



Test Patient #2

ID: 222222 **Name:** Test Patient #2 **Gender:** M **Client ID:** 22222 **Age:** 97

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MCG Test Results

Test ID	Date	ECG Quality	Local Ischemia	Global Ischemia
3061249	2007-05-03 18:10:15	Marginal	None	Very severe

Disclaimer:

Clinical studies have shown that MCG™ has a sensitivity of 90+% with 7±2% false negative results and a specificity of 85+% with 15±3% false positive results in detecting ischemia due to coronary artery disease (**CAD**). A positive CAD ischemia result does not guarantee that the subject has the disease, and a negative CAD ischemia result does not guarantee that the subject does not have the disease.

MCG™ analysis has the following detection rates for coronary arterial plaque luminal encroachment levels:

40-50% encroachment 75% detection rate
50-70% encroachment 90% detection rate
>70% encroachment 96% detection rate

MCG™ assumes that the subject has normal or corrected serum electrolyte chemistry and complete blood count (CBC). It also assumes that the subject has no structural anomalies of the myocardium. If these laboratory test results are unknown, dated, or abnormal at the time of this test, the results may be skewed.

¹Local Ischemia: regional or patchy myocardial ischemia caused by mid- or distal single or double vessel coronary artery disease (CAD).

²Global ischemia: diffuse myocardial ischemia caused by proximal large vessel (usually two vessel or more are pathological) CAD, and/or microvascular disease affecting the entire myocardium.

Suggestions

Disease severity:

Test	Severity
3061249 2007-05-03 18:10:15	9 : very severe

Disease Severity Range:

0 = x	No disease burden
0 < x <= 2	Mild disease burden
2 < x <= 4	Moderate disease burden
4 < x <= 5.5	Level 1 severe (moderately severe)
5.5 < x <= 7.5	Level 2 severe (severe)

7.5 < x <= 15

Level 3 severe (very severe)

15 < x

Level 4 severe (extremely severe)

Secondary results (pathological conditions):

- Myocardial Damage
- Ventricular Hypertrophy
- Cardiomyopathy
- Pulmonary Heart Disease
- Fibrillation (likely atrial).
- Ventricular arrhythmia.
- Myocarditis or Myocardial Inflammation
- Rheumatic Heart Disease or remnants thereof
- Congenital Heart Disease or remnants thereof

Tertiary results (physiopathological conditions):

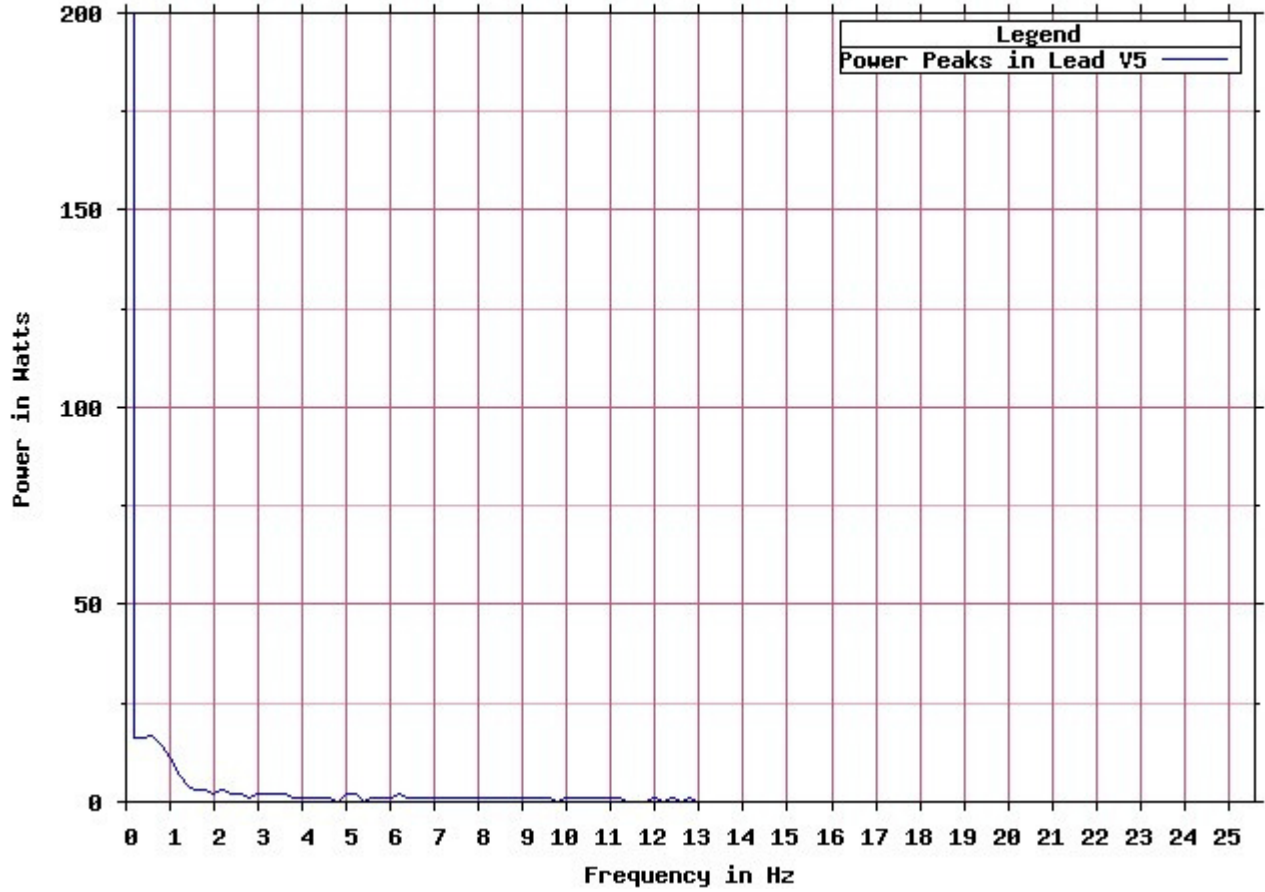
- Myocardial remodeling.
- Decreased myocardial compliance. Likely causes include ischemia, ventricular hypertrophy, increased afterload, systemic hypertension.
- Increased myocardial compliance. Likely causes include ischemia, myocarditis, structural anomalies, cardiomyopathy.
- Decreased cardiac output reflected by decreased ejection fraction.
- Bradycardia
- Tachycardia
- Acute Power Failure. Likely conditions are ischemia heart disease, pump failure, supply and demand imbalance.
- Global asynchrony (lead II behind lead V5).
- Regional or localized asynchrony

Disclaimer: This section contains comments and suggested diagnoses or conditions which require rigorous clinical validation. These suggestions and comments should be considered expert opinions and not a definitive diagnosis.

