

# Somatoform Disorders

OLIVER OYAMA, PhD, MHS, PA-C; CATHERINE PALTOO, MD, MS; and JULIAN GREENGOLD, MD  
*Morton Plant Mease/University of South Florida, Clearwater, Florida*

The somatoform disorders are a group of psychiatric disorders that cause unexplained physical symptoms. They include somatization disorder (involving multisystem physical symptoms), undifferentiated somatoform disorder (fewer symptoms than somatization disorder), conversion disorder (voluntary motor or sensory function symptoms), pain disorder (pain with strong psychological involvement), hypochondriasis (fear of having a life-threatening illness or condition), body dysmorphic disorder (preoccupation with a real or imagined physical defect), and somatoform disorder not otherwise specified (used when criteria are not clearly met for one of the other somatoform disorders). These disorders should be considered early in the evaluation of patients with unexplained symptoms to prevent unnecessary interventions and testing. Treatment success can be enhanced by discussing the possibility of a somatoform disorder with the patient early in the evaluation process, limiting unnecessary diagnostic and medical treatments, focusing on the management of the disorder rather than its cure, using appropriate medications and psychotherapy for comorbidities, maintaining a psychoeducational and collaborative relationship with patients, and referring patients to mental health professionals when appropriate. (*Am Fam Physician* 2007;76:1333-8. Copyright © 2007 American Academy of Family Physicians.)

► **Patient information:**  
A handout on somatoform disorder is available at <http://familydoctor.org/162.xml>.

**T**he somatoform disorders are a group of psychiatric disorders in which patients present with a myriad of clinically significant but unexplained physical symptoms. They include somatization disorder, undifferentiated somatoform disorder, hypochondriasis, conversion disorder, pain disorder, body dysmorphic disorder, and somatoform disorder not otherwise specified.<sup>1</sup> These disorders often cause significant emotional distress for patients and are a challenge to family physicians.

Up to 50 percent of primary care patients present with physical symptoms that cannot be explained by a general medical condition. Some of these patients meet criteria for somatoform disorders.<sup>2,3</sup> Although most do not meet the strict psychiatric diagnostic criteria for one of the somatoform disorders, they can be referred to as having “somatic preoccupation,”<sup>4</sup> a subthreshold presentation of somatoform disorders that can also cause patients distress and require intervention.

The unexplained symptoms of somatoform disorders often lead to general health anxiety; frequent or recurrent and excessive preoccupation with unexplained physical symptoms; inaccurate or exaggerated beliefs about somatic symptoms; difficult encounters with the health care system; disproportionate disability; displays of strong, often

negative emotions toward the physician or office staff; unrealistic expectations; and, occasionally, resistance to or noncompliance with diagnostic or treatment efforts. These behaviors may result in more frequent office visits, unnecessary laboratory or imaging tests, or costly and potentially dangerous invasive procedures.<sup>5-7</sup>

Little is known about the causes of the somatoform disorders. Limited epidemiologic data suggest familial aggregation for some of the disorders.<sup>1</sup> These data also indicate comorbidities with other mental health disorders, such as mood disorders, anxiety disorders, personality disorders, eating disorders, and psychotic disorders.<sup>1,3</sup>

## Diagnosis

The challenge in working with somatoform disorders in the primary care setting is to simultaneously exclude medical causes for physical symptoms while considering a mental health diagnosis. The diagnosis of a somatoform disorder should be considered early in the process of evaluating a patient with unexplained physical symptoms. Appropriate nonpsychiatric medical conditions should be considered, but over-evaluation and unnecessary testing should be avoided. There are no specific physical examination findings or laboratory data that are helpful in confirming these disorders; it

## SORT: KEY RECOMMENDATIONS FOR PRACTICE

<i>Clinical recommendation</i>	<i>Evidence rating</i>	<i>References</i>	<i>Comments</i>
Fostering a strong physician-patient relationship is integral to managing somatoform disorders.	C	27-30	Recommendations from clinical practice settings
Cognitive behavior therapy is effective in treating patients with somatoform disorders.	B	19-22	Consistent findings from randomized controlled trials
Psychiatric consultation helps improve the effects of somatoform disorders.	B	23, 24, 26	Consistent findings from randomized controlled trials

*A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see page 1262 or <http://www.aafp.org/afpsort.xml>.*

often is the lack of any physical or laboratory findings to explain the patient's excessive preoccupation with somatic symptoms that initially prompts the physician to consider the diagnosis.

