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## Original Contribution

### Risk of Brain Tumors Associated with Exposure to Exogenous Female Sex Hormones

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The etiology of brain tumors is largely unknown. Prior observations have implicated gender-specific hormones in the pathogenesis of these tumors. In a population-based case-control study, the authors identified all women aged 20–69 years who had been diagnosed with meningioma or glioma during 2000–2002 in four regions of Sweden. Controls were randomly selected from the study base.

Detailed information on hormone usage, including use of hormonal contraceptives, hormonal treatment for gynecologic problems, and hormone replacement therapy, was collected from 178 meningioma cases, 115 glioma cases, and 323 controls. Data were analyzed using unconditional logistic regression, adjusting for age, residential area, education, and parity. An increased relative risk of meningioma was found among postmenopausal women for ever use of hormone replacement therapy, with an odds ratio of 1.7 (95% confidence interval: 1.0, 2.8). Women who had used long-acting hormonal contraceptives (subdermal implants, injections, or hormonal intrauterine devices) had an increased risk of meningioma; the odds ratio for at least 10 years of use was 2.7 (95% confidence interval: 0.9, 7.5). Hormone usage was not associated with glioma risk in this study. The findings suggest that the use of female sex steroids may increase the risk of meningioma.

case-control studies; contraceptives, oral; estrogens; glioma; hormone replacement therapy; meningioma; progesterone

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Abbreviations: CI, confidence interval; ICD-10, International Classification of Diseases, Tenth Revision; ICD-O-2, International Classification of Diseases for Oncology, Second Edition