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#### [Intervention Review]

# Psychosocial interventions for recurrent abdominal pain in childhood

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# ABSTRACT

# Background

This review supersedes the original Cochrane review first published in 2008 (Huertas-Ceballos 2008).

Between 4% and 25% of school-aged children complain of recurrent abdominal pain (RAP) severe enough to interfere with their daily activities. No organic cause for this pain can be found on physical examination or investigation for the majority of such children. Although many children are managed by reassurance and simple measures, a large range of psychosocial interventions involving cognitive and behavioural components have been recommended.

#### Objectives

To determine the effectiveness of psychosocial interventions for reducing pain in school-aged children with RAP.

#### Search methods

In June 2016 we searched CENTRAL, MEDLINE, Embase, eight other databases, and two trials registers. We also searched the references of identified studies and relevant reviews.

#### **Selection criteria**

Randomised controlled trials comparing psychosocial therapies with usual care, active control, or wait-list control for children and adolescents (aged 5 to 18 years) with RAP or an abdominal pain-related functional gastrointestinal disorder defined by the Rome III criteria were eligible for inclusion.

#### Data collection and analysis

We used standard methodological procedures expected by Cochrane. Five review authors independently selected studies, assessed them for risk of bias, and extracted relevant data. We also assessed the quality of the evidence using the GRADE approach.

#### **Main results**

This review includes 18 randomised controlled trials (14 new to this version), reported in 26 papers, involving 928 children and adolescents with RAP between the ages of 6 and 18 years. The interventions were classified into four types of psychosocial therapy: cognitive behavioural therapy (CBT), hypnotherapy (including guided imagery), yoga, and written self-disclosure. The studies were carried out in the USA, Australia, Canada, the Netherlands, Germany, and Brazil. The majority of the studies were small and short term; only two studies included more than 100 participants, and only five studies had follow-up assessments beyond six months. Small sample sizes and the



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degree of assessed risk of performance and detection bias in many studies led to the overall quality of the evidence being rated as low to very low for all outcomes.

For CBT compared to control, we found evidence of treatment success postintervention (odds ratio (OR) 5.67, 95% confidence interval (CI) 1.18 to 27.32; Z = 2.16; P = 0.03; 4 studies; 175 children; very low-quality evidence), but no evidence of treatment success at medium-term follow-up (OR 3.08, 95% CI 0.93 to 10.16; Z = 1.85; P = 0.06; 3 studies; 139 children; low-quality evidence) or long-term follow-up (OR 1.29, 95% CI 0.50 to 3.33; Z = 0.53; P = 0.60; 2 studies; 120 children; low-quality evidence). We found no evidence of effects of intervention on pain intensity scores measured postintervention (standardised mean difference (SMD) -0.33, 95% CI -0.74 to 0.08; 7 studies; 405 children; low-quality evidence), or at medium-term follow-up (SMD -0.32, 95% CI -0.85 to 0.20; 4 studies; 301 children; low-quality evidence).

For hypnotherapy (including studies of guided imagery) compared to control, we found evidence of greater treatment success postintervention (OR 6.78, 95% CI 2.41 to 19.07; Z = 3.63; P = 0.0003; 4 studies; 146 children; low-quality evidence) as well as reductions in pain intensity (SMD -1.01, 95% CI -1.41 to -0.61; Z = 4.97; P < 0.00001; 4 studies; 146 children; low-quality evidence) and pain frequency (SMD -1.28, 95% CI -1.84 to -0.72; Z = 4.48; P < 0.00001; 4 studies; 146 children; low-quality evidence). The only study of long-term effect reported continued benefit of hypnotherapy compared to usual care after five years, with 68% reporting treatment success compared to 20% of controls (P = 0.005).

For yoga therapy compared to control, we found no evidence of effectiveness on pain intensity reduction postintervention (SMD -0.31, 95% CI -0.67 to 0.05; Z = 1.69; P = 0.09; 3 studies; 122 children; low-quality evidence).

The single study of written self-disclosure therapy reported no benefit for pain.

There was no evidence of effect from the pooled analyses for any type of intervention on the secondary outcomes of school performance, social or psychological functioning, and quality of daily life.

There were no adverse effects for any of the interventions reported.

#### Authors' conclusions

The data from trials to date provide some evidence for beneficial effects of CBT and hypnotherapy in reducing pain in the short term in children and adolescents presenting with RAP. There was no evidence for the effectiveness of yoga therapy or written self-disclosure therapy. There were insufficient data to explore effects of treatment by RAP subtype.

Higher-quality, longer-duration trials are needed to fully investigate the effectiveness of psychosocial interventions. Identifying the active components of the interventions and establishing whether benefits are sustained in the long term are areas of priority. Future research studies would benefit from employing active control groups to help minimise potential bias from wait-list control designs and to help account for therapist and intervention time.

# PLAIN LANGUAGE SUMMARY

#### Psychosocial therapy for recurrent abdominal pain in childhood

#### **Review question**

Do psychosocial therapies reduce pain in children and adolescents with recurrent abdominal pain?

#### Background

Between 4% and 25% of school-aged children complain of recurrent abdominal pain severe enough to interfere with their daily activities. No organic cause for this pain can be found on physical examination or investigation for the majority of such children. Although many children are managed by reassurance and simple measures, a large range of psychological and behavioural ('psychosocial') therapies have been recommended.

#### Methods and study characteristics

As of June 2016, we identified 18 randomised controlled trials (a type of scientific experiment in which people are randomly assigned to one of two or more treatments), which included 928 children and adolescents between the ages of 6 and 18 years. These studies compared a range of psychosocial therapy to usual care or some form of non-therapy control (such as education or breathing exercises). We identified four different kinds of psychosocial therapy: cognitive behavioural therapy, hypnotherapy, yoga, and written self-disclosure (a therapy that involves writing down thoughts and feelings about something distressing). The duration of the included studies ranged from five days to three months. The studies were conducted in the USA, Australia, Canada, the Netherlands, Germany, and Brazil.

#### **Key results**

We found that cognitive behavioural therapy and hypnotherapy may be effective in terms of reducing pain in the short term. There was little evidence of long-term benefit. There was no evidence that either therapy had a beneficial effect on quality of life, daily activities,

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or psychological outcomes such as anxiety and depression. Yoga therapy and written self-disclosure as a therapy had no effect on pain, quality of life, or daily activities. No adverse effects were reported from any of these therapies.

#### Quality of the evidence

We rated the overall quality of the evidence as low to very low for all outcomes. Many of the studies had small sample sizes or weaknesses in their study design. The authors reported no conflicts of interest in relation to funding.

#### Conclusion

Cognitive behavioural therapy and hypnotherapy warrant consideration by clinicians as part of the management strategy for children with recurrent abdominal pain. The overall quality of the evidence was low to very low. More high-quality research is needed to evaluate the particular aspects of the therapies that are effective and to establish whether benefits are maintained over time.