

# Alexis<sup>®</sup>

WOUND PROTECTORS/RETRACTORS





**Applied Medical is dedicated to providing innovative products that improve patient outcomes and enable the advancement of minimally invasive surgery. As a new generation medical device company, we are equally committed to improving the affordability and accessibility of high-quality healthcare.**

**To further our dedication to improving both hospital and patient outcomes, we are committed to being a part of the overall solution to reduce surgical site infection (SSI) through research, education, and awareness. Applied Medical has developed [stopwoundinfection.com](http://stopwoundinfection.com), a comprehensive resource for healthcare professionals interested in learning more about the prevention of SSI. Our mission is to enhance patient outcomes by providing multiple platforms to discuss and implement clinically proven methods to reduce the incidence of SSI.**

**Visit [www.stopwoundinfection.com](http://www.stopwoundinfection.com)**

to learn more about surgical site infection prevention.



*“Programs that reduce the incidence of SSI can substantially decrease morbidity and mortality and reduce the economic burden for patients and hospitals.”<sup>4</sup>*

## HEALTHCARE IMPACT

- SSI has added \$3 to \$10 billion to the cost of healthcare<sup>5</sup>
- 2% to 5% of patients undergoing inpatient surgery will develop an SSI<sup>6</sup>
- over 8,000 deaths were associated with over 290,000 cases of SSI in one year<sup>7</sup>

## PATIENT IMPACT

**On average, surgical site infection patients:**

- spend an additional 7-11 days in the hospital<sup>6</sup>
- are 60% more likely to spend time in ICU<sup>4</sup>
- are 5 times more likely to be readmitted to the hospital<sup>4</sup>
- have a 2-11 times higher risk of death than patients without an SSI<sup>6</sup>
- require an additional cost of \$27,631 per infection<sup>5</sup>

### References:

1. Reid K, Pockney P, Draganic B, Smith SR. Barrier wound protection decreases surgical site infection in open elective colorectal surgery: A randomized clinical trial. *Dis Colon Rectum*. 2010 Oct; 53(10): 1374-1380.
2. Lee P, Waxman K, Taylor B, Yim S. Use of wound-protection system and postoperative wound-infection rates in open appendectomy: A randomized prospective trial. *Arch Surg*. 2009; 144(9): 872-875.
3. Horiuchi T, Tanishima H, et al. Randomized, controlled investigation of the anti-infective properties of the Alexis retractor/protector of incision sites. *J Trauma*. 2007 Jan; 62(1): 212-215.
4. Kirkland KB, Briggs JP, Trivette SL, Wilkinson WE, Sexton DJ. The impact of surgical-site infections in the 1990s: Attributable mortality, excess length of hospitalization, and extra costs. *Infect Control Hosp Epidemiol*. 1999 Nov; 20(11): 725-730.
5. Harris R. Analysis of surgical site infection rates and cost benefits associated with plain gauze dressings compared to gauze dressings impregnated with Polyhexamethylene Biguanide (PHMB). *Am J Infect Control*. 2008 Jun; 36(5): E31-E32.
6. Anderson DL, Podgorny K, et al. Strategies to prevent surgical site infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Jun; 35(6):605-27 for individual references.
7. Klevens RM, Edwards JR, et al. Estimating health care-associated infections and deaths in U.S. hospitals, 2002. *Public Health Rep*. 2007 Mar-Apr; 122(2): 160-166.



**Alexis**<sup>®</sup>  
WOUND PROTECTORS/RETRACTORS

*Alexis - [ä-lek-sīs]*

*Origination: Greek.*

*Definition: Protector of Human-kind.*

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[www.appliedmedical.com/alexis](http://www.appliedmedical.com/alexis)

For more information  
<http://contact.appliedmedical.com/>

# PRODUCT INFORMATION

## Alexis<sup>®</sup>

WOUND PROTECTORS/RETRACTORS



### PROTECTION:

- Provides 360° wound protection
- Reduces superficial surgical site infection following colorectal surgeries <sup>1,2</sup>
- Maintains moisture at the incision site <sup>3</sup>

### RETRACTION:

- Provides 360° circumferential, atraumatic retraction
- Distributes force evenly, eliminating point trauma and associated pain
- Frees up valuable hands in the operating room

### EXPOSURE:

- Maximizes exposure with a minimum incision size
- Accommodates an incision range of 1-25cm
- Allows visualization of wound margins

