

Detoxification Profile

sample type: **SALIVA & URINE**

The **Detoxification Profile** utilizes functional challenges of caffeine, acetaminophen, and salicylate to evaluate the body's capacity to carry out Phase I and Phase II detoxification reactions. This assessment provides a comprehensive profile of the body's detoxification capacity and potential susceptibility to oxidative damage.

• **Analytes:**

Detoxification Profile–

caffeine clearance
acetaminophen derivatives
salicylate derivatives

Comprehensive

Detoxification Profile–

caffeine clearance
acetaminophen derivatives
salicylate derivatives
cysteine
sulfate
hydroxyl radical markers
urine lipid peroxides
glutathione peroxidase
glutathione
SOD

• **Specimen Requirements:**

Detoxification Profile –

15ml aliquot of 10-hour urine,
2ml saliva at 2 hours, 2ml saliva
at 8 hours

Comprehensive

Detoxification Profile–

15ml aliquot of 10-hour urine,
2ml saliva at 2 hours, 2ml saliva at
8 hours, 1ml oxalated whole blood,
5 ml plasma (separated), 2ml RBCs

• **Before Taking this Test:**

- Inform practitioner about health conditions and medications
- Discontinue aspirin and acetaminophen (for 24 hours)
- Avoid alcohol, caffeine, fruits, nuts, spices, and seasonings
- Fast 10 hours overnight (during urine collection and before blood draw)
- Arrange blood draw on the morning of last urine collection (Monday-Friday)
- See instructions inside test kit for details

The Mechanism of Detoxification

- One of the body's primary self-defense mechanisms is the conversion and neutralization of metabolic products and toxins into soluble and safe byproducts that can then be eliminated via the urine or bile. Xenobiotics (foreign chemicals) enter the body through routes such as the skin, respiratory tract, and intestine.
- The intestinal mucosa represents the primary barrier to the permeation of toxic compounds and macromolecules from ingested foodstuffs. Abnormalities of the intestinal immune system or mechanical barriers ("leaky gut") can lead to enhanced uptake of toxic compounds, which are then presented to the hepatic detoxification system for processing and elimination.
- If toxic compounds are in excess, or if the nutrients required for detoxification are in short supply, the liver's detoxification capability can be overwhelmed. When these chemicals are retained in the body, they contribute to illness.

Impaired detoxification has been implicated in a wide range of conditions, such as:

- Parkinson's disease
- Multiple Sclerosis
- Amyotrophic lateral sclerosis (ALS)
- Gilbert's Syndrome
- Paradoxical side effects of medications

It has been speculated that **multiple chemical sensitivity** and **chronic fatigue syndrome** result in part from impairments in detoxification and consequent oxidative stress to cell membranes and mitochondria.

Detoxification Testing

Genova Diagnostic's Detoxification Profile assesses the body's capacity to carry out Phase I and Phase II detoxification through functional challenges of caffeine, acetaminophen, and salicylate. The test evaluates:

- **Cytochrome P450** (Phase I) activity by measuring the clearance rate of caffeine in two timed salivary specimens.
- Phase II pathways of glutathione conjugation, sulfation, glucuronidation, and glycine conjugation through the measurement of acetaminophen and salicylate metabolites in a 10-hour urine collection.
- Critical imbalances in the various pathways, enabling the clinician to design a customized treatment program utilizing amino acids, vitamins and minerals that target specific areas.

In the **Comprehensive Detoxification Profile** sulfoxidation is also assessed via plasma cysteine and sulfate. Oxidative stress is evaluated by various markers, including lipid peroxides and markers for hydroxyl radical activity in the urine, and glutathione peroxidase, superoxide dismutase, and reduced glutathione in a fasting blood specimen.