Two related disorders, factitious disorder and malingering, must be excluded before diagnosing a somatoform disorder. In factitious disorder, patients adopt physical symptoms for unconscious internal gain (i.e., the patient

desires to take on the role of being sick), whereas malingering involves the purposeful feigning of physical symptoms for external gain (e.g., financial or legal benefit, avoidance of undesirable situations). In somatoform disorders, there are no obvious gains or incentives for the patient, and the physical symptoms are not willfully adopted or feigned; rather, anxiety and fear facilitate the initiation, exacerbation, and maintenance of these disorders.

Clinical diagnostic tools have been used to assist in the diagnosis of somatoform disorders.<sup>8</sup> One screening tool for psychiatric disorders that is used in primary care settings is the Patient Health Questionnaire (PHQ).<sup>9</sup> The somatoform screening questions on the PHQ include 13 physical symptoms (*Figure 1*).<sup>9</sup> If a patient reports being bothered "a lot" by at least three of the symptoms without an adequate medical explanation, the possibility of a somatoform disorder should be considered.

### Characteristics

There are three required clinical criteria common to each of the somatoform disorders: The physical symptoms (1) cannot be fully explained by a general medical condition, another mental disorder, or the effects of a substance; (2) are not the result of factitious disorder or malingering; and (3) cause significant impairment in social, occupational, or other functioning. The additional characteristics of each disorder are discussed briefly in the following and are listed in *Table 1*.<sup>1</sup>

### SOMATIZATION DISORDER

Patients with somatization disorder (also known as Briquet's syndrome) present with unexplained physical symptoms beginning before 30 years of age, lasting several years, and including at least two gastrointestinal complaints, four pain symptoms, one

### Patient Health Questionnaire: Screening for Somatoform Disorders

***During the past four weeks, how much have you been bothered by any of the following problems?***

	<i>Not at all</i>	<i>A little</i>	<i>A lot</i>
Stomach pain			
Back pain			
Pain in your arms, legs, or joints (knees, hips, etc.)			
Menstrual cramps or other problems with your periods			
Pain or problems during sexual intercourse			
Headaches			
Chest pain			
Dizziness			
Fainting spells			
Feeling your heart pound or race			
Shortness of breath			
Constipation, loose bowels, or diarrhea			
Nausea, gas, or indigestion			

NOTE: If a patient reports being bothered "a lot" by at least three of the symptoms without an adequate medical explanation, a somatoform disorder should be considered.

**Figure 1.** Patient Health Questionnaire: Screening for Somatoform Disorders.

*Information from reference 9.*

pseudoneurologic problem, and one sexual symptom (Table 2).<sup>1</sup> For example, a patient might have chronic abdominal complaints (e.g., abdominal cramping, diarrhea) that have been thoroughly evaluated but have no identified cause, as well as a history of other unexplained somatic symptoms such as anorgasmia, ringing in the ears, and chronic pain in the shoulder, neck, low back, and legs. Patients with this disorder often have made frequent clinical visits, had multiple imaging and laboratory tests, and had numerous referrals made to work up their diverse symptoms.

Somatization disorder appears to be more common in women than men, with a lifetime prevalence of 0.2 to 2 percent in women compared with less than 0.2 percent in men. Subthreshold somatization disorder may have a prevalence up to 100 times greater. Familial patterns exist, with a 10 to 20 percent incidence in first-degree female relatives.<sup>1</sup> No definitive cause has been identified for somatization disorder, although the familial patterns suggest genetic or environmental contributions.