Auto Power Spectrum of Lead V5

SIL30016 (test: 2007-05-03 18:10:15)

Auto Power Spectrum of Lead V5



1/2	O	U1	U2	U3	U3xy	U4	N1	N3	S	SS	F	FF	A1	A2	A3	A4	A5	A55
-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-

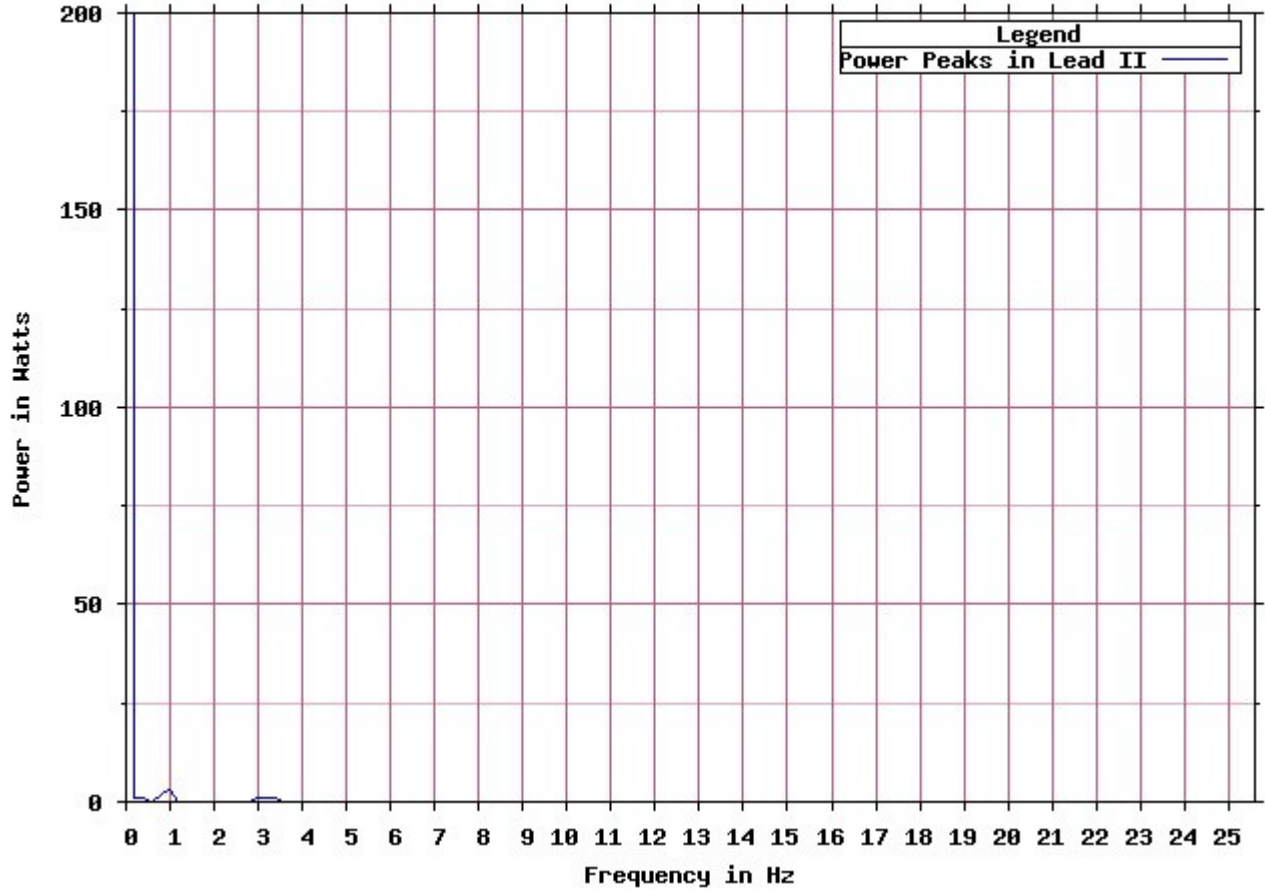
Legend

N3: Low third and/or fourth peak. Similar to N1 but historical.
S: Bradycardia; S: <60 bpm.

Auto Power Spectrum of Lead II

SIL30016 (test: 2007-05-03 18:10:15)

Auto Power Spectrum of Lead II



1/2	O	U1	U2	U3	U3xy	U4	N1	N3	S	SS	F	FF	A1	A2	A3	A4	A5	A55
-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-

