EULAR evidence-based recommendations for the management of fibromyalgia syndrome

S F Carville,1 S Arendt-Nielsen,2 H Bliddal,3 F Blotman,4 J C Branco,5 D Buskila,6 J A P Da Silva,7 B Danneskiold-Samsøe,3 F Dincer,8 C Henriksson,9 K G Henriksson,10 E Kosek,11 K Longley,12 G M McCarthy,13 S Perrot,14 M Puszczewicz,15 P Sarzi-Puttini,16 A Silman,17 M Spåth,18 E H Choy1

ABSTRACT

Objective: To develop evidence-based recommendations for the management of fibromyalgia syndrome.

Methods: A multidisciplinary task force was formed representing 11 European countries. The design of the study, including search strategy, participants, interventions, outcome measures, data collection and analytical method, was defined at the outset. A systematic review was undertaken with the keywords “fibromyalgia”, “treatment or management” and “trial”. Studies were excluded if they did not utilise the American College of Rheumatology classification criteria, were not clinical trials, or included patients with chronic fatigue syndrome or myalgic encephalomyelitis. Primary outcome measures were change in pain assessed by visual analogue scale and fibromyalgia impact questionnaire. The quality of the studies was categorised based on randomisation, blinding and allocation concealment. Only the highest quality studies were used to base recommendations on. When there was insufficient evidence from the literature, a Delphi process was used to provide basis for recommendation.

Results: 146 studies were eligible for the review. 39 pharmacological intervention studies and 59 non-pharmacological were included in the final recommendation summary tables once those of a lower quality or with insufficient data were separated. The categories of treatment identified were antidepressants, analgesics, and “other pharmacological” and exercise, cognitive behavioural therapy, education, dietary interventions and “other non-pharmacological”. In many studies sample size was small and the quality of the study was insufficient for strong recommendations to be made.

Conclusions: Nine recommendations for the management of fibromyalgia syndrome were developed using a systematic review and expert consensus.

Fibromyalgia syndrome (FMS) is a common rheumatological condition characterised by chronic widespread pain and reduced pain threshold, with hyperalgesia and allodynia. Associated features include fatigue, depression, anxiety, sleep disturbance, headache, migraine, variable bowel habits, diffuse abdominal pain and urinary frequency.1 2 Although the precise pathogenesis remains unknown, peripheral and central hyperexcitability at spinal or brainstem level,5 6 altered pain perception7 and somatisation8 have been hypothesised and demonstrated in some patients.

The American College of Rheumatology (ACR) classification criteria for FMS9 are the most commonly used in clinical and therapeutic research. The healthcare utilisation by patients with FMS is high averaging over $2000 per patient per year,10 but it has been shown that positive diagnosis and management can reduce healthcare utilisation.11 Although effective treatments are available12–14 no guidelines exist for the management of FMS. The objectives were to ascertain the strength of the research evidence on the effectiveness of treatment of FMS and develop recommendations for its management based on the best available evidence and expert opinion to inform healthcare professionals.

METHODS

Participants
A multidisciplinary taskforce was formed consisting of 19 experts in FMS representing 11 European countries.

Search strategy
A systematic search of Medline, PubMed, Embase, PsycINFO, CINAHL, Web of Sciences, Science Citation Indices, Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews using the keywords: “fibromyalgia”, “treatment or management” and “trial” for all publications till the end of December 2005 was carried out. A manual search of the bibliographies of trials was undertaken to verify that all published trials were identified.

Inclusion criteria
Included studies had to be clinical trials using the ACR 1990 classification criteria for FMS to select patients. Studies, including patients with chronic fatigue syndrome or myalgic encephalomyelitis, were excluded unless they were divided into separate comparator groups for analysis.

Assessment of literature
A “checklist” method15 was used to assess quality of each study. Data were tabulated using a customised data extraction form. This included number of patients in each arm, randomisation and blinding status. Previous reviews have identified two main outcome measures: pain assessed by the visual analogue scale (VAS) and function assessed by the fibromyalgia impact questionnaire (FIQ).16 17 The main measure of effect was the between-group difference calculated from the mean change between the pre- and post-treatment values in these outcome measures.
EULAR recommendations

From tables 1–3 the following recommendations were made (table 4).