## ALEXIS O WOUND PROTECTOR/RETRACTOR

Features a rigid retraction ring for superior exposure



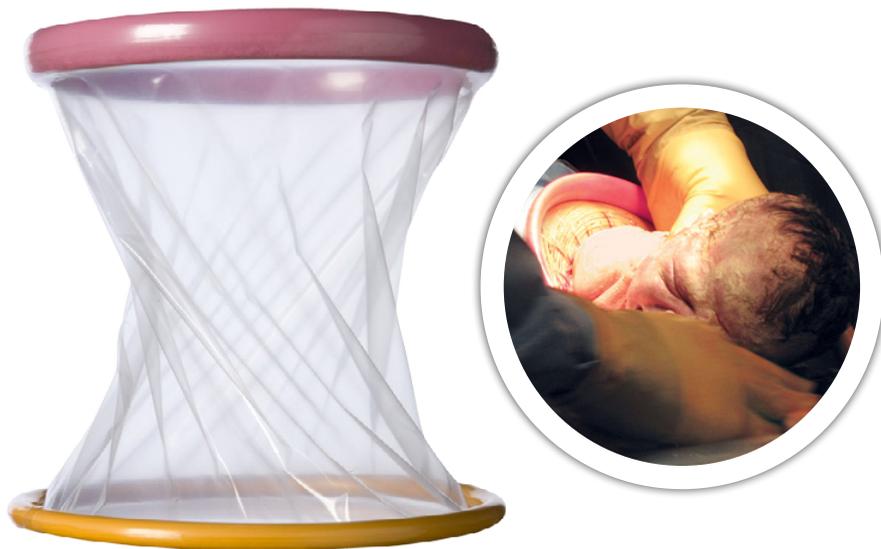
## ALEXIS WOUND PROTECTOR/RETRACTOR

Features a flexible retraction ring for maximum conformity



# PRODUCT INFORMATION

## ALEXIS® 0 C-SECTION RETRACTOR



May:

- Eliminate the need for a bladder blade
- Eliminate the need for hand-held retractors
- Reduce overall pain and discomfort following a surgical procedure
- Reduce intra-operative nausea by allowing enough exposure to keep the uterus in situ
- Reduce the need for analgesics and nausea medication after delivery
- Reduce recovery time
- Aid in Cesarean delivery for obese patients by retracting the pannus (or panniculus) away from the field and by reducing the slickness of fat on instruments
- Enhance visualization of the operative site by eliminating the need for hand-held retractors
- Reduce OR time by freeing up hands and optimizing surgical assistance
- Reduce the lateral femoral nerve damage (numbness in the legs due to the pressure of metal retractors)
- Improve cosmesis

## ALEXIS LAPAROSCOPIC SYSTEM



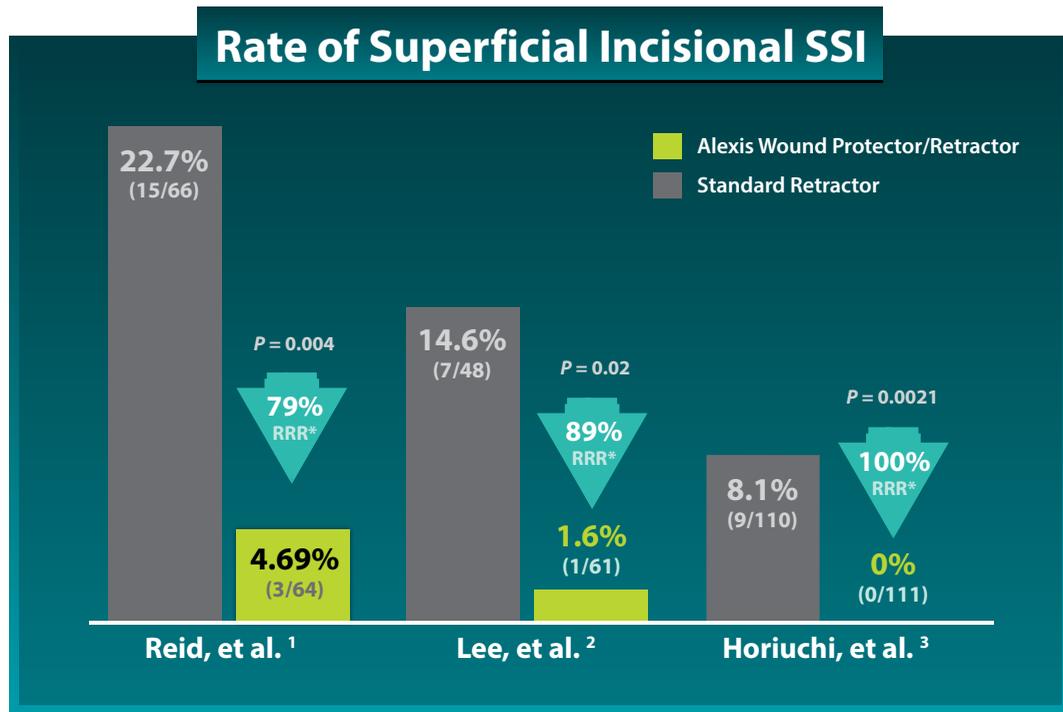
Enables a laparoscopic approach before and after specimen retrieval

