DETERMINATION OF CHROMIUM LEVELS IN THE SPUTUM OF FERRO-CHROMIUM PLANT LABOURERS.
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The chromium levels in the sputum of ferro-chromium plant labourers were determined by the Graphite-furnace Atomic Absorption Spectrometer method. The sputum samples were applied to the A.A.S. after mixing with 3% HCl. Although the mean chromium level of the labourers' sputum was 4361.90 ± 2564.87 ng/ml, the control group mean level was 539.20 ± 146.98 ng/ml and the p value was less than 0.01. Besides these studies, the chromium levels of labourers' sputum were determined before and after their work time. The values obtained were 4969.17 ± 2009.91 ng/ml (after) and 569.11 ± 2217 ng/ml (before). As a result of these experiments it can be understood that most of the chromium cumulated in the lung of the labourers during work. The most important result which was the main aim of these experiments was that the determination of chromium levels of the sputum can be considered as a valuable criteria for health of Ferro-Chromium labourers. The method also is easier than the determination of chromium in blood. (The normal value was considered as 500-600 ng/ml in this study).

LARGE BOWEL RESECTIONS AND CHEMICALLY INDUCED COLON CARCINOGENESIS.
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In familial polyposis patients who underwent resecting operative procedures of the large bowel, a postoperative regression of rectal polyps was observed which was attributed to effects of faecal stream diversion. This hypothesis was proved in the Azoxymethane-(AOM)-model, which is now widely used for research in large bowel cancer. AOM was administered to Fisher-344-rats with a dose of 7.5 mg/kg body weight once weekly for ten weeks. Groups of rats received diverting operations and/or large bowel resections either before or after carcinogen-course. The results of this study show that tumour incidences differ significantly depending on location of large bowel segments in relation to anastomosis and on timing of operation. Thus it is concluded that inhibiting effects by withdrawal of faecal promoting factors are limited to a permissive period in chemical carcinogenesis. Creation of an anastomotic site enhances colonic carcinogenesis by means of increased susceptibility to carcinogens during rapid cell proliferation. On the other hand this effect is less important in tumour prone mucosa by prior administration of AOM. Ileal faecal stream has inhibiting effects on chemically induced colon carcinogenesis.

DNA SEQUENCE ANALYSIS OF CARCINOGEN-INDUCED MUTATIONS.
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Previous work in this and other laboratories has demonstrated that the carcinogenicity of a wide variety of chemicals correlates well with mutations induced by such agents in both bacterial and mammalian systems. However certain anomalies remain, in particular in the case of benzo(a)pyrene diol epoxide (BPDE) the syn-isomer is more mutagenic in bacterial systems than is the anti-isomer but in mammalian cells the opposite is true and the latter situation mirrors the carcinogenic potency of the two compounds. It is therefore clearly important to determine the precise nature and yield of mutations induced by such agents in bacterial and mammalian cells. We have developed systems to investigate chemically-induced mutations in bacterial cells using DNA sequencing. Plasmid DNA has been modified to known extents of reaction within precise regions encoding selectable markers and used to transform appropriate bacteria. These markers include part of the lac operon as well as the tetracycline-resistance element on pBR322. Methods have been established to use the dideoxy-terminated copying method of DNA sequencing directly on double-stranded plasmid molecules using appropriate primers, and mutations induced by both isomers of BPDE as well as other agents have been determined using this method.