sientra.

Instructions for Use

SIENTRA OPUS HIGH-STRENGTH COHESIVE SILICONE GEL BREAST IMPLANTS

Smooth Round

WARNING:

- **Breast implants are not considered lifetime devices. The longer people have them, the greater the chances are that they will develop complications, some of which will require more surgery.**
- **Breast implants have been associated with the development of a cancer of the immune system called breast implant-associated anaplastic large cell lymphoma (BIA-ALCL). This cancer occurs more commonly in patients with textured breast implants than smooth implants, although rates are not well defined. Some patients have died from BIA-ALCL.**
- **Patients receiving breast implants have reported a variety of systemic symptoms such as joint pain, muscle aches, confusion, chronic fatigue, autoimmune diseases and others. Individual patient risk for developing these symptoms has not been well established. Some patients report complete resolution of symptoms when the implants are removed without replacement.**

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INTRODUCTION

DIRECTIONS TO THE PHYSICIAN

The information contained in this Instructions for Use (IFU) is intended to provide an overview of essential information about Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants (also referred to as the "Implants") including a device description, the indications for use, contraindications, warnings, precautions, important factors for a patient to consider, adverse effects, other reported conditions, and a summary of the Sientra Clinical Study of Silicone Gel Breast Implants (also referred to as the "Study"). There is a **Boxed Warning** for all breast implants (See Cover Page).

Patient Counseling Information

You should review this document and the patient labeling, including the *Patient Decision Checklist* that highlights key information regarding risks of breast implant surgery, prior to counseling the patient about Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants and breast implant surgery. Please familiarize yourself with the content of this document and resolve any questions or concerns prior to proceeding with the use of this device. You should thoroughly review all of the risk information with the patient and address all of her questions prior to signing the Checklist along with the patient, indicating that you have reviewed all of the information and addressed all of her questions. As with any surgical procedure, breast implantation is not without risks. Breast implantation is an elective procedure, and the patient must be well counseled and understand the risk/benefit relationship.

Before making the decision to proceed with surgery, you or your designated patient care coordinator should instruct the patient to read the document titled: *Patient Educational Brochure: Breast Augmentation/Reconstruction with Sientra Silicone Gel Breast Implants* (patient labeling), and discuss with the patient the warnings, precautions, important factors to consider, complications, and the Study results listed in the patient labeling. You should advise the patient of the potential complications and that medical management of serious complications may include additional surgery and explantation.

Please refer to the *INFORMATION TO BE DISCUSSED WITH THE PATIENT* section of this document for additional patient counseling information.

Informed Decision

Each patient should receive Sientra's *Patient Educational Brochure: Breast Augmentation/Reconstruction with Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants* during the patient's initial visit/consultation, to allow the patient sufficient time to read and adequately understand the important information on the risks, follow-up recommendations, and benefits associated with silicone gel breast implant surgery.

Allow the patient at least 1-2 weeks to review and consider this information before deciding to have primary breast surgery. In the case of revision surgery, it may be advisable to perform surgery sooner.

In order to document a successful informed decision process, as discussed above the patient labeling includes a ***Patient Decision Checklist***, which should be signed by both the patient and the surgeon and then retained in the patient's file. A copy should also be provided to the patient.

Sientra Limited Warranty and Device Tracking

Device tracking information will be recorded on the **Device Tracking Form** supplied by Sientra with each Implant. The form should then be returned to Sientra via email to enrollment@sientra.ca or fax to 1-(888) 906-0101. The privacy and security of providers and patients is safeguarded through the use of email transmission encryption technologies.

Sientra strongly recommends that all patients receiving Sientra's Implants participate in Sientra's Device Tracking program.

Patients are not required by law to enroll themselves in any tracking program or device registry. However, participation in Sientra's Device Tracking program is required in order to activate the Sientra Limited Warranty further discussed in the *PRODUCT REPLACEMENT POLICY AND LIMITED WARRANTIES* section of this IFU. Patients must allow their physicians to share contact information and information about the implant in order to activate the Warranty.

DEVICE DESCRIPTION

Sientra Implants are single-lumen devices composed of a barrier-type, silicone elastomer shell, filled with high-strength silicone gel. The Implants are dry heat sterilized and are available in various shapes, profiles, and sizes.

Table 1 shows available styles and sizes of Sientra's OPUS High-Strength Cohesive Silicone Gel Breast Implants.

