



A Critical Appraisal of **THE DIETARY MANAGEMENT of** **PEPTIC ULCER and** **ULCERATIVE COLITIS**

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IT IS PRETTY well agreed that the treatment of peptic ulcer, whether it is located in the stomach or duodenum, consists of inhibiting, neutralizing, or diluting the excessive secretion of corrosive gastric juice. The possibilities of neutralizing and diluting are limited because the stomach of the patient with peptic ulcer is an hypermotile one which empties itself rapidly and frequently. Inhibition of gastric secretion with drugs has also been of limited value because the drugs also inhibit other cholinergic functions and can, therefore, be used in only limited quantities. Gastric secretion in duodenal ulcer may be increased as much as tenfold. To most physicians, the medical therapy of peptic ulcer is largely a matter of diet. What can be expected of manipulating the diet, in terms of inhibition of gastric function or of promoting healing of an ulcer? The most physiologic way of inhibiting gastric function is by the ingestion of a fat-containing meal. The natural subsidence of the brisk increase in gastric function which accompanies eating appears to depend upon the effects of fat absorption toward the end of

the period of gastric digestion. Observations of this effect were made on the fistulous subject, Tom, and reported in detail elsewhere.¹

In Figure 1 are shown diagrammatically the results of ingestion of a normal fat-containing breakfast (on the left) in comparison with a fat-free breakfast (on the right). Five and one-half hours after a normal fat-containing breakfast there was still a little breakfast present in the stomach, but acidity was low and motor activity modest and intermittent. This normal tapering-off process failed to occur when fat was omitted from the meal. In the middle graph are shown the effects of a fat-containing breakfast, eaten in a setting of anxiety and tension. The usual inhibitory effects of fat were entirely outweighed by the stimulating effects of the situation. Only five hours after a meal the stomach was completely empty of recognizable breakfast. Titratable acid was 100 units and motor activity was unusually vigorous. This experiment, which illustrates the comparative effects of two opposing forces acting on the stomach, explains why one cannot count very heavily on the inhibitory effects of diet in peptic ulcer, especially when the stomach is under stimulation from meaningful events in the individual's daily life.

Neither is there much evidence that the wrong food can accelerate gastric function,

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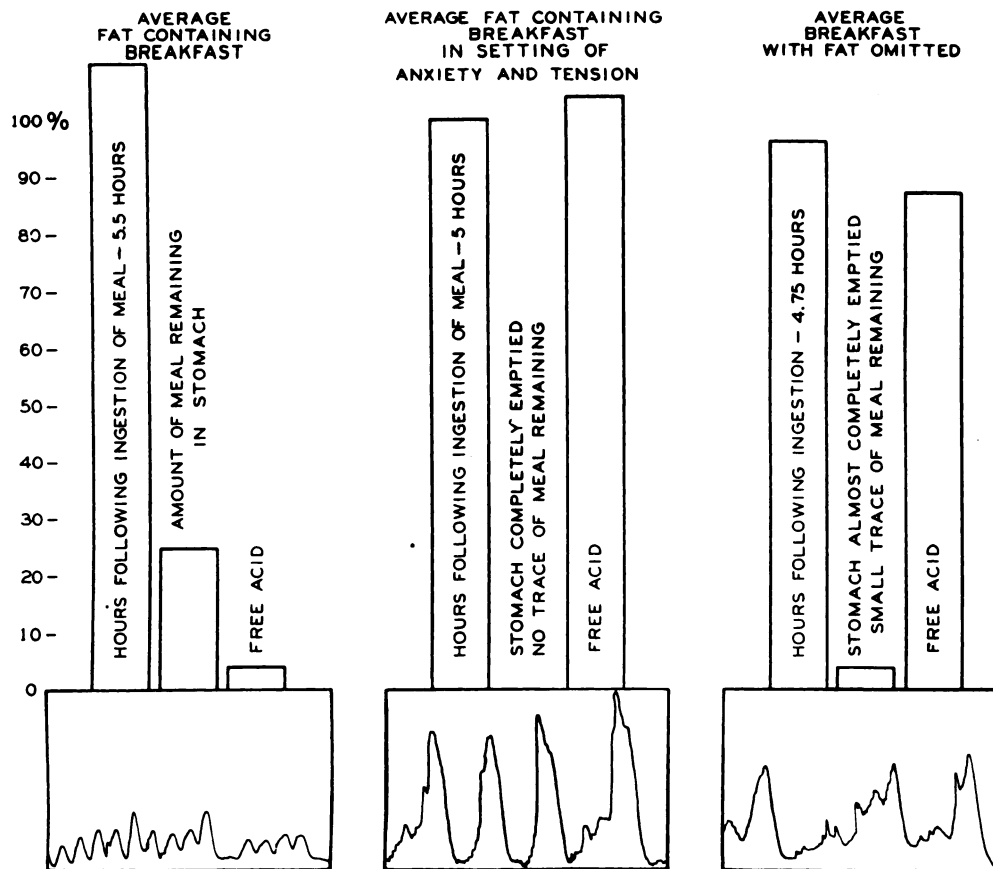


