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Children Can Greatly Reduce Abdominal Pain By Using Their Imagination

Children with functional abdominal pain who used audio recordings of guided imagery at home in addition to standard medical treatment were almost three times as likely to improve their pain problem, compared to children who received standard treatment alone.

And those benefits were maintained six months after treatment ended, a new study by University of North Carolina at Chapel Hill and Duke University Medical Center researchers has found.

The study is published in the November 2009 issue of the journal *Pediatrics*. The lead author is Miranda van Tilburg, Ph.D., assistant professor in the Division of Gastroenterology and Hepatology in the UNC School of Medicine and a member of the UNC Center for Functional GI & Motility Disorders.

"What is especially exciting about our study is that children can clearly reduce their abdominal pain a lot on their own with guidance from audio recordings, and they get much better results that way than from medical care alone," said van Tilburg. "Such self-administered treatment is, of course, very inexpensive and can be used in addition to other treatments, which potentially opens the door for easily enhancing treatment outcomes for a lot of children suffering from frequent stomach aches."

The study focused on functional abdominal pain, defined as persistent pain with no identifiable underlying disease that interferes with activities. It is very common, affecting up to 20 percent of children. Prior studies have found that behavioral therapy and guided imagery (a treatment method similar to self-hypnosis) are effective, when combined with regular medical care, to reduce pain and improve quality of life. But for many children behavioral therapy is not available because it is costly, takes a lot of time and requires a highly trained therapist.

For this study, 34 children ages 6 to 15 years old who had been diagnosed with functional abdominal pain by a physician were recruited to participate by pediatric gastroenterologists at UNC Hospitals and Duke University Medical Center. All received standard medical care and 19 were randomized to receive eight weeks of guided imagery treatment. A total of 29 children finished the study; 15 in the guided imagery plus medical treatment group and 14 in the medical treatment alone group.

The guided imagery sessions, developed jointly by van Tilburg, co-investigator Olafur Palsson, Psy.D. and Marsha Turner, the study coordinator, were recorded on CDs and given to children in the study to use at home.

The treatment consisted of a series of four biweekly, 20-minute sessions and shorter 10-minute daily sessions. In session one, for example, the CD directs children to imagine floating on a cloud and relaxing progressively. The session then gives them therapeutic suggestions and imagery for reducing discomfort, such as letting a special shiny object melt into their hand and then placing their hand on

their belly, spreading warmth and light from the hand inside the tummy to make a protective barrier inside that prevents anything from irritating the belly.

In the group that used guided imagery, the children reported that the CDs were easy and enjoyable to use. In that group, 73.3 percent reported that their abdominal pain was reduced by half or more by the end of the treatment course. Only 26.7 percent in the standard medical care only group achieved the same level of improvement. This increased to 58.3 percent when guided imagery treatment was offered later to the standard medical care only group. In both groups combined, these benefits persisted for six months in 62.5 percent of the children.

The study concluded that guided imagery treatment plus medical care was superior to standard medical care alone for the treatment of functional abdominal pain, and that treatment effects were sustained over a long period.

UNC co-authors of the study included Denesh K. Chitkara, M.D., adjunct research professor; William E. Whitehead, Ph.D., professor and co-director of the UNC Center for Functional GI & Motility Disorders, and Nanette Blois-Martin, pediatric nurse-practitioner.

Martin Ulshen, M.D., division chief of pediatric gastroenterology, hepatology and nutrition at Duke University Medical Center, is also a co-author.

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Audio-Recorded Guided Imagery Treatment Reduces Functional Abdominal Pain in Children: A Pilot Study

Miranda A.L. van Tilburg, Denesh K. Chitkara, Olafur S. Palsson, Marsha Turner, Nanette Blois-Martin, Martin Ulshen, and William E. Whitehead.
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OBJECTIVE: This study was designed to develop and to test a home-based, guided imagery treatment protocol, using audio and video recordings, that is easy for health care professionals and patients to use, is inexpensive, and is applicable to a wide range of health care settings.

METHODS: Thirty-four children, 6 to 15 years of age, with a physician diagnosis of functional abdominal pain were assigned randomly to receive 2 months of standard medical care with or without home-based, guided imagery treatment. Children who received only standard medical care initially received guided imagery treatment after 2 months. Children were monitored for 6 months after completion of guided imagery treatment.

RESULTS: All treatment materials were reported to be self-explanatory, enjoyable, and easy to understand and to use. The compliance rate was 98.5%. In an intention-to-treat analysis, 63.1% of children in the guided imagery treatment group were treatment responders, compared with 26.7% in the standard medical care-only group ($P = .03$; number needed to treat: 3). Per-protocol analysis showed similar results (73.3% vs 28.6% responders). When the children in the standard medical care group also received guided imagery treatment, 61.5% became treatment responders. Treatment effects were maintained for 6 months (62.5% responders).

CONCLUSION: Guided imagery treatment plus medical care was superior to standard medical care only for the treatment of abdominal pain, and treatment effects were sustained over a long period.