A white ECG (heart rate) line graphic that starts on the left, has several small peaks, then a larger, more prominent peak, and then levels off to the right, crossing the text area.

# ASSESSING FUTURE CARDIAC RISK IN AN **ASYMPTOMATIC POPULATION**

A step-by-step physician guide to help more accurately identify patients who may be at risk of a future cardiac event.

# RISK STRATIFICATION OF ASYMPTOMATIC INDIVIDUALS

There are a variety of cardiovascular (CV) risk prediction models currently available, many of which estimate CV risk by taking into account the presence of CV risk factors. This method of stratifying CV risk poses challenges, in particular in the local setting and between patients of different ethnicities.<sup>3,4</sup> Existing models also have specific limitations, such as applicability only in certain populations and the ability to measure only a limited number of CV outcomes.

## HOW DOES ABBOTT'S hsTnI RISK STRATIFICATION COMPARE WITH OTHER CURRENT TOOLS?

Current tools, such as Framingham 2008 and SCORE (ESC), involve measurements that are not specific to the heart and are dependent on age, which may not necessarily provide the true cardiac risk status of a patient. Data show that as hsTnI has been developed to specifically identify the presence of elevated troponin I levels, it can more accurately categorize patients' risk, compared to other currently available CV risk assessment tools, when used in conjunction with clinical and diagnostic findings.<sup>5-9</sup>

RISK SCORING SYSTEM	LIMITATIONS
European SCORE risk chart <sup>3</sup>	<ul style="list-style-type: none"><li>• Estimates only fatal CV risk</li><li>• May not be applicable in non-European populations</li><li>• Limited to the major determinants of risk</li><li>• Limited age range (40–65 years)</li></ul>
SCVD risk score calculator (AHA/ACC)	<ul style="list-style-type: none"><li>• May overestimate CV risk in both men and women<sup>4</sup></li><li>• Inferior to the Framingham Risk Score in identifying high CV risk individuals when evaluated in an Asian population<sup>10</sup></li></ul>
Framingham Risk Score <sup>11</sup>	<ul style="list-style-type: none"><li>• May overestimate CV risk in both men and women<sup>10</sup></li><li>• May not be accurate in those with markedly elevated risk factors (e.g. those with markedly elevated LDL levels)<sup>8</sup></li></ul>

Compared to the above mentioned tools, Abbott's hsTnI more accurately categorizes a patient into low, moderate or elevated risk categories when used in conjunction with clinical and diagnostic findings.<sup>5-9</sup>

# Abbott's hsTnI: an aid to stratifying risk of future cardiac disease in apparently healthy people

Abbott's hsTnI is a cardiac-specific blood test – the first CE marked cardiac-specific biomarker for risk stratification of the apparently healthy population. Used in conjunction with other clinical and diagnostic findings, Abbott's hsTnI is an aid to stratifying the risk of cardiovascular disease, including cardiovascular death, myocardial infarction (MI), coronary revascularization, heart failure, or ischemic stroke in asymptomatic individuals.<sup>1,2</sup>

As a physician, Abbott's hsTnI blood test can help you to more accurately stratify an asymptomatic individual's risk of a future cardiac event in to three categories: **low**, **moderate** or **elevated**. It enables you to better prioritize appropriate care for those at higher risk to help prevent adverse outcomes, and potentially avoid unnecessary investigations and treatments in those at lower risk.

Abbott's hsTnI can be integrated into daily practice and added to existing patient wellness checks.

# HOW TO USE THE RISK STRATIFICATION RESULTS

Abbott's hsTnI results are to be reported in the same way as current hsTnI results and applied to the risk stratification table shown below (Risk Stratification of Asymptomatic Individuals). The results enable you to:




- 1. IDENTIFY:** Assess which risk category an individual falls into based on the corresponding troponin I level. A statement interpreting these results, may be provided:
  - a.** It is critical to evaluate troponin I concentrations within the clinical context of all supporting parameters, including all classic CV risk factors (family history, blood pressure, lipids, smoking, diabetes), and all other clinical and diagnostic findings
  - b.** Any condition resulting in MI can potentially increase cardiac troponin I levels<sup>12</sup>
- 2. PREDICT:** Use your clinical judgement and adhere to recommended CV prevention guidelines to determine appropriate care for your patient based upon their level of risk
- 3. ACT:** Motivate your patients to take action to make healthier living choices to improve their heart health.