## ALEXIS ORTHOPAEDIC PROTECTOR



Features a reinforced sheath to protect skin, fat, muscles, and nerves from contact with sharp instrumentation and debris

## IS ALEXIS® PART OF YOUR STANDARD OF CARE?



1. Reid K, Pockney P, Draganic B, Smith SR. Barrier wound protection decreases surgical site infection in open elective colorectal surgery: A randomized clinical trial. *Dis Colon Rectum*. 2010 Oct; 53(10): 1374-1380.  
 2. Lee P, Waxman K, Taylor B, Yim S. Use of wound-protection system and postoperative wound-infection rates in open appendectomy: A randomized prospective trial. *Arch Surg*. 2009; 144(9): 872-875.  
 3. Horiuchi T, Tanishima H, et al. Randomized, controlled investigation of the anti-infective properties of the Alexis retractor/protector of incision sites. *J Trauma*. 2007 Jan; 62(1): 212-215.  
 \*RRR (relative risk reduction) was defined as the proportion of the control group (standard retractors) experiencing a given outcome minus the proportion of the treatment group (Alexis protector) experiencing the outcome, divided by the proportion of the control group (standard retractors) experiencing the outcome.

### Recommendation of a wound protector to REDUCE SURGICAL SITE INFECTION



***“Use impervious plastic wound protectors for gastrointestinal and biliary tract surgery.”***

Anderson DJ, Podgorny K, et al. Strategies to prevent surgical site infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*. 2014 Jun; 35(6): 605-627.

# REDUCTION IN SURGICAL SITE INFECTION



***"Impervious plastic wound protectors reduce the risk of SSI when employed in non-trauma related gastrointestinal and biliary tract surgery. Wound protectors represent a safe and simple intervention that may reduce postoperative morbidity and mortality."***

...

***"Our study suggests that the use of wound protectors decreases the risk of SSI by 45%. Our number needed to treat suggests that only 10 patients would have to be treated intraoperatively with a wound protector to prevent 1 SSI."***

Edwards JP, Ho AL, Tee MC, Dixon E, Ball CG. Wound protectors reduce surgical site infection: A meta-analysis of randomized controlled trials. *Ann Surg*. 2012 Jul; 256(1): 53-59.



***"The ALEXIS® wound retractor is more effective in preventing SSI in elective colorectal resections compared with conventional methods."***

Cheng KP, Roslan AC, et al. ALEXIS O-Ring wound retractor vs conventional wound protection for the prevention of surgical site infections in colorectal resections. *Colorectal Dis*. 2012 Jun; 14(6): e346-e351.



***"[U]se of a plastic wound retractor may result in reduced enteric bacterial colonization of the surgical incision site during gastrointestinal surgery. Reduced colonization of the surgical incision site by enteric bacteria due to the use of a plastic wound retractor should result in a reduction in SSI following gastrointestinal surgery."***

Mohan HM, McDermott S, et al. Plastic wound retractors as bacteriological barriers in gastrointestinal surgery: A prospective multi-institutional trial. *J Hosp Infect*. 2012 Jun; 81(2): 109-113.

**Use of Wound-Protection System and Postoperative Wound-Infection Rates in Open Appendectomy**  
A Randomized Prospective Trial

Lee P, Waxman K, Taylor B, Yim S. Use of wound-protection system and postoperative wound-infection rates in open appendectomy: A randomized prospective trial. Arch Surg. 2009; 144(9): 872-875.

**Objectives:** To determine if use of a wound-protection system in open appendectomy decreases the incidence of wound infection.

