dutchtest® COMPLETE

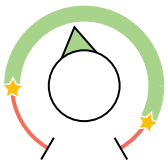
# Female QuickStart Guide

The Female QuickStart Guide will help you understand how to read the DUTCH Test using the DUTCH Dozen. The **DUTCH Dozen** is an interpretive framework that allows clinicians to understand their patients' DUTCH Test results quickly and comprehensively. We have streamlined the review of the DUTCH Test with a set of **12 assessments** that prioritize the most critical aspects of hormone function, covering estrogens, progesterone, androgens, and cortisol. The DUTCH Dozen allows clinicians to quickly evaluate key hormone markers in the **Hormone Testing Summary using page 1 of the report**, making it easier and faster to develop targeted treatment plans. See pages 24 and 38 of the DUTCH Interpretive Guide, respectively, for more information about the DUTCH Dozen and to learn about the DUTCH Advanced Insights.

This first page orients you to female reference ranges and the types of graphics used on the DUTCH report.

## DUTCH Dials

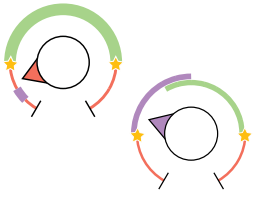
### Some dials have one normal range



- In-range results are in green
- Out-of-range results are in red

### Sex hormone dials for females have two normal ranges

- The luteal range on estrogen and progesterone dials and the premenopausal range on androgen dials are green
- The postmenopausal range is purple
- Out-of-range results are in red



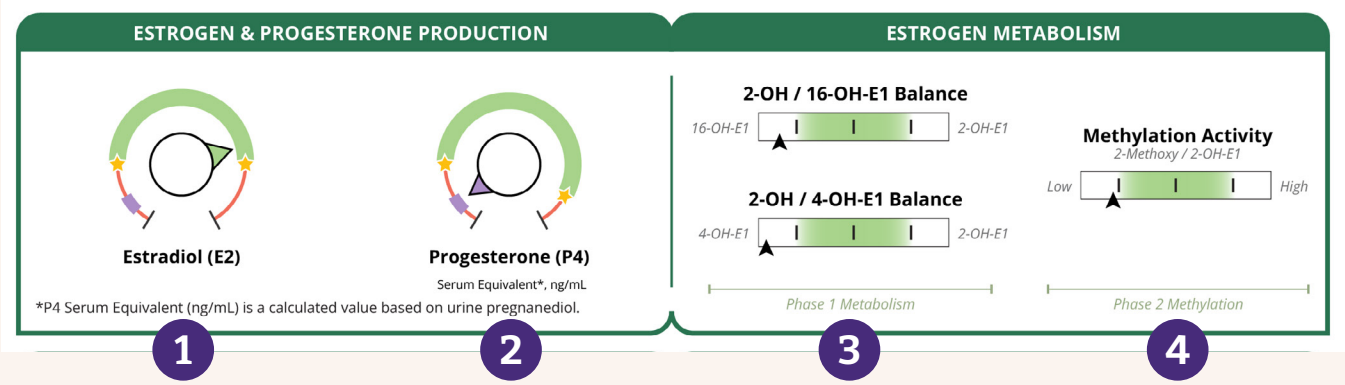
## DUTCH Sliders


Population sliders are used to report calculated ratios. In the example, the patient's result is at the 80th percentile, indicating 80% of people have lower values than theirs. The green shaded area is within range (20–80%). The outer white areas are out of range. The patient's result and the reference ranges are listed on the "table" pages of the report (pages 3 and 5).

DUTCH DOZEN

# Estrogen and Progesterone

**Page 1 of the report: Estrogen and Progesterone section of the Female Hormone Testing Summary**




## 1 Assess estrogen levels given the patient's reproductive status

Are estrogen levels normal? **Estradiol** is the most potent estrogen and thus has more estrogenic activity in the body compared to E1, E3 and the phase 1 and 2 estrogen metabolites.

## 2 Assess progesterone levels given the patient's reproductive status

Are progesterone levels normal? The progesterone DUTCH Dial reports the **Progesterone Serum Equivalent**. This is a calculated value based on urinary pregnanediol from DUTCH published validation studies. For cycling females in the luteal phase, the Estradiol and Progesterone Serum Equivalent dials can be easily compared on this summary page to assess relative balance.

## 3 Assess 2-OH preference in phase 1 estrogen metabolism

Is the protective 2-OH pathway preferred?

### 2-OH-E1

**2-OH** is the most prominent phase 1 estrogen metabolite. 2-OH metabolite is stable with little-to-no estrogen receptor activity.

### 16-OH

**16-OH** is an estrogenic phase 1 metabolite. 2-OH/16-OH-E1 balance slider shows 2-OH-E1 relative to 16-OH-E1. As the arrow moves to the left side of the slider, more 16-OH is present relative to 2-OH.

### 4-OH

**4-OH** is a genotoxic metabolite. 2-OH/4-OH-E1 balance slider shows 2-OH-E1 relative to 4-OH-E1. As the arrow moves to the left side of the slider, more 4-OH is present relative to 2-OH.

