

# Breast-Feeding Offers Resilience Against Psychosocial Stress in Children CME/CE

**News Author: Laurie Barclay, MD**

**CME Author: Penny Murata, MD**

Complete author [affiliations and disclosures, and other CME information](#), are available at the end of this activity.

**Release Date: November 28, 2006; Valid for credit through November 28, 2007**

## Credits Available

**Physicians** - maximum of 0.25 *AMA PRA Category 1 Credit(s)*<sup>TM</sup> for physicians;

**Family Physicians** - up to 0.25 AAFP Prescribed credit(s) for physicians;

**Nurses** - 0.3 nursing contact hours (0.0 contact hours are in the area of pharmacology)

All other healthcare professionals completing continuing education credit for this activity will be issued a certificate of participation.

Physicians should only claim credit commensurate with the extent of their participation in the activity.

November 28, 2006 — Breast-feeding is linked to resilience against psychosocial stress, such as divorce, in children, according to the results of an observational study reported in the December issue of the *Archives of Disease in Childhood*.

"Some early life exposures may result in a well controlled stress response, which can reduce stress related anxiety," write S. M. Montgomery, MD, of the Karolinska Institutet in Stockholm, Sweden, and colleagues. "Breast feeding may be a marker of some relevant exposures.... Potentially, these could operate through a number of mechanisms associated with factors such as maternal characteristics, development of the mother-child bond, and early mother-child interactions."

This study used longitudinal birth cohort data from the 1970 British Cohort Study that observed the lives of those born in 1 week in 1970 and living in Great Britain. Information was collected at birth and at ages 5 and 10 years for 8958 subjects, and linear regression determined whether breast-feeding modified the association of parental divorce or separation with anxiety using stratification and interaction testing. Childhood anxiety was measured by asking school teachers a question when the children were 10 years of age.

Among 5672 subjects who were not breast-fed, parental divorce or separation was associated with a significantly increased risk for anxiety (regression coefficient, 9.4; 95% confidence interval [CI], 6.1 - 12.8). For the breast-fed group, this association was much lower, with a regression coefficient of 2.2 (95% CI, -2.6 to 7.0). Interaction testing confirmed that breast-feeding significantly modified the effect of divorce, independent of simultaneous adjustment for multiple potential confounding factors. The interaction coefficient was -7.0 (95% CI, -12.8 to -1.2), indicating a 7% reduction in anxiety after adjustment.

"Breast feeding is associated with resilience against the psychosocial stress linked with parental divorce/separation," the authors write. "This could be because breast feeding is a marker of exposures related to maternal characteristics and parent-child interaction."

Study limitations include unmeasured confounding factors, inability to rule out the possibility that breast-feeding is also a marker of other more important but unmeasured maternal characteristics, measure of childhood anxiety based on a single question, and possible bias due to the teachers' knowledge of breast-feeding in subjects.

"The benefits of breast feeding are well recognised, and this study indicates that it may be

associated with lower levels of anxiety among children who have had the potentially stressful experience of parental divorce," the authors conclude. "Research into the mediating factors underlying the resilience indicated by breast feeding should focus on exposures and associations related to early rather than prolonged breast feeding."

This project was funded by the British Economic and Social Research Council and forms part of the work conducted by the Capability and Resilience Network. The authors have disclosed no relevant financial relationships.

*Arch Dis Childhood.* 2006;91:990-994.

## **Learning Objectives for This Educational Activity**

Upon completion of this activity, participants will be able to:

- 1 Describe whether breast-feeding is associated with the relationship between parental divorce and childhood anxiety.
- 2 Report the effect of breast-feeding duration on the relationship between parental divorce and childhood anxiety.

## **Clinical Context**

In the September 12, 1997, issue of *Science*, Sapolsky reported that the development of the neuroendocrine systems involved in stress response might be affected by early maternal contact. An animal model by Liu in the September 12, 1997, issue of *Science* showed that rats with greater maternal contact during early nursing had a lower hypothalamic-pituitary-adrenal response to adult stress. A study by Strohschein in the 2005 issue of the *Journal of Marriage and the Family* found that in human children, one marker for stress is parental divorce or separation, which can lead to anxiety and depression. Thus, the current authors investigate how maternal-child contact through breast-feeding might affect a child's response to stress.

