Phase I

Caffeine Clearance

Ref Range: 0.5 - 1.8

Phase II

Plasma Cysteine

Ref Range: 3.10 - 5.90

Plasma Sulfate

Ref Range: 4.80 - 5.30

Glutathione Conjugation

Acetaminophen N-acetyltransferase % Recovery:

Glycine Conjugation

Salicyluric Acid % Recovery:

Sulfation

Acetaminophen Sulfate % Recovery:

Glucuronidation

Acetaminophen Glucuronide % Recovery:

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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Commentary

To the patient:

Our bodies must be able to detoxify, or neutralize, toxins from the external environment as well as those produced within our own bodies. This process takes place mostly in the liver, and consists of two phases. In Phase I toxins are activated, which means that they are altered in such a way that carrier molecules (Phase II) are able to transport them out of the body. A handy analogy is the bagging of our trash (Phase I), so that the garbageman can pick it up and cart it away (Phase II). Phase I is accomplished by a family of enzymes called "cytochrome P450", and Phase II takes place via a number of important mechanisms, four of which we measure in this test, with the help of the challenge substances, caffeine, acetaminophen and aspirin. Both Phase I and Phase II of detoxification must function adequately so that toxins are able to be neutralized, and the two phases must be in balance with each other so that the activated compounds from Phase I cannot accumulate in the body and cause damage.

To the clinician:

Caffeine clearance is within the reference range, indicating normal Phase I (cytochrome P450) activity.

"Note: Phase I/Phase II ratios which lie below the reference range will not be discussed within the commentary text, even though they may appear in the red boxes labeled "abnormal". At this time we have not found sufficient information to consider them clinically significant."

Among the Phase II pathways, glucuronidation is underfunctioning. This can result in poor detoxification of many compounds in the body, particularly many medications. This may reflect nutritional inadequacies and/or genetic uniqueness.