Fig. 1. Gastric function approximately 5 hours following the ingestion of a meal. Sample tracings of motor activity in the gastric antrum are shown in the blocks below the columns.

although coffee and alcohol promote increased gastric acidity and, therefore, might profitably be eliminated from the diet. Most foods other than fats and notably protein, are capable of accelerating gastric function. Among these are essential elements in the diet which cannot be eliminated. The stimulating effects of food, however, are transitory and not very vigorous in comparison to the stimulating effects of life situations.

Some dietary prescriptions are based on the notion that certain articles of diet are irritating to the stomach. Accordingly, various foods were placed directly into the stomach of our fistulous subject, Tom. Observations were made at times when the stomach was hyperemic and overactive from the standpoint of acid secretion and motor activity, as well as when it was in its pale, inactive state. The gastric mucosa was carefully scrutinized, not

only with the naked eye but also with a dissecting microscope, so that subtle changes could be detected. No foods, including chile con carne, were found to be irritating to the stomach. At a later date these observations were repeated on a fistulous subject who had an active duodenal ulcer. Again, there was no evidence of irritation or other recognizable effects. Finally, chemicals and other substances such as strong condiments were applied directly to the stomachs of Tom and of the patient with peptic ulcer. Each substance was also applied simultaneously to the skin of the forearm. As shown in Table I, it was found that the skin of the forearm was far more vulnerable to irritants than was the lining of the stomach.

It would appear that the treatment of peptic ulcer is the treatment of gastric hyperfunction and that measures which do not have a

TABLE I
Comparison of the Effects of Various Substances on the Gastric Mucosa and the Skin of the Forearm

	Gastric mucosa	Forearm
Alcohol 50%	0	++
Alcohol 100%	0	++
Digitalis	0	0
Ferrous sulfate	0	0
Mustard (1-30 susp. in water)	++	++++++
1 N HCl	++	++++++
0.1 N NaOH	++	++++++

+ = slight erythema. ++++++ = vesiculation and destruction of tissue.
 +++++ = wheal formation.
 Other pluses indicate intermediate grades of change.

significant bearing on gastric function have little relevance in the treatment of peptic ulcer. As far as diet is concerned, it is evidently important to provide feedings that are frequent enough so that the stomach will not remain empty, and it is also important that these feedings contain milk and cream, which do as well at neutralizing and inhibiting gastric function as can be done. The addition of nonabsorbable alkalis and antispasmodics is probably worth while but of limited value. The most pertinent steps in the management of patients with peptic ulcer are concerned with a consideration of the person in the patient, including attempts to help him deal more constructively with problems and challenges in his day-to-day life. Certainly, before prescribing limitations to the diets of persons with peptic ulcer, we need better evidence that ordinary foods are either stimulating or irritating to the stomach.