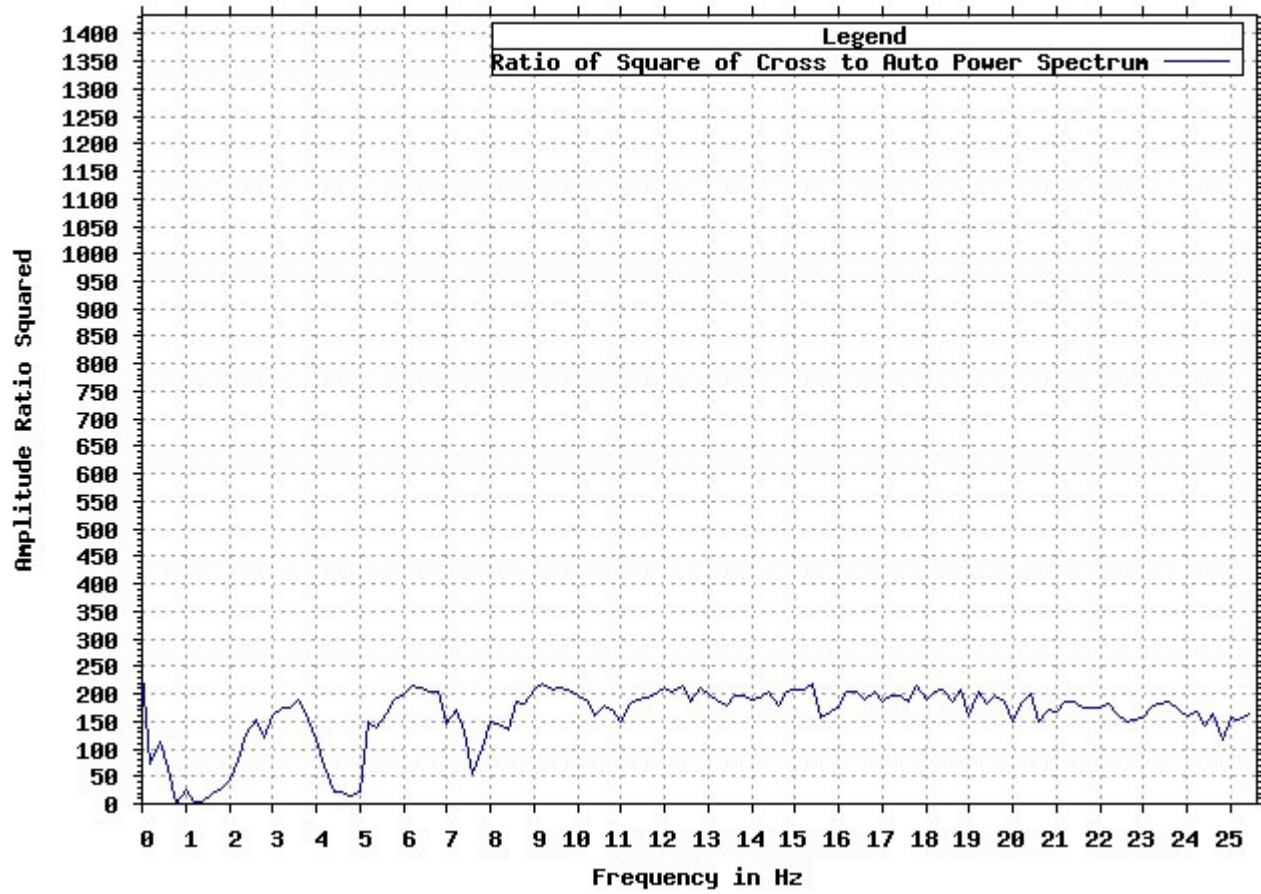
Legend

- N1:** Low first peak: recent damage to the mesocardium from general anesthesia, myocardial contusion, syncope, and/or dyspnea leading to hypoxia.
- N3:** Low third and/or fourth peak. Similar to N1 but historical.
- S:** Bradycardia; S: <60 bpm.

Coherence Function

SIL30016 (test: 2007-05-03 18:10:15)

Coherence Function



Q1	Q2
+	+

Notes: Decreased ejection fraction.

Legend

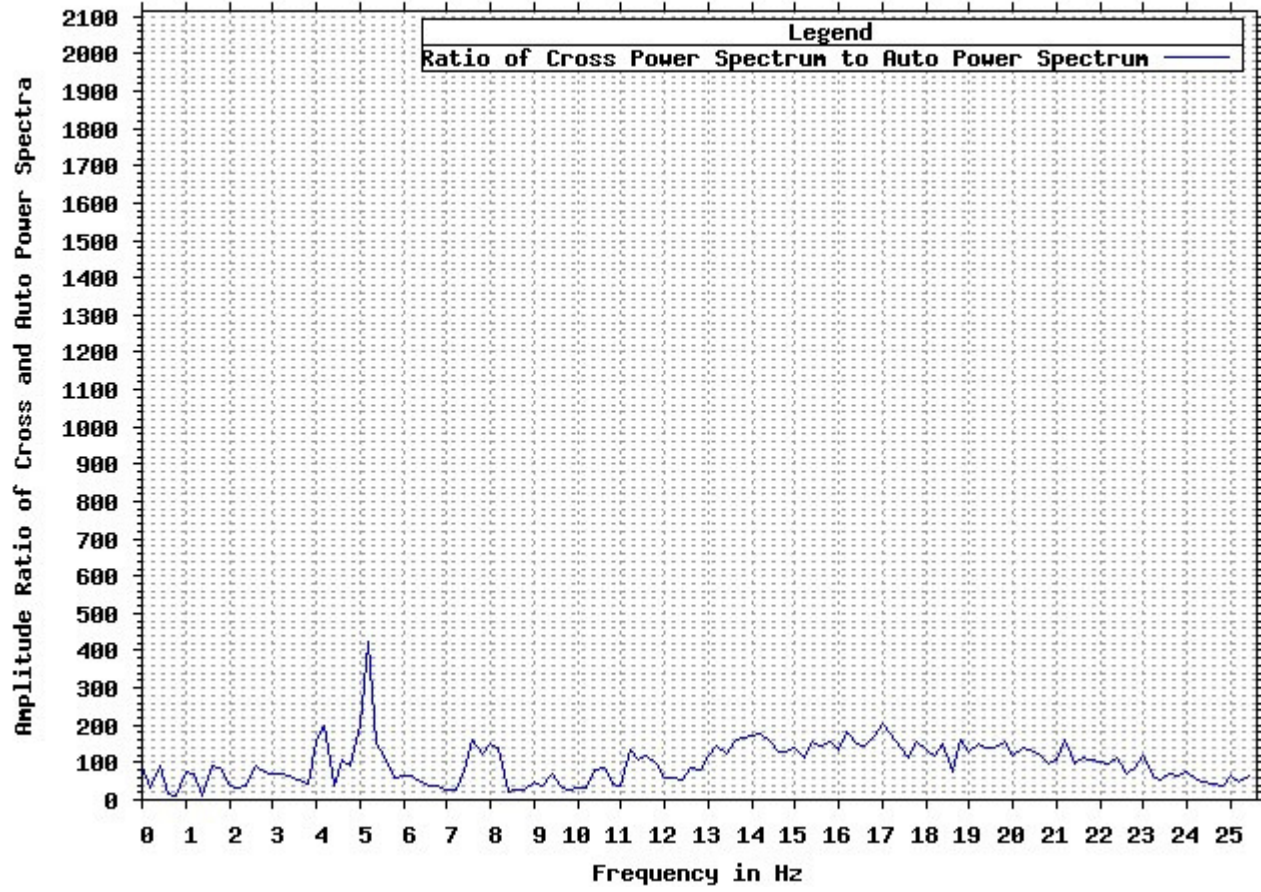
Q1: A low first peak.

Q2: Low coherence of the transfer function.

