Fibromyalgia syndrome

This is an update of a previous How to Treat on fibromyalgia syndrome, published 6 June 2008.

Background

CHRONIC or persistent musculoskeletal pain, out of proportion to any easily demonstrable peripheral pathology, is a common presentation in general practice. It can have a devastating impact on quality of life, and can be highly frustrating both for the patient and GP to manage. Such pain is characteristically associated with deep soft tissue (especially muscle) tenderness, whether regional or more widespread, and may occur in the complete absence of any locally definable ‘organic’ lesion.

Fibromyalgia syndrome occupies the severe end of the spectrum of this type of pain and pressure sensitivity. It is the third most prevalent musculoskeletal disorder, twice as common as rheumatoid arthritis and with at least comparable impact on quality of life. It is recognised by the WHO as a medical disorder (ICD-10, Other soft tissue disorders, M79.7).

While traditionally all ‘medically unexplained’ musculoskeletal pain has been interpreted as having a psychological origin, including hypochondriasis, ‘masked’ depression or somatisation, advances in pain science indicate that these interpretations are incomplete.

Considerable indirect scientific evidence now strongly suggests that much persistent pain has a primarily neurological basis, with disordered processing by pain neural pathways, and that this is variably modulated by genetic, peripheral tissue (nociceptive) and supraspinal (psychological) factors.

Importantly, these insights have led to the continuing development of scientifically validated management strategies for fibromyalgia syndrome, with increasing benefits for patients. Together with the growing recognition in the community of the need for early diagnosis and intervention, increased consumer expectations for management are therefore resulting in more fibromyalgia-related presentations to, and hence challenges for, Australian general practice.

In response, this article updates and complements the How to Treat article from 6 June 2008 on fibromyalgia syndrome.

In particular, it emphasises the primary role of general practice in managing these complex, often multidimensional, chronic illness patients, and the increasing practical resources that are now available to assist GPs.

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**Epidemiology**

**Pathogenesis**

**Figures 1 and 2**

**Figure 1: Prevalence rates for chronic widespread pain and fibromyalgia by age and sex across the adult life span.**

**Figure 2: Central sensitivity syndrome.**

**Figure 3: Neural pathways and neurotransmitters that influence pain sensitivity.**

**Fibromyalgia syndrome often stems from the cumulative effects of multiple stressors to which individuals have been exposed over time.**

**How to treat Fibromyalgia syndrome**

DESPITE fibromyalgia syndrome being defined by its hallmark symptom of pain and the related physical examination finding of pressure sensitivity, it is a multisystem complaint that overlaps with many functional pain or somatic syndromes. These related syndromes occur with increased frequency within fibromyalgia syndrome patients and/or relatives.

Lifetime and current stress-related psychiatric disorders are also increased within patients and/or relatives. Additionally, cross-sectional studies consistently show that up to 80% of patients with the syndrome are psychologically distressed, but much of this may be a reaction to physical symptomatology. Consistent with this, premoned psychological distress does not occur clearly in the majority of fibromyalgia syndrome cases in prospective studies.

Overseas studies suggest that fibromyalgia syndrome affects 2% of the population, the great majority being female with a still-to-be explained peak incidence in middle life (figure 1).

Epidemiological studies indicate that there exist both genetic and environmental risk factors for the development of fibromyalgia syndrome. First-degree relatives of individuals with fibromyalgia have an eightfold increased risk of developing the condition, but only a twofold risk of having a lifetime psychiatric disorder. In general terms, environmental risk factors comprise physical and/or psychological stressors. These include cold or humid weather, weather changes, poor sleep, emotional stress, physical overactivity or physical inactivity, and flare-ups in response to noise and smell.

It is notable, however, that fibromyalgia syndrome often stems from the cumulative effects of multiple ascending (from the periphery) and descending (subcortical) neural information, as the dorsal horn of the spinal cord. The dorsal horn participates in facilitatory and inhibitory feedback loops with the brainstem–limbic system. Current evidence strongly suggests that, at least at the dorsal horn level, the nociceptive system in fibromyalgia syndrome is augmented with an overall excitatory integrated output ascending to the brain, a state that is called central sensitisation.

