within the low end of the reference ranges with topical ERT, as are the parent estrogens from which they are derived. Topically delivered estrogens raise the level of urinary estrogens very little, which is likely due to excrettion more in the bile/feces than in urine.

The hydroxylation of estradiol and estrone represent the first phase of metabolism and elimination of these estrogens via urine. Following hydroxylation at the 2-, 4-, or -16 position, the estrogens undergo further modification (methylation, sulfation, glucuronidation) that increases their solubility and excretion in urine. In the laboratory these sulfate and glucuronide groups are removed by enzyme hydrolysis, which allows for measurement of the different types of hydroxylated estrogens, in addition to methylation of the hydroxyl groups (see below). The 2- and 4-hydroxylated E1 and E2 metabolites are referred to as catechol estrogens.

Research and clinical studies show that the 2-hydroxylated estrogens (2-OH E2 and 2-OH E1) are a safer pathway of hydroxylation than the 4-hydroxyestrogens (4-OH E2 and 4-OH E1), which bind to and damage DNA, leading to mutations that are associated with increased breast cancer risk. For reviews see: Cavalieri EL, Rogan EG Future Oncol 6(1): 75-79, 2010; and Lee, JR, Zava DT What Your Doctor May Not Tell You About BREAST CANCER: How Hormone Balance Can Help Save Your Life: Chapter 7.

2-hydroxylated estrogen metabolism is increased with cruciferous vegetables and extracts of them, so higher consumption of these foods will enhance the safer 2-hydroxylation pathway for estrogen metabolism. The most commonly used concentrated extracts of cruciferous vegetables contain high levels of indole-3-carbinol (I3C) and its metabolite diindolylmethane (DIM). Iodine also increases the 2-hydroxylation of estrogens, with a slight increase in 4-hydroxylation (Stoddard FR et.al. Int J Med Sci 5: 189-196, 2008), which is associated with the protective effects of higher dose iodine therapy for prevention of breast cancer. The more dangerous 4-hydroxylated estrogen metabolism is enhanced by exposure to environmental toxins, mostly petrochemical-based products but also heavy metals, that induce 4-hydroxylation pathway enzymes (1B1), and cause formation of Reactive Oxygen Species (ROS) that co-oxidize the catechol estrogens to quinones.

16-hydroxyestrone is another pathway of estrone metabolism and is a precursor to estriol (see Steroid Hormone Cascade). Early clinical research in humans suggested that a high urinary level of 16-hydroxyestrone relative to 2-hydroxylated estrogens (i.e. a low 2-OH E1 + 2-OH E2/16-OH E1 ratio), was associated with an increased risk of breast cancer in premenopausal women, but not in postmenopausal women. This has remained controversial and newer research suggests that while higher levels of 16-hydroxy estrone may indeed be slightly associated with

The Power of At-Home Testing

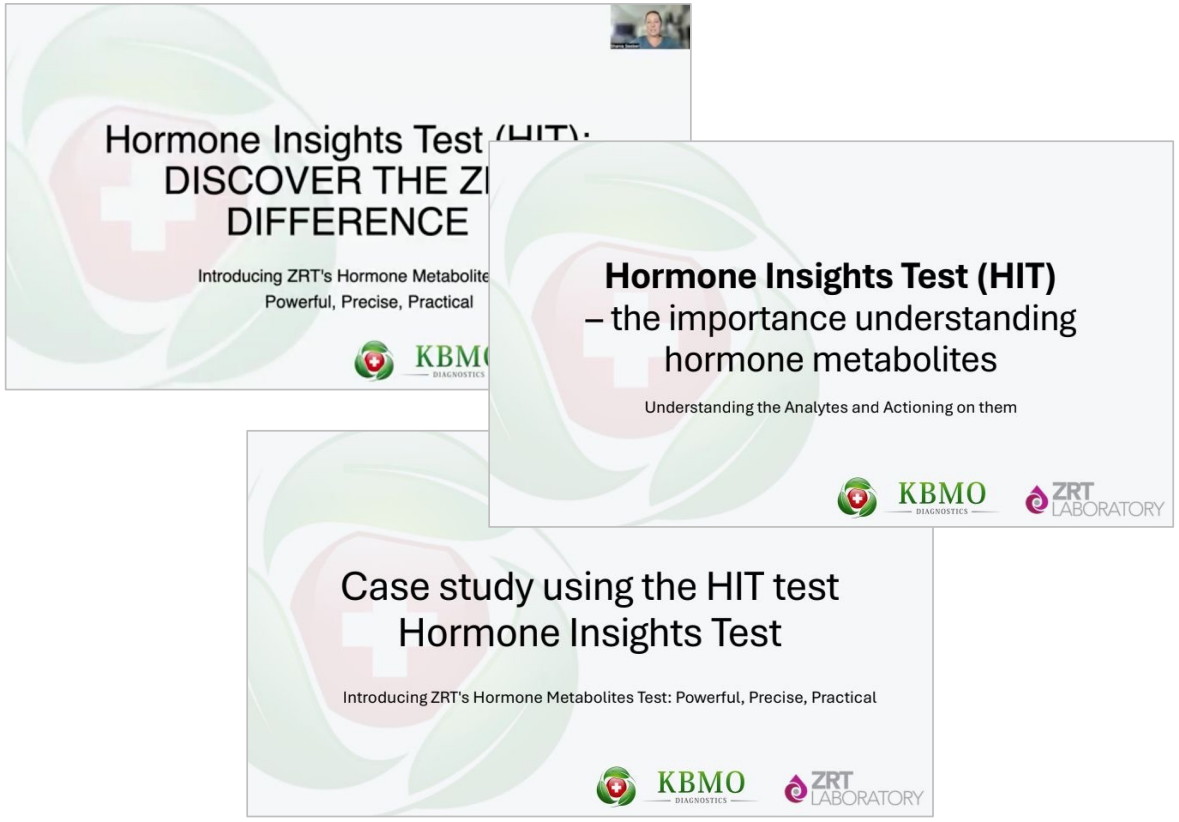
- Simple, non-invasive collection
- Less stressful, time-consuming and expensive!
- Better compliance
- Easy integration into your practice
- No need to stop hormones/supplements