Table 1
Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implant Designs

Style Number and Gel Filler		Shell Surface	Shape and Profile	Volume (cc)	Width (cm)	Height (cm)	Projection (cm)
HSC	HSC+						
10512-MP	10712-MP	Smooth	Round Moderate	80-800	8.1-16.4	8.1-16.4	2.1-5.2
10610-LP	10710-LP	Smooth	Round Low	80-800	8.0-18.3	8.0-18.3	2.1-4.1
10610-LPP	10710-LPP	Smooth	Round Low Plus	80-440	8.0-14.5	8.0-14.5	2.1-3.9
10621-MP	10721-MP	Smooth	Round Moderate	95-800	7.7-15.6	7.7-15.6	2.9-5.7
10621- HP	10721- HP	Smooth	Round High	190-800	9.6-15.7	9.6-15.7	4.0-6.4
10621-XP	10721-XP	Smooth	Round Extra High	190-510	8.8-12.0	8.8-12.0	4.6-6.2

INDICATIONS FOR USE

Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants are indicated for:

- **Breast augmentation for women at least 22 years old.** Breast augmentation includes primary breast augmentation as well as revision surgery to correct or improve the result of primary breast augmentation surgery.
- **Breast reconstruction.** Breast reconstruction includes primary reconstruction to replace breast tissue that has been removed due to cancer or trauma or that has failed to develop properly due to a severe breast abnormality. Breast reconstruction also includes revision surgery to correct or improve the results of a primary breast reconstruction surgery.

CONTRAINDICATIONS

Breast implant surgery is contraindicated in women

- With active infections anywhere in their body,
- With existing cancer or precancerous conditions who have not received adequate treatment for those conditions,
- Who are currently pregnant or nursing.

WARNINGS

AVOID DAMAGING THE IMPLANT DURING SURGERY AND OTHER MEDICAL PROCEDURES

WARNING:

- **Breast implants are not considered lifetime devices. The longer people have them, the greater the chances are that they will develop complications, some of which will require more surgery.**
- **Breast implants have been associated with the development of a cancer of the immune system called breast implant-associated anaplastic large cell lymphoma (BIA-ALCL). This cancer occurs more commonly in patients with textured breast implants than smooth implants, although rates are not well defined. Some patients have died from BIA-ALCL.**
- **Patients receiving breast implants have reported a variety of systemic symptoms such as joint pain, muscle aches, confusion, chronic fatigue, autoimmune diseases and others. Individual patient risk for developing these symptoms has not been well established. Some patients report complete resolution of symptoms when the implants are removed without replacement.**

The most common causes of implant rupture include damage to the implant that occurs during the surgical implantation or other related medical procedures. Accordingly, physicians should not use excessive force and should minimize the handling of the implant during surgical insertion.

- Do not allow cautery devices or sharp instruments, such as scalpels, suture needles, hypodermic needles, hemostats, Adson forceps or scissors to contact the Implant during the implantation procedures.
- Use an appropriate length incision to accommodate the style, size, and profile of the implant.
- Do not treat capsular contracture by closed capsulotomy or forceful external compression, which could likely result in implant damage, rupture, folds, and/or hematoma.
- Use care in subsequent procedures, such as open capsulotomy, breast pocket revision, hematoma/seroma aspiration, and biopsy/lumpectomy to avoid damage to the implant. Repositioning of the implant during surgical procedures should be carefully evaluated by the medical team and care taken to avoid contamination of the implant. Use of excessive force during any subsequent procedure can contribute to localized weakening of the breast implant shell potentially leading to decreased device performance.
- Do not immerse the implant in any liquid such as Betadine or other iodine solution. If Betadine is used in the pocket, ensure that it is rinsed thoroughly so that no residual solution remains in the pocket.
- Do not alter the implants or attempt to repair or insert a damaged implant.

- Do not reuse or re-sterilize any implant that has been previously implanted. Breast implants are intended for single use only.
- Do not place more than one implant per breast.
- Do not use the periumbilical approach to place this implant.

MICROWAVE DIATHERMY

Do not use microwave diathermy in patients with breast implants, as it has been reported to cause tissue necrosis, skin erosion, and implant extrusion.

PRECAUTIONS

SPECIFIC POPULATIONS

The safety and effectiveness of this device have not been established in patients with

- Autoimmune diseases, for example, Lupus and Scleroderma,
- A compromised immune system (for example, currently receiving immunosuppressive therapy),
- Conditions that interfere with wound healing and blood clotting,
- Reduced blood supply to breast tissue,
- Planned chemotherapy following breast implant placement,
- Planned radiation therapy to the breast following breast implant placement,
- History of radiation therapy to the breast,
- Clinical diagnosis of depression or other mental disorders, including body dysmorphic disorder and eating disorders. Please discuss any history of mental health disorders with your patient prior to surgery. Patients with a diagnosis of depression or other mental disorders should wait until resolution or stabilization of these conditions prior to undergoing breast implantation surgery.