## 4 Assess methylation of 2-OH estrogens

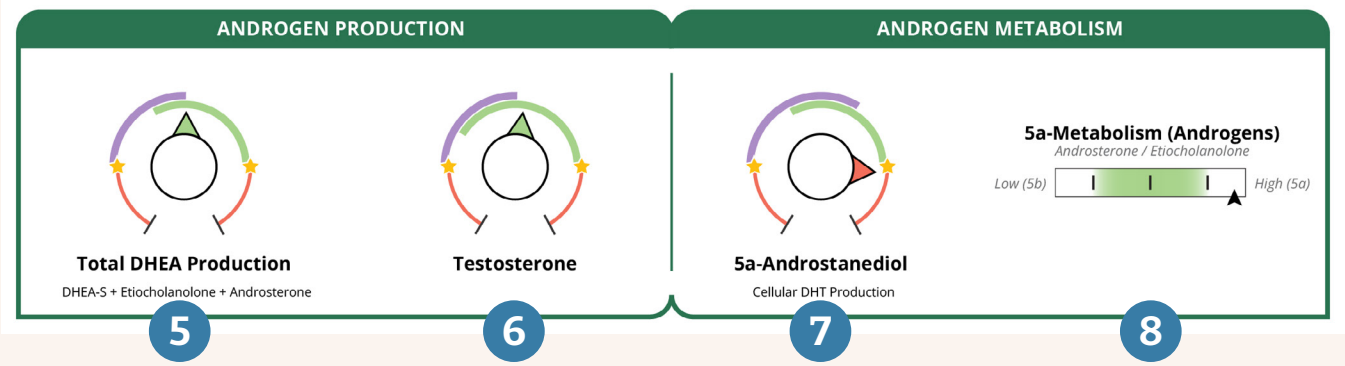
Are 2-OH estrogens being adequately methylated?

**The Methylation Activity** slider bar shows the ratio 2-Methoxy/2-OH-E1. 2- Methoxy-E1 is a neutral, stable phase 2 metabolite that is easily excreted from the body. The patient's result is shown by the black arrow. When results are to the left, it indicates lower than average methylation activity, to the right indicates higher than average activity.

DUTCH DOZEN

# Androgens

**Page 1 of the report: Androgen section of the Female Hormone Testing Summary**




## 5 Assess adrenal androgen levels (Total DHEA)

Are adrenal androgen levels normal?

**Total DHEA Production** is the sum of three urinary DHEA metabolites, DHEA-S, etiocholanolone, and androsterone, and shows the total androgen production from the adrenal glands.

## 6 Assess testosterone levels

Are testosterone levels normal?

**Testosterone** on the DUTCH Test reflects the bioavailable conjugated testosterone excreted in urine. For most patients, this result will parallel serum free testosterone.

NOTE: If urinary testosterone is below range, confirm low testosterone levels in the serum before considering treatment.

## 7 Assess cellular production of 5a-DHT via 5a-androstanediol

Is cellular production and activity of 5a-DHT normal?

### 5a-DHT

**5a-DHT** is the most potent androgen and has 4x more androgenic activity than testosterone.

### 5a-Androstanediol

**5a-Androstanediol** is a metabolite of 5a-DHT.
Research shows that 5a-androstanediol best reflects intracellular production and activity of 5a-DHT.

## 8 Assess if there is a preference for the more potent alpha metabolism of the androgens

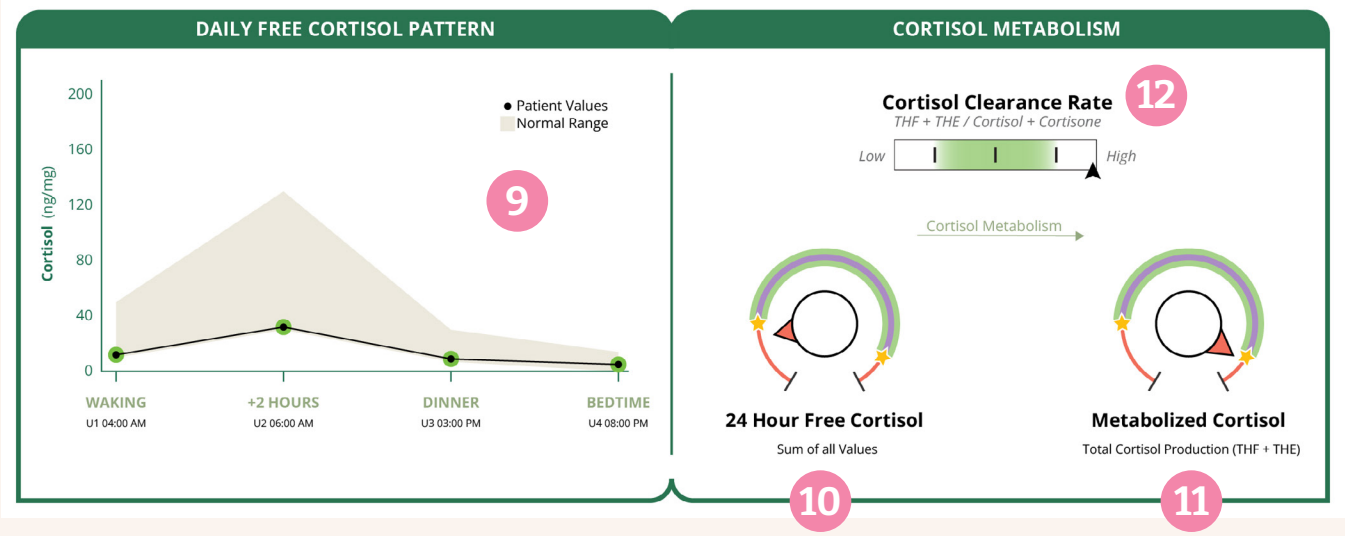
Is there a preference for 5a-reductase metabolism of the androgens?