Extrapolating from animal and human neurophysiological studies, the widely distributed, deep tissue, spontaneous pain and evoked pain (the latter manifesting as ‘alldodynia’ to normally non-noxious stimuli, and ‘hyperalgasia’, or pain amplification, to noxious stimulation), which characterise the syndrome, can therefore be explained. Also, and most importantly, the seemingly unique tendency of fibromyalgia patients to have protracted flares of pain after physical activity, potentially for days, has one possible explanation, as the dorsal horn processes of central sensitisation include prolonged reverberation of neural circuitry after stimulation by noxious or non-noxious stimuli.

Additionally, the prominent tendency for psychosocial stress to exacerbate the pain of fibromyalgia can be partially explained by dysfunction of descending pain modulatory pathways.

Evidence consistent with such dorsal horn dysregulation is accumulating. Enhanced spinal cord reactivity to painful stimulation occurs in a significant proportion of fibromyalgia patients using the objective electrophysiological nociceptive withdrawal reflex. Sub-anaesthetic ketamine, which blocks nociceptive pathway sensitisation at the dorsal horn and brainstem, can suppress characteristic psychophysical indicators of spinal sensitisation in most fibromyalgia patients. Functional neuroimaging findings of increased cortical and subcortical responses to standardised painful stimuli are congruent with enhanced nociception in fibromyalgia arising caudal to the forebrain.

Also, descending supraspinal inhibitory modulatory influences on dorsal horn nociception have been shown in psychophysical experiments to be deficient. Consistent with this, depressed cerebrospinal fluid levels of metabolites of dorsal horn inhibitory neurochemicals noradrenaline, serotonin and dopamine have been demonstrated in cross-sectional studies of fibromyalgia syndrome, and levels of facilitatory substance P, glutamate and nerve growth factor are increased (figure 3).

Furthermore, medications that correct CNS levels of these neurochemicals—for example SSRIs—have been shown to be effective (figure 3 cont’d page 22)

Cont’d page 22
SNRIs and alpha-2-delta ligands, such as gabapentin and pregabalin (see figure 4) — ameliorate pain in subgroups of patients with fibromyalgia syndrome.

Therefore, a viable hypothesis for understanding the pain of fibromyalgia is that it is causally associated with increased dorsal horn excitability along the entire length of the spinal cord. This sensitisation results from increased excitability of the integrating neural circuitry of the dorsal horn, partly due to decreased descending inhibition.

From animal studies, however, this dynamic model requires concomitant nociceptiveafferent input from the periphery to generate an output to ascending nociceptive pathways, but in primary fibromyalgia syndrome no peripheral source of afferent input is readily apparent. However, growing evidence suggests irritative foci within skeletal muscle (such as myofascial trigger points) may provide at least some of this input in the syndrome, and might do so in a positive feedback loop.

There exists preliminary confirmatory evidence that successful management of fibromyalgia will therefore require optimisation of all descending supraspinal and peripheralfiller afferent influences on the dorsal horn nociceptive system.15,16

Compatibility of this central sensitisation model with the traditional biopsychosocial model of chronic pain is therefore also confirmed.

Although persistent pain no doubt contributes mechanistically to the remaining multisystem complaints of fibromyalgia syndrome, it is clinically apparent that amelioration of pain often does not lead to their resolution, implying that central sensitisation theory may not completely explain the syndrome. Also, it remains unclear which of the major non-pain symptoms are unique to the syndrome, or which of those may arise in any persistent pain condition.

Diagnosis

WHILE fibromyalgia syndrome is characterised by persistent widespread pain in the presence of widespread pressure sensitivity (mechanical allodynia), it is generally accompanied by multisystem complaints of fibromyalgia syndrome, it is clinically apparent that amelioration of pain often does not lead to their resolution, implying that central sensitisation theory may not completely explain the syndrome. Also, it remains unclear which of the major non-pain symptoms are unique to the syndrome, or which of those may arise in any persistent pain condition.

