

Effect of acute cigarette smoking, alone or with alcohol, on gastric barrier function in healthy volunteers

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Background. Smoking is a risk factor for gastroduodenal ulcer and gastric adenocarcinoma.

However, the pathophysiological mechanisms induced by acute cigarette smoking in the human gastric mucosa are poorly understood. **Aim.** To evaluate the effect of acute cigarette smoking, alone or with alcohol, on the gastric permeability to sucrose, a specific marker of mucosal damage in the stomach. **Subjects and Methods.** Twenty healthy volunteers (8 smokers/12 non-smokers) were studied. Each fasted subject ingested 500 ml of a 20% sucrose solution and the amount of sucrose excreted in a 5-hour urine collection was measured by gas chromatography. Four sucrose permeability tests were carried out: 1. basal, 2. while smoking 5 cigarettes, 3. after drinking 50 ml of a 40° alcoholic beverage, 4. a combination of 2+3. **Results.** Sucrose excretion increased after alcohol ingestion [40.5 ± 6.0 mg vs 143.1 ± 28.9 mg, $p=0.002$), but was not modified by acute cigarette smoking (34.4 ± 5.9 mg). When alcohol and cigarett