Assessment of recommendations

There was no weighting in terms of order of the recommendations. ∆ denotes recommendation derived from expert opinion.

∆ Full understanding of fibromyalgia requires comprehensive assessment of pain, function and psychosocial context. Fibromyalgia should be recognised as a complex and heterogeneous condition where there is abnormal pain processing and other secondary features.

This is based on expert opinion. It is important to recognise that FMS is a heterogeneous condition comprising a range of symptoms and features, effective management must take all of these factors into account. The nociceptive system also has connections with the stress regulating, immune and the sleep system in the limbic brain. It is these links that probably lead to the “syndrome” incorporating numerous symptoms and features.

∆ Optimal treatment requires a multidisciplinary approach with a combination of non-pharmacological and pharmacological treatment modalities tailored according to pain intensity, function, associated features, such as depression, fatigue and sleep disturbance in discussion with the patient.

This is a logical progression from the first recommendation. It represents general practice, but is based solely on expert opinion. As FMS is polymyalgic, lacking one treatment that acts on all symptoms, a multidisciplinary approach is necessary. The needs of the individual is often required. This may need to include self-management via patient education. 47–49 Only two multidisciplinary trials were short-listed in the summary tables for further analysis. 30 31 Other reviews have supported the use of multidisciplinary treatment, 47 49 but highlighted the lack of high-quality trials in this area. 45 52

Heated pool treatment with or without exercise is effective in fibromyalgia

Heated pool treatment or balneotherapy was reported to be effective in improving pain and function. Three of five trials included exercise in the intervention 44 45 48 (two positive for function and two for pain). Of those without exercise, two were positive for pain and function. 44 46 In the third trial only the heated pool treatment group improved in pain, but no comparison was made with the control. Function was not assessed. 39 Drop-out for adverse events was very low. Sample sizes ranged from medium to large. Three of the studies restricted the use of medications (not stated in the remaining two). The fairly high quality of this small number of studies with positive results has led to this recommendation and there is agreement with previous reviews. 46 49

∆ Individually tailored exercise programmes, including aerobic exercise and strength training, can be beneficial to some patients with fibromyalgia.

This is based largely on expert opinion with a combination of some experimental evidence and previous reports.

For aerobic exercise the majority of trials were open (seven of 11). The best quality were a randomised, assessor blind 12-week study by Richards and Scott, 14 with large sample size, 14 and a smaller randomised single blind study by Valim et al. 42 Valim et al reported an improvement in VAS pain and FIQ compared with control. Richards and Scott did not report significant between-group improvements in either of our chosen outcome measures although the FIQ score did improve more in the treatment group, and significant between-group improvements

RESULTS

Research evidence identified

In the preliminary search, 508 studies were identified. Tables 1 and 2 demonstrate how these were short-listed.

