

**Date:** August 13, 2013

**Title:** Providing Most Effective Child Life Care for Patients Having General Anesthesia

**Clinical Question:**

P (Population/Problem)	Among children undergoing general anesthesia,
I (Intervention)	does providing coping strategies* to patients
C (Comparison)	versus verbal preparation only
O (Outcome)	decrease maladaptive behavior* post-operatively as reported by parents?

[Definitions for terms marked with \\* may be found in the Supporting Information section.](#)

**Target Population for the Recommendation:**

Children ages 2-12 years having general anesthesia within a medical facility.

**Recommendation:**

It is recommended that children receiving general anesthesia in a medical facility be provided with coping strategies to decrease maladaptive behaviors post-operatively (Gorayeb 2009 [2b]; Zastowny 1986 [2b]).

**Notes:** Studies also showed a decrease in a child's anxiety when provided with coping strategies pre-operatively (Farrell 2013 [2a]; Li 2007 [2a]; Kain 1998 [2a]; Gorayeb 2009 [2b]; Zastowny 1986 [2b]; Brewer 2006 [3a]).

Additionally, studies showed an increase in child cooperation with the use of coping strategies (Farrell 2013 [2a], Zastowny 1986 [2b]).

**Discussion/Synthesis of Evidence related to the recommendation:**

The grade for the body of evidence was moderate for children being provided coping strategies before general anesthesia to reduce maladaptive behaviors post-operatively.

Studies show that providing coping methods to children pre-operatively versus verbal preparation alone can lead to fewer post-op maladaptive behaviors (Gorayeb 2009 [2b]; Zastowny 1986 [2b]; Brewer 2006 [3a]), lessened anxiety (Farrell 2013 [2a]; Kain 1998 [2a]; Li 2007 [2a]; Gorayeb 2009 [2b]; Zastowny 1986 [2b]; Brewer 2006 [3a]) and increased cooperation (Farrell 2013 [2a]; Zastowny 1986 [2b]).

When providing coping strategies as interventions multiple strategies were noted and often included: therapeutic play/desensitization, (Farrell 2013 [2a]; Li 2007 [2a]; Kain 1998 [2a]; Gorayeb 2009 [2b]; Brewer 2006 [3a]), filmed/live modeling/rehearsal, (Farrell 2013 [2a]; Li 2007 [2a]; Gorayeb 2009 [2b]; Brewer 2006 [3a]) viewing of all relevant areas of day surgery, answering questions, alleviating misconceptions (Farrell 2013 [2a]; Li 2007 [2a]; Gorayeb 2009[2b]; Brewer 2006[3a]) and filmed modeling of coping skills shown to parents to teach and utilize with their child (Zastowny 1986 [2b]).

The randomized controlled trials by Gorayeb (2009 [2b]) and Zastowny (1986 [2b]), evaluated children's behavior after surgery. Gorayeb, et al., (2009 [2b]) found children in the intervention group showed a statistically significant ( $p = .02$ ) drop in negative behaviors compared to the control group. The intervention group was shown to be less prone to health problems including enuresis, headaches and vomiting after surgery. The intervention group was also shown to be less prone to other maladaptive behaviors including: fear, twitching, sleeping and eating problems. In the study by Zastowny, et al., (1986 [2b]) children in the coping skills group exhibited fewer maladaptive behaviors than both the anxiety reduction and information only groups ( $p < .005$ ).

Along with behavior, several studies reported decreased child anxiety after the interventions (Farrell, 2013 [2a]; Kain, 1998 [2a]; Li, 2007 [2a]; Gorayeb, 2009 [2b]; Zastowny, 1986 [2b]; and Brewer, 2006 [3a]). Some studies demonstrated that patients exhibited less anxiety post-intervention (Farrell, et al., (2013 [2a]), Kain, et al., (1998 [2a]), and Li, et al., (2007 [2b])). One study showed children in the experimental group with lower anxiety scores in the post-operation period (Li, et al., 2007 [2b]). Through a post-hoc test, Li (2007 [2a]) found that children in the experimental group

reported lower anxiety scores both post-intervention and post-operatively compared to the control group. Parents of the experimental group also reported lower anxiety compared with the control group (Li, et al. (2007 [2a]).