**Design:** A randomized prospective trial.

**Setting:** A community hospital.

**Patients:** One hundred seven patients undergoing open appendectomy.

**Intervention:** Randomly assigned experimental patients were treated with the Alexis wound-protection system, whereas control patients were treated with standard open appendectomy. Outcomes including wound-healing rates, wound-infection rates, and hospital charges were compared. The mean age of patients was 40 years, and 60% were female.

**Main Results:** Incidence of wound infection in the Alexis group was 14% (10 of 70 patients) compared with 26% (18 of 67 patients) in the control group. The difference in wound-infection rates was statistically significant (P = .02). The mean hospital charges were significantly lower in the Alexis group (\$10,100) compared with the control group (\$11,500) (P = .001).

**Conclusions:** Use of a wound-protection system in open appendectomy results in a statistically significant reduction in the incidence of wound infection and lower hospital charges.

**Key Words:** Wound-protection system; wound-infection rates; open appendectomy.

**“Our data demonstrate that a statistically significant reduction in the incidence of wound infection was achieved with the use of a wound-protection device. This device provides a simple intervention that may eventually have a large impact on the incidence of surgical wound infection and therefore annual health care expenditures.”**

Lee P, Waxman K, Taylor B, Yim S. Use of wound-protection system and postoperative wound-infection rates in open appendectomy: A randomized prospective trial. Arch Surg. 2009; 144(9): 872-875.

**Barrier Wound Protection Decreases Surgical Site Infection in Open Elective Colorectal Surgery: A Randomized Clinical Trial**

Reid K, Pockney P, Draganic B, Smith SR. Barrier wound protection decreases surgical site infection in open elective colorectal surgery: A randomized clinical trial. Dis Colon Rectum. 2010 Oct; 53(10): 1374-1380.

**Objectives:** To determine if barrier wound protection in elective open colorectal surgery decreases the incidence of surgical site infection.

**Design:** A randomized prospective trial.

**Setting:** A community hospital.

**Patients:** One hundred seven patients undergoing open elective colorectal surgery.

**Intervention:** Randomly assigned experimental patients were treated with the Alexis wound-protection system, whereas control patients were treated with standard open colorectal surgery. Outcomes including wound-healing rates, wound-infection rates, and hospital charges were compared. The mean age of patients was 60 years, and 60% were female.

**Main Results:** Incidence of wound infection in the Alexis group was 14% (10 of 70 patients) compared with 26% (18 of 67 patients) in the control group. The difference in wound-infection rates was statistically significant (P = .02). The mean hospital charges were significantly lower in the Alexis group (\$10,100) compared with the control group (\$11,500) (P = .001).

**Conclusions:** Use of a barrier wound protection system in elective open colorectal surgery results in a statistically significant reduction in the incidence of surgical site infection and lower hospital charges.

**Key Words:** Barrier wound protection; surgical site infection; elective colorectal surgery.

**“[T]he use of barrier wound protection in elective open colorectal resectional surgery resulted in a clinically significant reduction in incisional surgical site infections. Barrier wound protection of this nature should be considered routine in this type of surgery.”**

Reid K, Pockney P, Draganic B, Smith SR. Barrier wound protection decreases surgical site infection in open elective colorectal surgery: A randomized clinical trial. Dis Colon Rectum. 2010 Oct; 53(10): 1374-1380.

**A wound retractor/protector can prevent infection by keeping tissue moist and preventing tissue damage at incision sites**

Horiuchi T, Nakatsuka S, et al. A wound retractor/protector can prevent infection by keeping tissue moist and preventing tissue damage at incision sites. Helix Review Series: Infectious Diseases. 2007; 3: 17-23.

**Objectives:** To determine if a wound retractor/protector can prevent infection by keeping tissue moist and preventing tissue damage at incision sites.

**Design:** A randomized prospective trial.

**Setting:** A community hospital.

**Patients:** One hundred seven patients undergoing open appendectomy.

**Intervention:** Randomly assigned experimental patients were treated with the Alexis wound-retractor/protector, whereas control patients were treated with standard open appendectomy. Outcomes including wound-healing rates, wound-infection rates, and hospital charges were compared. The mean age of patients was 40 years, and 60% were female.

**Main Results:** Incidence of wound infection in the Alexis group was 14% (10 of 70 patients) compared with 26% (18 of 67 patients) in the control group. The difference in wound-infection rates was statistically significant (P = .02). The mean hospital charges were significantly lower in the Alexis group (\$10,100) compared with the control group (\$11,500) (P = .001).