For example, if a patient falls into a low–moderate risk category, and you are following 2016 European Guidelines on Cardiovascular Disease Prevention in clinical practice, section 2.3.5 offers guidance on apparently healthy people, and recommends ‘offering lifestyle advice to maintain their low–moderate risk status’ using SCORE tables.<sup>4</sup>

## RISK STRATIFICATION OF ASYMPTOMATIC INDIVIDUALS

The following cut-off points may be used to aid in stratifying the risk of a future cardiac event in asymptomatic individuals.<sup>1,2</sup>



TROPONIN LEVEL		INTERPRETATION
MALE (pg/mL)	FEMALE (pg/mL)	
<6	<4	 <b>Low risk</b> of future heart attack
≥6 to ≤12	≥4 to ≤10	 <b>Moderate risk</b> of future heart attack
>12	>10	 <b>Elevated risk</b> of future heart attack

# UNDERSTANDING CARDIAC INJURY CATEGORIZATION



By providing you with a diagnostic test that can help you to more accurately identify a patient's risk of a future cardiac event, Abbott's hsTnI enables you to:

- Motivate and empower patients to take control and make long-term changes to their lifestyle to improve their heart health
- Recommend targeted treatments before a cardiac event takes place.

## UNDERSTAND RISK OF CARDIOVASCULAR INJURY USING ABBOTT'S hsTnI CARDIAC-SPECIFIC BLOOD TEST IN CONJUNCTION WITH OTHER CLINICAL AND DIAGNOSTIC FINDINGS<sup>1,2,13</sup>

An example framework below has been developed using Framingham Risk Score as the risk calculator:

TROPONIN LEVEL											
MALE (pg/mL)		FEMALE (pg/mL)		MALE (pg/mL)		FEMALE (pg/mL)		MALE (pg/mL)		FEMALE (pg/mL)	
<6		<4		≥6 to ≤12		≥4 to ≤10		>12		>10	
<b>INTERPRETATION</b>				<b>INTERPRETATION</b>				<b>INTERPRETATION</b>			
<b>Low risk</b> of future cardiac event <b>CARDIAC INJURY UNLIKELY<sup>5-8</sup></b>				<b>Moderate risk</b> of future cardiac event <b>CARDIAC INJURY PROBABLE<sup>5-8</sup></b>				<b>Elevated risk</b> of future cardiac event <b>CARDIAC INJURY PRESENT<sup>5-8</sup></b>			
FRAMINGHAM RISK SCORE <sup>13</sup>				FRAMINGHAM RISK SCORE <sup>13</sup>				FRAMINGHAM RISK SCORE <sup>13</sup>			
↓ 10 YEAR RISK OF MANIFESTING CLINICAL CVD:				↓ 10 YEAR RISK OF MANIFESTING CLINICAL CVD:				↓ 10 YEAR RISK OF MANIFESTING CLINICAL CVD:			
<b>&lt;10%</b>				<b>&lt;10%</b>				<b>&lt;10%</b>			
<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Follow up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Follow up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Follow up as per local guidelines*</li> </ul>			
<b>10–20%</b>				<b>10–20%</b>				<b>10–20%</b>			
<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Treat underlying conditions</li> <li>• Follow-up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Treat underlying conditions</li> <li>• Follow up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Treat underlying conditions</li> <li>• Follow up as per local guidelines*</li> </ul>			
<b>&gt;20%</b>				<b>&gt;20%</b>				<b>&gt;20%</b>			
<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Treat underlying conditions</li> <li>• Follow-up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Treat underlying conditions</li> <li>• Follow up as per local guidelines*</li> </ul>				<ul style="list-style-type: none"> <li>• Lifestyle consultation</li> <li>• Intervention as per local guidelines*</li> <li>• Treat underlying conditions</li> <li>• Follow up as per local guidelines*</li> </ul>			

\* Local guidelines such as the European Society of Cardiology (ESC), American College of Cardiology / American Heart Association (AHA / ACC), World Health Organization (WHO), or the US Preventive Services Task Force (USPSTF).<sup>3,14-16</sup>

# IDENTIFY. PREDICT. ACT

Add Abbott's High Sensitive Troponin-I cardiac specific blood test to your patient's health check. And help change lives.