In order to avoid possible injury or damage to the incision site(s), you should advise your patients to avoid the following for the first month after the surgery:

- Sun exposure,
- Jerky movements or activities that stretch the skin at your incision site(s),
- Participating in sports or other activities that raise your pulse or blood pressure, and
- Unnecessary physical or emotional stress.

SURGICAL PRECAUTIONS

Surgical precautions, such as those described below, should be undertaken to maximize a successful aesthetic result and the long-term performance of the device.

Surgical Technique

The implantation of Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants involves a variety of surgical techniques. Therefore, you should use the method, which in your own best medical judgment, will provide the patient with the desired outcome consistent with this *Instructions for Use* document.

Implant Selection

In order to properly select the correct implant, the following considerations should be taken into account and, as appropriate, discussed with the patient:

- The implant should be consistent in size with the patient's chest-wall dimensions, including base width measurements, also considering the laxity of the tissue and the projection of the implant.
- A thorough discussion should be conducted with the patient, employing appropriate visual aids to clarify her objectives and manage expectations, in order to reduce the incidence of reoperation for size change.
- The following may cause implants to be more palpable: larger implants, subglandular placement, and an insufficient amount of skin/tissue available to cover the implant.
- Available tissue must provide adequate coverage of the implant.

Incision Site Selection

You should choose one of the following incision sites, based on your patient's particular needs:

1. The periareolar incision
2. The inframammary incision
3. The axillary incision

The periareolar incision is typically more concealed; however, it may be associated with an increased risk of certain complications, such as changes in breast sensation and difficulties breastfeeding, as compared to other incision sites (2000).[1]

The periumbilical approach has not been studied in Sientra's Study and should not be used for a variety of reasons, including potential damage to the implant shell.

Implant Placement Selection

A well-defined, dry pocket of adequate size and symmetry must be created for implant placement.

Possible benefits of submuscular placement are that it may result in less palpable implants, less likelihood of capsular contracture (2000)[1], and easier imaging of the breast for mammography. Also, submuscular placement may be preferable if the patient has thin or weakened breast tissue.

Subglandular placement may result in more palpable implants, greater likelihood of capsular contracture (2004-2005),[2, 3] and increased difficulty in imaging the breast with mammography.

Use of Surgical Mesh or Acellular Dermal Matrix (ADM)

The use of surgical mesh or acellular dermal matrix (ADM) together with the Breast Implants was not studied as part of Sientra's pivotal PMA Clinical Study.; the risks and adverse events are not known.

INFORMATION TO BE DISCUSSED WITH THE PATIENT

Breast implantation is an elective procedure, and the patient must be thoroughly counseled on the risks, as well as the benefits, of these products and procedures. You should advise your patient that she must read the patient labeling for either augmentation or reconstruction, as applicable. The patient labeling is intended as the primary means to relate uniform risk and benefit information to assist your patient in making an informed decision about primary breast augmentation and revision-augmentation, or primary reconstruction and revision-reconstruction surgery (as applicable),but is not intended to replace consultation with you. The patient should be advised to wait at least 1-2 weeks after reviewing and considering this information before deciding whether to have this surgery, unless an earlier surgery is deemed medically necessary.

Both you and your patient will be required to sign the *Patient Decision Checklist* form prior to surgery. This form can be found on the last page of each patient brochure. The form, once signed, acknowledges the patient's full understanding of the information provided in the brochure. The form should be retained in the patient's permanent medical record.

Below are some of the important factors your patients need to be aware of when using Sientra Implants.

RUPTURE

Rupture of a silicone gel breast implant may be silent/asymptomatic (i.e., there are no symptoms experienced by the patient and no physical signs of changes with the implant) rather than symptomatic. Health Canada and the Canadian Expert Advisory Panel on silicone gel-filled breast implants advocate the following approach to monitor patients with breast implants.

In consideration of all the available scientific information, it has been suggested that the process for determining implant integrity (e.g., rupture) should be related to clinical signs and symptoms. Thus, the following 6-step process is recommended when screening for silicone gel-filled breast implant rupture:

1. Patient self-examination
2. New Symptom or sign suspected;
3. Physician physical examination, related to a periodic review or new symptoms and signs, suggests findings that warrant further investigation;
4. Ultrasound, mammogram, or both of the implant and the breast involved should be acquired;
5. MRI if ultrasound is negative or inconclusive. The MRI should be performed at a center with a breast coil with a magnet of at least 1.5 Tesla. The MRI should be read by a radiologist who is familiar with looking for implant rupture; and
6. If signs of rupture are seen on MRI, then in consultation with the plastic surgeon, the implant(s) may be removed, with or without replacement.

