Hypnotherapy. The two randomly selected groups were the drug was continued for a further 10 weeks during which time patients received either hypnotherapy or no hypnotherapy. The two randomly selected groups were comparable in terms of age, sex, smoking habits, and alcohol consumption. Follow-up of both groups of patients was continued for 12 months after the cessation of ranitidine. After 1 year, 8 (53%) of the hypnotherapy patients and 15 (100%) of the control subjects had relapsed. The results of this study suggest that hypnotherapy may be a useful therapeutic adjunct for some patients with chronic recurrent duodenal ulceration.

### Introduction

**Duodenal ulceration** can now be rapidly and effectively healed by many drugs,1,2 but post-treatment relapse remains so troublesome that continuous maintenance therapy has been advocated.3 Relapse rates may vary depending on the healing agent employed:4 in some studies over 90% of patients relapse following the use of H₂ receptor antagonists,5 although about 85% is a more usual one year relapse rate.6-10 Tripotassium dicitratobismuthate appears to be associated with a lower relapse rate of about 60%.11-13 The aetiology of duodenal ulceration is poorly understood but it is probably multifactorial.14 The effects of emotion on the gastric mucosa were observed as early as 1833.15 Stress, both psychological and physical, has since been shown to affect gastric emptying and the secretion of acid and pepsin,16-18 but attempts to causally link stress and peptic ulcer disease have produced conflicting results.19-25 We are evaluating the role of hypnotherapy in gastroenterology,26-29 and felt that some of the possible aetiological mechanisms operating in peptic ulceration might be amenable to modification by this treatment. Hypnotherapy can modify the response to betazole-stimulated gastric acid secretion,29 although the mechanism by which this is mediated remains unclear. We report a controlled trial of the effect of hypnotherapy on duodenal ulceration.

### Patients and Methods

We studied 30 patients (16 males, 14 females, mean age 40 years, SD 9) with endoscopically proven duodenal ulceration: all had frequently relapsing disease, with at least one confirmed relapse in the previous 6 months. Before entry into the trial, patients were randomly assigned to receive either hypnotherapy or no hypnotherapy after ulcer healing had occurred. All were treated with ranitidine 150 mg twice daily and, after healing of the ulcer was proved by endoscopy, the drug was continued for a further 10 weeks at the same dose in both groups whilst hypnotherapy was applied to the active group. The active group received 7 sessions of hypnotherapy and were given an audio tape for daily autohypnosis; the other group were seen as often, but did not receive any hypnotherapy. The ranitidine was then stopped and both groups were reviewed every 3 months for a further year, with the active group receiving hypnotherapy at their follow-up visits. All subjects had an endoscopy at the end of the study, or sooner if a symptomatic relapse occurred.

### Discussion

This study shows that hypnotherapy is helpful in maintaining remission in those patients with duodenal ulceration who are particularly prone to relapse. The
INCREASED ENERGY EXPENDITURE IN YOUNG CHILDREN WITH CYSTIC FIBROSIS

R. W. SHEPHERD1,2 T. L. HOLT2
L. VASQUES-Velasquez3 W. A. COWARD3 A. PRENTICE3 ALAN LUCAS3

Departments of Gastroenterology1 and Child Health, Royal Children’s Hospital, University of Queensland, Brisbane, Australia; and The Dunn Nutrition Unit, Cambridge3

Summary
To investigate the role of energy expenditure in the altered energy balance in cystic fibrosis (CF), total energy expenditure (TEE) was measured by the doubly-labelled water method in 9 clinically well CF infants (body weight 7.3–10.9 kg) without chronic lung disease. CF infants had 25% higher rates of energy expenditure when compared with data derived from measurements of TEE obtained by the same method in 16 healthy infants, matched for age and body weight. Mean TEE (SEM) for CF was 950 (38) kcal, vs 876 (72) kcal for controls matched for age and 758 (46) kcal for controls matched for weight. Although subclinical disease activity cannot be excluded as a determinant of the excess TEE, the possibility of an energy-requiring basic defect is suggested, because further analysis indicated that factors other than body weight, degree of underweight, presence of pancreatic insufficiency, or presence of lung disease were important. Increased TEE may contribute to undernutrition in CF, even in the absence of chronic lung disease.

Introduction
CHRONIC NUTRITIONAL RECOVERY IS A COMMON AND IMPORTANT FEATURE OF CYSTIC FIBROSIS (CF).1 Studies of body composition and measurements of protein turnover

S. M. COLGAN AND OTHERS: REFERENCES—continued

REFERENCES
6. Hanski J, Korman MG, Schmidt GT, Strom A, Shaw RG. Relapse rate of duodenal ulcer after healing with cimetidine or maldron (J. Gastroenterology 1980; 78:179–80)


S. M. C. is in receipt of a grant from the North West Regional Health Authority.

Correspondence should be addressed to P. J. W.