Transfer Function

SIL30016 (test: 2007-05-03 18:10:15)

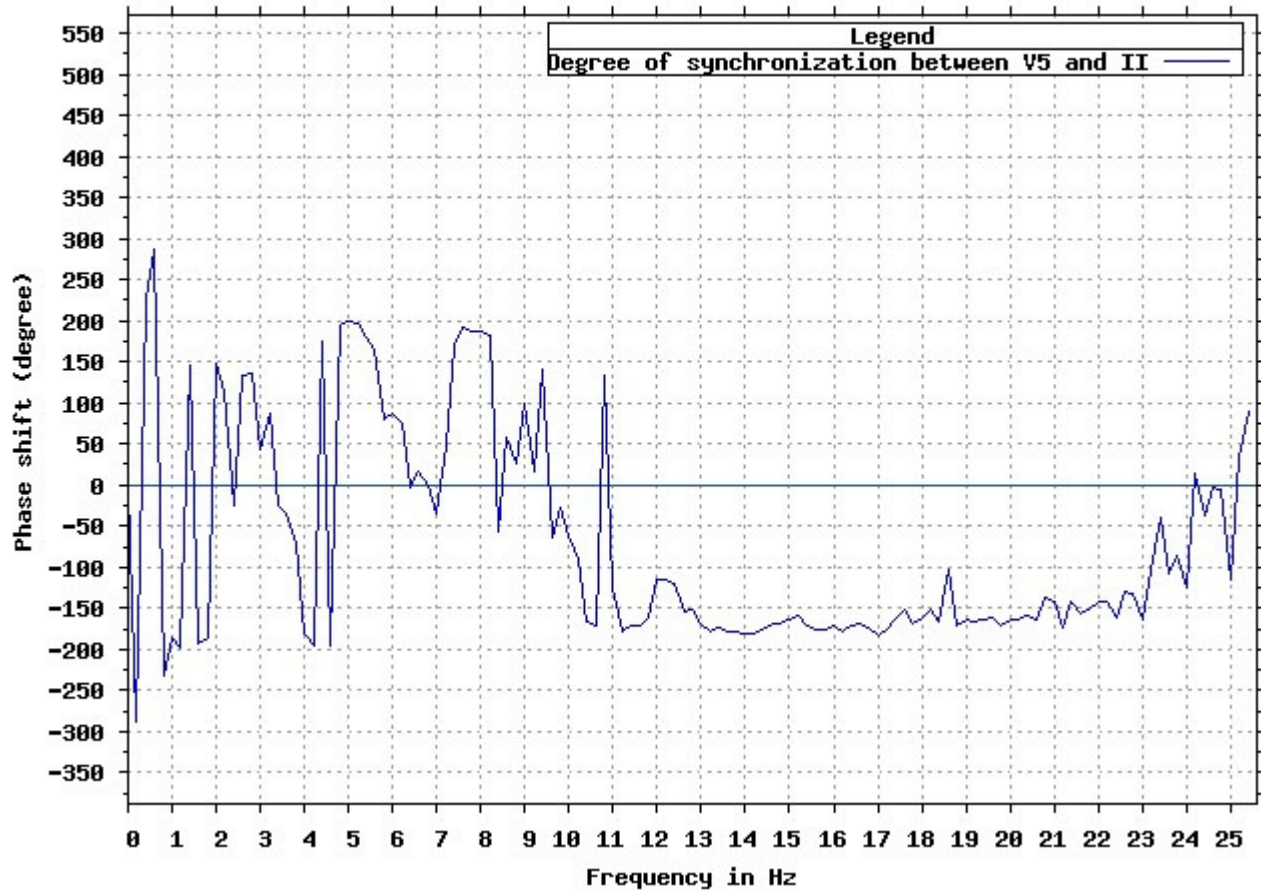
Transfer Function



Phase Angle Shift

SIL30016 (test: 2007-05-03 18:10:15)

Phase Shift



P+	P-	WW	PWW+	PWW-	L
-	+	+	-	-	-

Notes: Myocardial remodeling, Global asynchrony: Lead II behind Lead V5.

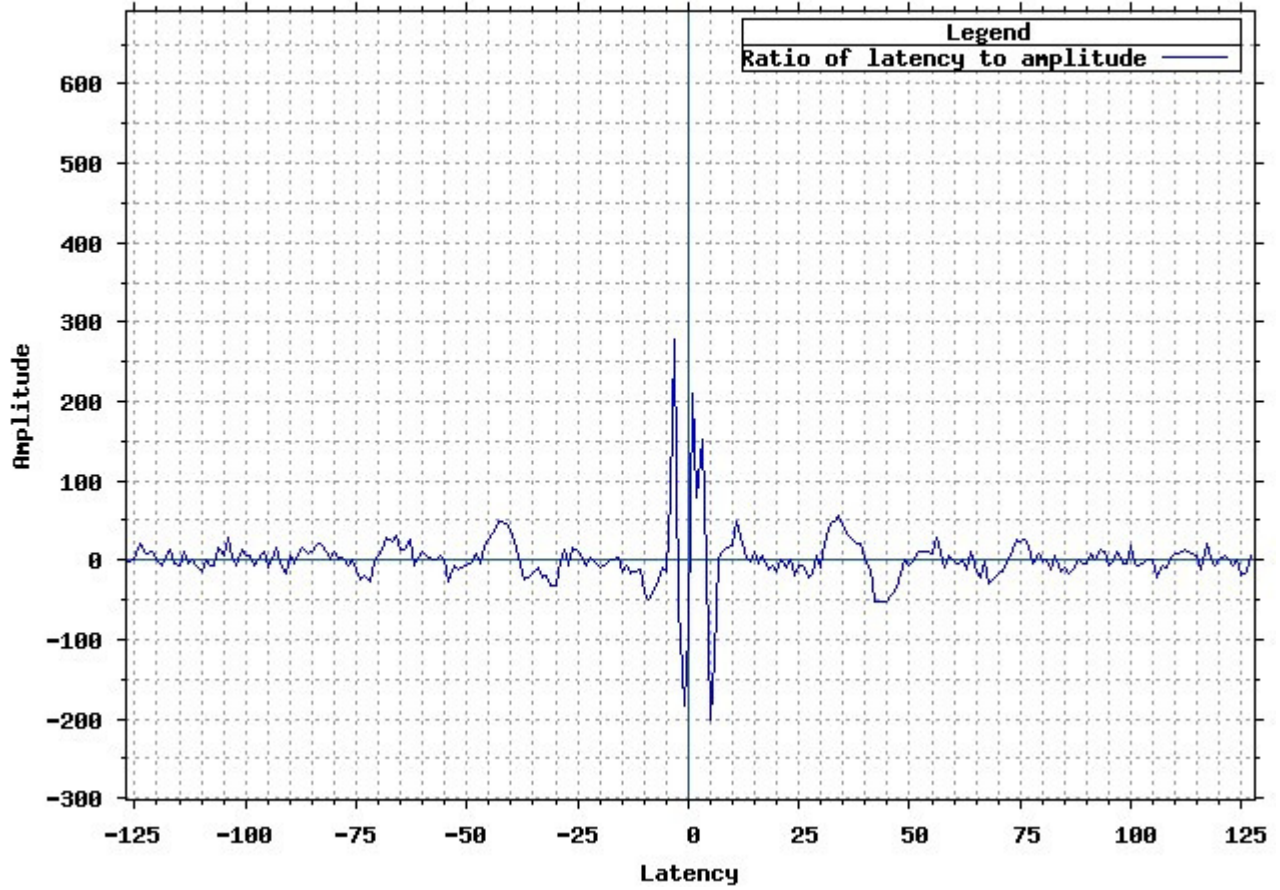
Legend

P-: Low phase shift under the abscissa.