EXPLANTATION

Implants are not considered lifetime devices, and patients will likely undergo implant removal(s), with or without replacement, over the course of their life. When implants are removed without replacement, changes to the patient's breasts may be irreversible. Complication rates are typically higher following revision surgery (removal with replacement).

REOPERATION

Additional surgeries to the patient's breasts will likely be required, whether because of implant rupture, other complications, or unacceptable size/cosmetic outcomes. Patients should be advised that their risk of future complications increases with revision surgery as compared to primary augmentation or reconstruction surgery. Further, in a reoperation in which the implant is not removed (such as open capsulotomies or scar revision), there is a risk that the integrity of the implant's shell could be compromised inadvertently, potentially leading to product failure.

BREAST EXAMINATION TECHNIQUES

Patients should perform breast self-examinations monthly and be shown how to distinguish the implant from their breast tissue. The patient should not manipulate or squeeze the implants excessively. The patient should be told that the presence of lumps, persistent pain, swelling, hardening, or change in the implant shape might be symptoms of rupture of the implant. If the patient has any of these signs, the patient should be told to report them to her surgeon, and possibly have an MRI evaluation to screen for rupture.

MAMMOGRAPHY

Patients who have undergone augmentation or revision augmentation should be instructed to undergo routine mammography exams as per their physician's recommendations. Mammograms may not be appropriate for all patients undergoing reconstruction. Please instruct the patient to consult with her surgeon or oncologist for mammogram recommendations specific to her situation. The importance of having these exams should be emphasized. Patients should be instructed to inform their mammography technologist about the presence, type, and placement of their implants. Patients should request a diagnostic mammography, rather than a screening mammography, because more pictures are taken with diagnostic mammography. Breast implants may complicate the interpretation of mammographic images by obscuring underlying breast tissue and/or by compressing overlying tissue. Accredited mammography centers, technicians with experience in imaging patients with breast implants, and the use of displacement techniques, are needed to adequately visualize breast tissue in the implanted breast. The current recommendations for preoperative/screening mammograms are no different for women with breast implants than for those women without implants. Pre-surgical

mammography with a follow-up mammogram after implantation may be performed to establish a baseline for routine future mammography in augmentation patients.

LACTATION

Breast implant surgery may interfere with the ability to successfully breast feed, either by reducing or eliminating milk production. The Institute of Medicine (IOM), in its 1999 report on the safety of silicone breast implants, encourages mothers with silicone gel breast implants to breast feed, stating that while breast implantation may increase the risk of lactation difficulties, there is no evidence of a hazard to the infant "beyond the loss of breastfeeding itself", (2000).[1] Other professional medical associations and independent scientific panels have echoed these conclusions and recommendations (1996,1998, 2001).[4-6]

AVOIDING DAMAGE DURING OTHER TREATMENT

Patients should inform other treating physicians of the presence of implants to minimize the risk of damage to the implants.

SMOKING

As with any surgery, smoking may interfere with the healing process after breast implant surgery.

RADIATION TO THE BREAST

Sientra has not tested the *in vivo* effects of radiation therapy in patients who have breast implants. The literature suggests that radiation therapy may increase the likelihood of capsular contracture (2006,2009),[7, 8] necrosis, and implant extrusion (2009).[9]

INSURANCE COVERAGE

Patients should be advised that health insurance premiums may increase, insurance coverage may be dropped, and/or future coverage may be denied based on the presence of breast implants. Treatment of complications of breast implantation may not be covered as well. Patients should check with their insurance company regarding coverage issues before undergoing surgery.

MENTAL HEALTH AND ELECTIVE SURGERY

It is important that all patients seeking to undergo elective surgery have realistic expectations that focus on improvement rather than perfection.

Request that your patient openly discuss with you, prior to surgery, any history that she may have of depression or other mental health disorders.

LONG-TERM EFFECTS

Sientra has completed its 10-year Clinical Study. In addition, Sientra has initiated a separate dual-design postapproval study, which includes a prospective cohort study and a series of case-control studies, to address specific issues that Sientra's current Study was not designed to fully answer, as well as to provide a real-world assessment of key endpoints. The endpoints in Sientra's postapproval study include long-term local complications, connective tissue disease (CTD), CTD signs and symptoms, neurological disease, neurological signs and symptoms, offspring issues, reproductive issues, lactation issues, cancer, including BIA-ALCL, suicide, mammography issues, and MRI compliance and results. Sientra will continue to update its product labeling on a regular basis with the results of the ongoing U.S. Post Approval Study. It is important for you to relay any new safety information to your patients as soon as such information is provided to you.

GENERAL ADVERSE EFFECTS ASSOCIATED WITH BREAST IMPLANT SURGERY

Potential adverse events that may occur with silicone gel breast implant surgery include: rupture, capsular contracture, reoperation, implant removal, pain, changes in nipple and breast sensation, infection, hematoma/seroma, unsatisfactory results, breast feeding complications and additional complications.

