

The background of the entire page is a heatmap visualization of an ECG signal. The color scale ranges from dark blue (low intensity) to red (high intensity). The signal is represented as a series of horizontal bands with distinct peaks and troughs, indicating electrical activity over time.

# HYPERQ™

Unlocking the hidden treasures of ECG



**SCHILLER**  
The Art of Diagnostics

# HYPERQ™

The groundbreaking HyperQ technology with superior accuracy provides a unique solution for the detection and evaluation of Coronary Artery Disease (CAD) and Acute Coronary Syndrome (ACS).

HyperQ: more accurate diagnosis, fewer false alarms.

## HyperQ: selected publications

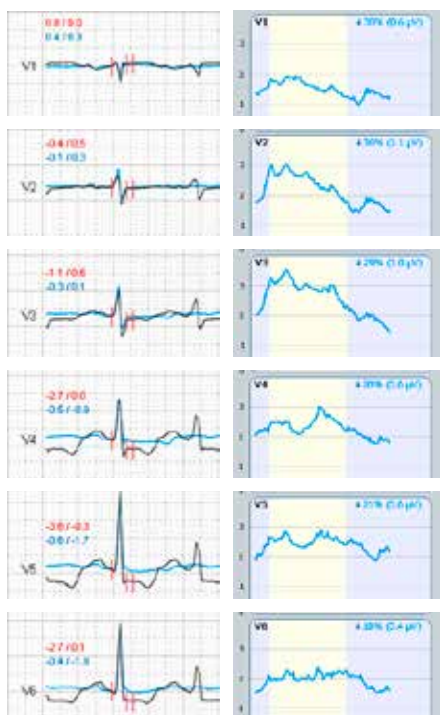
- The Use of ECG Depolarization Abnormalities for Detection of Stress-Induced Ischemia as defined by Myocardial Perfusion Imaging, Tali Sharir et al., American Journal of Cardiology (2012); 109(5) 642-650.
- High-Frequency QRS Analysis Improves the Specificity of Exercise ECG Testing in Women Referred for Angiography, David Rosenmann et al., Journal of Electrocardiology, Vol. 46(1) pp. 19-26, January 2013
- The cost-effectiveness of stress testing using high-frequency QRS analysis, Guy Amit et al., Int. J. Medical Engineering and Informatics 2013, Vol. 5, No. 1, pp. 68-80.
- High-Frequency QRS Analysis in Patients with Acute Myocardial Infarction – A Preliminary Study. Amit G et al, Annals of Noninvasive Electrocardiology, Volume 18, Issue 2, pages 149-156, March 2013
- Feasibility of high-frequency QRS analysis in patients with acute myocardial infarction. Amit G et al, J. of Electrocardiology 44 (2011) 742-747
- Analysis of Depolarization Abnormalities in the Evaluation of Patients with Chest Pain. Galante O et al, Euro. Heart J. (2011) 729, P4184

## STRESS

### REVOLUTIONISING THE DETECTION OF CORONARY ARTERY DISEASE

Coronary Artery Disease (CAD) screening is largely based on stress ECG testing that has a limited diagnostic accuracy. Additionally, there are growing concerns over exposure to radiation and cutbacks on payment for costly cardiac imaging.

HyperQ stress ECG testing provides a low-cost, non invasive, radiation-free and highly reliable first line CAD diagnostic solution for private cardiology practices as well as cardiology departments in hospitals. HyperQ is based on solid scientific and clinical research and is FDA-cleared and CE-marked.



#### WOMAN WITH NEGATIVE HYPERQ AND ABNORMAL ST

65 years, female: ST segment analysis shows significant abnormalities. However, the HyperQ analysis correctly detected normal coronary

### HyperQ Stress: unbeatable benefits

Significant increase in diagnostic accuracy

- Higher sensitivity in diagnosing ischaemia
- Fewer false alarms in non-ischaemic patients
- Performs equally well in women and men
- Provides clear results in patients with equivocal standard stress ECG test results
- Fits into existing workflows
- Same procedure as traditional stress ECG tests
- 12-lead configuration
- User-friendly and interactive interface
- Straightforward interpretation

HyperQ Stress is integrated in the following SCHILLER devices: CARDIOVIT CS-200 Excellence and CS-200 Touch.



### HIGHEST ACCURACY IN WOMEN

CAD continues to be underdiagnosed in women, contributing to a higher mortality rate. Although coronary angiography is the gold standard for the diagnosis of CAD, it is an expensive, invasive test that is appropriate for only a minority of women who present with chest pain symptoms. Non-invasive testing plays an important role in identifying women with CAD, enabling preventive and therapeutic interventions to be appropri-

ately used, decreasing the risk of MI and improving the survival chances. Thanks to HyperQ's high frequency analysis, SCHILLER is able to go far beyond the standard ST-segment diagnosis with its limited accuracy, and interpret the QRS complex.

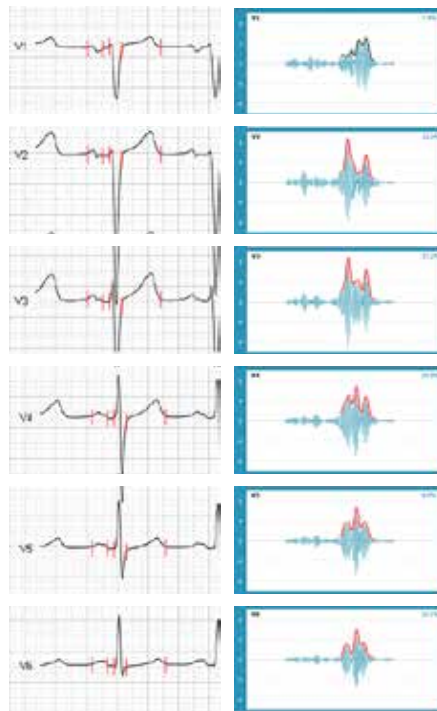
SCHILLER thus provides an insight into the major and crucial contraction part of the cardiac cycle, providing unprecedented accuracy using a non-invasive solution.

## REST

### EARLY DETECTION OF ACUTE CORONARY SYNDROME (ACS)

Chest pain is one of the main reasons for hospital emergency department visits worldwide. Early risk stratification of patients presenting with chest pain and suspected acute myocardial ischaemia or infarction is a major clinical challenge. Resting 12-lead ECGs, a mainstay in the management of acute myocardial ischaemia, is limited by low sensitivity, especially in cases of non ST elevation myocardial infarction and unstable angina.

Studies have shown that only 25 % of patients who were suspected of having ACS on the basis of specific symptoms were eventually diagnosed with ACS. Adding an additional criterion may revolutionise one of the most commonly used routines in emergency departments.



#### PATIENT WITH POSITIVE HYPERQ AND ACS

62 years, female, ACS: as displayed on the side, ST segment analysis shows no abnormalities. However, the HyperQ analysis correctly detects significant ischaemia.

#### HyperQ Rest: unbeatable benefits

- ❖ HyperQ Rest provides high accuracy, early detection and superior diagnostic value.
- ❖ No need for oversized, expensive devices—extracts additional, previously unseen data from the standard 12-lead ECG.
- ❖ Suitable for emergency departments, emergency medical services, primary care clinics and telemedicine services.

HyperQ Rest is integrated in the following SCHILLER devices: CARDIOVIT CS-200 Excellence and CS-200 Touch.



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