



Community Hospital of the Monterey Peninsula®

**Pulmonary Wellness Program
Peninsula Wellness Center
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High Altitude Simulation Test (HAST)

Community Hospital of the Monterey Peninsula now offers high altitude simulation testing (HAST) through the outpatient Pulmonary Wellness Program. This test will enhance safety for passengers with lung disease when traveling by automobile to high altitude and/or airplane.

A large number of patients with underlying pulmonary disease travel to high altitudes or by air each year, putting them at risk for significant cardiopulmonary effects of induced hypoxia. HAST provides a simple way to identify those patients at risk by simulating conditions encountered at high altitude. By having the patient breathe a mixture of gases containing approximately 15.1 percent oxygen, the test approximates the FiO₂ at an elevation of 8,000 feet and allows the physician to screen for hypoxia, significant symptoms, and arrhythmias. Repeating the test with supplemental oxygen ensures adequate treatment of those patients who have a decrease in the alveolar pressure of oxygen, significant symptoms, and/or arrhythmias.

The California Thoracic Society recommends that patients with any of the following diagnosis may benefit from having HAST: Severe airway disease; cystic fibrosis; neuromuscular disease; kyphoscoliosis; those hospitalized for acute respiratory illness within the previous six weeks; previous air travel intolerance with respiratory symptoms such as, dyspnea, chest pain, confusion or syncope; or a condition worsened by hypoxemia such as cerebral vascular disease, coronary artery disease, or heart failure. To take the high altitude simulation test the patient must be in stable respiratory condition and a non-smoker. A physician referral is required.

The protocol for HAST is to obtain patient baseline blood pressure, heart rate/rhythm, SaO₂, and dyspnea rating. The patient is then placed on the hypoxic mixture for 20-30 minutes or less, depending on symptoms. The patient is closely monitored during rest and mild exertion, and vital signs and dyspnea ratings are recorded. A report and summary of the test is sent to the referring physician.

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