Below is a description of these adverse events. For specific adverse event rates/outcomes for Sientra Implants, refer to the Study section that follows.

RUPTURE

Breast implants are not lifetime devices. Breast implants rupture when the shell develops a tear or hole. Rupture can occur any time after implantation, but rupture is more likely to occur the longer the implant is implanted. The following things may cause implants to rupture: damage by surgical instruments; stressing the implant during implantation and weakening it; folding or wrinkling of the implant shell; excessive force to the chest; trauma; compression during mammographic imaging; and severe capsular contracture. Breast implants may also simply wear out over time.

Rupture of a silicone gel breast implant may be silent/asymptomatic (i.e., there are no symptoms experienced by the patient and no physical signs of changes with the implant) rather than symptomatic. Health Canada and the Canadian Expert Advisory Panel on silicone gel-filled breast implants advocate the following approach to monitor patients with breast implants.

In consideration of all the available scientific information, it has been suggested that the process for determining implant integrity (e.g., rupture) should be related to clinical signs and symptoms. Thus, the following 6-step process is recommended when screening for silicone gel-filled breast implant rupture:

1. Patient self-examination
2. New Symptom or sign suspected;
3. Physician physical examination, related to a periodic review or new symptoms and signs, suggests findings that warrant further investigation;
4. Ultrasound, mammogram, or both of the implant and the breast involved should be acquired;
5. MRI if ultrasound is negative or inconclusive. The MRI should be performed at a center with a breast coil with a magnet of at least 1.5 Tesla. The MRI should be read by a radiologist who is familiar with looking for implant rupture; and
6. If signs of rupture are seen on MRI, then in consultation with the plastic surgeon, the implant(s) may be removed, with or without replacement.

Studies (1992,1995-1996) in the medical literature suggest that silent rupture is relatively uncommon.[10-12] Rupture rates appear to be higher following primary or revision reconstruction than primary or revision augmentation. In some instances, gel may migrate from the implant into the capsule and possibly outside of the capsule to other places in the body. There are a small number of reports that describe health effects occurring in women with ruptured implants, but the causality cannot be determined (2014, 2018).[13, 14] Sometimes there are local symptoms associated with gel implant rupture. These symptoms include hard knots or lumps surrounding the implant or in the armpit, change or loss of size or shape of the breast or implant, pain, tingling, swelling, numbness, burning, or hardening of the breast (2001-2003).[15-18]

When MRI findings indicate a rupture (such as subcapsular lines, characteristic folded wavy lines, teardrop sign, keyhole sign, noose sign), or ultrasound findings of rupture or if there are signs or symptoms of rupture, you should remove the Implant (with or without replacement of the Implant) and any gel you determine is present. It also may be necessary to remove the tissue capsule, as well, all of which will involve additional surgery, with associated costs. If your patient has symptoms, such as breast hardness, a change in breast shape or size, and/or breast pain, you should recommend that she have an MRI to determine whether rupture is present (2000, 2004).[1, 19]

There may also be consequences of rupture. If rupture occurs, silicone may either remain within the scar tissue surrounding the Implant (intracapsular rupture) or move outside the capsule (extracapsular rupture), or gel may move beyond the breast (migrated gel). There is also a possibility that rupture that initially occurs as an intracapsular rupture may progress to extracapsular and beyond. There have been few health consequences associated with migrated gel reported in the literature.

Additional Information on the Consequences of Rupture from Literature*:*

Studies of Danish women evaluated with MRI involving a variety of manufacturers and implant models showed that about three-fourths of implant ruptures are intracapsular and the remaining one-fourth is extracapsular (2001)[20]. Additional studies of Danish women indicate that over a 2-year period, about 10% of the implants with intracapsular rupture progressed to extracapsular rupture as detected by MRI (2004).[19] Approximately half of the women whose ruptures had progressed from intracapsular to extracapsular reported that they experienced trauma to the affected breast during this time period or had undergone mammography. In the other half, no cause was given. In the women with extracapsular rupture, after 2 years, the amount of silicone seepage outside the scar tissue capsule increased for about 14% of these women. This type of information pertains to a variety of silicone implants from a variety of manufacturers and implant models and is not specific to Sientra's OPUS High-Strength Cohesive Silicone Gel Breast Implants.