WW: A sharp oscillation of phase shift wave forms; usually reflects time delay between different myocardial fibers within a part of the heart due to coronary artery blockage and MI.

Impulse Response Function

Impulse Response



D1	D2	f	M1	M3	M2	M4
-	+	-	-	+	-	-

Notes: Myocardial remodeling. Increased myocardial compliance.

Legend

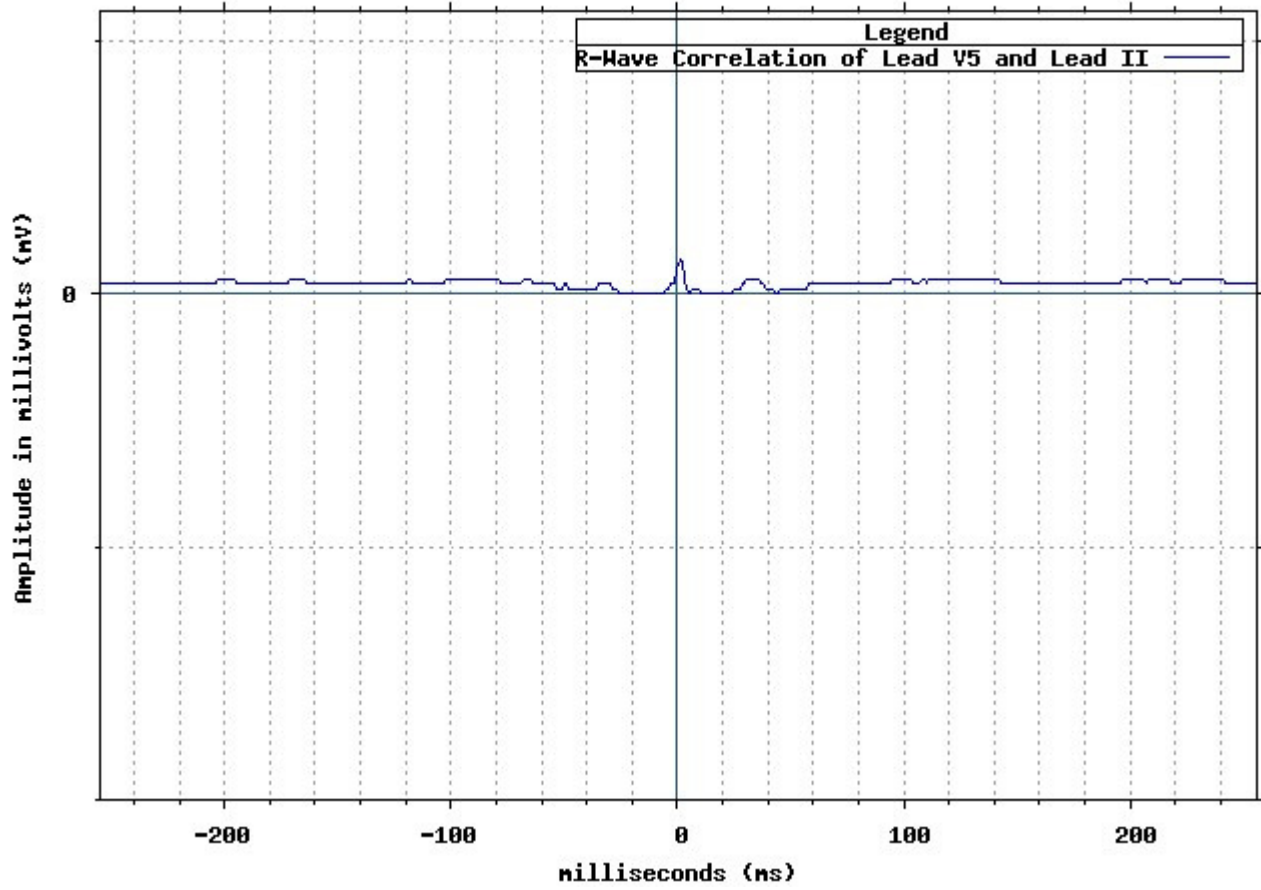
D2: Trapezoid wave; current or potential arrhythmia.

M3: Three or more main peaks. Usually reflects a conduction block, atrial/ventricular dilation or increased compliance.

Cross Correlation

SIL30016 (test: 2007-05-03 18:10:15)

Cross Correlation



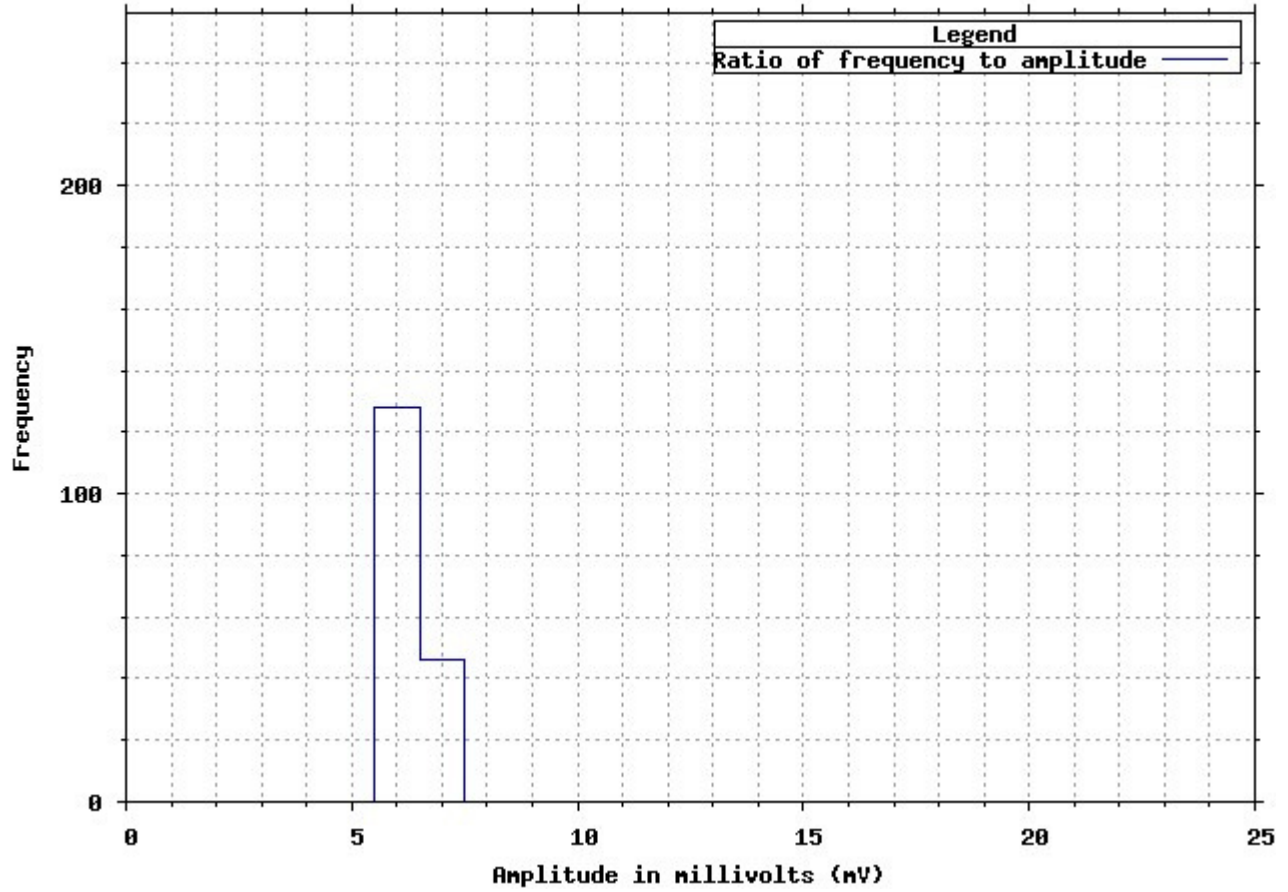
rrr	RRR	r	R	rr	RR	rR	R+	R-	RW+	RW-	pt	PT	Rn
+	-	-	-	-	+	-	-	-	-	-	+	+	-

