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BRAINSTEM DEVELOPMENT IN NEWBORN SINGLETON AND TWINS. R.N.Amlie*, S.J. Sanders,* A.Starr,* W.H.Martin,* R.F.Huxtable. Department of Pediatrics University of California, Irvine, California.

Auditory evoked brainstem potentials(AEBP)were measured in 17 twin pairs (T) & 27 singleton newborn(S). AEBP are far field reflections of changes in electrical activity in the auditory brainstem pathway.A click stimulus of 65 dBSL was presented monaurally at 10/sec & responses recorded from scalp electrodes.Responses to 2048 clicks were amplified & computer averaged.Latencies of 3 major waves in the first 10 msec were measured. Conceptional age(CA)range was 31-41 wks for T & 26-44 wks for S.Birth-weight(BW)was 1175-3650 gms for T & 560-4200 gms for S. Mean BW difference for T was 335 gms(40-1130). The Table shows mean latency in msec as

CA wave	I		III		IV-V		
weeks	T.P.	S.	T.P.	S.	T.P.	S.	I, III & IV-V at 65 dBSL in TP & S.No responses were recorded in 3 infants at 26 wks.CA, who later developed responses at 28 wks.This may represent the auditory threshold, lack of neural synchrony or cochlear immaturity to high frequency sounds.
32-33	2.9	2.9	6.5	6.1	8.8	8.4	
32-35	2.3	2.1	5.2	5.0	7.6	7.6	
36-37	1.5	1.9	4.6	4.8	6.1	7.0	
38-39	1.9	1.9	4.7	4.9	6.1	7.0	
40-41	1.7	1.8	4.7	4.6	6.7	6.9	

The difference in latency of the waves for each TP showed a range of 0-1.3 msec with a mean of 0.49 msec before 36 wks CA with a range of 0-1 msec with a mean of 0.24 msec for TP 36-41 wks CA.This confirms the consistency of our testing procedures & may indicate increase in neural synchrony with age or differences in brainstem maturation before 36 wks CA.AEBP cannot be detected before 28 wks at 65 dB.The similarity of brain stem development for S & TP of the same CA suggest that the relative undergrowth of twins during the last part of pregnancy has limited effect on brainstem maturation.TP weight differences showed no significant effect on responses.