CAPSULAR CONTRACTURE

Patients should be advised that capsular contracture might be more common following infection, hematoma, and seroma, and that the chance of it occurring may increase over time. Capsular contracture is also a risk factor for implant rupture (2001),[16] and it is one of the most common reasons for reoperation. Patients should be advised that additional surgery might be needed in cases where pain and/or firmness are severe. This surgery ranges from removal of the implant capsule tissue to removal and possible replacement of the implant itself. This surgery may result in loss of breast tissue. Capsular contracture may recur after these additional surgeries.

REOPERATION

Patients should be advised that additional surgery to their breast and/or implant will likely be necessary over the course of their life. Reoperations can be required for many reasons including a patient's decision to change the size or type of her implants, or to otherwise improve her breast surgery outcome.

IMPLANT REMOVAL

Patients should be advised that the implants are not considered lifetime devices and they will potentially undergo Implant removal, with or without replacement, over the course of their life. Patients should also be advised that the changes to their breast following explantation might be irreversible.

PAIN

Pain of varying intensities and lengths of time may occur and persist following breast implant surgery. In addition, improper size, placement, surgical technique, or capsular contracture may result in pain. The surgeon should instruct his or her patient to inform him or her if there is significant pain or if pain persists.

CHANGES IN NIPPLE AND BREAST SENSATION

Sensation in the nipple and breast can increase or decrease after implant surgery.

Sensation is typically lost after complete mastectomy where the nipple itself is removed. This loss of feeling can be severely lessened by partial mastectomy. Radiation therapy also can significantly reduce sensation in the remaining portions of the breast or chest wall. The placement of breast implants for reconstruction may further lessen the sensation in the remaining skin or breast tissue. The range of changes varies from intense sensitivity to no feeling in the nipple or breast following surgery. While some of these changes can be temporary, they can also be permanent, and may affect the patient's sexual response or ability to breast feed.

INFECTION

In rare instances, acute infection may occur in a breast with implants. The signs of acute infection include erythema, tenderness, fluid accumulation, pain, and fever. Very rarely, Toxic Shock Syndrome, a potentially life-threatening condition, has been reported in women after breast implant surgery. It is characterized by symptoms that occur suddenly and include high fever (102°F, 38.8°C), vomiting, diarrhea, a sunburn-like rash, red eyes, dizziness, lightheadedness, muscle aches, and drops in blood pressure, which may cause fainting. Patients should be instructed to contact a physician immediately for diagnosis and treatment for any of these symptoms.

UNSATISFACTORY RESULTS

Patients should be informed that dissatisfaction with cosmetic results related to such things as incorrect size, scar deformity, hypertrophic scarring, capsular contracture, asymmetry, wrinkling, implant displacement/migration, and implant palpability/visibility might occur. Careful surgical planning or technique can minimize, but not preclude, the risk of such results. Pre-existing asymmetry may not be entirely correctable. Revision

surgery may be indicated to maintain patient satisfaction but carries additional considerations and risks.

BREAST FEEDING COMPLICATIONS

Difficulties with breast-feeding have been reported following both breast reduction and breast augmentation surgeries. A periareolar surgical approach may further increase the chance of breast-feeding difficulties.

BENIGN BREAST DISEASE

The risk or prevalence of benign breast disease among women with silicone breast implants has not been widely published in the literature. A single clinical study (prior to 2008) identified a galactocele in one of 100 women with silicone gel implants. The current literature search identified two case series of generally noncancerous breast tumors among women with silicone breast implants. One series (2018) examined desmoid tumors in the breast; the reviewers estimated the incidence of desmoid tumors of the breast in women following breast implant surgery to be 2.0-2.7 cases per million, which is lower than the incidence among the general population (estimated to be 2.4-4.3 cases per million).[21] A second small case series of eight women (2009) with implant-associated mesenchymal tumors of the breast that occurred in women with breast implants found insufficient evidence to claim a relationship to biomaterials.[22]

ADDITIONAL COMPLICATIONS

After breast implant surgery, the following may occur and/or persist, with varying intensity and/or varying length of time: implant extrusion, necrosis, delayed wound healing, and breast tissue atrophy/chest wall deformity. Calcium deposits can form in the tissue capsule surrounding the implant with symptoms that may include pain and firmness. Lymphadenopathy has also been reported in some women with implants.

OTHER REPORTED CONDITIONS

Patients receiving breast implants have reported a variety of systemic symptoms such as joint pain, muscle aches, confusion, chronic fatigue, autoimmune diseases and others. Individual patient risk for developing these symptoms has not been well established. Some patients report complete resolution of symptoms when the implants are removed without replacement.

There have been reports in the literature of other conditions in women with silicone gel breast implants. Many of these conditions have been studied to evaluate their potential association with breast implants. Furthermore, there is the possibility of risks, yet unknown, which in the future could be determined to be associated with breast implants. It should be noted that the cited references include data from augmentation and/or reconstruction patients, as well as from a variety of manufacturers and implant models. With the exception of BIA-ALCL, as presented below, no cause-and-effect relationship has been established between breast implants and the other conditions listed below. The following information was obtained from literature published through the end of 2020.

