NON-NEUROLOGICAL LATE EFFECTS AMONG CHILDHOOD BRAIN TUMOR SURVIVORS: AN ANALYSIS FROM THE CHILDHOOD CANCER SURVIVORS STUDY. Gurney JG, Punyko J, Neglia J, Packer R, Sklar C, Kadan-Lottick N, Nicholson HS, Wolden S, McNeil DE, Mertens A., Robison L. University of Minnesota, Minneapolis, MN (J.G.G., J.P., N.K-L, J.N., A.M., L.R.), Children's National Medical Center, Washington DC (R.P.), Memorial Sloan Kettering Cancer Center, New York NY (C.S, S.W.), Oregon Health Sciences University, Portland OR (H.S.N.), National Cancer Institute, Rockville MD (D.E.M.).

We conducted an outcomes evaluation among 1607 brain tumor survivors who participated in the Childhood Cancer Survivors Study (CCSS). CCSS is a multicenter, retrospective cohort study of persons who were diagnosed as children or adolescents with a neoplasm between 1970 and 1986 and survived at least 5-years post-diagnosis. Frequency and onset of late effects were collected from a questionnaire instrument by self or surrogate report. Detailed treatment data were collected from medical records. Rates for selected outcomes that occurred 5 or more years after diagnosis were compared with that of 3418 sibling participants who were cancer-free. After controlling for sex in a Cox proportional hazards regression analysis, survivors reported substantially higher rates than siblings for hypothyroidism (relative risk [RR] 14.3, 95% confidence interval [CI] 9.7-21.0), growth hormone deficiency (RR 278, 95% CI 111-695), meds needed for reaching puberty (RR 86, 95% CI 31-238), stroke (RR 42.8, 95% CI 16.7-110), and osteoporosis (RR 24.7, 95% CI 9.9-61.4). Rates of diabetes mellitus differed little between survivors and siblings. Among survivors, after controlling for histology, sex, and age at diagnosis, radiotherapy consistently increased risk for the above-mentioned outcomes relative to surgery alone. Risks were even higher for those who also received chemotherapy, and the increase was not explained by higher radiation dose. We found that adolescents and adults who survived brain tumors during childhood have a high risk for numerous non-neurological late effects. Primary care and oncology providers should be aware of the risk of late effects in brain tumor survivors, and encourage appropriate monitoring and follow-up treatment.