

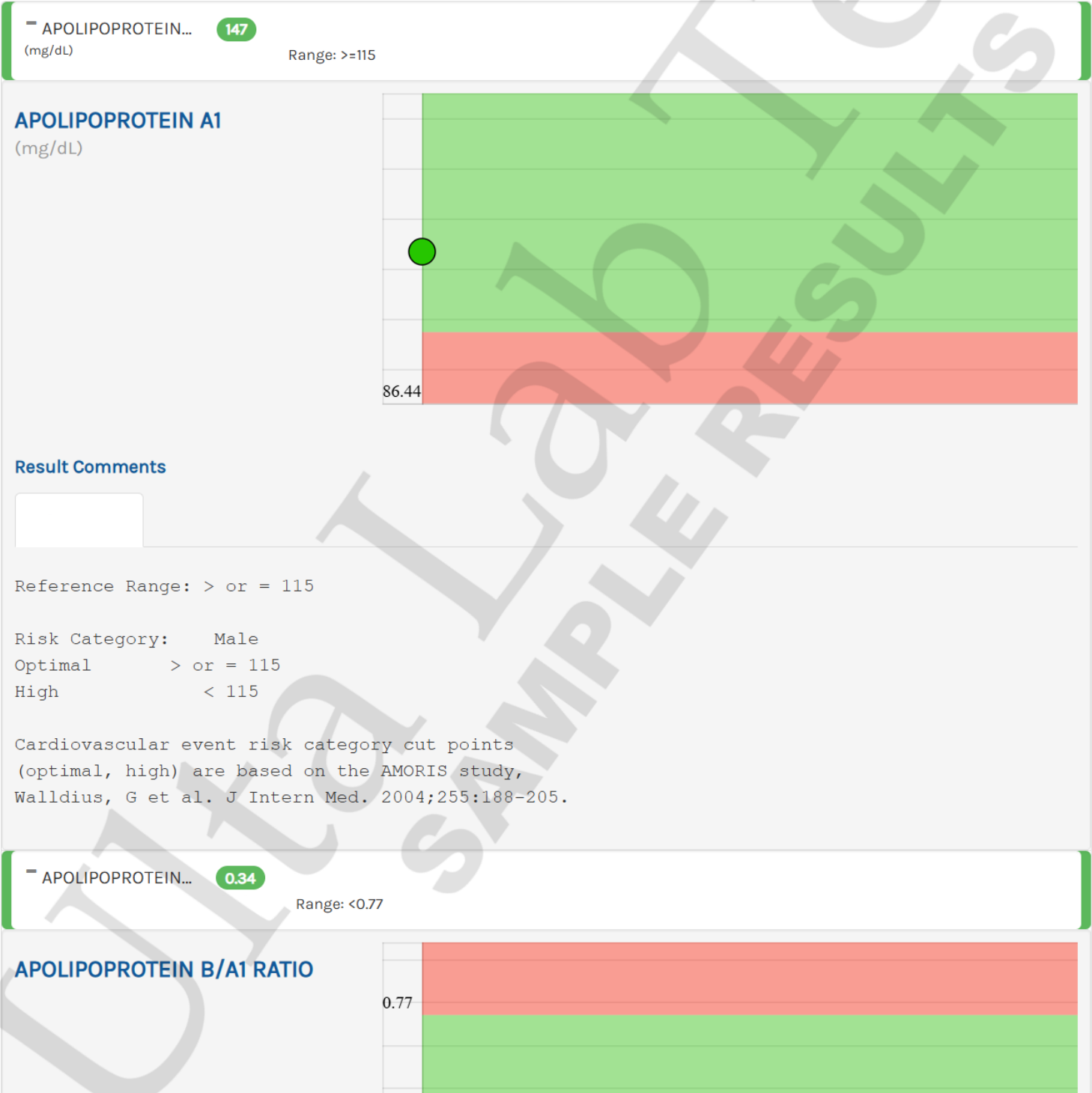
— Cardiovascular Health

The circulatory system, also known as the cardiovascular system (CVS), is a vast network of organs and vessels that are responsible for the flow of blood, nutrients, oxygen, other gases, and hormones to and from cells. Without the circulatory system, the body would not be able to fight disease or maintain a stable internal environment like a proper temperature and pH, referred to as homeostasis. The cardiovascular system is made up of three independent systems that work together: the heart (cardiovascular), lungs (pulmonary) and arteries, veins, coronary and portal vessels (systemic).

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HDL Particles

High density lipoprotein (HDL) particles are often referred to as good cholesterol, because they are associated with a decreased risk of developing cardiovascular disease.



### Result Comments

#### Risk Category:

Optimal	<0.77
Moderate	0.77-0.95
High	>0.95

Cardiovascular event risk category cut points (optimal, moderate, high) are based on the AMORIS study (Walldius G, Jungner I. 2004 doi:10.1046/j.1365-2796.2003.01276.x)

### LDL Particles

Low-density lipoprotein particle (LDL-P) testing evaluates LDL particles according to their number, size, density, and/or electrical charge. Low-density lipoproteins (LDL) are particles that transport lipids throughout the body. Each particle contains a combination of protein, cholesterol, triglyceride, and phospholipid molecules. Their composition changes as they circulate in the blood. Some molecules are removed and others are added, resulting in lipoprotein particles whose properties vary from large and fluffy to small and dense. LDL particle testing determines the relative amounts of particles of differing properties. Traditional lipid testing measures the amount of LDL cholesterol (LDL-C) present in the blood, but it does not evaluate the number of particles of LDL (LDL-P). Some studies have shown that increased numbers of small dense LDL particles are more likely to cause atherosclerosis than fewer light, fluffy LDL particles. An increased number of small, dense LDL could be one of the reasons that some people have heart attacks even though their total and LDL cholesterol concentrations are not particularly high."

#### Hide

APOLIPOPROTEIN...  
(mg/dL)

50

Range: <90

**APOLIPOPROTEIN B**  
(mg/dL)

90

### Result Comments

Reference Range: <90

Risk Category:

Optimal	<90
Moderate	90-129
High	> or = 130

A desirable treatment target may be <80 mg/dL or lower depending on the risk category of the patient including patients on lipid lowering therapies, patients with ASCVD, diabetes with >1 risk factors, Stage 3 or greater CKD with albuminuria, or heterozygous familial hypercholesterolemia. ApoB relative risk category cut points are based AACE/ACE and ACC/AHA recommendations.

(Grundy SM, et al. 2019.doi:10.1016/j.jacc.2018.11.002; Handelsman Y, et al. 2020. doi:10.4158/CS-2020-0490).