CONNECTIVE TISSUE DISEASE DIAGNOSES OR SYNDROMES

Connective tissue diseases include diseases such as lupus, scleroderma, rheumatoid arthritis and fibromyalgia. There have been a number of published epidemiological studies, meta-analyses, and "weight-of-the-evidence" or critical reviews that have looked at whether having a breast implant is associated with having a typical or defined connective tissue disease. The study size needed to conclusively rule out a smaller risk of connective tissue disease among women with silicone gel breast implants would need to be very large (2000, 2003-2004).[1, 23-28] These published studies (1997-2002, 2004,2016,2019) taken together show that breast implants are either not significantly associated with a risk of developing a typical or defined connective tissue disease, or if a significance was detected, based on limitations of the studies a causative relationship with breast implants could not be determined.[1, 15, 16, 25-27, 29-39] These studies do not distinguish between women with intact and ruptured implants. One study (2003) evaluated specific connective tissue disease diagnoses and symptoms in women with silent ruptured versus intact implants, but it was too small to rule out a small risk.[24] Another study(2003) in a small group of women concluded that significantly more women with ruptured implants than intact implants reported debilitating chronic fatigue;[40] the women reported their symptoms after learning whether or not they had a ruptured implant. More recently (2011,2017), the results of one large cohort study (23,847 women, 3950 with breast implants)[41] and one large clinical follow-up study of 55,279 women who had breast implantation for both augmentation and reconstruction indications,[42] have been reported. The large cohort study found that, among women with breast implants, there was either no significant increase in risk of the disease when it was based on self-report or was too small (less than 5 cases) to generate reliable risk estimates in verified cases for the following: polymyositis or dermatomyositis, rheumatoid arthritis, scleroderma, and systemic lupus erythematosus. Women with breast implants had a significantly increased risk of Sjögren's syndrome when it was

based on self-report but was too small (less than 5 cases) to generate reliable risk estimates in verified cases. In the consideration of "all" or "atypical" Connective Tissue Disease, women with breast implants showed a significantly increased risk of the disease when it was based on self-report but the relative risk was no longer significant when these cases were verified.[41]

The large clinical follow-up study (2017) found that the expected occurrence rate of the following connective tissue diseases: polyarteritis nodosa, physician-diagnosed lupus or lupus-like syndrome, or physician-diagnosed scleroderma/systemic sclerosis, were not observed in women with breast implants at a higher rate than the nationally expected rate.[42]

Some independent scientific panels and review groups have concluded that there is no evidence to support an association between breast implants and connective tissue disease (2011),[43] or at least, if a risk cannot be absolutely excluded it is too small to be quantified (1998 and 2000-2001).[1, 6, 27]

CONNECTIVE TISSUE DISEASE SIGNS AND SYMPTOMS

Some literature reports have also been made associating silicone gel breast implants with various rheumatological signs and symptoms, such as fatigue, exhaustion, joint pain and swelling, muscle pain and cramping, tingling, numbness, weakness, and skin rashes. Having these rheumatological signs and symptoms does not necessarily mean that a patient has a connective tissue disease. Some scientific expert panels (2000) and literature reports (2001-2002 and 2004) have found no evidence of a consistent pattern of signs and symptoms in women with silicone gel breast implants.[1, 44-47] If a patient has an increase in these signs or symptoms, you should refer her to a rheumatologist to determine whether these signs or symptoms are due to a connective tissue disorder or autoimmune disease.

Patients receiving breast implants have reported a variety of systemic symptoms such as joint pain, muscle aches, confusion, chronic fatigue, autoimmune diseases and others. Individual patient risk for developing these symptoms has not been well established. Some patients report complete resolution of symptoms when the implants are removed without replacement.

CANCER

Breast Cancer

Some reports (2000-2001,2006-2007,2015) in the medical literature indicate that patients with breast implants are not at a greater risk than those without breast implants for developing breast cancer.[30, 48-57] Some reports (2000,2002-2004,2019) have suggested that breast implants may interfere with or delay breast cancer detection by mammography and/or biopsy; however, other reports in the published medical literature

indicated that breast implants neither significantly delay breast cancer detection nor adversely affect cancer survival of women with breast implants.[24, 48, 51, 56, 58-60]