#### UNDIFFERENTIATED SOMATOFORM DISORDER

The diagnosis of undifferentiated somatoform disorder is a less-specific version of somatization disorder that requires only a six-month or longer history of one or more unexplained physical complaints in addition to the other requisite clinical criteria. Chronic fatigue that cannot be fully explained by a known medical condition is a typical symptom. The highest incidence of complaints occurs in young women of low socioeconomic status, but symptoms are not limited to any group.<sup>1</sup>

#### CONVERSION DISORDER

Conversion disorder involves a single symptom related to voluntary motor or sensory functioning suggesting a neurologic condition and referred to as pseudoneurologic. Conversion symptoms typically do not conform to known anatomic pathways or physiologic mechanisms, but instead they more commonly fit a lay view of physiology (e.g., a hemiparesis that does not follow known corticospinal-tract pathways or

**Table 1. Characteristics of Somatoform Disorders**

<i>Disorder</i>	<i>Essential characteristics</i>
Somatization disorder	Unexplained physical symptoms manifested before age 30 Symptoms last for several years Symptoms include two gastrointestinal, four pain, one pseudoneurologic, and one sexual
Undifferentiated somatoform disorder	≥ Six months' history One or more unexplained physical symptoms
Conversion disorder	Single unexplained symptom involving voluntary or sensory functioning
Pain disorder	Pain symptom is predominant focus Psychological factors play the primary role in the perception, onset, severity, exacerbation, or maintenance of pain
Hypochondriasis	Fixation on the fear of having a life-threatening medical condition
Body dysmorphic disorder	Preoccupation with a real or imagined physical defect
Somatoform disorder not otherwise specified	Misinterpretation or exaggeration of unexplained physical symptoms Patient does not meet full criteria for any of the other somatoform disorders

*Information from reference 1.*

**Table 2. Selected Symptoms of Somatization Disorder**

<b>Gastrointestinal (two)</b>	<b>Pseudoneurologic (one)</b>
Bloating	Amnesia
Diarrhea	Aphonia
Food intolerance	Blindness
Nausea	Difficulty swallowing
Vomiting	Double vision
<b>Pain (four)</b>	Impaired coordination
Abdominal	Loss of consciousness
Back	Paralysis
Chest	Paresthesias
Dysmenorrhea	Urinary retention
Dysuria	<b>Sexual (one)</b>
Extremity	Ejaculatory dysfunction
Head	Erectile dysfunction
Joint	Hyperemesis of pregnancy
Rectal	Irregular menses
	Menorrhagia
	Sexual indifference

*NOTE: Numbers in parenthesis refer to the number of symptoms in each category required for the diagnosis of somatization disorder (in addition to other criteria).*

*Information from reference 1.*

## Somatoform Disorders

**Clinically significant depressive disorder, anxiety disorder, personality disorder, and substance abuse disorder often coexist with somatoform disorders.**

without changes in reflexes or muscle tone), a clue to this disorder. Patients may present in a dramatic fashion or show a lack of concern for their symptom. Onset rarely

occurs before age 10 or after 35 years of age. Conversion disorder is reported to be more common in rural populations, persons of lower socioeconomic status, and those with minimal medical or psychological knowledge.<sup>1</sup>

### PAIN DISORDER

Pain disorder is fairly common. Although the pain is associated with psychological factors at its onset (e.g., unexplained chronic headache that began after a significant stressful life event), its onset, severity, exacerbation, or maintenance may also be associated with a general medical condition. Pain is the focus of the disorder, but psychological factors are believed to play the primary role in the perception of pain. Patients with pain disorder use the health care system frequently, make substantial use of medication, and have relational problems in marriage, work, or family. Pain may lead to inactivity and social isolation, and it is often associated with comorbid depression, anxiety, or a substance-related disorder.

### HYPOCHONDRIASIS

Patients with hypochondriasis misinterpret physical symptoms and fixate on the fear of having a life-threatening medical condition. These patients must have a nondelusional preoccupation with their symptom or symptoms for at least six months before the diagnosis can be made. Prevalence is 2 to 7 percent in the primary care outpatient setting, and there do not appear to be consistent differences with respect to age, sex, or cultural factors.<sup>1</sup> The predominant characteristic is the fear patients exhibit when discussing their symptoms (e.g., an exaggerated fear of having acquired human immunodeficiency virus despite reassurance to the contrary). This fear is pathognomonic for hypochondriasis.