The current observational study uses data from the longitudinal 1970 British Cohort Study, reported by Ferri and colleagues in their book *Changing Britain, Changing Lives*, to evaluate the resilience of breast-feeding, the association of breast-feeding with modification of the relationship between the adverse exposure of parental divorce or separation, and the outcome of anxiety at age 10 years.

## **Study Highlights**

- 1 Of 16,500 subjects from the 1970 British Cohort Study of residents of Great Britain born in 1 week in April, 8958 subjects had complete data for main analysis.
- 2 Data collection at birth from interviews of mothers and review of medical records included maternal age at child's birth, maternal age on departure from full-time education, paternal occupation, smoking during pregnancy, prematurity, puerperal psychosis, and depression during pregnancy.
- 3 Data collection at age 5 years from interviews of parents and questionnaires included breast-feeding duration, maternal tendency for depression using the 24-item Malaise Inventory, and assessment for chronic illness or disability.
- 4 Data collection at age 10 years included teacher's assessment of whether child was "worried or anxious about many things," where maximum score of 50 was "very anxious"; maternal interview indicating parental divorce or separation between ages 5 and 10 years; and medical examination and record review for chronic illness or disability and puberty.
- 5 Puerperal psychosis and depression and puberty were not associated with the dependent variable and were excluded from final analysis.

- 6 Parental divorce or separation was associated positively with childhood anxiety at age 10 years.
- 7 Independent measures associated with increased risk for anxiety included female sex, maternal depression at age 5 years, and limiting disability at age 10 years.
- 8 Independent measures associated with decreased risk for anxiety included higher paternal social class, older maternal age at departure from full-time education, higher number of previous pregnancies, and higher birth weight.
- 9 Outcome measures of effect modification were stratified analysis and interaction testing.
- 10 Stratified analysis showed the association between parental divorce or separation and greater risk for anxiety was higher in 5672 non–breast-fed children vs 6223 breast-fed children (regression coefficient, 9.4 and 95% CI, 6.1 - 12.8 vs 2.2 and 95% CI, -2.6 to 7.0).
- 11 Interaction testing showed that after adjusting for potential confounding factors, the association between parental divorce or separation and anxiety was lower in breast-fed children vs non–breast-fed children; interaction coefficient of -7.0 (95% CI, -12.8 to -1.2) indicated a 7% reduction in anxiety risk associated with parental divorce.
- 12 Breast-feeding duration was less than 1 month for 43%, less than 1 to 3 months for 27%, and more than 3 months for 29%.
- 13 Comparison of breast-feeding duration for up to 1 month vs duration for more than 1 month showed no significant difference on the association between parental divorce or separation and anxiety, although power was limited.
- 14 Study limitations included the possibility that other breast-feeding–associated exposures are responsible for findings and the definition of childhood anxiety was based on only 1 measure.

### **Pearls for Practice**

- 1 Breast-feeding or a breast-feeding–linked exposure is associated with resilience against childhood anxiety related to parental divorce.
- 2 Breast-feeding duration is not associated with the relationship between parental divorce and childhood anxiety.

### **Instructions for Participation and Credit**

There are no fees for participating in or receiving credit for this online educational activity. For information on applicability and acceptance of continuing education credit for this activity, please consult your professional licensing board.

This activity is designed to be completed within the time designated on the title page; physicians should claim only those credits that reflect the time actually spent in the activity. To successfully earn credit, participants must complete the activity online during the valid credit period that is noted on the title page.

#### **FOLLOW THESE STEPS TO EARN CME/CE CREDIT\*:**

1. Read the target audience, learning objectives, and author disclosures.
2. Study the educational content online or printed out.
3. Online, choose the best answer to each test question. To receive a certificate, you must receive a passing score as designated at the top of the test. Medscape encourages you to

complete the Activity Evaluation to provide feedback for future programming.

You may now view or print the certificate from your CME/CE Tracker. You may print the certificate but you cannot alter it. Credits will be tallied in your CME/CE Tracker and archived for 5 years; at any point within this time period you can print out the tally as well as the certificates by accessing "Edit Your Profile" at the top of your Medscape homepage.

\*The credit that you receive is based on your user profile.

### **Target Audience**

This article is intended for primary care clinicians, psychiatrists, and other specialists who provide care for women who might breast-feed or for children with or at risk for anxiety.

### **Goal**

The goal of this activity is to provide medical news to primary care clinicians and other healthcare professionals in order to enhance patient care.

Accessed online December 8, 2006

[http://www.medscape.com/viewarticle/548329\\_print](http://www.medscape.com/viewarticle/548329_print)