Support & Education

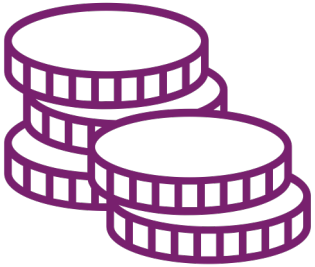
- 1st report → personal 1:1 walk-through
- Weekly Hormone Help Hour → group coaching, case studies and Q&A
- Supplement partnerships → practical, real-world application
- Education → one of KBMO's core values!
- *And of course, we're always at the end of the phone - or email!*

KBMO

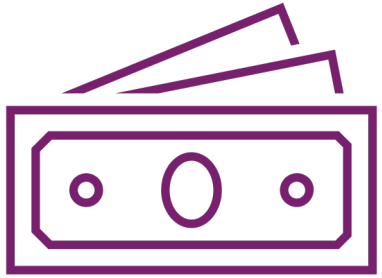
Dr Shania Seeber



Pricing & Postage



Practitioner Price
£249



Retail Price
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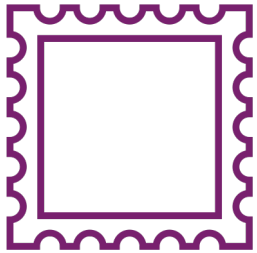

FREE Postage
& Returns

Your Next Steps with HIT

- Order your first test at www.kbmodiagnostics.co.uk
- Attend your first 1:1 session
- Bring your cases and questions to the Hormone Help Hour
- Enjoy the brilliant webinars with Dr Shania Seeber to build your knowledge on the HIT.

KBMO

Smarter Testing, Better Outcomes

HIT = insights that matter

Simple reports, relevant data

Support at every step

Future of hormone testing

Next Webinar: 16th September, 10am

Digestive Deep Dive:

The Dynamic Duo of Gut Testing in Action

with Dr Shania Seeber

Thank You

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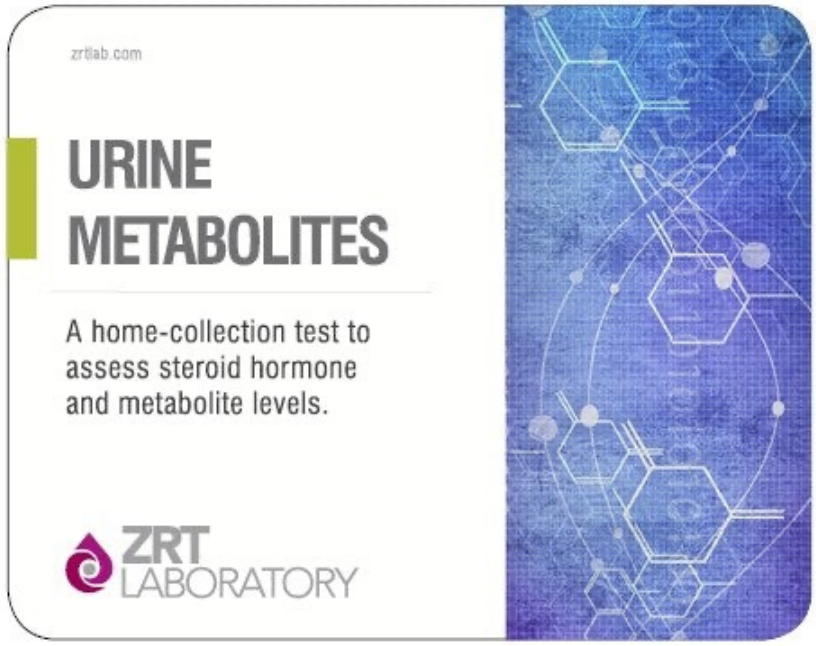

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