**Table 1: Pain types**

<table>
<thead>
<tr>
<th>Aetiology</th>
<th>Peripheral (nociceptive)</th>
<th>Neuropathic</th>
<th>Central (non-nociceptive)</th>
<th>Important conditions to be excluded in fibromyalgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Primarily due to inflammation or mechanical damage in periphery</td>
<td>Damage or entrapment of peripheral nerves</td>
<td>Primarily due to a central disturbance in pain processing</td>
<td>• Hypothyroidism</td>
</tr>
<tr>
<td></td>
<td>Responds to NSAIDs, opioids, procedures (e.g., surgery)</td>
<td>Intervention to both peripheral and central pharmacological therapy</td>
<td>Triyclic, neuroactive compounds most effective</td>
<td>• Polyneuritis rheumatica</td>
</tr>
<tr>
<td>Behavioural factors</td>
<td>Behavioural factors minor</td>
<td>Behavioural factors more prominent</td>
<td>Fibromyalgia, irritable bowel syndrome, tension headache, idiopathic low back pain</td>
<td>• Multiple sclerosis</td>
</tr>
<tr>
<td>Examples</td>
<td>Osteoarthritis, rheumatoid arthritis, cancer pain</td>
<td>—</td>
<td>—</td>
<td>• Statin myopathy</td>
</tr>
</tbody>
</table>

**Figure 4: Pain-processing pathways in fibromyalgia syndrome.**

- **A:** CNS neurotransmitters affecting sensory/nociceptive processing
- **B:** Neurochemical effects of medication on pain in fibromyalgia

**Facilitation of sensory/nociceptive processing**
- Substance P
- Glutamate and EAA
- Serotonin (5HT1A,1B)
- Nerve growth factor
- Cholecystokinin

**Inhibition of sensory/nociceptive processing**
- Nonsteroidal (NSAIDs)
- Serotonin (5HT1A,1B)
- Dopamine
- Opioids
- GABA
- Cannabinoids
- Adenosine

**Increased levels of neurotransmitters that augment pain transmission to the spine and brain**
- Alpha-2-delta ligands

**Attenuation of nociceptive system**
- SNRIs

**Adapted from: Nature Reviews, Rheumatology; 2011; 7:518-27.**
from page 22

drome. A reasonable initial labo-
atory screen therefore comprises an FBC, full biochemistry screen, thyroid function tests, creatine kinase, CRP and ESR.

While in otherwise-well adult
women with longstanding symp-
toms the diagnosis of fibromyal-
 gia can be very straightforward, the long differential diagnostic list and the frequent co-occurrence of mul-
tiple pain-causing pathologies can make diagnosis challenging. There-
fore, referral to a rheumatologist or experienced pain physician can certainly be useful for advice on both diagnosis and management.

The ACR 1990 classification criteria for clinical diagnosis of fibromyalgia have long been criti-
cised, in part because the tender point count has been shown to be influenced by not only physiologi-
cal based sensitivity to pressure but psychological distress.

In response, in 2010 the ACR published provisional diagnos-
tic criteria (see Online resources), which do not require a clinical assessment of mechanical allo-
dynia, but do include a weighted evaluation of relevant concomitant

Management

DESPITE these continuing prob-
lems of definition, scientific applica-
tion of the ACR 1990 classification criteria has resulted in concrete, increasingly evidence-
based advances in the manage-
ment of fibromyalgia syndrome, directed at the syndrome’s pain neural pathway sensitisation and rehabilitation. Several evidence-
base national and international clinical practice guidelines have been published, the most recent from Germany.

Recent approaches are both pharmacological and non-pharma-
cological, and overall have a mod-
est, although significant effect, even when combined. In general, only a minority of individuals will respond to any specific therapy used as monotherapy. A signifi-
cant proportion of patients do not respond to any extent and con-
sequently the syndrome remains a chronic disorder that does not remit in most patients.

Fibromyalgia is therefore best managed using chronic disease prin-
ciples, with an emphasis on optimis-
ing function. For most patients with a relatively uncomplicated presenta-
tion, this can usually be directed and best con-
ducted in the primary care setting facilitated in Australia by use of Medicare’s chronic disease manage-
ment programs.

Management needs to be patient-centred and holistic, with integrated care planning emphasis-
ing the acquisition of self-man-
gagement skills and evidence-based medica-
tions (see Online resources) and best con-
ducted in the primary care setting facilitated in Australia by use of Medicare’s chronic disease manage-
ment programs.

Music therapy may be of use in some patients, particularly those who use music as a predominant means of expression of emotion.

One study has shown the potential for music therapy to reduce pain intensity and tenderness in fibromyalgia patients.

In addition to medication management, non-pharmacological approaches, including cognitive-behavioural therapy and exercise therapy, have shown promise in improving pain and other symptoms associated with fibromyalgia.