Finally, some articles noted an increase in cooperation of children during induction when using coping skills (Farrell 2013 [2a]; Zastowny, 1986 [2b]). The study by Farrell, et al., (2013 [2a]) utilized child life specialists, in pre-op and in the induction room, with children in the intervention group. Additionally, Kain, et al., (1998 [2a]) in their discussion noted that patients may be taught coping skills, but then are unable to utilize them in high stress moments.

#### Reference List:

- Brewer, S., Gleditsch, S.L., Syblik, D., Tietjens, M.E., & Vacik, H.W. (2006). Pediatric anxiety: Child life intervention in day surgery. *Journal of Pediatric Nursing*, 21(1), 13-22 [3a]
- Farrell, M.A., Parrish, K., Ziemer, K., Scarlett, W.G., Parker, S., Martin, K.J., Ahmed, M.I. (2013). The effects of child life intervention on reducing pediatric patients' anxiety and increasing cooperation in perioperative settings. *Child Life Focus*, 31(2), 1-8 [2a]
- Gorayeb, R.P., Petean, E.B.L., Pileggi, F.O., Tazima, M.F.G.S., Vicente, Y.A.M.V., & Gorayeb, R. (2009). Importance of psychological intervention for the recovery of children submitted to elective surgery. *Journal of Pediatric Surgery*, 44(7), 1390-1395 [2b]
- Kain, Z.N., Caramico, L.A., Mayes, L.C., Genevro, J.L., Bornstein, M.H., & Hofstadter, M.B. (1998). Preoperative preparation programs in children: A comparative examination. *Anesthesia and Analgesia*, 87(6), 1249-55 [2a]
- Li, H.C.W., Lopez, V., & Lee, T.L.I. (2007). Psychoeducational preparation of children for surgery: The importance of parental involvement. *Patient Education and Counseling*, 65(1), 34-41 [2a]
- Vernon D.T.A., Schulman, J.L., Foley, J.M. (1966). Changes in children's behavior after hospitalization: Some dimensions of response and their correlates. *American Journal of Diseases of Children* 111(6), 581-593. [4b]
- Zastowny, T.R., Kirschenbaum, D.S., & Meng, A.L. (1986). Coping skills training for children: Effects on distress before, during, and after hospitalization for surgery. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 5(3), 231-247. [2b]

## IMPLEMENTATION

#### Applicability Issues:

Timing is often a potential concern as so much information needs to be communicated to the child and family before a child receives general anesthesia. All of the studies offered interventions that were 20 minutes or longer. Some of the research associated with better behavior outcomes, offered preparation and coping strategies prior to the day of surgery (Gorayeb 2009 [2b]; Kain 1998 [2a]; Li 2006 [2a]; Zastowny 1986 [2b]). Farrell, et al., (2013 [2a]) showed patients had less anxiety before induction after receiving coping strategies the day of receiving anesthesia.

Staff availability can also be a concern. If there are not currently resources in place for providing coping strategies, acquiring appropriate staff may be a necessary step. When possible, child life specialists should offer interventions/coping strategies as these healthcare professionals have received extensive training in child development and are not responsible for providing any medical care, thus making them a non-threatening member of a hospitalized child's healthcare team. Other disciplines such as nurses, and psychologists offered coping strategies in the literature as well as child life specialists.

#### Relevant CCHMC Tools for Implementation:

Cincinnati Children's Hospital Medical Center, CCHMC Growing Through Knowing Note: Helping Your Child Cope After Surgery. Knowing Note Number KN-00598, 08/2012.