Legend

- rrr:** A low main peak; low cross correlation due to ischemia or potential MI.
- RR:** Long R-R interval; possible current or potential arrhythmia.
- pt:** Neuroendocrine disturbance; pt along with 1/2, A5 or A55 suggest CAD.
- PT:** Neuroendocrine disturbance; PT along with 1/2, A5 or A55 suggest CAD.

Amplitude Histogram V5

Lead V5 Voltage Histogram



V+	V-	Vn+	Vn-
-	+	-	+

Legend

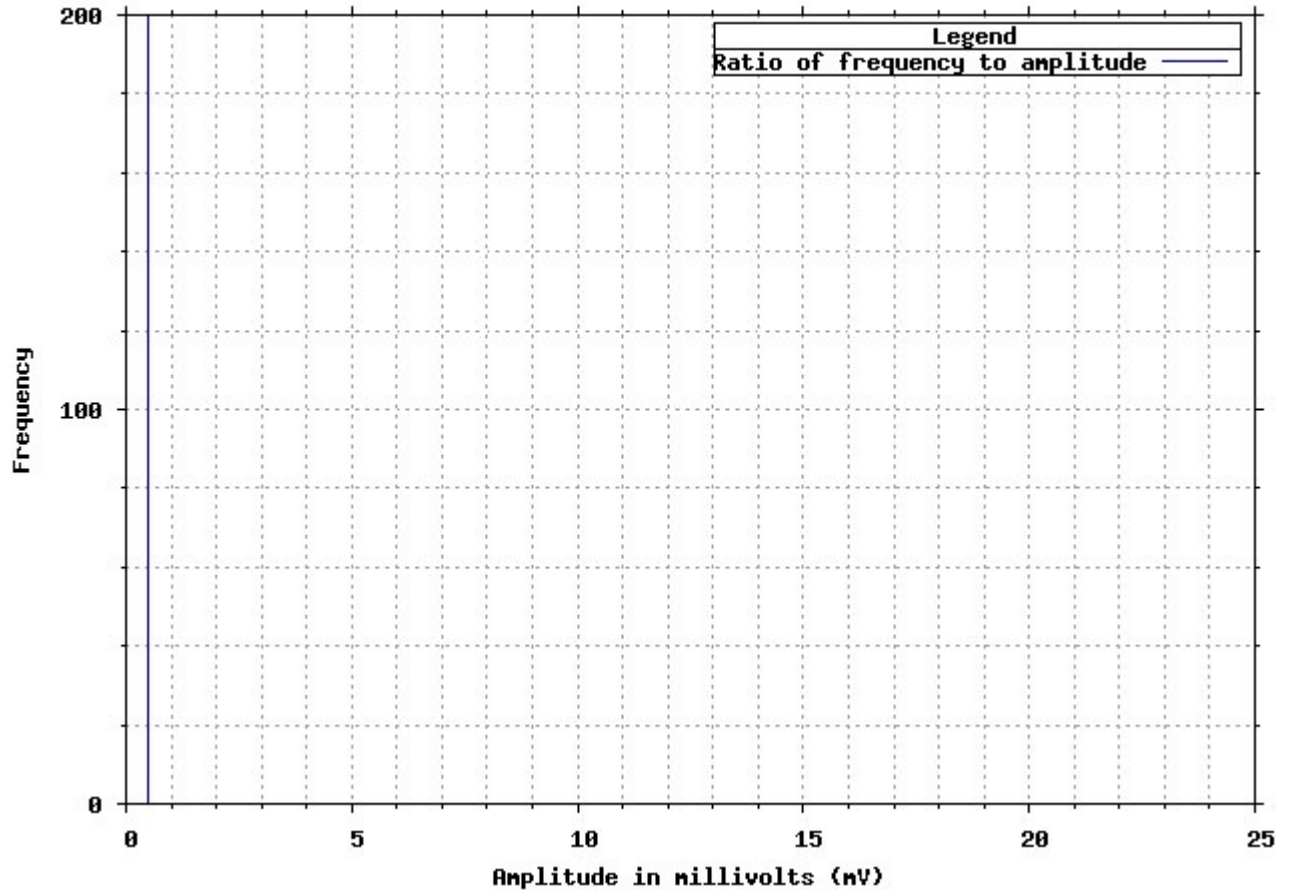
V-: Low (<5mm) R waves or hypovoltage in lead V5.

Vn-: Small number of recorded events in the histogram; reflects chronic heart dysfunction for > one year.