Exercise therapy, in particular, has been shown to improve physical function, reduce pain, and improve mood in patients with fibromyalgia.

Cognitive-behavioural therapy involves teaching patients to identify and challenge negative thought patterns, and to develop coping strategies for managing pain and other symptoms.

Overall treatment goals in fibromyalgia management

Reduce pain and tenderness

Ameliorate multidimensional symptoms, including:
•  Fatigue
•  Cognitive impairment
•  Deconditioning
•  Mood and anxiety symptoms
•  Sleeplessness

Restore function and improve quality of life

Appreciate that patients have the continuing challenge of managing not only the daily impact of multiple symptoms but the psychoso-
cial issues that arise from having a long-term multisystem and perva-
sive disorder. An important aim of care will be to assist the patient in learning how to live constructively with their chronic condition.

Notwithstanding the limitations of modern management of fibro-
myalgia syndrome, all patients have the potential to improve at least somewhat using this article’s recommended approach, and a sizeable proportion will significantly improve, making involve-
ment in the care of these patients very gratifying.

Early diagnosis of fibromyal-
ya is now strongly advocated, to maximise the potential effective-
ness of treatments and avoid the self-perpetuating physical, psycho-
ological and socioeconomic conse-
quences of untreated pain, thereby minimising chronicity. Early vali-
dation of symptomatology can play an important role in promot-
ing patient engagement with con-
sequent encouragement of active illness behaviour.

Successful management initially requires careful clinical assess-
ment to clarify the diagnosis. This includes identifying the predispos-
ing factors and comorbid condi-
tions (see Diagnosis, page 22), which may be driving the patho-
physiological disturbance of the syndrome and which would there-
fore require independent manage-
ment.

Ranking of patient priorities with regard to symptoms, function and quality of life is critical, as this ena-
bles individualised, focused manage-
ment. This can be facilitated using inventories such as the Revised Fibromyalgia Impact Questionnaire (FIQR) or Fibromyalgia Assessment Status (FAS) (see Online resources, page 25) and patient symptom dia-
grams, which can be used repeatedly throughout management.

Overall, a semi-quantitative process using realistic goal-setting and outcome assessment can pro-
vide structure to continuing man-
agement, enabling the eventual discovery of the optimal individual mix of pharmacological and non-
pharmacological treatment tech-
niques for each patient (see figure 6).

Concentrating on the manage-
ment of the most intrusive com-
plaints (as determined by formal ranking) at each visit, will expedite stabilisation of the patient in the general practice setting.

Optimal management of fibro-
myalgia is now strongly advocated, (pharmacological and non-phar-
macological) approach, tailored to each patient’s unique presentation. While pharmacological therapies have the strongest evidence base, combinations of exercise and educa-
tional and psychological tech-
niques may be more effective.

However, the scientific evaluation of treatment combinations, includ-
ing pharmacological, remains in its infancy.

Features on presentation that might predict intolerance of and/or response to particular thera-
pies unfortunately remain unclear, implying that trials of all interven-
tions are empirical and may need to be performed very cautiously.

Four core principles of fibro-
myalgia management — formal self-management edu-
cation, mechanism-specific neuro-
modulatory medication, exercise, and cognitive behavioural therapy — are the most evidence-based.

However, additional, less formal, self-managed psychosocial and lifestyle adaptations, with skills acquired via experiential learning, can also be successful.

Non-pharmacological therapies

Education

At diagnosis, referral to resources that educate patients about the nature of fibromyalgia syndrome, its management, and the limita-
tions of therapies is strongly rec-
commended, and is fortunately now easier with improved online resources (for example the Fibro-
myalgia Australia website).

Approaches using experiential learning result in greater engage-
ment than passive formal courses, and especially if performed in a group setting that includes interac-
tions with peers, this helps to give patients an understanding of the need for active involvement in self-care and development of personal skills.

As management strategies for the syndrome are evolving, continu-
ing interaction with educational resources should be encouraged.

Patients also need to educate themselves continually about the unique nature of the condition, often complex features of their illness and how they are responding to the manage-
ment strategies that are being tri-
alled. Self-monitoring by regularly recording symptoms in a diary (see Online resources) and discussing these with the patient’s relevant health professional can be very productive and can increase patient autonomy in the management of their condition.