Cincinnati Children's Hospital Medical Center, CCHMC Growing Through Knowing Note: Coping Methods. Knowing Note Number KN-00267, 04/2013.

Cincinnati Children's Hospital Medical Center: Child Life Support During Medical Procedures, <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>, BEST number: 120, pages 1-5, 12/22/2011.

#### Outcome or Process Measures:

By providing coping strategies to patients before surgery, child life specialists hope to maximize patients' coping abilities during the often stressful experience of general anesthesia, as well as during the post-operative period. Children's

maladaptive behaviors can be measured after surgery with the Post Hospital Behavior Questionnaire (PHBQ), which has acceptable test-retest reliability (Vernon et al. 1966 [4b]).

## SUPPORTING INFORMATION

### Background/Purpose of BEST Development:

Multiple disciplines in same day surgery offer preparation to patients and families using any or all modalities listed: verbal explanations, photos, masks and handouts. Certified child life specialists understand the best and most appropriate interventions for children. Child life specialists seek to provide interventions using desensitization, role rehearsal and play to encourage positive coping. Identifying the best practice from the literature for providing child life coping interventions can facilitate better outcomes in the medical center for patients and families.

### Definitions:

Coping Strategies: medical play, modeling, de-sensitization, rehearsal, therapeutic play and breathing techniques.

Maladaptive Behaviors: changes in appetite, sleep, behavior/emotion, enuresis, and separation anxiety.

### Search Strategy:

*Databases*: PsycInfo, Medline, CINAHL, Google Scholar, hand searched references of relevant articles.

*Search Terms*: Surgery, Maladaptive Behaviors, Preoperative Anxiety, Coping Skills, Coping, Postoperative Period, Pediatric Surgery, Therapeutic Play, Endoscopy

*Limits, Filters, Search Dates*: English. Limited to articles from 1980 to 2013.

*Date Last Search Done*: 4/16/13.

### Relevant CCHMC Evidence-Based Documents:

None were found

### Group/Team Members:

*Team Leader/Author*: Nikki Gosnell, BS, CCLS; Cincinnati Children's Hospital Medical Center, Child Life and Integrative Care, Same Day Surgery and Vascular Access Team

*Support/Consultant*: Barbara K. Giambra, PhD(c), MS, RN, CPNP, Evidence-Based Practice Mentor, Center For Professional Excellence, Research and Evidence-Based Practice

*Ad Hoc/Content Reviewers*: Cathie Marshall, BS, AA, CCLS Clinical Manager, Division of Child Life and Integrative Care Patient/Family/Parent or Other Parent Organization: Jodi Kelley, Parent of patient in Same Day Surgery

### Conflicts of Interest were declared for each team member:

- No financial or intellectual conflicts of interest were found.
- No external funding was received for development of this BEST.
- The following conflicts of interest were disclosed:

**Note:** Full tables of the [LEGEND evidence evaluation system](#) are available in separate documents:

- [Table of Evidence Levels of Individual Studies by Domain, Study Design, & Quality](#) (abbreviated table below)
- [Grading a Body of Evidence to Answer a Clinical Question](#)
- [Judging the Strength of a Recommendation](#) (dimensions table below)

**Table of Evidence Levels** (see note above):

Quality level	Definition
1a+ or 1b+	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5a or 5b	General review, expert opinion, case report, consensus report, or guideline
5	Local Consensus

