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P99. Osteoporosis in Severe Cerebral Palsy

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Bone fractures are common in children with severe cerebral palsy. The degree of disuse osteoporosis in this population has not been previously reported. Twenty-six individuals who had a fracture were identified (age range, 9–46 years; mean, 21 years; 8 females, 18 males). All had severe quadriplegic cerebral palsy and were wheelchair-bound; 23 were fed by gastrostomy tube; 2 had tracheostomies; all were receiving adequate amounts of calcium and vitamin D and had normal serum calcium and vitamin D levels; 8 were treated with valproic acid for epilepsy; and none had received any steroid treatments. All underwent bone mineral density (BMD) determinations using a Hologic QDR-1000 x-ray bone densitometer. The results are reported in T scores (1 T = 1 SD). A T score result below -2.5 defines osteoporosis. BMD in the hip/femoral neck was determined in 17 cases. The T score range was -1.99 to -4.34 , with a mean of -3.60 . Fourteen of the 17 T scores were below -2.5 . BMD in the lumbar spine was determined in 21 cases. The T score range was -2.41 to -6.43 , with a mean of -4.20 . Nineteen of the 21 T scores were below -2.5 . There was no significant correlation in BMD results with sex, age, or valproic acid

intake. There was a significant correlation between BMD determinations in the femoral neck and lumbar spine ($p < 0.05$). These results indicate a severe degree of osteoporosis in this population. There was no correlation with the degree of osteoporosis and use of valproic acid.