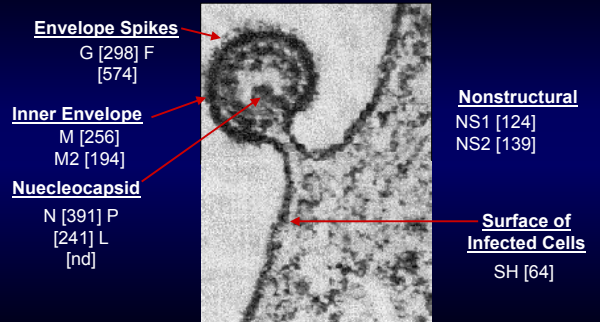


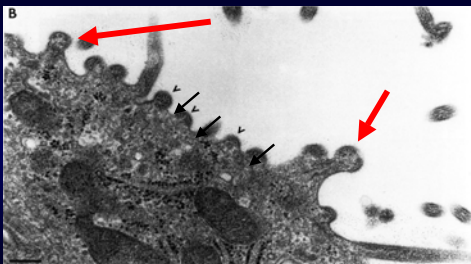
RSV Workshop: New Approaches to Acute and Chronic Disease

Gregory J. Redding, M.D.
University of Washington School of Medicine
Seattle, Washington

Respiratory Syncytial Virus (RSV)

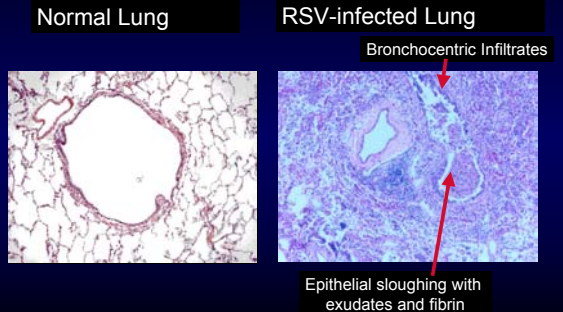


Apical Release of RSV from Polarized Cells

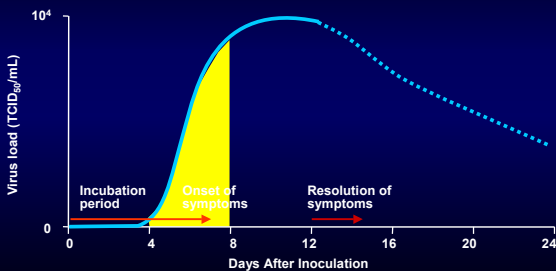


Roberts SR, et al. *Virology*. 1995;69:2667-73;
Presented by G Wertz, PhD: ICRV, 2003

RSV Bronchiolitis

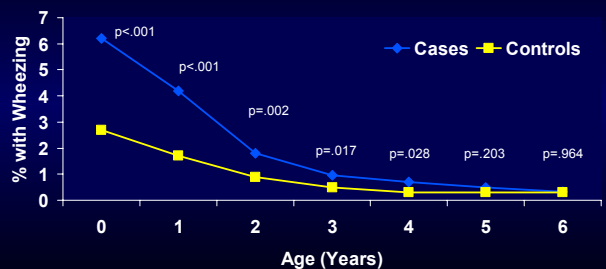


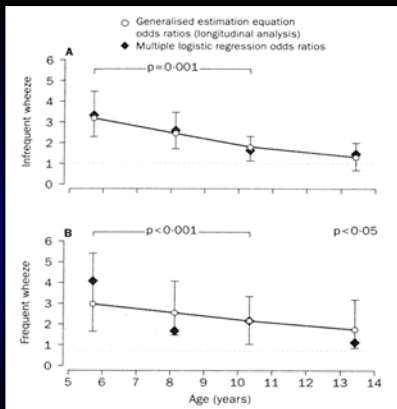
Viral Loads in RSV Lower Respiratory Tract Infection (LRTI)



TCID₅₀/mL = tissue culture infectious dose for 50% of test units per milliliter
McIntosh K and Chanock RM. *Virology*. 2nd ed. 1990:1048.

Mean Number Of Visits With Wheezing Per Child By Year





Stein RT et al. *Lancet* 1999; 354:541-45

New Issues Related to RSV Acute Management, Long-term Follow-up and Prevention

- Can we reduce disease severity?
- Can we identify those at risk for chronic and recurrent symptoms?
- Can we improve prevention of RSV LRIs in this population?

