Chest, Vol 94, 77-80, Copyright © 1988 by American College of Chest Physicians

ARTICLES

# Performance of a demand oxygen saver system during rest, exercise, and sleep in hypoxemic patients

**JS Bower, CJ Brook, K Zimmer and D Davis**
Kansas City Pulmonary Clinic, Mo.

Demand oxygen systems have been shown to be effective in treating hypoxemia during seated rest and during exercise, but the performance of these systems during sleep has not been previously studied. We compared the efficacy of a new demand oxygen saver system with that of continuous flow nasal oxygen during the usual activities of daily life including sleep, seated rest, and exercise. Six hypoxemic patients were studied. All six had chronic obstructive pulmonary disease, though one patient had kyphoscoliosis with mixed obstructive and restrictive lung disease. Patients were studied during each activity of daily life while receiving supplemental oxygen by continuous flow nasal cannula at 2 liters per minute and during use of the demand oxygen saver system. The demand oxygen system produced arterial oxygenation equivalent to continuous flow nasal cannula under all conditions while utilizing substantially less oxygen. When compared with administration of oxygen by continuous flow nasal cannula, the demand oxygen saver cannula utilized only 45 percent as much oxygen during seated rest, 44 percent as much oxygen during exercise, and 39 percent as much oxygen during sleep. Our data support the use of demand oxygen systems for treatment of hypoxemia in patients with chronic obstructive lung disease.