Amplitude Histogram II

SIL30016 (test: 2007-05-03 18:10:15)

Lead II Voltage Histogram



2+	2-	2n+	2n-
-	+	-	+

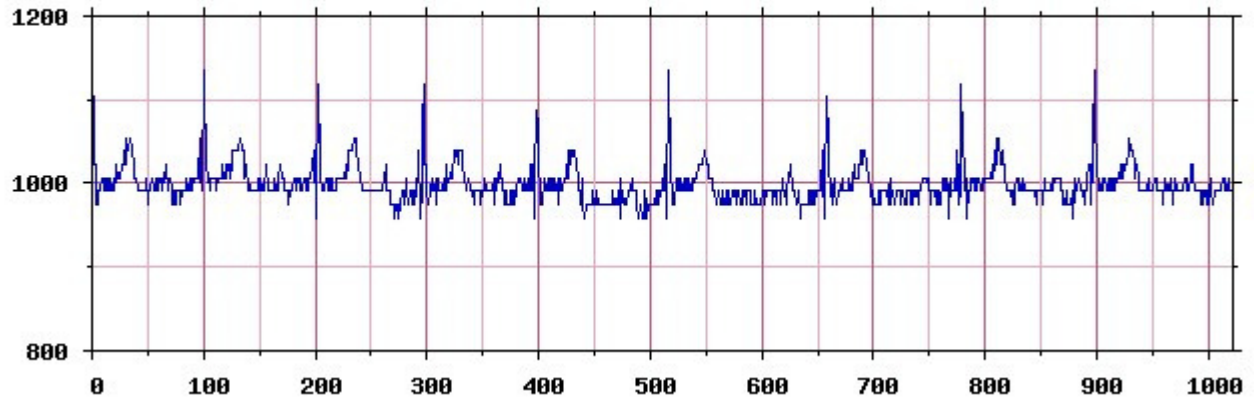
Legend

- 2-: Low (<5mm) R waves or hypovoltage in lead II.
- 2n-: Similar to but carries less impact than a positive Vn-.

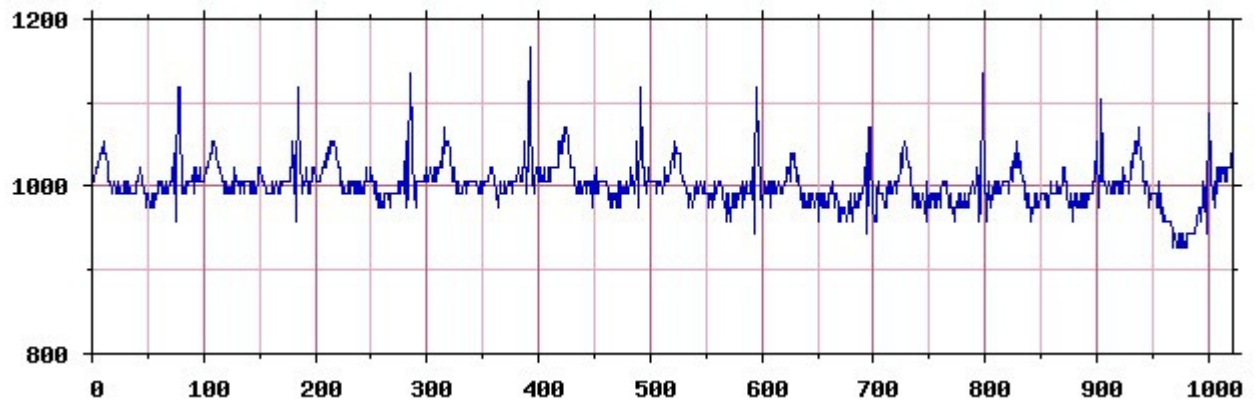
ECG Trace: Test 3061249

Lead II

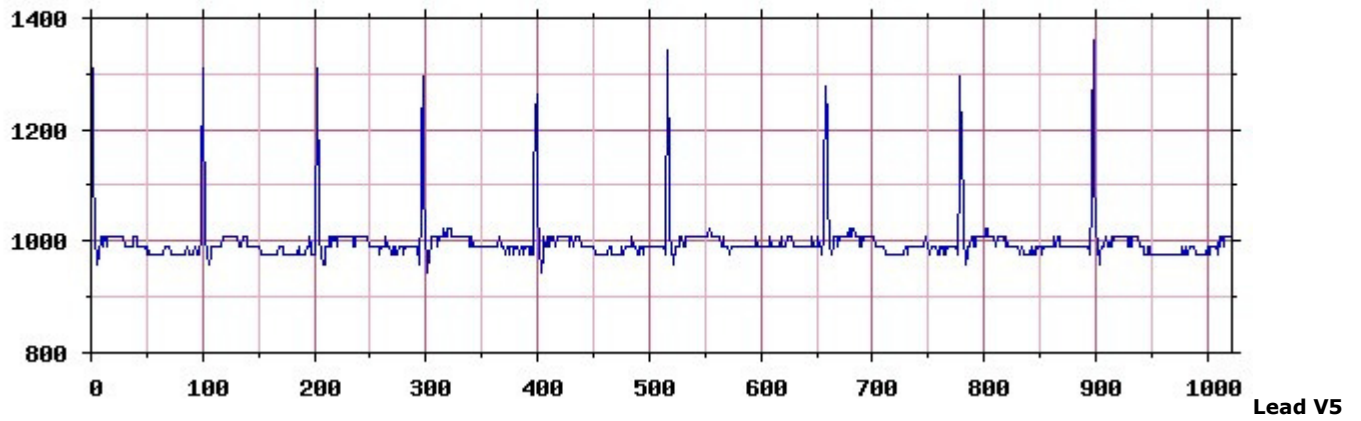
Segments 8 (35840 ns) to 9 (40960 ns)



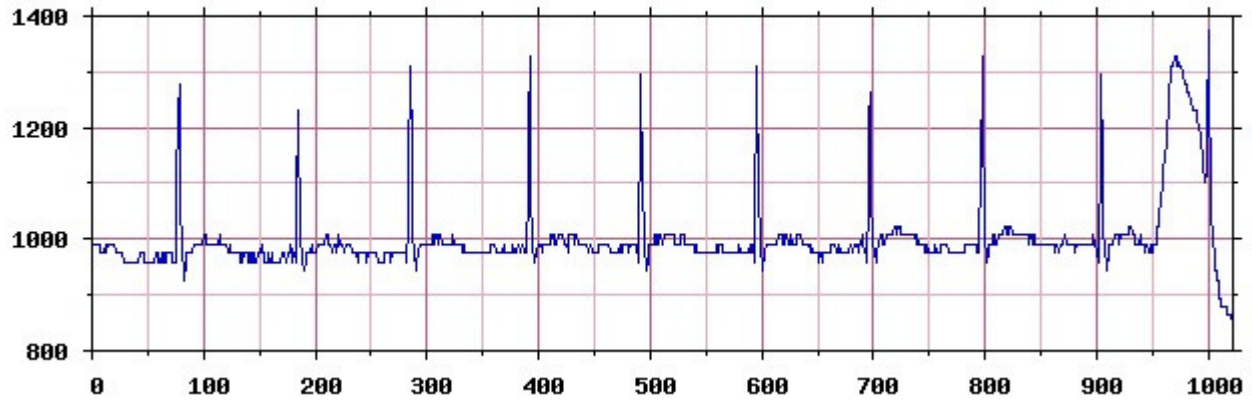
Segments 1 (0 ns) to 2 (5120 ns)