Sensitivity analysis

Effect size and NNH for the interventions recommended were calculated where possible (table 3).
Programmes should be tailored to the individual. The exception of Valim
litation techniques are recommended due to expert opinion.
function compared with control. Other relaxation and rehabi-
and lasted 10 weeks, reported improvement in both pain and
were seen at 12 months follow-up. All three strength training
were randomised but only one single blind. This had no
In general the quality of studies among exercise trials was
was frequently inadequate. Those that did show some differences in favour
exercise used usual activity and care for their controls86 41 (with the exception of Valim et al who had a stretching control
to change their medication intake while on the trial.9
Although evidence in the literature was poor, the committee felt
given the safety and benefit of exercise to general health
exercise should be included as a recommendation. The poor quality
of the trials and our predetermined outcome measures were likely
precluding positive outcomes from being shown. In previous
reviews, exercise has been recommended12 16 17 47 48 with aerobic
exercise gaining the most support. It is likely that different forms of
exercise would suit different subgroups of patients, hence these
programmes should be tailored to the individual.
Cognitive behavioural therapy may be of benefit to some patients
with fibromyalgia.
This is based on expert opinion. The only two studies identified
for our review with pure cognitive behavioural therapy (CBT)
were of poor quality; neither had a control group, both allowed
patients to remain on their usual medication and only one used
either of our predetermined outcome measures.
This is another area in which the poor quality of trials has
masked what experts believe to be a realistic reflection of possible benefits. While previous review work has also been
hampered by the inadequacy of research in this field, strong
evidence has been reported for CBT with positive results for pain and function.47
Other therapies such as relaxation, rehabilitation, physiotherapy
and psychological support may be used depending on the needs of the
individual patient.
This is based on expert opinion and some experimental evidence. Two studies of moderate quality were identified for
physiotherapy. An open study46 for connective tissue massage, which had larger subject numbers (25 control and 25 treated)
and lasted 10 weeks, reported improvement in both pain and function compared with control. Other relaxation and rehabi-
litation techniques are recommended due to expert opinion.

Table 1 Study breakdown from initial literature search

<table>
<thead>
<tr>
<th>No. rejected</th>
<th>Reason</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>Not relevant</td>
<td>337</td>
</tr>
<tr>
<td>72</td>
<td>Reviews</td>
<td>265</td>
</tr>
<tr>
<td>29</td>
<td>Not American College of Rheumatology criteria</td>
<td>236</td>
</tr>
<tr>
<td>20</td>
<td>Not clinical trials</td>
<td>216</td>
</tr>
<tr>
<td>19</td>
<td>Abstracts</td>
<td>197</td>
</tr>
<tr>
<td>8</td>
<td>No pain or function assessments</td>
<td>189</td>
</tr>
<tr>
<td>5</td>
<td>Follow-up data only</td>
<td>184</td>
</tr>
<tr>
<td>4</td>
<td>Fibromyalgia syndrome combined for analysis</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Eligible clinical trials

<table>
<thead>
<tr>
<th>No. rejected</th>
<th>Reason</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Data recorded, but not given</td>
<td>161</td>
</tr>
<tr>
<td>4</td>
<td>Non-English language: translations reveal to be ineligible</td>
<td>157</td>
</tr>
<tr>
<td>12</td>
<td>Non-English language: translations not available</td>
<td>145</td>
</tr>
<tr>
<td>+1</td>
<td>Identifed from bibliographies</td>
<td>146</td>
</tr>
</tbody>
</table>

The 146 eligible clinical trials included 59 pharmacological and 87 non-
pharmacological (including multidisciplinary). Studies were further subdivided into
treatment interventions and the highest quality studies from each intervention were
selected to be the basis for recommendations (table 2).

Although evidence in the literature was poor, the committee felt
given the safety and benefit of exercise to general health
exercise should be included as a recommendation. The poor quality
of the trials and our predetermined outcome measures were likely
precluding positive outcomes from being shown. In previous
reviews, exercise has been recommended12 16 17 47 48 with aerobic
exercise gaining the most support. It is likely that different forms of
exercise would suit different subgroups of patients, hence these
programmes should be tailored to the individual.
Cognitive behavioural therapy may be of benefit to some patients
with fibromyalgia.
This is based on expert opinion. The only two studies identified
for our review with pure cognitive behavioural therapy (CBT)
were of poor quality; neither had a control group, both allowed
patients to remain on their usual medication and only one used
either of our predetermined outcome measures.
This is another area in which the poor quality of trials has
masked what experts believe to be a realistic reflection of possible benefits. While previous review work has also been
hampered by the inadequacy of research in this field, strong
evidence has been reported for CBT with positive results for pain and function.47
Other therapies such as relaxation, rehabilitation, physiotherapy
and psychological support may be used depending on the needs of the
individual patient.
This is based on expert opinion and some experimental evidence. Two studies of moderate quality were identified for
physiotherapy. An open study46 for connective tissue massage, which had larger subject numbers (25 control and 25 treated)
and lasted 10 weeks, reported improvement in both pain and function compared with control. Other relaxation and rehabi-
litation techniques are recommended due to expert opinion.

