
Family Practice Forum

The Protein-Sparing Modified Fast: Its Place in Office Practice

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The protein-sparing modified fast (PSMF), popularly known as the liquid protein diet, has received widespread attention in the popular press as a treatment for obesity. Because of the dangers of using the PSMF without medical supervision, family physicians are receiving frequent requests from patients to supervise the fast. The unprecedented efficacy of the PSMF, which has been documented in several major studies,¹⁻⁵ raises some provocative issues concerning the place of the PSMF in office practice.

In brief, patients on a PSMF are given 1.2 to 1.4 gm/kg of ideal body weight of protein per day; no other foods except noncaloric beverages are permitted. The protein should be a complete protein and not the "predigested" collagen that has been available on drugstore shelves. Natural protein sources containing essential fatty acids and trace elements (such as poultry, fish, or lean meat) are recommended. The PSMF is also supplemented with water, potassium, calcium, a vitamin-mineral supplement containing folic acid, and allopurinol in some patients to control ketosis-induced hyperuricemia. Careful metabolic monitoring is essential.

Contraindications to the PSMF include pregnancy, lactation, renal insufficiency, hepatic failure, gout, cerebrovascular insufficiency, is-

chemic heart disease, congestive heart failure, and other conditions which may sensitize the heart to rhythm disturbances. Diuretics should not be used concomitantly with the fast. Transient adverse effects that have been noted in some patients include mild diffuse hair loss, menstrual irregularities, muscle cramps, postural hypotension, and diarrhea. Deaths from ventricular arrhythmias have been reported in patients on complete fasts,^{6,7} and recently in patients on liquid protein diets.⁸ Physicians supervising the PSMF need to be fully informed of contributing factors, warning signs, and appropriate management in preventing complications.

Is the PSMF a passing fad or a useful new tool for treating a difficult condition? Compared with the alternatives (Table 1), it has many favorable features. Probably because of its tendency to produce mild anorexia, patient adherence is excellent; weight loss after the initial diuresis is about one half pound per day. Moderate caloric deficit diets have a dismal history of failure on both short and long-term bases.^{9,10} In addition, moderate caloric deficit diets are associated with a strikingly higher incidence of depression and other psychiatric illnesses than fasts and near-fasts.¹¹ While depression has not been specifically studied in association with the PSMF, it has been looked for and has not been reported as a significant problem.

The long-term effectiveness of the PSMF alone is probably no better than any other rapid weight-loss method. The only promising method of long-term effectiveness for obesity control is behavior

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Table 1. Common Metabolic Sequelae of Various Diet Manipulations

Diet	Metabolic Sequelae
Moderate caloric deficit diet	Decreased lean body mass, hunger
Low-carbohydrate, high protein, high fat diets (such as Atkin's diet)	Ketosis, mild anorexia, dehydration, electrolyte losses, hyperuricemia, hypercholesterolemia
Protein-sparing modified fast	Ketosis, mild anorexia, dehydration, electrolyte losses, hyperuricemia
Complete fast	Ketosis, mild anorexia, dehydration, electrolyte losses, hyperuricemia, decreased lean body mass, hyperbilirubinemia, neutropenia

modification of eating and exercise patterns.¹²⁻¹⁴ Some investigators who have used the PSMF have integrated the fast with a comprehensive weight control program including behavior modification and exercise. Preliminary results show maintained weight loss for most patients for up to two years after completion of the PSMF.³

With newer and probably more effective measures available, perhaps it is time for primary care physicians to exert more than a token effort at treating obesity, one of the common problems in medical practice. The family physician is uniquely qualified to manage the diverse facets of patient care that successful treatment of obesity demands. As a clinician, counselor, patient educator, and leader of a health-care team with a wide variety of skills, he/she should be competent to manage the treatment of obesity in all its phases. Behavior modification in the past has usually been referred to clinical psychologists, social workers, or professionals with skills in the behavioral sciences. However, with the increased emphasis on prevention, counseling, behavioral science, and long-term care in the definition of primary health care,¹⁵ neglect of behavior modification in the office setting no longer seems justified.

Research continues on the effectiveness, physiological mechanisms, and adverse effects of the PSMF. Although it may be too early to export the PSMF *en masse* from academia to office practice, it is not too early for family practice centers in academic settings to prepare the way for the adaptation of the PSMF to the office setting. Patient education procedures and materials, the use of exercise, and the use of behavior modification in

conjunction with the PSMF all need development in the office setting. Treatment of obesity in this setting could have a higher degree of success than has been possible in the past.

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