**Conclusions:** Use of a wound retractor/protector in open appendectomy results in a statistically significant reduction in the incidence of wound infection and lower hospital charges.

**Key Words:** Wound retractor/protector; wound-infection rates; open appendectomy.

**“The studied wound retractor/protector effectively protects wound tissue from damage due to environmental factors experienced during surgery.”**

Horiuchi T, Nakatsuka S, et al. A wound retractor/protector can prevent infection by keeping tissue moist and preventing tissue damage at incision sites. Helix Review Series: Infectious Diseases. 2007; 3: 17-23.

**Randomized, Controlled Investigation of the Anti-Infective Properties of the Alexis Retractor/Protector of Incision Sites**

Horiuchi T, Tanishima H, et al. Randomized, controlled investigation of the anti-infective properties of the Alexis retractor/protector of incision sites. J Trauma. 2007 Jan; 62(1): 212-215.

**Objectives:** To determine if the Alexis retractor/protector has anti-infective properties.

**Design:** A randomized prospective trial.

**Setting:** A community hospital.

**Patients:** One hundred seven patients undergoing open appendectomy.

**Intervention:** Randomly assigned experimental patients were treated with the Alexis retractor/protector, whereas control patients were treated with standard open appendectomy. Outcomes including wound-healing rates, wound-infection rates, and hospital charges were compared. The mean age of patients was 40 years, and 60% were female.

**Main Results:** Incidence of wound infection in the Alexis group was 14% (10 of 70 patients) compared with 26% (18 of 67 patients) in the control group. The difference in wound-infection rates was statistically significant (P = .02). The mean hospital charges were significantly lower in the Alexis group (\$10,100) compared with the control group (\$11,500) (P = .001).

**Conclusions:** Use of the Alexis retractor/protector in open appendectomy results in a statistically significant reduction in the incidence of wound infection and lower hospital charges.

**Key Words:** Alexis retractor/protector; anti-infective properties; open appendectomy.

**“The results of this study demonstrate that wound infection decreased significantly in the with Alexis retractor group.”**

Horiuchi T, Tanishima H, et al. Randomized, controlled investigation of the anti-infective properties of the Alexis retractor/protector of incision sites. J Trauma. 2007 Jan; 62(1): 212-215.

# REDUCTION IN BACTERIAL INVASION



*"[U]se of a plastic wound retractor may result in reduced enteric bacterial colonization of the surgical incision site during gastrointestinal surgery. Reduced colonization of the surgical incision site by enteric bacteria due to the use of a plastic wound retractor should result in a reduction in SSI following gastrointestinal surgery."*

Mohan HM, McDermott S, et al. Plastic wound retractors as bacteriological barriers in gastrointestinal surgery: A prospective multi-institutional trial. J Hosp Infect. 2012 Jun; 81(2): 109-113.

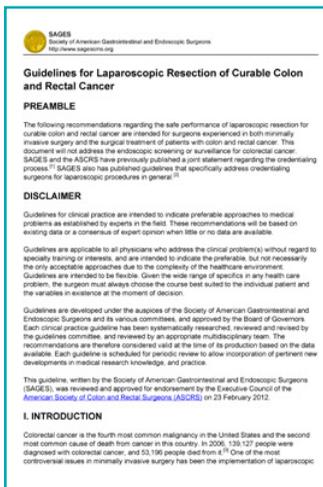


*"These results suggest that the [wound protector] protects an incision site from bacterial invasion."*

*"[W]e consider that the low incidence of SSI may have resulted from the protective effects of the [wound protector]."*

Horiuchi T, Tanishima H, et al. A wound protector shields incision sites from bacterial invasion. Surg Infect (Larchmt). 2010 Dec; 11(6): 501-503.

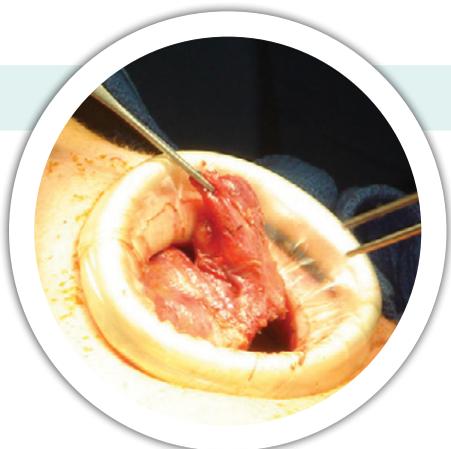
# Recommendation of a wound protector to REDUCE ABDOMINAL WALL CANCER RECURRENCES



*"Recommendation: The use of a wound protector at the extraction site and the irrigation of port sites and extraction site incisions may reduce abdominal wall cancer recurrences. (++) (strong)"*

Guidelines for Laparoscopic Resection of Curable Colon and Rectal Cancer. SAGES Society of American Gastrointestinal and Endoscopic Surgeons. <https://www.sages.org/publications/guidelines/guidelines-for-laparoscopic-resection-of-curable-colon-and-rectal-cancer/>. February 2012. Accessed January 22, 2015.