1a = good quality study; b = lesser quality study

**Table of Language and Definitions for Recommendation Strength** (see note above):

Language for Strength	Definition
It is strongly recommended that... It is strongly recommended that... not...	When the dimensions for judging the strength of the evidence are applied, there is high support that benefits clearly outweigh risks and burdens. <i>(or visa-versa for negative recommendations)</i>
It is recommended that... It is recommended that... not...	When the dimensions for judging the strength of the evidence are applied, there is moderate support that benefits are closely balanced with risks and burdens.
There is insufficient evidence and a lack of consensus to make a recommendation...	
<i>Given the dimensions below and that more answers to the left of the scales indicate support for a stronger recommendation, the recommendation statement above reflects the strength of the recommendation as judged by the development group. (Note that for negative recommendations, the left/right logic may be reversed for one or more dimensions.)</i>	
<b>Rationale for judgment and selection of each dimension:</b>	
<b>1. Grade of the Body of Evidence</b>	<input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low <i>Rationale: 2a, 2b, 2b, 3a=4 studies</i>
<b>2. Safety/Harm (Side Effects and Risks)</b>	<input checked="" type="checkbox"/> Minimal <input type="checkbox"/> Moderate <input type="checkbox"/> Serious <i>Rationale: Children who use avoidance coping strategies may not benefit from more information and other provided coping strategies. (Kain et al., 1998 [2a]) When properly assessed by a child life specialist, alternate strategies may be used with these patients.</i>
<b>3. Health benefit to patient</b>	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Minimal <i>Rationale: Providing children with coping strategies for general anesthesia may promote adjustment for more extended periods (Zastowny et al., 1986 [2b]) and can be used in other stressful situations at the medical center or in life.</i>
<b>4. Burden on patient to adhere to recommendation</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> Unable to determine <input type="checkbox"/> High <i>Rationale:</i>
<b>5. Cost-effectiveness to healthcare system</b>	<input type="checkbox"/> Cost-effective <input checked="" type="checkbox"/> Inconclusive <input type="checkbox"/> Not cost-effective <i>Rationale:</i>
<b>6. Directness of the evidence for this target population</b>	<input type="checkbox"/> Directly relates <input checked="" type="checkbox"/> Some concern of directness <input type="checkbox"/> Indirectly relates <i>Rationale: All studies addressed child anxiety towards anesthesia/surgery; different modes of preparation and coping were trialed and outcomes/effects were not always directly related to maladaptive behaviors post-operatively.</i>
<b>7. Impact on morbidity/mortality or quality of life</b>	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low <i>Rationale: Quality of life may be improved post-operatively with the appropriate use of coping strategies by a child.</i>

Copies of this Best Evidence Statement (BEST) and related tools (if applicable, e.g., screening tools, algorithms, etc.) are available online and may be distributed by any organization for the global purpose of improving child health outcomes.

Website address: <http://www.cincinnatichildrens.org/service/i/anderson-center/evidence-based-care/bests/>

Examples of approved uses of the BEST include the following:

- Copies may be provided to anyone involved in the organization's process for developing and implementing evidence based care;
- Hyperlinks to the CCHMC website may be placed on the organization's website;
- The BEST may be adopted or adapted for use within the organization, provided that CCHMC receives appropriate attribution on all written or electronic documents; and
- Copies may be provided to patients and the clinicians who manage their care.

Notification of CCHMC at [EBDMinfo@cchmc.org](mailto:EBDMinfo@cchmc.org) for any BEST adopted, adapted, implemented, or hyperlinked by the organization is appreciated.

Please cite as: Gosnell, N., Cincinnati Children's Hospital Medical Center: Best Evidence Statement Providing Most Effective Child Life Care for Patients Having General Anesthesia, <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>, BEST 175, pages 1-5, 8/13/13.

This Best Evidence Statement has been reviewed against quality criteria by two independent reviewers from the CCHMC Evidence Collaboration. Conflict of interest declaration forms are filed with the CCHMC EBDM group.

Once the BEST has been in place for five years, the development team reconvenes to explore the continued validity of the recommendation. This phase can be initiated at any point that evidence indicates a critical change is needed. CCHMC EBDM staff performs a quarterly search for new evidence in an horizon scanning process. If new evidence arises related to this BEST, authors are contacted to evaluate and revise, if necessary.

*For more information about CCHMC Best Evidence Statements and the development process, contact the Evidence Collaboration at [EBDMinfo@cchmc.org](mailto:EBDMinfo@cchmc.org).*

## Note

**This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.**