Supportive Care for RSV

- Administer humidified oxygen
- Monitor for apnea, hypoxemia, and impending respiratory failure
- Normalize body temperature
- Rehydrate with oral or intravenous fluids
- Monitor for signs of fluid overload
- Adjust diuretics as needed

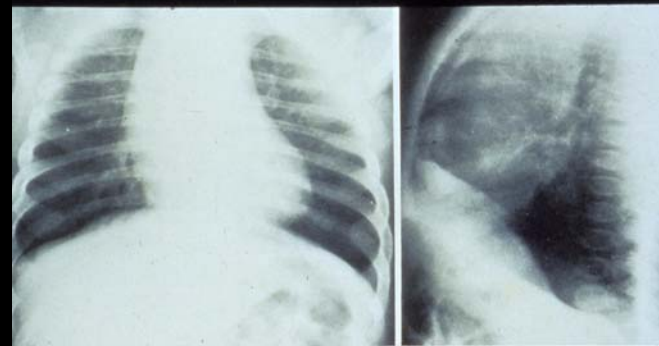
“New” Supportive Care Strategies

- Nasal resistance/suctioning
- Gastro-esophageal reflux
- Aspiration risk
- Home oxygen/Discharge SaO₂ criteria

Thoracic Index (TI): Background

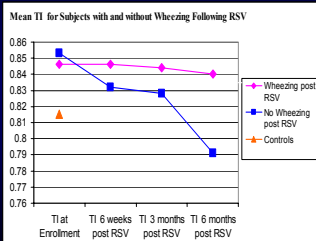


- Simple non-invasive assessment of persistent airway obstruction in young children needed
- Anthropometric measure of chest wall configuration to detect pulmonary hyperinflation due to airway obstruction
- Ratio of chest depth to chest width measured with calipers



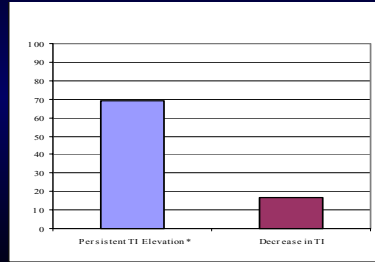
Longitudinal TI Measurement Following RSV Among Children with and without Subsequent Wheezing

Results



	N	Without Wheezing	With Wheezing	p value
Enrollment	31	0.853 (0.07)	0.850 (0.05)	0.78
6 Wks post RSV	23	0.832 (0.06)	0.850 (0.08)	0.62
3 Mos post RSV	23	0.828 (0.05)	0.844 (0.04)	0.48
6 Mos post RSV	23	0.791 (0.06)	0.840 (0.04)	<0.03

Longitudinal TI Measurement Following RSV Among Children with and without Subsequent Wheezing



Incidence of wheezing following RSV if TI 'persistently elevated'

RSV Prevention Strategies

- Public Health Measures
- RSV Immunoprophylaxis (Synagis and Son of Synagis)
- RSV Vaccines

Social/Environment Characteristics of Eskimo Children*

Median #/home	7 persons
Shares bed with ≥ 1 other	70% families
Running water in the home	40% of homes
Breast fed > 50% feedings	65%
Smoker in the home	60%
Otitis media < 2 years of age	59%**
Dental caries	85%

* RSV Surveillance Study 1993-1996
** Reed and Dunn Pub Health Resp 1970

AAP Guidelines: 2003

- Infants born at ≤ 28 weeks gestation up to one year of age at the onset of RSV season.
- Infants born at 29-32 weeks gestation up to six months of age at the onset of RSV season.
- Infants born at 32-35 weeks gestation with additional risk factors for severe RSV disease.

RISK FACTORS: Exposure to pollutants, child care attending, school age siblings, congenital abnormalities of the airway, severe neuromuscular disease.

AAP Guidelines: 2003

Candidates for Synagis® (palivizumab) prophylaxis:

- Infants with chronic lung disease (CLD) < 24 months of age at onset of RSV season who have required medical management of their CLD within the prior six months.
- Infants with "hemodynamically significant" cyanotic and acyanotic heart disease who are ≤ 24 months of age at the onset of the RSV season.

