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Effects of dietary polyamines on the promotion of mammary tumor in rats.

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The effects of dietary polyamines have been investigated on 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP)-induced carcinogenesis of the breast in rats by feeding spermidine (Spd) at three different concentrations. The cumulative incidence of mammary tumor in the group treated with PhIP plus Spd was 92% (low spermidine diet) and 68% (high spermidine diet), compared to 50% in the PhIP group with a control diet. These results suggest that dietary polyamines may enhance the promotion of PhIP-induced mammary carcinogenesis. In addition, however, a low spermidine diet can promote the development of tumor in rats, but on the other hand a high spermidine diet may suppress the mammary carcinogenesis.