Table 2 Breakdown of the short-listed studies to base recommendations on, and those eliminated from further analysis

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Total no.</th>
<th>No. omitted</th>
<th>No. included</th>
<th>Quality of studies included</th>
<th>Reasons for excluding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systenic</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2 = 1, 1 = 2 (crossover)</td>
<td>1 = too few subjects, 2 = no control</td>
</tr>
<tr>
<td>Topical</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>Both = 1</td>
<td>No control combined FMS and MFP</td>
</tr>
<tr>
<td>Antidepressants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tricyclic antidepressants</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>4 = 1, 2 = 2 (crossover)</td>
<td>Single blind</td>
</tr>
<tr>
<td>Selective serotonin reuptake inhibitors</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>3 = 1, 1 = 2 (crossover)</td>
<td>No control</td>
</tr>
<tr>
<td>Dual reuptake inhibitors</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>All = 1</td>
<td>No control</td>
</tr>
<tr>
<td>5HT2/3 Antagonists</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>3 = 1, 1 = 2 (crossover)</td>
<td>No control</td>
</tr>
<tr>
<td>Monoamine oxidase inhibitors</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>Both = 1</td>
<td>1 = data not clear, 1 = quasi randomised, single blind</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triiodothyronine</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individuals</td>
<td>16</td>
<td>4</td>
<td>12</td>
<td>5 = 1, 4 = 2, 3 = 5</td>
<td>No results</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pool-based</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1 = 3, 1 = 4</td>
<td>–</td>
</tr>
<tr>
<td>Aerobic</td>
<td>11</td>
<td>1</td>
<td>10</td>
<td>4 = 3, 6 = 4</td>
<td>No results</td>
</tr>
<tr>
<td>Strength</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1 = 3, 2 = 4</td>
<td>Open, not randomised 2 = open not randomised, 1 = no data</td>
</tr>
<tr>
<td>Mixed</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Education/CBT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Education-exercise</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>1 = 3, 7 = 4</td>
<td>No control</td>
</tr>
<tr>
<td>CBT</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>–</td>
</tr>
<tr>
<td>CBT+exercise</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>1 = 3, 2 = 4</td>
<td>Open, not randomised 2 = open not randomised, 1 = no data</td>
</tr>
<tr>
<td>Combination</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>Low quality and limited data</td>
<td></td>
</tr>
<tr>
<td>Dietary</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>1 = 1, 1 = 4, 2 = 5</td>
<td>No data</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1 = 3, 1 = 4</td>
<td>No data and no control</td>
</tr>
<tr>
<td>Balneotherapy</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>All = 4</td>
<td>–</td>
</tr>
<tr>
<td>Laser/light</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>Both = 3</td>
<td>–</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1 = 1, 1 = 3, 1 = 4</td>
<td>No data</td>
</tr>
<tr>
<td>Magnets</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>Both = 1</td>
<td>–</td>
</tr>
<tr>
<td>Homeopathy</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>–</td>
<td>No data</td>
</tr>
<tr>
<td>Individuals</td>
<td>14</td>
<td>3</td>
<td>11</td>
<td>2 = 1, 1 = 3, 3 = 4, 3 = 5</td>
<td>No data</td>
</tr>
</tbody>
</table>

CBT, cognitive behavioural therapy; FMS, fibromyalgia syndrome; MFP, myofascial pain.

