	Saline infused			Glucose infused	
n = ( )	13–18 weeks (3)	Term (6)	GDM (7)	13–18 weeks (7)	Term (7)
Glucose mg %	44±13	90±7	87±10	168±38	142±34
Insulin μU/ml	2.6±0.9	4.0±0.7	20.6±6.2	6.9±1.6	20.0±5.4

tween glucose and insulin levels in all normal term infants, but not in FGDMs. As a group the latter had insulin levels which were high relative to glucose. It is concluded: (1) the normal fetal pancreas responds to a sustained glucose stimulus with an output of insulin, (2) the term fetus' response is greater than the 2nd trimester fetus, and (3) the FGDM has higher cord insulin levels for normal glucose concentrations. This suggests that glucose may not be the primary insulino genic factor in FGDMs. (APS)

132 *Apnea in Premature Infants as Related to Changes in Environmental Air Temperatures.* PAUL H. PERLSTEIN*, NEIL K. EDWARDS* and JAMES M. SUTHERLAND, Univ. of Cincinnati, College of Medicine, Cincinnati, Ohio.

Cyclic and sudden changes in incubator air temperature are characteristic of environments controlled by servo mechanisms which trigger 'on' and 'off' in response to variations in skin temperature. An impression that apneic spells often begin following sudden increases in air temperature, was tested by taking advantage of these characteristic oscillations. The thermal events associated with over 500 apneic spells were recorded during the monitoring of selected premature infants in incubators servo controlled to maintain skin temperature between 36–36.6°. Of the apneic spells recorded, 126 were chosen for analysis because each was preceded by more than 15 minutes of spontaneous breathing. The temperature change which occurred during the 100 seconds before the onset of apnea was compared with the change measured exactly 15 minutes earlier. Of the 126 apneic spells, 70 occurred during a rise, 44 during a fall, and 12 during a plateau in air temperature. During the non-apneic control periods, there were 41 rises, 64 falls, and 21 plateaus in temperature. The onsets of apnea, therefore, were preceded by rising air temperatures more commonly ($p = 0.00023$) than were matched moments without apnea. This correlation, supported by dramatic examples of apnea with sudden increases in air temperature, adds to the evidence that present incubator thermal control may initiate a trigger for apnea. (SPR)

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