Detoxification Profile (Standard)

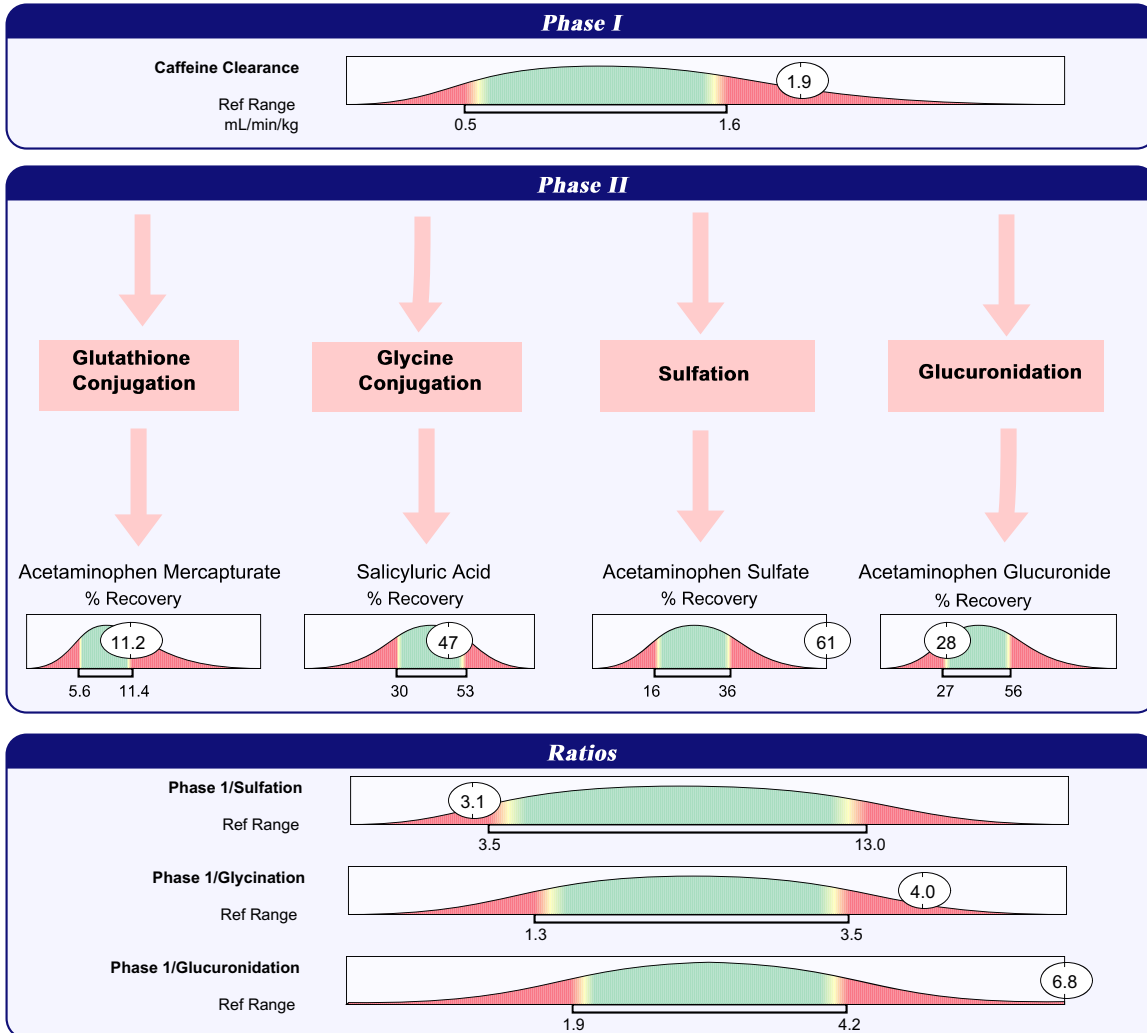


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Patient: **SAMPLE PATIENT** Order Number:
Age: 48 Completed: March 07, 2007
Sex: F Received: March 02, 2007
MRN: Collected: March 01, 2007

This test reveals important clinical information about:

- **Phase I and Phase II detoxification pathways**, which are critical for effective elimination of toxic compounds and metabolic by-products from the body
- **Oxidative stress by evaluation of markers for free radical scavengers, lipid peroxidation, and free radical activity**, which are included in the comprehensive version
- **Factors possibly contributing to conditions such as Parkinson's, multiple sclerosis, amyotrophic lateral sclerosis, multiple chemical sensitivity, inflammatory conditions, and chronic fatigue syndrome**



This test was developed and its performance characteristics determined by GSDL, Inc. It has not been cleared or approved by the U.S. Food and Drug Administration.

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For test kits, clinical support, or more information contact:

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More detailed publications with references are also available: www.GDX.net