

## **What Is the DUTCH Test?**

**The DUTCH (Dried Urine Test for Comprehensive Hormones) Complete Test provides a detailed analysis of sex hormones, adrenal hormones, their metabolites, and organic acids, offering insights into hormonal balance, metabolism, and potential health issues.**

- Non-invasive collection (urine samples on filter paper)
- Analyzes sex hormones, adrenal function, metabolites, and organic acids
- Gold standard for functional hormone assessment

# **What Does It Measure?**

## **Sex Hormones**

- Estrogen (E1, E2, E3)
- Progesterone
- Testosterone, DHEA

## **Adrenal Hormones**

- Cortisol (free and metabolized)
- Cortisone
- DHEA-S

## **Metabolism & Detoxification**

- Estrogen metabolites (2-OH, 4-OH, 16-OH)
- Methylation capacity (COMT activity)

## **Organic Acids**

- B-vitamin markers (B6, B12, Biotin)
- Neurotransmitter metabolites (HVA, VMA)
- Glutathione & oxidative stress markers

## **Why Use DUTCH Instead of Saliva or Serum?**

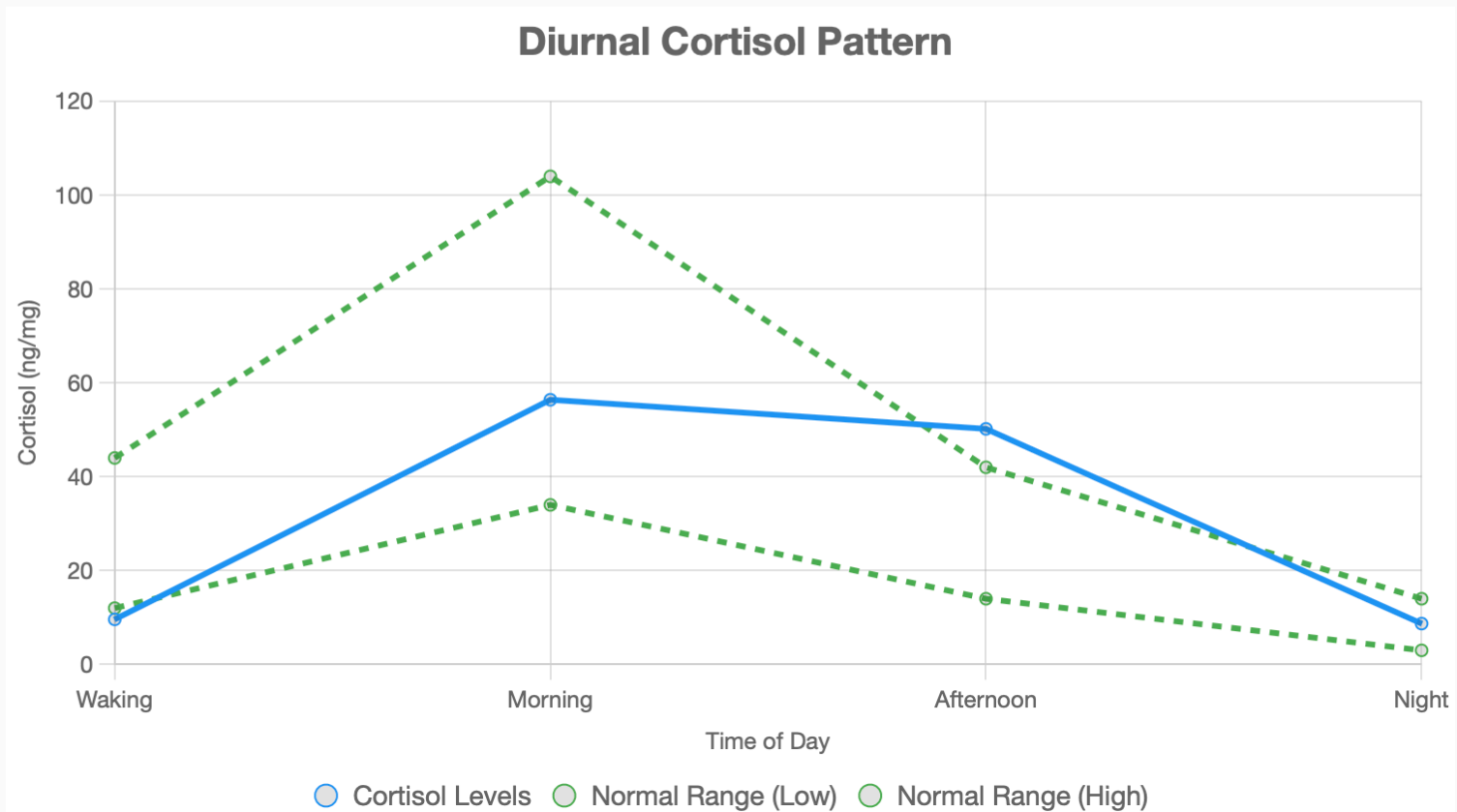
- **Urine provides both free and metabolized hormones**
- **Multiple time points show diurnal cortisol rhythm**
- **Includes detox pathways and nutrient markers**
- **Detects root causes of hormonal symptoms**

## Understanding Cortisol Patterns

- Waking cortisol should spike, then decline through day
- Flat or reversed patterns → adrenal dysregulation
- Measured as:
  - Free cortisol (tissue availability)
  - Metabolized cortisol (production volume)
  - Cortisone (inactive form)

## Visual Representation

To illustrate the cortisol diurnal pattern, here's a chart showing the free cortisol levels across the day compared to the normal range:



## Estrogen & Detox Pathways

- Estrogens are metabolized via:
  - **2-OH (protective)**
  - **4-OH (potentially harmful)**
  - **16-OH (proliferative)**
- COMT methylation turns 2-OH into non-toxic form
- Poor detox → hormone-related cancers, mood issues

## **When to Order a DUTCH Test**

- Menopause & perimenopause symptoms
- PMS, PCOS, infertility
- Fatigue, low libido, weight gain
- Insomnia, anxiety, mood swings
- Suspected estrogen dominance or adrenal fatigue