### BODY DYSMORPHIC DISORDER

Body dysmorphic disorder involves a debilitating preoccupation with a physical defect, real or imagined. In the case of a real physical imperfection, the defect is usually slight but the patient's concern is excessive. For example, a woman with a small, flat keloid on the shoulder may be so self-conscious of it that she never wears clothing that

would reveal it, avoids all social situations in which it may be seen by others, and feels others are judging her because of it. The disorder occurs equally in men and women.<sup>10</sup>

### SOMATOFORM DISORDER NOT OTHERWISE SPECIFIED

Somatoform disorder not otherwise specified is a psychiatric diagnosis used for conditions that do not meet the full criteria for the other somatoform disorders, but have physical symptoms that are misinterpreted or exaggerated with resultant impairment. A variety of conditions come under this diagnosis, including pseudocyesis, the mistaken belief of being pregnant based on actual signs of pregnancy (e.g., expanding abdomen without eversion of the umbilicus, oligomenorrhea, amenorrhea, feeling fetal movement, nausea, breast changes, labor pains).

### Treatment

Patients who experience unexplained physical symptoms often strongly maintain the belief that their symptoms have a physical cause despite evidence to the contrary. These beliefs are based on false interpretation of symptoms.<sup>11</sup> Additionally, patients may minimize the involvement of psychiatric factors in the initiation, maintenance, or exacerbation of their physical symptoms.

### DISCUSSING THE DIAGNOSIS

The initial steps in treating somatoform disorders are to consider and discuss the possibility of the disorder with the patient early in the work-up and, after ruling out organic pathology as the primary etiology for the symptoms, to confirm the psychiatric diagnosis. A psychiatric diagnosis should be made only when all criteria are met.

Discussing the diagnosis requires forethought and practice.<sup>12</sup> The delivery of the diagnosis may be the most important treatment step. The physician must first build a therapeutic alliance with the patient. This can be partially achieved by acknowledging the patient's discomfort with his or her unexplained physical symptoms and maintaining a high degree of empathy toward the patient during all encounters.

The physician should review with the patient the diagnostic criteria for the suspected somatoform disorder, explaining the disorder as for any medical condition, with information regarding etiology, epidemiology, and treatment. It should also be explained that the goal of treatment for somatoform disorders is management rather than cure.

### THERAPY

Once the diagnosis is made and the patient accepts the diagnosis and treatment goals, the physician may treat

**Table 3. Practice Management Strategies for Somatoform Disorders**

Accept that patients can have distressing, real physical symptoms and medical conditions with coexisting psychiatric disturbance without malingering or feigning symptoms
Consider and discuss the possibility of somatoform disorders with the patient early in the work-up, if suspected, and make a psychiatric diagnosis only when all criteria are met
Once the diagnosis is confirmed, provide patient education on the individual disorder using empathy and avoiding confrontation
Avoid unnecessary medical tests and specialty referrals, and be cautious when pursuing new symptoms with new tests and referrals
Focus treatment on function, not symptom, and on management of the disorder, not cure
Address lifestyle modifications and stress reduction, and include the patient's family if appropriate and possible
Treat comorbid psychiatric disorders with appropriate interventions
Use medications sparingly and always for an identified cause
Schedule regular, brief follow-up office visits with the patient (five minutes each month may be sufficient) to provide attention and reassurance while limiting frequent telephone calls and "urgent" visits
Collaborate with mental health professionals as necessary to assist with the initial diagnosis or to provide treatment

Information from references 27 through 30.

any psychiatric comorbidities. Psychiatric disorders rarely exist in isolation, and somatoform disorders are no exception. Clinically significant depressive disorder, anxiety disorder, personality disorder, and substance abuse disorder often coexist with somatoform disorders and should be treated concurrently using appropriate modalities.<sup>13</sup>

Studies supporting the effectiveness of pharmacologic interventions targeting specific somatoform disorders are limited. Antidepressants are commonly used to treat depressive or anxiety disorders and may be part of the approach to treating the comorbidities of somatoform disorders. Antidepressants such as fluvoxamine (Luvox, brand not available) for treating body dysmorphic disorder, and St. John's wort for treating somatization and undifferentiated somatoform disorders have been proposed.<sup>14,15</sup>

Cognitive behavior therapy has been found to be an effective treatment of somatoform disorders.<sup>16-21</sup> It focuses on cognitive distortions, unrealistic beliefs, worry, and behaviors that promulgate health anxiety and somatic symptoms. Benefits of cognitive behavior therapy include reduced frequency and intensity of symptoms and cost of care, and improved patient functioning.<sup>22</sup>

