Review: cognitive behavioural therapy and graded exercise show the most promise for chronic fatigue syndrome


QUESTION: In patients with chronic fatigue syndrome (CFS), what is the effectiveness of evaluated interventions?

Study selection
Studies were selected if they were randomised controlled trials (RCTs) or controlled clinical trials of any intervention used in the treatment or management of CFS in adults or children. Studies in which diagnoses were based on another syndrome with criteria similar to CFS, such as myalgic encephalomyelitis, chronic fatigue immune deficiency syndrome, or chronic Epstein-Barr virus infection were included, but studies of fibromyalgia were not.

Data sources
Published and unpublished studies in any language were identified by searching 19 databases, including Medline, EMBASE/Excerpta Medica, PsycLIT, ERIC, Current Contents, and the Cochrane Library (to 2000). The internet was searched using a meta-search engine, references of retrieved articles were scanned, and individuals and organisations were contacted through a website dedicated to this review and through members of 2 advisory panels.

Data extraction
Data were extracted on study validity (allocation concealment [RCTs], control group and adjustment for confounders [controlled studies], baseline comparability of groups, blinding, follow up, dropouts, objectivity of outcome assessment, analysis, sample size, and co-interventions); intervention; diagnostic criteria; duration of follow up; and outcomes (psychological, physical, quality of life and health status, physiological, and resource use).

Main results
44 studies were included (32 studies enrolled adults, 1 enrolled children, and 2 enrolled adults and children; 9 studies did not give age information) (n=2801; age range 11–87 y, 71% women) with 31 different interventions; 36 studies were RCTs. The studies were grouped by type of intervention (behavioural, immunological, pharmacological, supplements, complementary or alternative, and other interventions). 18 trials (41%) showed an overall beneficial effect of the intervention (≥1 clinical outcome improved). The results from the RCTs are in the table. Cognitive behavioural therapy and graded exercise therapy showed beneficial effects. Overall evidence from the other interventions was inconclusive.

Conclusions
In patients with chronic fatigue syndrome, 31 different interventions showed mixed results for effectiveness. Cognitive behaviour therapy and graded exercise therapy show the most promise.

COMMENTARY
Although controversy still exists about the causes of chronic fatigue syndrome, it is becoming increasingly clear which treatments are the most effective. The review by Whiting et al, the work of 2 research groups (1 in the UK and 1 in the US), is a summary of what we know to date. Interventions consisting of either graded exercise or cognitive behavioural therapy are effective treatments for some people with chronic fatigue syndrome.

Unfortunately, this review describes the results of the different studies in a simple way either as showing improvement or no difference. Therefore, it is hard for the reader to assess different degrees of improvement apart from a crude score card of the number of studies which showed either improvement or no difference for each type of intervention. This also means that small, poor quality studies carry the same weight as larger, good quality trials. Some of these issues are discussed in the text. (In passing, it is noteworthy that despite the attention paid to this problem in the US, few good quality treatment trials are described in this review from that country).

The remaining questions for clinicians and patients include: how are patients engaged in effective treatments, what is the key element which produces change, what treatments are offered to patients who fail to respond to the first line treatments described in this review, and how are effective treatments delivered? Cognitive behavioural treatments are usually time consuming and in clinical practice may best be delivered in a group setting.

Simon Hatcher, MBBS, MD
University of Auckland
Auckland, New Zealand

## Interventions from RCTs for chronic fatigue syndrome

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Number of RCTs</th>
<th>Number of patients</th>
<th>Overall effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>3</td>
<td>350</td>
<td>3 improvement; 0 no difference</td>
</tr>
<tr>
<td>CBT</td>
<td>5</td>
<td>533</td>
<td>3 improvement; 2 no difference</td>
</tr>
<tr>
<td>Immunological</td>
<td>9</td>
<td>440</td>
<td>4 improvement; 5 no difference</td>
</tr>
<tr>
<td>Pharmacological</td>
<td>12</td>
<td>896</td>
<td>2 improvement; 10 no difference</td>
</tr>
<tr>
<td>Supplements</td>
<td>5</td>
<td>174</td>
<td>2 improvement; 3 no difference</td>
</tr>
<tr>
<td>Complementary or alternative</td>
<td>2</td>
<td>84</td>
<td>1 improvement; 1 no difference</td>
</tr>
</tbody>
</table>

*RCTs=randomised controlled trials; GET-graded exercise therapy; CBT-cognitive behaviour therapy. Intervention duration ranged from 2 weeks to 1 year (mean 16 wk); follow up ranged from 2 weeks to 5 years.
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