Clinical trial evidence is lacking in these areas, although reviews report some benefits.47

Tramadol is recommended for the management of pain in fibromyalgia
Simple analgesics such as paracetamol and other weak opioids can also be considered in the treatment of fibromyalgia.
Corticosteroids and strong opioids are not recommended.
Regarding tramadol, two randomised controlled trials were identified as eligible for the review.30 31 One was a high-quality study of large sample size and 13 weeks duration.31 The second was preceded by an open label study and only included responders.30 Bennett et al reported positive effects for pain and function, and Russell et al reported improved pain levels but no change in function. There was no difference between placebo and function, and Russell et al 67 68 reported improved pain levels but restricted concomitant medications, but did not report significant long-term side-effects and no clinical trials were identified in FMS. Previous reviews support our recommendation.47 57

Russell et al disallowed sedative hypnotics only. Tramadol should be used with some caution due to the possibility of typical opiate withdrawal symptoms with discontinuation and the risk of abuse and dependence.25 26

The recommendation for simple analgesics and other weak opioids is based mainly on expert opinion due to insufficient data.65 The negative recommendation for use of strong opioids and corticosteroids is based on expert opinion. These medications have significant long-term side-effects and no clinical trials were identified in FMS. Previous reviews support our recommendation.25 35

### Table 3 Effect size calculated using modified Cohen’s d method for recommended treatments where data available

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effect size (95% confidence interval)</th>
<th>Pain</th>
<th>Function</th>
<th>NNH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacological</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amitriptyline</td>
<td>1.033 (−0.393, 2.458)</td>
<td>0.51 (−12.847, 13.868)</td>
<td>45.56 (−36.06, 127.17)</td>
<td></td>
</tr>
<tr>
<td>Dual re-uptake</td>
<td>0.341 (−0.644, 1.323)</td>
<td>0.438 (−2.77, 3.647)</td>
<td>9.91 (6.67, 12.96)</td>
<td></td>
</tr>
<tr>
<td>MAOI</td>
<td>0.822 (−0.024, 1.669)</td>
<td>Cannot calculate</td>
<td>24.29 (2.93, 37.14)</td>
<td></td>
</tr>
<tr>
<td>SSR</td>
<td>0.824 (−0.417, 2.064)</td>
<td>0.536 (−7.323, 8.395)</td>
<td>8.25 (5.8, 10.7)</td>
<td></td>
</tr>
<tr>
<td>Tramadol</td>
<td>0.657 (−0.276, 1.589)</td>
<td>0.189 (−6.312, 6.689)</td>
<td>35 (only one study)</td>
<td></td>
</tr>
<tr>
<td>Tropisetron</td>
<td>0.799 (−0.884, 2.482)</td>
<td>Cannot calculate</td>
<td>27.47 (only one study)</td>
<td></td>
</tr>
<tr>
<td>Pramipexole</td>
<td>0.736 (−0.556, 2.028)</td>
<td>0.606 (−7.073, 8.285)</td>
<td>−21 (only one study)</td>
<td></td>
</tr>
<tr>
<td>Non-pharmacological</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pool-based exercise</td>
<td>0.437 (−0.659, 1.532)</td>
<td>0.495 (−1.68, 2.67)</td>
<td>−8 (one study)</td>
<td></td>
</tr>
<tr>
<td>Balneotherapy</td>
<td>1.408 (0.684, 2.133)</td>
<td>2.085 (−5.334, 9.979)</td>
<td>Cannot calculate</td>
<td></td>
</tr>
<tr>
<td>Aerobic exercise</td>
<td>0.377 (−0.794, 1.549)</td>
<td>0.062 (−5.174, 5.297)</td>
<td>−13.5 (one study)</td>
<td></td>
</tr>
<tr>
<td>Strength training</td>
<td>2.225 (1.159, 3.292)</td>
<td>1.031 (−29.197, 31.259)</td>
<td>16.15 (one study)</td>
<td></td>
</tr>
</tbody>
</table>

MAOI, monoamine oxidase inhibitor; NNH, number needed to harm; SSRI, selective serotonin reuptake inhibitor.

*Extended report*
measure. Fäber et al made no comment on whether concomitant medications had been controlled, but Späth et al disallowed antidepressants, tranquilisers and sedatives. This treatment appears well tolerated. These were short-term studies, so further research into longer-term effects is required.