Psychosocial and lifestyle adaptations

Psychosocial stress, physical activ-
ity and/or poor quality sleep, fre-
quently aggravate the symptoms of individuals with fibromyalgia syndrome, often in a vicious cycle.

Cognitive-behavioural measures

Figure 5: Visual aid for patients to identify their pain sites over the past week.

Predisposing conditions that may aggravate fibromyalgia

-  Spinal mechanical pain syndromes (including post-trauma)
-  Hypermobility syndromes
-  Inflammatory arthritis (especially rheumatoid arthritis)
-  Connective tissue disorders (SLE, Sjogren’s syndrome)
-  Systemic inflammatory states (polymyalgia rheumatica, obesity, chronic infections, especially neuropathic HIV and hepatitis C)
-  Post-infectious fatigue syndromes
-  Neuropathies
-  Primary sleep disorders (obstructive sleep apnoea and restless legs syndrome)
-  Stress-related psychiatric disorders (anxiety and depression)
Fibromyalgia syndrome techniques are frequently indicated to stabilize symptoms. Formal cognitive behavioural therapy has a small effect on pain and health-related quality of life, although it appears to improve psychological characteristics of individuals with fibromyalgia. CBT is tailored to the psychological characteristics of individuals, for example persistence versus avoidance of activity styles. Traditional CBT comprises the exploration of a medley of techniques, including stress management, goal-setting, activity pacing, problem solving and cognitive restructuring, all to promote cognitive and behavioural coping skills, and therefore self-efficacy. Neuger approaches such as emotional disclosure and acceptance-commitment therapy are being explored, and may be useful in complementing traditional coping skills. Occupational improvement is therefore emphasised, with consequent improvement in quality of life, despite residual symptoms. However, by using community resources, such skills can be acquired less formally (see figure 6) and at a lower cost. There is growing evidence that suggests small but useful effect sizes for sleep hygiene techniques, meditative movement therapies, and avoidance of activity styles.

To ameliorate these interactions, including stress management, activity pacing and sleep hygiene techniques are frequently indicated to stabilize symptoms. Formal cognitive behavioural therapy has a small effect on pain and health-related quality of life, although it appears to significantly help one-third of fibromyalgia sufferers. Improved efficacy may occur if CBT is tailored to the psychological characteristics of individuals, for example persistence versus avoidance of activity styles. Traditional CBT comprises the exploration of a medley of techniques, including stress management, goal-setting, activity pacing, problem solving and cognitive restructuring, all to promote cognitive and behavioural coping skills, and therefore self-efficacy. Neuger approaches such as emotional disclosure and acceptance-commitment therapy are being explored, and may be useful in complementing traditional coping skills. Occupational improvement is therefore emphasised, with consequent improvement in quality of life, despite residual symptoms. However, by using community resources, such skills can be acquired less formally (see figure 6) and at a lower cost. There is growing evidence that suggests small but useful effect sizes for sleep hygiene techniques, meditative movement therapies, and avoidance of activity styles.

Regularly reviewed care guided by treatment outcomes – Ongoing fibromyalgia management

<table>
<thead>
<tr>
<th>GP management plan</th>
<th>Community resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early referral to</strong></td>
<td><strong>Care plan, agreed treatment goals:</strong></td>
</tr>
<tr>
<td>Fibromyalgia syndrome self-management education program (group or web-based CBT)</td>
<td>to include:</td>
</tr>
<tr>
<td><strong>Early intervention</strong></td>
<td>Psychotherapy</td>
</tr>
<tr>
<td>Focused on fibromyalgia syndrome</td>
<td>Allied health professionals who specialise in fibromyalgia syndrome</td>
</tr>
<tr>
<td><strong>Stabilise condition for rehabilitation and improving quality of life</strong></td>
<td>Community education and activity programs</td>
</tr>
<tr>
<td><strong>Utilise assessment tools to rank symptoms</strong></td>
<td>Practice nurse reviews</td>
</tr>
<tr>
<td><strong>Manage risk factors and comorbidities</strong></td>
<td>Monitor all interventions and self-management strategies</td>
</tr>
<tr>
<td><strong>Stabilise symptoms:functional problems</strong></td>
<td>Referrals influenced by:</td>
</tr>
<tr>
<td><strong>Introduce the importance of stress reduction to prevent pain wind-up; pacing, monitoring and feedback</strong></td>
<td>• Availability of local services</td>
</tr>
<tr>
<td><strong>Refer to allied health, community education and activity programmes.</strong></td>
<td>• Patient’s health: chronic disease management</td>
</tr>
</tbody>
</table>

Patient’s symptoms will cycle, maintain focus on progress and prevention over time vs daily ups and downs

Review treatment outcomes and adjust treatment plan at follow-up visits

- Use assessment tools, patient diary
- Medication efficacy and adverse effects
- Monitor comorbidities and referral outcomes
- Adjust treatment

A dynamic or cyclic stepwise process

As patient’s situation improves or changes, treatment priorities and goals will change as well.