ULCERATIVE COLITIS

The treatment of ulcerative colitis is also bound up with dietary rituals for which we

have relatively little concrete evidence. It appears that the fundamental disturbance in ulcerative colitis is one of colonic hyperfunction with hyperemia, engorgement, and intense hypermotility of the gut. This has been shown to be associated with the great increase in fragility of the membrane, with easy ulceration. Ulcerations have been produced in a segment of gut which was disconnected from the fecal stream and not subject to any local irritation by seeds, skins, or vegetable fibers. The ulcerations occurred in a setting of intense emotional conflict. Certain foods, such as prunes, have cathartic properties and it seems logical to eliminate these from the diet of a patient with ulcerative colitis.

The presence of bulk in the colon is a natural stimulus to peristaltic activity, but by no means an essential one. A completely empty colon has been shown to engage in most intense and persistent contractile activity following stimuli arising out of the life situation.

In ulcerative colitis, the gastrocolic reflex has been shown to be greatly exaggerated, even when the colon has been disconnected from the rest of the alimentary tract. Thus, the effect does not depend upon any food actually coming into contact with the mucous membrane of the colon. It therefore appears that the ingredients of the feces with respect to residual food constituents have very little to do with colonic hyperfunction or ulceration. A series of 35 patients with ulcerative colitis of varying severity treated by Grace completely without reference to diet, but with major consideration of the life adjustment, did considerably better in a three-year follow-up than a group of carefully matched cases who were treated by traditional means including dietary restriction.² The comparative figures are shown in Table II.

TABLE II
Ulcerative Colitis

Results of treatment of ulcerative colitis in a special clinic compared to the results achieved in a comparable group as closely matched as possible and treated in other clinics of the hospital.

Totals	Died	Operations	Worse	Same	Improved	Symptom free
Med. A (34)	3 = 9%	1 = 3%	0	8 = 23%	13 = 39%	9 = 26%
Match (34)	6 = 18%	10* = 29%	2 = 6%	7 = 21%	6 = 18%	5 = 15%

* Two died following operation.

Undue regimentation or restriction may lead either to malnutrition or to frustration and resentment on the part of the patient, with deleterious effects which far outweigh the beneficial effects of the diet. On the other hand, a carefully balanced diet which involves a certain amount of ritual may have a very salutary psychological effect on an over-meticulous, compulsive patient. In such a case, however, one must not carelessly attribute favorable results to the intrinsic merits of the foods.

SUMMARY

Evidence is presented which suggests that settings of anxiety and tension can nullify the beneficial effects of a high fat meal on gastric acidity and motility. One should not count very heavily on the inhibitory effects of diet in peptic ulcer when the stomach is under stimulation from stressful situations in the patient's daily life. There is also a great need to study the true effects of certain so-called irritating foods, condiments, and chemicals on the stomach. In a fistulous subject, the direct application of commonly accepted irritants produced fewer and lesser changes in the stomach than on the skin.

Similarly, the colon in ulcerative colitis responds more violently to certain situational stimuli than to foods and fecal contents.

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RESUMEN

Apreciación crítica del tratamiento dietético de la úlcera péptica y de la colitis ulcerosa

Se presenta evidencia que sugiere que períodos de ansiedad y tensión pueden nulificar los efectos benéficos de una comida rica en grasas sobre la motilidad y acidéz gástrica. No se puede confiar completamente en los efectos inhibitorios de la dieta en la úlcera péptica cuando el estómago se encuentra bajo la influencia de situaciones tensionales que ocurren en la vida diaria del paciente. Existe también la necesidad de un estudio completo de los verdaderos efectos que producen en el estómago los llamados alimentos irritantes, condimentos y sustancias químicas. En un individuo fistuloso la aplicación directa de los irritantes comunmente aceptados producen cambios menores en el estómago que en la piel.

De un modo similar, el colon en la colitis ulcerosa responde más violentamente a ciertos estímulos emocionales que a los alimentos y al contenido fecal.