One trial for pramipexole was positive for both pain and function.60 Frequency of mild/moderate adverse events was high and this trial did not restrict concomitant medications, although dosages were kept stable. A monotherapy trial is required for more conclusive assessment of effect.

One trial reported pregabalin 450 mg reduced pain, but FIQ was not assessed.60 Drop-outs due to adverse events were largely classed mild to moderate in severity. All medications for pain and sleep disorders were restricted, with the exception of paracetamol.

These are recent studies and suggest further research into the use of these promising medications for FMS. Previous reviews have also mentioned their potential benefit.67 68 (neither include the pramipexole study as this was not published).

**DISCUSSION**

These EULAR recommendations are based on expert opinion and changes in pain assessed by VAS and function assessed by the FIQ in clinical trials. Positive effects in other outcome measures were not considered, neither were pain or function if assessed by different instruments. Consequently some studies were excluded from our review due to not using these outcome measures, or not presenting the data. Although other instruments might be more sensitive in FMS it was decided that setting a standard for outcome measures was vital so that comparisons could be made fairly between trials and therefore using those most frequently reported allowed better analysis.67 68 Previous reviews have used different inclusion/exclusion criteria and/or assessed more or different outcome measures producing different evidence.16 47 48

The high variability in outcome measures used, reporting of results, as well as the inadequacy of methodological quality were barriers to conducting meta-analysis.12 14 16 17 57 62 This led to difficulties in producing strict evidence-based recommendations. In some areas evidence is lacking due to the poor quality of the studies, where expert opinion suggests otherwise, eg, exercise.

Outcome measures may be decided according to desired treatment effect. Non-pharmacological interventions have previously been suggested to have a significantly better effect on function than medications,62 reflected by its wider assessment in these studies. However, if this outcome measure is not frequently assessed in pharmacological trials, results could be biased.

Guidance on how to conduct good randomised controlled trials in FMS, including standardised outcome measures and validated, sensitive instruments is important for future research.

For the treatments that were recommended, effect sizes generally range from medium to high. Although these results give an indication of the efficacy of each treatment, they should be interpreted with some caution as they were only calculated where data were available and could be biased by factors such as whether or not the outcome measure was assessed. We have not collected any information on the cost-effectiveness of these treatments. Further analysis of disease duration and baseline values does not reveal any obvious pattern that would affect the outcomes of this review. Review of the abstracts published between 2002 and 2005 revealed no conflicting evidence to that derived from the published articles identified.

The assessment of strength of evidence tends to favour pharmacological studies as double blindling and placebo controls are impossible in many non-pharmacological studies. However, most non-pharmacological interventions are safe and have other health benefits. These important factors were taken into account in formulating these recommendations.

**Summary**

These recommendations are the first to be commissioned for FMS, although previous reviews have addressed the area.47 62 The standard operating procedures published by EULAR66 were followed. They will be updated every 5 years and it is hoped that good quality clinical trials in this area will add to the evidence currently available. These recommendations should assist healthcare providers, with a secondary intention to incorporate information into materials for patients.

The nine recommendations included eight management categories, three of which had strong evidence from the current literature, and three were based on expert opinion.

**REFERENCES**


EULAR evidence-based recommendations for the management of fibromyalgia syndrome

S F Carville, S Arendt-Nielsen, H Bliddal, et al.

Ann Rheum Dis 2008 67: 536-541 originally published online July 20, 2007
doi: 10.1136/ard.2007.071522

Updated information and services can be found at:
http://ard.bmj.com/content/67/4/536.full.html

These include:

References
This article cites 61 articles, 12 of which can be accessed free at:
http://ard.bmj.com/content/67/4/536.full.html#ref-list-1

Article cited in:
http://ard.bmj.com/content/67/4/536.full.html#related-urls

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections
- Muscle disease (1384 articles)
- Pain (neurology) (30899 articles)
- Drugs: musculoskeletal and joint diseases (8539 articles)
- Fibromyalgia (307 articles)
- Musculoskeletal syndromes (17540 articles)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/