- Exercise should be fun, not a burden.
- Include exercise of non-painful parts of the body.
- Modify exercise to allow increased pain during and shortly after exercise, but avoid continuous and increasing pain intensity over time.
- Keep the exercise well within the capabilities of the patient’s body.
- Monitor symptoms flares – minor symptom flares to be expected during the initial stages of therapy, but should ease off once a routine is established. During major symptom flares, do not grade the exercises.
- The evidence base for efficacy of passive physical therapies, including acupuncture and massage, remains modest, and a time limit should be set for these therapies. Complicating regional musculoskeletal issues may, however, respond favourably to passive therapies.

Pharmacological therapies

Two broad groups of evidence-based approaches to medication exist, each directed against an assumed mechanistically driven neurochemical imbalance of fibromyalgia (see figure 4, page 22):

- Tricyclic and SNRI antidepressants, which centrally increase noradrenaline and serotonin levels.
- Alpha2-delta calcium-channel blockers.

Confirmation of fibromyalgia diagnosis – Define remediable risk factors and aggravating comorbidities

References


Online resources

- Fibromyalgia Australia: www.fibromyalgiaaustralia.org.au
- Revised Fibromyalgia Impact Questionnaire (FIMQ): www.fibromgm.org/file/?file=QuFQIFQ.pdf
- FQIR validation and psychometric properties: www.ncbi.nlm.nih.gov/pubmed/PMC2787284
How to Treat Quiz
Fibromyalgia syndrome
23 November 2012

1. Which THREE statements regarding the epidemiology of fibromyalgia syndrome and environmental risk factors are correct?
   a) The hallmark clinical features of fibromyalgia syndrome are pain and the related physical examination finding of pressure sensitivity.
   b) Studies suggest that fibromyalgia syndrome affects 25% of the population.
   c) Fibromyalgia patients who have relatives with fibromyalgia syndrome have an eightfold increased risk of developing the condition.
   d) Physical stressors such as weather changes, emotional stress and physical overactivity are some of the environmental risk factors for the development of fibromyalgia.

2. Which THREE statements regarding the pathophysiology of fibromyalgia are correct?
   a) The pain of fibromyalgia is considered to be due to a combined facilitation of ascending excitatory pain neural pathways and dysfunction of descending pain modulatory pathways with a net overactivity of pain excitatory neural mechanisms.
   b) Studies have been able to confirm that psychological factors such as catastrophising, hopelessness and inability to cope with stress are common in fibromyalgia patients.
   c) The dorsal horn of the spinal cord integrates nociceptive afferent (from the periphery) and descending (supraspinal) neural information.
   d) The nociceptive system at the dorsal horn level in fibromyalgia syndrome is augmented with an overall excitatory integrated output ascending to the brain, a state that is called central sensitisation.

3. Which TWO statements regarding pain, stress and neurotransmitters in fibromyalgia syndrome are correct?
   a) Fibromyalgia is pain caused by normally non-nociceptive stimuli.
   b) A possible explanation for the tendency of fibromyalgia patients to have protracted flares of pain after physical activity may be the dorsal horn processes of central sensitisation include prolonged reorganisation of neural circuitry after stimulation by nociceptive or non-nociceptive stimuli.
   c) The tendency for psychosocial stress to exacerbate the pain of fibromyalgia syndrome is unrelated to the descending pain modulatory pathways.
   d) Depressed cerebrospinal fluid levels of metabolites of dorsal horn inhibitory neurotransmitters noradrenaline, serotonin and dopamine have been demonstrated in fibromyalgia syndrome.