# PROCEDURAL APPLICATIONS



## GENERAL

Inguinal Hernia Repair (XS, S)  
Thyroidectomy (XS, S)  
Appendectomy (S, M)  
Splenectomy (L, XL)  
Pancreatectomy (L, XL)  
Whipple (XXL)



## BREAST

Lumpectomy (XS, S)  
Mastectomy (S, M)  
Sentinel Lymph Node Biopsy (XXS, XS, S)



## OB/GYN

Postpartum Tubal Ligation (XXS, XS)  
Bilateral Salpingo Oophorectomy (XS, S)  
Mini-Laparotomy (S, M)  
Lap Hysterectomy (S, M Laparoscopic System)  
Myomectomy (S, M)  
Total Abdominal Hysterectomy (S, M, L)  
Cesarean Section (L, XL)

## BARIATRIC

Lap Sleeve Gastrectomy (XXS)  
Lap Gastric Bypass (XS, S)  
Open Gastric Bypass (L, XL)



## COLON & RECTAL

Stoma Formation (XXS)  
Lap Colectomy (S, M Laparoscopic System)  
Open Colectomy (L, XL, XXL)



## CARDIOTHORACIC

Video-Assisted Thoracoscopic Surgery (VATS) (XXS, XS, S)  
Mitral Valve Repair/Replacement (S, M)  
Thoracotomy (S, M)



## ORTHOPAEDIC

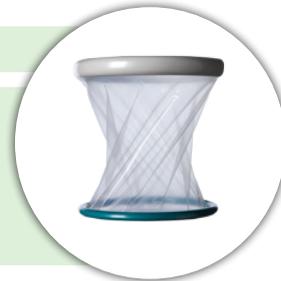
Total Shoulder Arthroplasty (S/S)  
Total Hip Arthroplasty (S/M, M/L)



# REORDER INFORMATION

## Alexis® 0 Wound Protector/Retractor

REORDER NO.	SIZE	QUANTITY
C8401	Small, 2.5 - 6cm	5/BOX
C8402	Medium, 5 - 9cm	5/BOX
C8403	Large, 9 - 14cm	5/BOX
C8404	X-Large, 11 - 17cm	5/BOX
C8405	XX-Large, 17 - 25cm	5/BOX



## Alexis Wound Protector/Retractor

REORDER NO.	SIZE	QUANTITY
C8313	XX-Small, 1 - 3cm	5/BOX
C8323	XX-Small, Short, 1 - 3cm	5/BOX
C8312	X-Small, 2 - 4cm	5/BOX
C8322	X-Small, Short, 2 - 4cm	5/BOX
C8301	Small, 2.5 - 6cm	5/BOX
C8302	Medium, 5 - 9cm	5/BOX
C8303	Large, 9 - 14cm	5/BOX
C8304	X-Large, 11 - 17cm	5/BOX



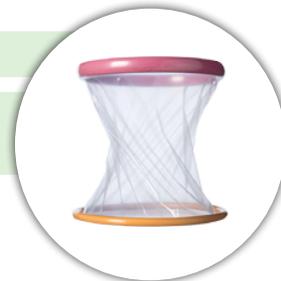
## Alexis Laparoscopic System with Kii® Fios® First Entry

REORDER NO.	SIZE	QUANTITY
C8701	Small, 2.5 - 6cm	5/BOX
C8702	Medium, 5 - 9cm	5/BOX



## Alexis 0 C-Section Retractor

REORDER NO.	SIZE	QUANTITY
G6313	Large, 9 - 14cm	5/BOX
G6314	X-Large, 11 - 17cm	5/BOX



## Alexis Orthopaedic Protector

REORDER NO.	SIZE	QUANTITY
HR001	Small/Small, 2.5 - 8cm	5/BOX
HR004	Small/Medium, 2.5 - 8cm	5/BOX
HR005	Medium/Large, 5 - 13cm	5/BOX

