Different results have been observed in systematically analysing bacteriological cultures of (a) bronchial secretions aspirated during fiberoptic bronchoscopy and (b) of sputum. In a prospective study of 23 patients with chronic infections of the lower respiratory tract, bacteriological cultures of the sputum showed more bronchopathogenic strains than those of subsequently removed bronchial secretions. These different findings may be attributed to a bactericidal effect of topical anesthetics used during bronchoscopy. To evaluate the influence of anesthetics on the growth of microorganisms, several strains cultured from sputum specimens were exposed to various solutions of the most commonly used anesthetics. The growth of Haemophilus influenzae and Diplococcus pneumoniae was completely depressed by all the tested solutions and dilutions. Only Staphylococcus aureus and several strains of Enterobacteriaceae were resistant even to high concentrations of anesthetic solutions. The results suggest that specimens of bronchial secretions taken by routine fiberoptic techniques cannot be used for reliable bacteriological diagnosis of lower respiratory tract infections.