4. Which TWO statements regarding pain in fibromyalgia syndrome are correct?
   a) The persistent pain of fibromyalgia is rarely accompanied by other somatic symptoms.
   b) Fibromyalgia patients complain of stiffness despite the disorder traditionally being considered non-inflammatory.
   c) Fibromyalgia syndrome rarely presents with a patient complaining of pain in the extremities.
   d) The diagnosis of fibromyalgia syndrome can be suspected from a history of symptoms of longstanding, widely distributed, muscular deep-tissue pain, daytime fatigue and non-restorative sleep.

5. Which TWO statements are correct regarding diagnosis of fibromyalgia syndrome?
   a) Specific examination of tender point sites as determined by the American College of Rheumatology is essential in the diagnosis of the condition.
   b) Specific tests are warranted in the diagnosis of fibromyalgia syndrome.
   c) The diagnosis of fibromyalgia syndrome is facilitated by a history of symptoms of longstanding, widely distributed, muscular deep-tissue pain, daytime fatigue and non-restorative sleep.
   d) The diagnosis of fibromyalgia syndrome is confirmed by a high level of somatization and pain sensitivity.

6. Which THREE statements are correct regarding central pain?
   a) It is primarily due to a central disturbance in pain processing.
   b) Central pain is opioid responsive.
   c) Tricyclics and other neuronal medications are most effective in treating central pain.
   d) Cancer pain is an example of central pain.

7. Which THREE statements regarding management of fibromyalgia syndrome are correct?
   a) Fibromyalgia patients have shown an excellent response to both pharmacological and non-pharmacological treatments.
   b) The most effective approach to management of fibromyalgia is to use chronic disease principles and emphasise optimisation of function.
   c) It is important for GPs managing patients with fibromyalgia to understand that patients have the continuing challenge of managing not only the daily impact of multiple symptoms but the psychosocial issues that arise from having a long-term, multisystem and pervasive disorder.
   d) Educators such as the Revised Fibromyalgia Impact Questionnaire can be useful in the ranking of patient priorities with regard to symptoms, function and quality of life.

8. Which TWO statements are correct regarding pharmacological therapies in fibromyalgia syndrome?
   a) Tricyclic and SNRI antidepressants centrally increase noradrenaline and serotonin levels.
   b) Gabapentinoids increase glutamate and substance P levels centrally.
   c) There is evidence that duloxetine has a small overall effect size for durable pain relief irrespective of depression status.
   d) Both duloxetine and pregabalin are available on the PBS for treatment of fibromyalgia syndrome.

9. Which TWO statements regarding medications in fibromyalgia syndrome are correct?
   a) Pure mu-opioid receptor agonists such as codeine and morphine are recommended for the treatment of pain in fibromyalgia.
   b) Weight gain can be a limiting side effect of gabapentinoid drugs.
   c) Fibromyalgia is predominantly managed with pharmacological treatment with a gabapentinoid.
   d) The efficacy of all medications can be evaluated within four weeks of commencement.

10. Which THREE statements regarding non-pharmacological treatments in fibromyalgia syndrome are correct?
    a) Patients should be referred at diagnosis to educational resources about the nature of fibromyalgia syndrome.
    b) Exercise and mood are predominant symptoms, start pharmacological treatment with a gabapentinoid.
    c) Patients should be provided with a variety of pharmacological treatments.
    d) Emotional disclosure and acceptance-commitment therapy are newer psychological approaches which are currently being studied.

CPD Quiz Update
The RACGP requires that a brief GP examination form be completed with every quiz to obtain category 2 CPD or PDP points for the 2011–13 triennium. You can complete this online along with the quiz at www.australiandoctor.com.au. Because this is a requirement, we are no longer able to accept the quiz by post or fax. However, we have included the quiz questions here for those who like to prepare the answers before completing the quiz online.

Instructions
Complete this quiz online and fill in the GP examination form to earn 2 CPD or PDP points. We no longer accept quizzes by post or fax.
The mark required to obtain points is 80%. Please note that some questions have more than one correct answer.

Online Only

Tips for improving pain therapy
Individualise therapy
If pain and sleep dominate, start with duloxetine.
If pain and sleep dominate, start with gabapentinoid, low dose tricyclic antidepressant or tramadol.
Avoid pure mu-opioid receptor agonists.
For any drug, start low and increase dose gradually.
Recommended dose is often not achieved because of side effects.
May be better to add second drug rather than switch.
Non-pharmacological therapy is as important as drugs.