Name of the test
ST2

Alternative name of the test
IL1RL1 (Interleukin-1 Receptor Like 1)


What is this test used for?
ST2 is a cardiac biomarker, which is used to evaluate the prognosis in patients with acute coronary syndrome and chronic heart failure. It belongs to the IL-1 (interleukin-1) receptor family. ST2 has 2 isoforms: soluble ST2 (sST2) and ST2 bound to a cell membrane (ST2L). When the level of soluble ST2 is low, the ligand of ST2, IL-33, binds to ST2L, and this has a cardioprotective effect. However, when the amount of sST2 is increased, it competitively binds to IL-33. As a result, IL-33 cannot bind to ST2L for cardioprotective signaling. Research has shown, that increasing the amount of soluble isoform of ST2 causes reducing of cardiac function, death of cells and myocardium fibrosis.

This test measures the amount of soluble ST2 in the serum.

When is the test ordered?
ST2 levels can be measured to evaluate risks of hospitalization and mortality in patients with chronic heart failure. ST2 is used as a dichotomous marker, which can identify high and low risk patients.

Measuring both ST2 and NT-proBNP can be helpful to more accurately evaluate the prognosis; each of these tests is an independent marker and the unique information received from them complements each other.

(the source of the diagram: http://circheartfailure.ahajournals.org/content/6/6/1172.full)
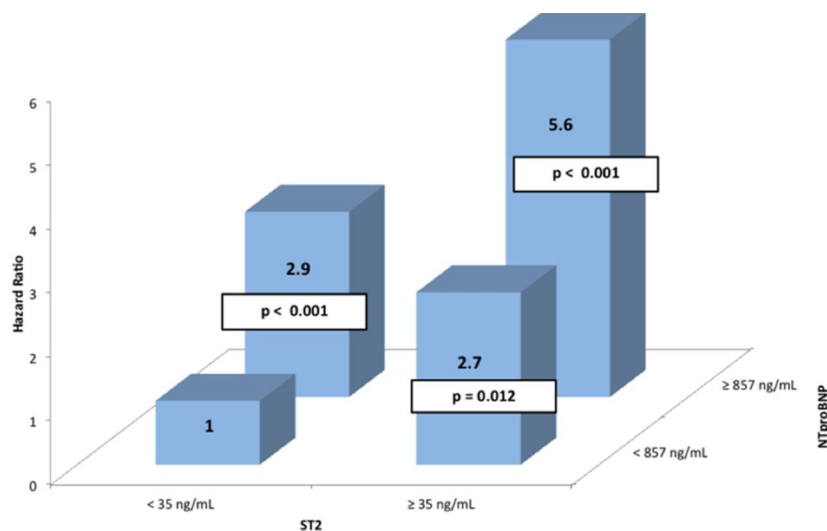
ST2 is not used to diagnose heart failure. It is ordered in only patients with diagnosed chronic heart failure.

How is this test performed?
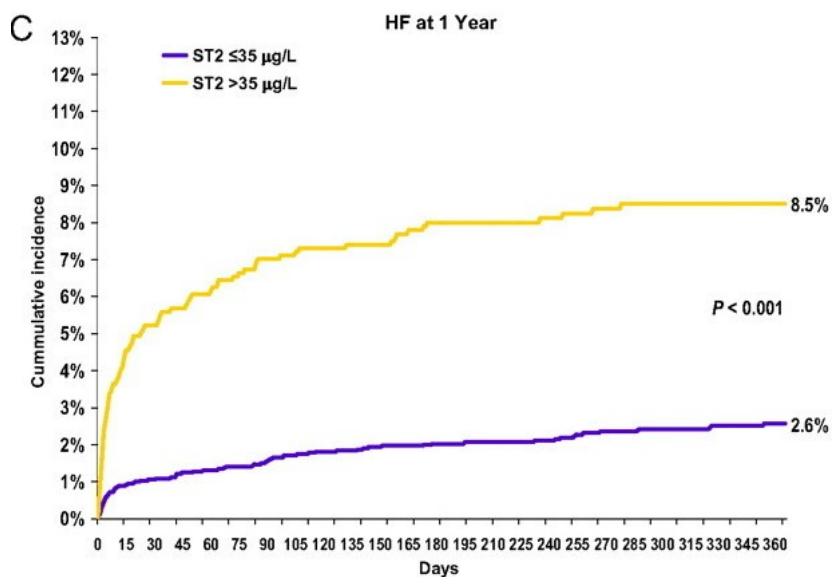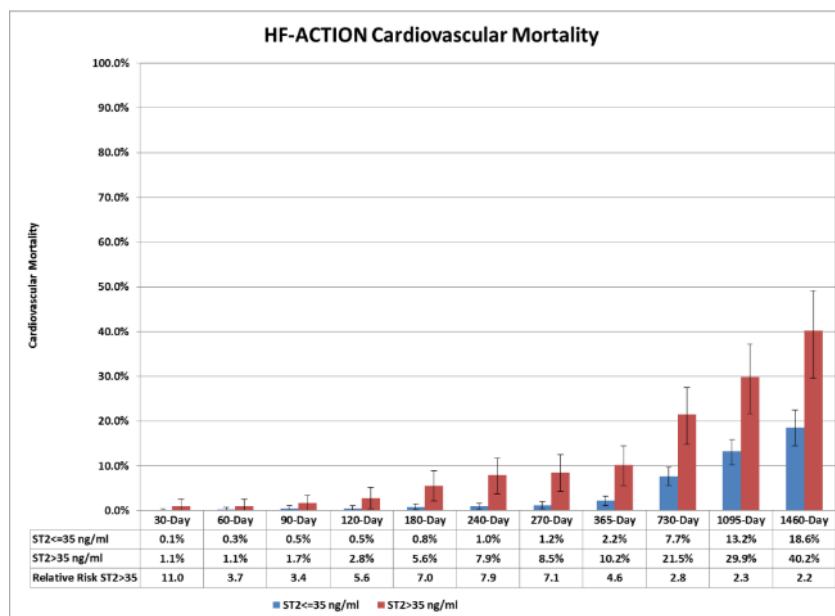A blood sample is taken from a vein.

How to prepare for the test
Prior to the test, it is essential to first consult with a doctor and get the exact instructions about any preparation needed.

Interpretation of results
The test results should be interpreted by a doctor.
Research showed that ST2 level at 35 ng/ml is the value that can be used to divide patients into higher and lower risk groups. Patients with ST2 level below 35 ng/ml, have better prognosis compared to patients with higher amounts of ST2. Serum level of ST2 above 35 ng/ml is associated with increased risk of hospitalization and mortality.

HF-ACTION Cardiovascular Mortality

	30-Day	60-Day	90-Day	120-Day	180-Day	240-Day	270-Day	365-Day	730-Day	1095-Day	1460-Day
ST2<=35 ng/ml	0.1%	0.3%	0.5%	0.5%	0.8%	1.0%	1.2%	2.2%	7.7%	13.2%	18.6%
ST2>35 ng/ml	1.1%	1.1%	1.7%	2.8%	5.6%	7.9%	8.5%	10.2%	21.5%	29.9%	40.2%
Relative Risk ST2>35	11.0	3.7	3.4	5.6	7.0	7.9	7.1	4.6	2.8	2.3	2.2

■ ST2<=35 ng/ml   ■ ST2>35 ng/ml

HF at 1 Year

C

— ST2 ≤35 µg/L
— ST2 >35 µg/L

$P < 0.001$

8.5%

2.6%

(source of the diagram: http://clinchem.aaccjnls.org/content/58/1/257.full)

Sources:
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