## REFERRAL

Collaboration with a mental health professional can be helpful in making the initial diagnosis of a somatoform disorder, confirming a comorbid diagnosis, and providing treatment.<sup>23</sup> The family physician is in the best position to make the initial diagnosis of somatoform disorder, being most knowledgeable of the specific presentation of general medical conditions; however, collaboration with a psychiatrist or other mental health professional may help with the subtleties between these disorders and their psychiatric comorbidities, the severity of disorders, and the time demands in caring for these patients. Results of a recent, small randomized controlled trial conducted in the Netherlands, which combined cognitive behavior therapy provided by general practitioners with psychiatric consultation, suggest improvements in symptom severity, social functioning, and health care use when multiple interventions are employed.<sup>24</sup>

## FOLLOW-UP

A schedule of regular, brief follow-up office visits with the physician is an important aspect of treatment.<sup>13</sup> This maintains the therapeutic alliance with the physician, provides a climate of openness and willingness to help,<sup>25</sup> allows the patient an outlet for worry about illness and the opportunity to be reassured repeatedly that the symptoms are not signs of a physical disorder, and allows the physician to confront problems or issues proactively. Scheduled visits may also prevent frequent and unnecessary between-visit contacts and reduce excessive health care use.<sup>26</sup>

The practical management strategies described here and elsewhere are summarized in *Table 3*.<sup>27-30</sup> Following these strategies will assist physicians in managing some of the most challenging clinical encounters in family medicine.

The authors thank Elizabeth Lawrence, MD, for reviewing the manuscript.

## The Authors

OLIVER OYAMA, PhD, MHS, PA-C, is an associate director of the Morton Plant Mease/University of South Florida Family Medicine Residency Program, Clearwater, and an affiliate assistant professor in the Department of Family Medicine at the University of South Florida, Tampa. He received his doctoral degree in clinical psychology from Indiana University, Bloomington, and his master's degree in health sciences and a physician assistant certification from Duke University, Durham, N.C.

## Somatoform Disorders

CATHERINE PALTOO, MD, MS, is in private practice in Tampa, and was one of the chief residents of the Morton Plant Mease/University of South Florida Family Medicine Residency Program. She received her master's degree in clinical psychology from Fort Hays State University, Hays, Kan., and her medical degree from the University of Kansas School of Medicine, Wichita.

JULIAN GREENGOLD, MD, is an assistant director of the Morton Plant Mease/University of South Florida Family Medicine Residency Program, the director of continuing medical education for the Morton Plant Mease Health System, and an affiliate associate professor in the Department of Family Medicine at the University of South Florida. He received his medical degree from St. Louis (Mo.) University and completed his postgraduate training at Waterbury Hospital/Yale University, Waterbury, Conn.

Address correspondence to Oliver Oyama, PhD, MHS, PA-C, Morton Plant Mease/USF Family Medicine Residency Program, 807 N. Myrtle Ave., Clearwater, FL 33755 (e-mail: [oliver.oyama@baycare.org](mailto:oliver.oyama@baycare.org)). Reprints are not available from the authors.

Author disclosure: Nothing to disclose.

### REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. rev. Washington, D.C.: American Psychiatric Association, 2000.
2. Barsky AJ, Borus JF. Somatization and medicalization in the era of managed care. *JAMA* 1995;274:1931-4.
3. de Waal MW, Arnold IA, Eekhof JA, van Hemert AM. Somatoform disorders in general practice: prevalence, functional impairment and comorbidity with anxiety and depressive disorders. *Br J Psychiatry* 2004;184:470-6.
4. Righter EL, Sansone RA. Managing somatic preoccupation. *Am Fam Physician* 1999;59:3113-20.
5. Barsky AJ, Orav EJ, Bates DW. Somatization increases medical utilization and costs independent of psychiatric and medical comorbidity. *Arch Gen Psychiatry* 2005;62:903-10.
6. Hiller W, Fichter MM, Rief W. A controlled treatment study of somatoform disorders including analysis of healthcare utilization and cost-effectiveness. *J Psychosom Res* 2003;54:369-80.
7. Barsky AJ, Ettner SL, Horsky J, Bates DW. Resource utilization of patients with hypochondriacal health anxiety and somatization. *Med Care* 2001;39:705-15.
8. Chaturvedi SK, Desai G, Shaligram D. Somatoform disorders, somatization and abnormal illness behaviour. *Int Rev Psychiatry* 2006;18:75-80.
9. Spitzer RL, Williams JB, Kroenke K, Linzer M, deGruy FV III, Hahn SR, et al. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study. *JAMA* 1994;272:1749-56.
10. Castle DJ, Rossell S, Kyrios M. Body dysmorphic disorder. *Psychiatr Clin North Am* 2006;29:521-38.
11. Salkovskis PM. Somatic problems. In: Hawton K, Salkovskis PM, Kirk J, Clark DM, eds. *Cognitive Behavior Therapy for Psychiatric Problems: A Practical Guide*. New York, N.Y.: Oxford University Press, 1989:235-76.
12. McCahill ME. Somatoform and related disorders: delivery of diagnosis as first step. *Am Fam Physician* 1995;52:193-204.
13. Servan-Schreiber D, Kolb NR, Tabas G. Somatizing patients: Part I. Practical diagnosis. *Am Fam Physician* 2000;61:1073-8.
14. Phillips KA, Siniscalchi JM, McElroy SL. Depression, anxiety, anger, and somatic symptoms in patients with body dysmorphic disorder. *Psychiatr Q* 2004;75:309-20.
15. Muller T, Mannel M, Murck H, Rahlf VV. Treatment of somatoform disorders with St. John's wort: a randomized, double-blind and placebo-controlled trial. *Psychosom Med* 2004;66:538-47.
16. Burton C. Beyond somatization: a review of the understanding and treatment of medically unexplained physical symptoms (MUPS). *Br J Gen Pract* 2003;53:231-9.
17. McLeod CC, Budd MA. Treatment of somatization in primary care: evaluation of the Personal Health Improvement Program. *HMO Pract* 1997;11:88-94.
18. McLeod CC, Budd MA, McClelland DC. Treatment of somatization in primary care. *Gen Hosp Psychiatry* 1997;19:251-8.
19. Speckens AE, van Hemert AM, Spinhoven P, Hawton KE, Bolk JH, Rooijmans HG. Cognitive behavioural therapy for medically unexplained physical symptoms: a randomised controlled trial. *BMJ* 1995;311:1328-32.
20. Warwick HM, Clark DM, Cobb AM, Salkovskis PM. A controlled trial of cognitive-behavioural treatment of hypochondriasis. *Br J Psychiatry* 1996;169:189-95.
21. Barsky AJ, Ahern DK. Cognitive behavior therapy for hypochondriasis: a randomized controlled trial. *JAMA* 2004;291:1464-70.
22. Allen LA, Woolfolk RL, Escobar JI, Gara MA, Hamer RM. Cognitive-behavioral therapy for somatization disorder: a randomized controlled trial. *Arch Intern Med* 2006;166:1512-8.
23. Smith GR Jr, Monson RA, Ray DC. Psychiatric consultation in somatization disorder. A randomized controlled study. *N Engl J Med* 1986;314:1407-13.
24. van der Feltz-Cornelis CM, van Oppen P, Ader HJ, van Dyck R. Randomised controlled trial of a collaborative care model with psychiatric consultation for persistent medically unexplained symptoms in general practice. *Psychother Psychosom* 2006;75:282-9.
25. Margo KL, Margo GM. The problem of somatization in family practice. *Am Fam Physician* 1994;49:1873-9.
26. Smith GR Jr, Rost K, Kashner TM. A trial of the effect of a standardized psychiatric consultation on health outcomes and costs in somatizing patients. *Arch Gen Psychiatry* 1995;52:238-43.
27. Goldberg RJ, Novack DH, Gask L. The recognition and management of somatization. What is needed in primary care training. *Psychosomatics* 1992;33:55-61.
28. Walker EA, Unutzer J, Katon WJ. Understanding and caring for the distressed patient with multiple medically unexplained symptoms. *J Am Board Fam Pract* 1998;11:347-56.
29. Gillette RD. Caring for frequent-visit patients. *Fam Pract Manag* 2003;10:57-62.
30. Gillette RD. "Problem patients": a fresh look at an old vexation. *Fam Pract Manag* 2000;7:57-62.