To implement cardiac risk stratification of the apparently healthy population using Abbott's hsTnI test in your practice, please contact your local Abbott Diagnostics representative.

**For more information go to [www.corelaboratory.abbott](http://www.corelaboratory.abbott)**

## REFERENCES

1. ARCHITECT STAT High Sensitive Troponin-I Package Insert.
2. Alinity i STAT Troponin-I [package insert]. Lake Bluff, IL: Abbott Laboratories; 2019. H05938R01.
3. Piepoli MF, Hoes AW, Agewall S, et al. 2016 European Guidelines on cardiovascular disease prevention in clinical practice: The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts) Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). *Eur Heart J*. 2016;37(29):2315–81.
4. DeFilippis AP, Young R, Carrubba CJ et al. *Ann Intern Med*. 2015 Feb 17;162(4):266–75.
5. Sigurdardottir FD, Lyngbakken MN, Holmen OL, et al. Relative prognostic value of cardiac troponin I and C-reactive protein in the general population (from the Nord-Trøndelag Health [HUNT] Study). *Am J Cardiol*. 2018;121(8):949–55. doi.org/10.1016/j.amjcard.2018.01.004.
6. Ford I, Shah ASV, Zhang R, et al. High-sensitivity cardiac troponin, statin therapy, and risk of coronary heart disease. *J Am Coll Cardiol*. 2016;68(25):2719–28. doi:10.1016/j.jacc.2016.10.020.
7. Blankenberg S, Salomaa V, Makarova N, et al. Troponin I and cardiovascular risk prediction in the general population: the BiomarCaRE consortium. *Eur Heart J*. 2016;37(30):24–37. doi:10.1093/eurheartj/ehw172.
8. Everett BM, Zeller T, Glynn RJ et al. High-sensitivity cardiac troponin I and B-type natriuretic peptide as predictors of vascular events in primary prevention: impact of statin therapy. *Circulation*. 2015;131(21):18–60. doi:10.1161/CIRCULATIONAHA.114.014522.
9. Omland T, Lemos de JA, Holmen OL et al. Impact of Sex on the Prognostic Value of High-Sensitivity Cardiac Troponin I in the General Population: The HUNT Study. *Clin Chem*. 2015 Apr;61(4):646–656.
10. Garg N, Muduli SK, Kapoor A, et al. Comparison of different cardiovascular risk score calculators for cardiovascular risk prediction and guideline recommended statin uses. *Indian Heart J*. 2017;69(4):458–463. doi:10.1016/j.ihj.2017.01.015.
11. Blom DJ. *S Afr Fam Pract* 2011;53(2):121–128.
12. Thygesen K, Alpert JS, Jaffe AS, et al. Third universal definition of myocardial infarction. *Circulation*. 2012;126(16):2020–2035. doi.org/10.1161/CIR.0b013e31826e1058.
13. Framingham cardiovascular risk assessment. UpToDate. <https://www.uptodate.com/contents/calculator-cardiovascular-risk-assessment-10-year-men-patient-education>. Accessed October 2018.
14. Arnett DK, Blumhail RS, Albert MA, et al. 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*. 2019;140:e596–646.
15. World Health Organization (WHO). 2007. Prevention of Cardiovascular Disease: Guideline for assessment and management of cardiovascular risk. Accessed May 2021.
16. US Preventive Services Task Force. Risk Assessment for Cardiovascular Disease With Nontraditional Risk Factors: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2018;320(3):272–80.

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