

PERIPHERAL PULMONARY OBSTRUCTION (PPO) IN SMALL CHILDREN WITH CHRONIC LUNG DISEASE STUDIED BY FORCED EXPIRATORY FLOW (FEF) WITH JACKET COMPRESSION TECHNIQUE. Teresa Farstad, Frans Brockmeier, Dag Bratlid. Neonat.Res.Lab. Dept. Ped. Rikshospitalet, University of Oslo, Norway.

Lung function in 30 children born prematurely have been followed for two years. Group I (BW 1232±83 g, GA 27.8±0.5 wks) had been treated for severe respiratory distress syndrome (RDS) in the neonatal period with mechanical ventilation for 28±4.6 d (mean±SEM). Group II (BW 2181±333 g, GA 33.0±1.2 wks) had mild or no RDS. Infants were studied at 50 and 120 wks corrected age. Total respiratory system compliance (C_{RS}) and static resistance (R_{S0}) were measured by occlusion technique (PEDS[®]). PPO was measured as $V_{max}FRC$ (ml/sec)/cm body height by partial FEF with jacket compression (squeeze) technique (PUFFS[®]). Data given as mean±SEM.

	age/wks	$V_{max}FRC$	C_{RS}/kg	R_{S0}/cm
I	n=18 50±2	1.02±0.14	1.168±0.08	0.784±0.07
	120±2	1.86±0.34*#	1.330±0.13	0.422±0.34#
II	n=12 52±3	1.27±0.17	1.391±0.10	0.544±0.08
	126±3	3.04±0.32#	1.300±0.12	0.413±0.04

*p<0.05 between groups, #p<0.05 within group. No significant group differences in C_{RS} and R_{S0} could be found. FEF revealed significant PPO in Group I. FEF is a better method for demonstration of pulmonary obstruction in small children than measurements of static resistance.

PREMATURITY, SUBSEQUENT ASTHMA AND LUNG FUNCTION AT THE AGE OF 9-11. E.v.Mutius, T.Nicolai, P.Reitmeir. University Children's Hospital; Institute for Biostatistics, Munich, Germany.

Little is known about longterm sequelae of prematurity in non selected population based studies. We investigated cross-sectionally all fourth grade schoolchildren in Munich (n=7445) and n=1958 schoolchildren in Southern Bavaria (born 1978-80) with a parental questionnaire (Q) and lung function test (L) (Pneumoskop, Fa.Jäger) prior to and after cold air challenge (CACH) (RHES device, Fa. Jäger). **Results.** Response rates were 87% for Q and 77.5% for L. In the 5647 german children with complete lung function results parents of 298 (5.3%) children reported prematurity (P) (gestational age <37wks) and birth weight <2500gr. The prevalence of asthma was 12.0% for P boys (m) vs 9.6% for term boys, 12.2% for P girls (f) vs 6.0% for term girls (p<0.02). The prevalence of asthma increased only slightly (p=0.4) when P children had been ventilated (30.7% of P) as compared to non ventilated P. The prevalence of abnormal L parameters in % prior to CACH is:

%Abnormal:	FVC	FEV1	PEF	MEF75	MEF50	MEF25
	m/f	m/f	m/f	m/f	m/f	m/f
Preterm	7,0/7,6	7,8/5,9	10,2/15,3	11,7/17,1	11,7/15,9	8,6/12,9
Term	7,6/6,1	7,5/5,8	8,5/12,8	10,5/9,9+	9,0/7,8#	8,3/6,7*

+p=0.01, #p=0.001, *p=0.02 (comparing term to P). There was no difference for the change in FEV1 after CACH between P and Term. **Conclusion:** The prevalence of asthma was significantly higher in preterm born children. P girls showed significantly lower L (MEF75, MEF50, MEF25) compared to term born girls. We found no difference in bronchial hyperreactivity to cold air between groups.