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FILE: ▪ Essential Oils
▪ Respiratory Illness
▪ Pediatrics

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RE: A Case Report Describing the Use of Essential Oil Diffusion for Child's Respiratory Illness

Hedayat KM. Essential oil diffusion for the treatment of persistent oxygen dependence in a three-year-old child with restrictive lung disease with respiratory syncytial virus pneumonia. *Explore*. 2008;4(4):264-266.

Essential oils are volatile liquids that readily enter the tracheobronchial tree by passive inhalation. Such oils have demonstrated properties that may suggest novel treatment approaches to respiratory disease.

Essential oil of spike lavender (*Lavandula latifolia*) has mucolytic and expectorant activity, mainly from the presence of eucalyptol and camphor. Spanish wild marjoram (*Thymus mastichina*) essential oil contains a high amount of eucalyptol, as well as antiviral and antibacterial activity. The balsam fir (*Abies balsamea*) is reputed to have strong antimicrobial action, particularly with regard to pulmonary infections. The two most common components of peppermint (*Mentha* x *piperita*) essential oil are menthone and menthol. Menthol improves mucus clearance, reduces cough, decreases restlessness in children with bronchitis, and possesses antiviral and antibacterial activity. Menthone contributes to strong free radical scavenging activity.

This case review presents a three-year-old female with central core myopathy, restrictive lung disease, and scoliosis. The child was admitted to the hospital for respiratory syncytial virus, pneumonia, and acute respiratory distress. She had an 18-day history of oxygen requirement, with acute desaturation episodes, even while receiving high-flow oxygen and mucolytic therapy.

On the eighth day of the hospitalization, the previous treatments were discontinued and an essential oil mixture consisting of spike lavender, Spanish marjoram, balsam fir, and peppermint was nebulized at the parents' request. Three drops were applied to a fibrous filter

inserted into the base of a fan diffuser, and the mixture was diffused every six hours into the room for passive inhalation. Within 12 hours, oxygen requirement was reduced, blood oxygen saturation increased, and desaturation episodes abated. On the second day of oil use (tenth day of hospitalization), the child was weaned of the oxygen and discharged home.

The author suggests that essential oils, such as the ones used in this patient, may offer a novel and inexpensive treatment option for patients with altered airway clearance or those suffering from pulmonary illnesses of viral etiologies. In light of the pronounced and rapid recovery of the patient described in this case study, further research is warranted to examine the mucolytic, antiviral, and anti-inflammatory activity of essential oils in the treatment of respiratory illnesses.

—Jennifer Minigh, PhD

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