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An international case-control study of maternal diet during pregnancy and childhood brain tumor risk: a histology-specific analysis by food group.

[Pogoda JM](#), [Preston-Martin S](#), [Howe G](#), [Lubin F](#), [Mueller BA](#), [Holly EA](#), [Filippini G](#), [Peris-Bonet R](#), [McCredie MR](#), [Cordier S](#), [Choi W](#).

USC/Norris Comprehensive Cancer Center, University of Southern California, Los Angeles, CA, USA. jpogoda@statology.com

PURPOSE: Maternal dietary data from an international collaborative case-control study on childhood brain tumors were used to evaluate associations between histology-specific risk and consumption of specific food groups during pregnancy. **METHODS:** Nine study centers from seven countries contributed 1218 cases and 2223 controls. Most cases were diagnosed between 1982 and 1992 and ranged in age from 0 to 19 years. Dietary consumption was measured as average grams per day. **RESULTS:** Foods generally associated with increased risk were cured meats, eggs/dairy, and oil products; foods generally associated with decreased risk were yellow-orange vegetables, fresh fish, and grains. The cured meat association was specific to astrocytomas (odds ratio [OR] range=1.8-2.5 across astrocytoma subtypes for 4th vs. 1st quartile of consumption, p trends ≤ 0.03) and ependymomas (OR, 2.0; 95% confidence interval (CI), 0.4-2.9 for 4th vs. 1(st) quartile; p trend=0.03) and was similar in magnitude to previously reported ORs relating maternal cured meat consumption to increased astroglial risk. Other histology-specific associations were decreased risk of anaplastic astrocytomas from cruciferous vegetables (OR, 0.4; 95% CI, 0.3-0.7 for 4th vs. 1st quartile; p trend<0.0001), decreased risk of astroglial tumors from fresh fish (OR, 0.6; 95% CI, 0.5-0.9 for 4th vs. 1st quartile; p trend=0.008), and increased risk of medulloblastoma from oil products (OR, 1.5; 95% CI, 1.0-2.2 for 4th vs. 1(st) quartile; p trend=0.005). **CONCLUSIONS:** These results suggest the need for dietary analysis not only by brain tumor histology, but also by specific foods within a broad food group.

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