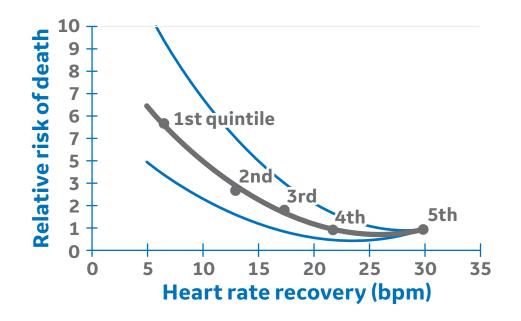
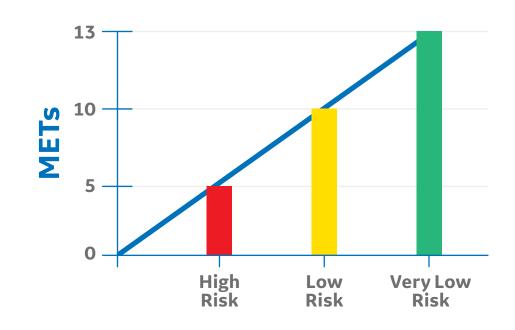
Exercise Test as a Prognostic Tool



HRR (Heart Rate Recovery)



METS (Metabolic equivalents of task)



Modified Mason-Likar Electrode Placement

AHA Label IEC Label Electrode Location

Exercise Test Responses

EXERCISE TEST INTERPRETATION

FACTORS TO CONSIDER

| V1 (red) | C1 (red) | Fourth intercostal space at the right sternal border. | | | RISK | |
|--------------------------------------|--|--|-------------|------------------|-------------|--------------|
| V2 (yellow) | C2 (yellow) | Fourth intercostal space at the left sternal border. | RA | AS | SESSMEN | Τ |
| V3 (green) | C3 (green) | Midway between locations V2and V4 (C2 & C4). | | | HRR | METs |
| V4 (blue) | C4 (brown) | Mid-clavicular line in the fifth intercostal space. | V1 V2 V3 | ST slope/level | METs TWA | HRR RPP |
| V5 (orange) | C5 (black) | Anterior axillary line on the same horizontal level as V4 (C4). | V4 V5 V6 | ST/HR index | Duke | Chronotropic |
| V6 (purple) | C6 (purple) | Mid-axillary line on the same horizontal level as V4 and V5(C4 & C5). | | ST/HR Hysteresis | FVEr | responses |
| LA (black) | L (yellow) | Just below the clavicle of the left arm. | RL S S LL | ST | F | UNCTIONA |
| RA (white) LL (red) RL (green) | R (red) F (green) N (black) | Just below the clavicle of the right arm. Lower left abdominal quadrant. Lower right abdominal quadrant. | | MEASUREMENT | | ASUREMEN |
| RL (green) | N (black) | Lower right abdominal quadrant. | | | | |

Exercise Testing Protocols

| FUNCTIONAL CLASS | | NICAI ATUS | | METS | BICYCLE ERGOMETER | TREADMILL PROTOCOLS | | | | | METS | |
|---------------------|----------------------------|------------------------------|------|----------|---------------------------|------------------------------|------------------------|--------------|----------------------|------|--------|----------|
| | ΊTΥ | | | | 1 WATT = 6.1 Kpm / min | BRU MOD 3 min 9 MPH | IFIED Stages %GR | 3 min MPH | UCE Stages %GR | NAUG | HTON | |
| | ΑCΤΙVITY | | | | | 6.0 | 22 | 6.0 | 22 | | | |
| | | | | | | 5.5 | 20 | 5.5 | 20 | | | |
| | ON AGE, | | | | FOR 70 KG | 5.0 | 18 | 5.0 | 18 | | | |
| NORMAL | Ó | | | 16 | BODY WEIGHT Kpm / min | | | | | | | 16 |
| AND | EN | | | 15 | - | | | | | | | 15 |
| | END I | | | 14 13 | 1500 | 4.2 | 16 | 4.2 | 16 | | | 14 13 |
| | HEALTHY, DEPENDENT LTHY | | | 12 | 1350 | | | | | | | 12 |
| | H≺, I | | | 11 | 1200 | 1 | | | | | | 11 |
| | ALTI | ≥ | | 10 | 1050 | - 3.4 | 14 | 3.4 | 14 | • | Stages | 10 |
| | H H | | | 9 | | - | | | | MPH | %GR | 9 |
| | HEA | | | 8 | 900 | - | | | | 2 | 17.5 | 8 |
| | RV | | | 7 | 750 | 2.5 | 12 | 2.5 | 12 | 2 | 14.0 | 7 |
| | NTA | SEDENTARY HEALTHY LIMITED | | 6 | 600 | | | | | 2 | 10.5 | 6 |
| | DE | | ATIC | 5 | 450 | 1.7 | 10 | 1.7 | 10 | 2 | 7.0 | 5 |
| | S | Σ | ΜΟ | 4 | 300 | | | 1.1 | 10 | 2 | 3.5 | 4 |
| | | | /MPT | 3 | 150 | 1.7 | 5 | | | 2 | 0 | 3 |
| | | | SYN | 2 | | 1.7 | 0 | | | 1 | 0 | 2 |
| IV | | | | 1 | | | | | | | - | 1 |

Bibliography

- Bourque, J.M., et al., Value of Exercise Stress Electrocardiography for Risk Stratification in Patients With Suspected or Known Coronary Artery Disease in the Era of Advanced Imaging Technologies. JACC. Cardiovascular imaging, 2015. 8(11): p. 1309-1321.
- 2. Borjesson, M., et al., *The role of exercise testing in the interventional era*: A shift of focus. Interventional Cardiology (London), 2012. **4**(5): p. 577-583.
- 3. Cole, C.R., et al., *Heart-rate recovery immediately after exercise as a predictor of mortality*. N Engl J Med, 1999. **341**(18): p. 1351-7.
- 4. Fletcher, G.F., et al., *Exercise Standards for Testing and Training: A Scientific Statement From the American Heart Association*. Circulation, 2013. **128**(8): p. 873-934.
- 5. Kligfield, P., et al., *Exercise electrocardiogram testing: beyond the ST segment*. Circulation, 2006. **114**(19): p. 2070-82.
- Leino, J., et al., Combined assessment of heart rate recovery and T-wave alternans during routine exercise testing improves prediction of total and cardiovascular mortality: the Finnish Cardiovascular Study. Heart Rhythm, 2009. 6(12): p. 1765-71.
- 7. Nieminen, T., et al., *T-wave alternans predicts mortality in a population undergoing a clinically indicated exercise test.* Eur Heart J, 2007. **28**(19): p. 2332-7.
- 8. Maddox, T.M., et al., *The prognostic importance of abnormal heart rate recovery and chronotropic response among exercise treadmill test patients*. American Heart Journal, 2008. **156**(4): p. 736-44.
- 9. Peterson, P.N., et al., Association of exercise capacity on treadmill with future cardiac events in patients referred for exercise testing. ACC Cardiosource Review Journal, 2008. **17**(6): p. 49-52.

This poster is intended to assist healthcare professionals and compliment text study and/or classroom instruction. There are many variables to consider in any clinical situation therefore, we believe that interpretations should be left to experienced clinicians.

DOC2015999 / JB50452XX