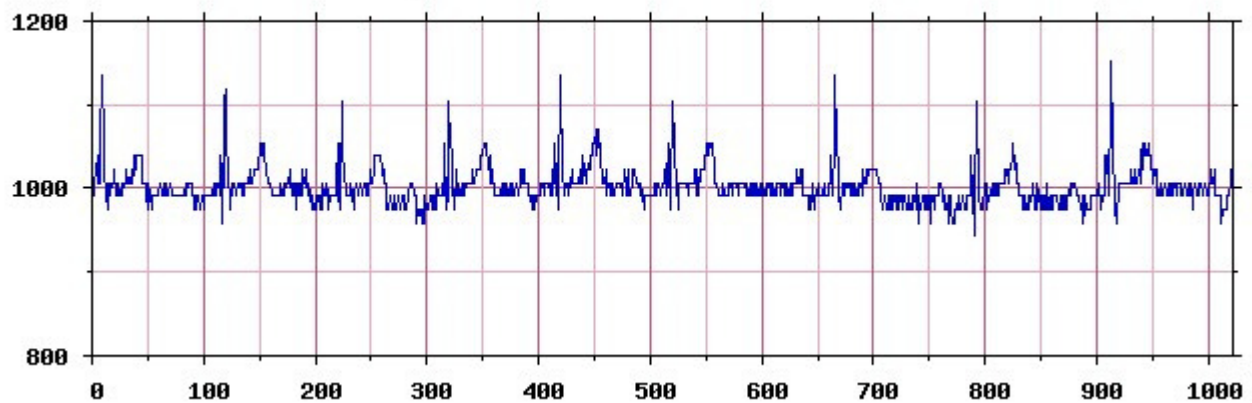
Segments 8 (35840 ns) to 9 (40960 ns)



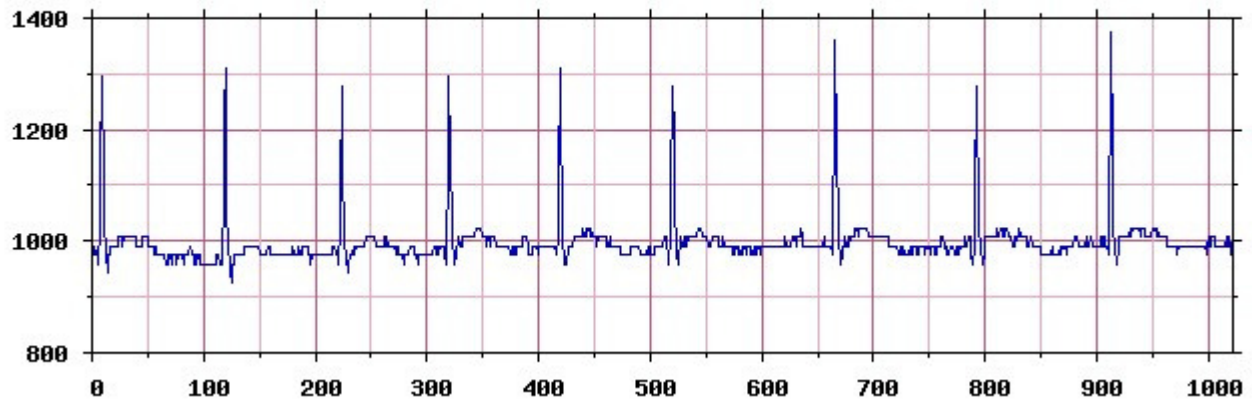
Segments 1 (0 ns) to 2 (5120 ns)



Segments 15 (71680 ns) to 16 (76800 ns)



Segments 15 (71680 ns) to 16 (76800 ns)



About MCG™

MCG™ is a new, web-based, non-invasive diagnostic tool for aiding your physician(s) in diagnosing multiple types of heart disease, including coronary artery disease (CAD). It adopts the principles of Systems Analysis in mathematically analyzing the digitized resting electrocardiograph (ECG) data from leads V5 and II simultaneously.

The results of the mathematical calculations are graphically represented as an auto power spectrum and its variations: phase shift, impulse response, coherence function, cross correlation and amplitude histogram. Collectively, these mathematical transformations supply various aspects of the electromechanical properties of the heart muscle in relationship to the physiological properties of the blood and its impact on

the myocardial functions as a whole.

The abnormal "Ischemia Indexes" derived from each of these six functions are integrated into a mathematical pattern which represents the myocardium as a whole system which is used for complex pattern recognition. The computer statistically matches each individual's transformation set to the patterns of a large population consisting of thousands of healthy people and tens of thousands of people with heart diseases collected from years of clinical research, software development, and database collections. The computer analysis is then reported to a physician who determines the final diagnosis and therapeutic recommendations, if required.

According to our peer reviewed published (and as yet other unpublished) prospective and double blind trial data from over 1,200 patients undergoing coronary angiograms:

- Among those who have more than 40% but less than 50% coronary artery atherosclerotic plaque luminal encroachments in single or multiple vessels, MCG™ detection rates at approximately 75%
- Among those who have more than 50% but less than 70% coronary artery atherosclerotic plaque luminal encroachments in single or multiple vessels, MCG™ detection rates at approximately 90%
- Among those who have more than 70% coronary artery atherosclerotic plaque luminal encroachments in single or multiple vessels, MCG™ detection rates at approximately 96%
- There are roughly 15(±3)% false positive cases which include:
 1. Coronary artery vasospasms; Coronary Arteriopathy (connective tissue disorders, vaculitides or aneurysms)
 2. Microvascular disease (peripheral vascular disease)
 3. Aortic stenosis/regurgitation
 4. Hypertensive heart disease and metabolic disorders
 5. Renal disease, (i.e. end stage renal disease)
 6. Poor quality ECG tracings
- There are about 7(±2)% false negative cases which include:
 1. Well-established coronary collateral circulations with visibly poor coronary angiogram results
 2. Coronary angiogram results showed moderate luminal encroachments, however, the MCG™ test was negative.
 3. Poor quality ECG tracings

Finally, unlike the primary diagnosis of the presence or absence of local or global ischemia, the secondary findings of each test (such as MI, LVH, arrhythmias, etc) should be considered as a reference or an expert's opinions rather than definitive diagnosis. This is due to these findings requiring additional controlled, prospective and double blind studies for validations. The ultimate treatment decisions are between you and your physician(s).

For more details on MCG™ analysis, please visit <http://www.premierheart.com/webapp/tech.php> .