

# Leukemia, and its treatment, may pose neurocognitive risks

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(HealthDay)—Underlying leukemia, even before chemotherapy, may

pose a neurocognitive risk to young patients, according to a study published online March 29 in *JAMA Oncology*.

Yin Ting Cheung, Ph.D., from the St. Jude Children's Research Hospital in Memphis, Tenn., and colleagues examined concentration of cerebrospinal fluid (CSF) biomarkers of brain injury at [diagnosis](#) and during cancer therapy to evaluate associations with long-term neurocognitive outcomes among 235 [acute lymphoblastic leukemia](#) patients (51.1 percent boys; mean age at diagnosis, 6.8 years; treated from June 1, 2000, through Oct. 31, 2010, and with follow-up being completed on Oct. 21, 2014).

The researchers found that myelin basic [protein](#) and glial fibrillary acidic protein levels were elevated at baseline and through consolidation. There was a positive correlation between the number of intrathecal injections and [nerve growth factor](#) level increase at consolidation ( $P = 0.005$ ). There was an association between increases in glial fibrillary acidic protein (risk ratio, 1.23), myelin basic protein (risk ratio, 1.06), and total tau (risk ratio, 1.76) levels and a higher risk for leukoencephalopathy and higher apparent diffusion coefficient in frontal lobe white matter five years after diagnosis ( $P$

"Glial injury may be present at diagnosis of acute lymphoblastic leukemia. Neuronal injury was associated with intrathecal chemotherapy," the authors write. "The CSF biomarkers may be useful in identifying individuals at risk for worse neurologic outcomes, particularly those with genetic susceptibility to poor brain function."

**More information:** [Abstract/Full Text \(subscription or payment may be required\)](#)

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