**The 5a-Metabolism (Androgens)** slider shows the Androsterone (5a) / Etiocholanolone (5b) ratio. Results on the left indicate relatively more inactive 5b metabolites. Results to the right indicate more active 5a metabolites, which typically indicates a higher potential for high androgen symptoms.

DUTCH DOZEN

# Cortisol

Page 1 of the report: Cortisol section of the Female Hormone Testing Summary




## 9 Assess the daily free cortisol pattern

Is the daily free cortisol pattern optimal?

The graph plots free cortisol measured from the individual urine samples taken throughout the day.

The reference range is shown in the shaded area behind the patient's results, which are shown by the dark line.

The first value reported (Waking A) represents the overnight period. The second value (Morning B) is the peak. Urine samples reflect cortisol levels in the hours before the sample was collected.

## 10 Assess the daily total of free cortisol in circulation (24hr Free Cortisol)

What is the daily total of free cortisol in circulation?

**The 24hr Free Cortisol** dial shows a sum of the 4 points on the **Daily Free Cortisol Pattern**.

This dial shows overall cortisol exposure throughout the day.

## 11 Assess the total cortisol produced by the adrenal glands (Metabolized Cortisol)

What is the total production of cortisol by the adrenals?

Cortisol and cortisone are metabolized in the body into a-THF, b-THF, and b-THE. The sum of these equals the **Metabolized Cortisol** and can give additional insight into total adrenal cortisol output for the day.

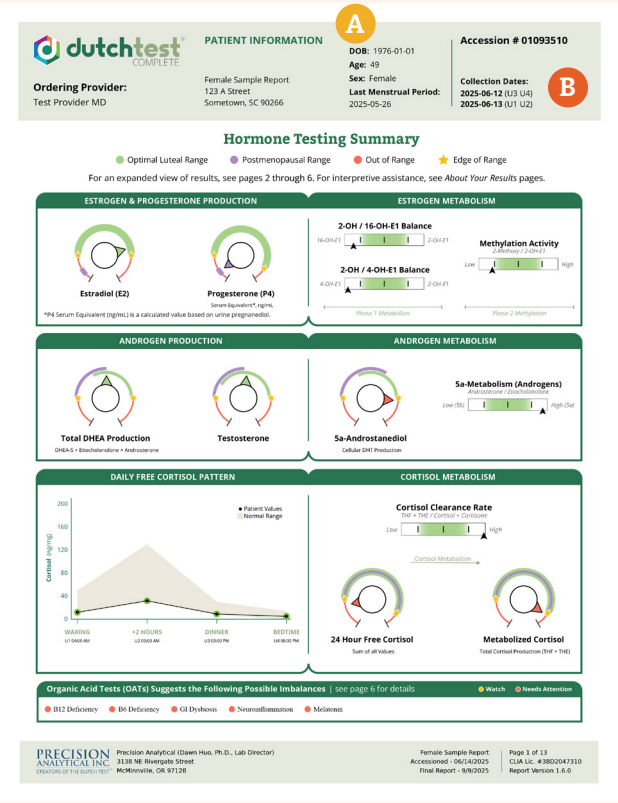
## 12 Assess the rate of cortisol clearance from the body

Is cortisol being cleared from the body at an appropriate rate?

**The Cortisol Clearance Rate** is the ratio of THF + THE / Cortisol + Cortisone. This can help assess the rate at which cortisol is cleared from the body. Results on the left indicate slower cortisol clearance, and results on the right indicate faster cortisol clearance.

# Patient and Sample Information

## Page 1 of the report: Female Hormone Testing Summary




**A** **Patient information**

Personal information and last menstrual period. Cycle timing is important for estrogen and progesterone levels.

**B** **Sample information**

The date and time each sample was collected. The letter U indicates a urine sample.

## Learn more

There are several other guides for healthcare providers to learn about the DUTCH test in more detail:

DUTCH Interpretive Guide
dutchtest.com/resources

DUTCH Treatment Guide
dutchtest.com/resources

dutch®