



PAML Introduces New Comprehensive Cardiac Risk Assessment Battery

Lawrence M. Killingsworth, Ph.D., DABCC
Chief Science & Technical Officer

PAML is introducing a comprehensive battery that combines the most frequently ordered tests for cardiac risk assessment. The battery will include the following tests:

- ▶ **Lipid Profile**
 - Cholesterol
 - Triglycerides
 - HDL
 - Calculated LDL
- ▶ **Homocysteine**
- ▶ **High-Sensitivity C-Reactive Protein**
- ▶ **Glucose**

The **Lipid Profile** measures the lipids that are recommended by the National Cholesterol Education Program ATP III Guidelines to determine risk of having a heart attack or stroke.

The ATP III report emphasizes the importance of LDL levels and recommends three categories of risk that modify the published LDL cholesterol goals. The risk categories and the major risk factors identified in the report are shown below.

Three Categories of Risk That Modify LDL Cholesterol Goals

Risk Category	LDL Goal (mg/dL)
CHD or CHD Risk equivalents	< 100
Multiple (2+) Risk Factors*	< 130
0-1 Risk Factor	< 160

* Risk factors that modify LDL goals are listed below. CHD indicates coronary heart disease.

Risk Factors (Exclusive of LDL Cholesterol) That Modify LDL Goals**

- Cigarette smoking
- Hypertension (blood pressure \geq 140 / 90mm Hg or on antihypertensive medication)
- Low HDL Cholesterol (< 40 mg/dL)***
- Family history of premature CHD
- Age (men \geq 45 years; women \geq 55 years)

** Diabetes is classified as a CHD risk equivalent.

*** HDL Cholesterol > 60 mg/dL is considered a “negative” risk factor, serving to remove one risk factor from the total count.

Homocysteine is a potent inducer of atherosclerosis. Elevated plasma homocysteine is a strong risk factor for atherosclerotic vascular disease in the coronary, cerebral, and peripheral vessels. Homocysteine is an independent risk factor, but it may also enhance the effect of the conventional risk factors such as hyperlipidemia, hypertension, and cigarette smoking. Recent studies have suggested that homocysteine levels can be a predictor of cardiovascular mortality.

Reference Range and Clinical Interpretive Information

LDL Cholesterol (mg/dL)*

< 100	Optimal
100-129	Near or above optimal
130-159	Borderline high
160-189	High
\geq 190	Very High

*See also risk factors that modify these cut-offs.

HDL Cholesterol (mg/dL)

< 40	Low
40-59	Within normal limits
\geq 60	High

Total Cholesterol (mg/dL)

< 200	Desirable
200-239	Borderline high
\geq 240	High

Triglycerides (mg/dL)

< 150	Normal
150-199	Borderline high
200-499	High
\geq 500	Very high

Homocysteine (μ mol/L)

4.0-12.0

hsCRP (mg/L)

< 1.0	Low risk
1.0-3.0	Average risk
> 3.0	High risk

Glucose, fasting (mg/dL)

Adult	65-109
Pregnant	65-94

ADA diagnostic categories for non-pregnant adults:

Impaired fasting glucose 110-125

A fasting glucose result of 126 mg/dL or greater indicates diabetes if the abnormality is confirmed on a subsequent day.

A random glucose result of > 200 mg/dL indicates diabetes if the abnormality is confirmed on a subsequent day.

Continued

High-Sensitivity C-Reactive Protein (hsCRP). Inflammation plays a major role in the atherosclerotic process. hsCRP, a sensitive marker of systemic inflammation, has emerged as a powerful independent predictor of risk for a future myocardial infarction, stroke, peripheral artery disease and vascular death.

Glucose. Cardiovascular disease, which includes coronary heart disease (CHD), cerebrovascular disease and peripheral vascular disease, is the leading cause of mortality in people with diabetes. Individuals with diabetes have an increased risk for having cardiovascular events compared with age-matched subjects without diabetes. The ATP III Guidelines classify diabetes as a CHD risk equivalent.

References

1. Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). JAMA 2001;**285**:2486-2497.
2. The ATP III Guidelines can be found on the web at <http://www.nhlbi.nih.gov> (select the option for ATP III cholesterol guidelines).
3. Refsum H et al. Homocysteine and Cardiovascular Disease. Ann Rev of Med 1998;**49**:31-62.
4. Pearson TA, et al. AHA/CDC Scientific Statement. Markers of Inflammation and Cardiovascular Disease. Application to Clinical and Public Health Practice: A Statement for Healthcare Professionals from the Centers for Disease Control and Prevention and the American Heart Association. Circulation 2003;**107**:499-511.

Test Information

DESCRIPTION **COMPREHENSIVE CARDIAC RISK ASSESSMENT BATTERY**

INCLUDES Cholesterol, Triglyceride, HDL, LDL (Calculated), Homocysteine (Cardiac Risk), High-Sensitivity C-Reactive Protein, Glucose (fasting)

METHOD Hexokinase, FPIA, Enzymatic, Nephelometry

ORDER CODE CRABAT

CPT CODE 80061, 83090, 86141, 82947

SPECIMEN 2.5 mL serum (SST or red-top tube) and 1 mL EDTA plasma (lavender-top tube). Patient should be fasting 12-14 hours. Put EDTA tube on ice immediately after drawing and separate from plasma within 6 hours. Separate serum from cells and put in separate plastic tube. Store and transport all tubes refrigerated.

COMMENTS *Minimum amount:* 2.5 mL serum, 0.5 mL EDTA plasma.

Unacceptable conditions: frozen specimens.

Stability: 1 week refrigerated.

SCHEDULE Homocysteine, Monday – Friday; other tests, Sunday – Friday.

For more information, please
contact Client Services or
see us on the Web at

www.paml.com

Provided for the clients of

PATHOLOGY ASSOCIATES MEDICAL LABORATORIES
PACLAB NETWORK LABORATORIES
TRI-CITIES LABORATORY
TREASURE VALLEY LABORATORY
ALPHA MEDICAL LABORATORY

*For more information, please contact
your local representative.*