Brain and Nervous System Cancers

One study has reported an increased risk of brain cancer in women with breast implants as compared to the general population (2001).[49] The incidence of brain cancer, however, was not significantly increased in women with breast implants when compared to women who had other types of plastic surgeries; the study relied on very few cases and the authors relied upon death certificates for brain cancer diagnoses, which may reflect other cancers that have metastasized. Other large studies (2000, 2002, 2004, 2006-2007,2009,2012,2017) and a published review of four large studies in women with cosmetic implants concluded that the evidence does not support an association between brain cancer and breast implants.[26, 50, 52-56, 61][42, 62]

Lympho-Hematopoietic Cancers

One study (2001) has reported an increased risk of leukemia in women with breast implants as compared to the general population.[49] However, there was no increased risk when compared to women who had other types of plastic surgery. Other recent large studies (2000, 2002, 2004, 2006-2007,2009,2012) concluded that the evidence does not support an association between lympho-hematopoietic cancers and breast implants.[26, 50, 52-56, 61, 62] One of the studies actually found a statistically reduced rate of lympho-hematopoietic cancers among women with breast implants compared to the general population(2012).[62]

Breast Implant Associated-Anaplastic Large Cell Lymphoma (BIA-ALCL)

Based on information reported to global regulatory agencies and found in medical literature, an association has been identified between breast implants and the development of anaplastic large cell lymphoma (BIA-ALCL), a type of non-Hodgkin's lymphoma (2008).[63] This cancer occurs more commonly in patients with textured breast implants than smooth implants, although rates are not well defined (2019).[64-66] Some patients have died from BIA-ALCL. As of September 2018, the US Food and Drug Administration had identified 457 unique medical device reports for BIA-ALCL, including the deaths of nine patients.[67] Women with breast implants have a very small but increased risk of developing ALCL (BIA-ALCL) in the fluid or scar capsule adjacent to the implant. In a number of case series reviews, BIA-ALCL presented most commonly as a late seroma but could also present as a mass attached to the capsule, tumor erosion through the skin, or in a regional node (2008-2009,2011-2015,2017).[68-87]

Five epidemiology studies were identified that presented risk estimates of BIA-ALCL associated with breast implants. Three studies (2016-2018) found a statistically significant association,[88-90] whereas 2 others (2012-1013) did not.[91, 92]

BIA-ALCL has been reported globally in patients with an implant history that includes Sientra's and other manufacturers' breast implants with various surface properties, styles, and shapes. Most of the cases in the literature reports describe a history of the use of textured implants.

You should consider the possibility of BIA-ALCL when a patient presents with late onset, persistent peri-implant seroma. In some cases, patients presented with capsular contracture or masses adjacent to the breast implant. When testing for BIA-ALCL, collect fresh seroma fluid and representative portions of the capsule, and send to a laboratory with appropriate expertise for pathology tests to rule out BIA-ALCL, including immunohistochemistry testing for CD30 and ALK (anaplastic lymphoma kinase). If your patient is diagnosed with peri-implant BIA-ALCL, develop an individualized treatment plan in coordination with a multidisciplinary care team. The United States National Comprehensive Cancer Network (NCCN) recommends surgical treatment that includes implant removal and complete capsulectomy ipsilaterally as well as contralaterally, where applicable (Ref. NCCN Clinical Practice Guidelines in Oncology, T-cell Lymphomas. Current version).[93] One clinical follow-up study of 87 women with BIA-ALCL was conducted to evaluate the efficacy of different therapies and determine the optimal treatment approach (2016).[94] Women with BIA-ALCL confined by the capsule surrounding the implant had better event-free survival and overall survival than did women with BIA-ALCL that had spread beyond the capsule ($p=0.03$). Women who underwent complete surgical excision (total capsulectomy with implant removal) had better overall survival ($p = 0.022$) and event-free survival ($p = 0.014$) than did women who received partial capsulectomy, systemic chemotherapy, or radiation therapy.

A call for continued research to further understand the true prevalence, pathophysiology, and *etiopathogenesis* has been the theme in the most recent literature (2019).[64, 66, 95, 96]

Report all confirmed cases of BIA-ALCL to Health Canada (https://www.canada.ca/en/health-canada/services/drugs-health-products/medeffect-canada/adverse-reaction-reporting/medical-device.html). In some cases, Health Canada may contact you for additional information. Health Canada will keep the identities of the reporter and the patient confidential.

You may also visit Health Canada's Breast Implants website for additional information:

https://www.canada.ca/en/health-canada/services/drugs-medical-devices/breast-implants.html

For additional information on Heath Canada's analysis and review of BIA-ALCL, please visit:

https://www.canada.ca/en/health-canada/services/drugs-medical-devices/breast-implants/risks.html#rare_risk

Respiratory/Lung Cancer

One study (2001) has reported an increased incidence of respiratory/lung cancer in women with breast implants.[49] Other research (2006) in women in Sweden and Denmark have found that women who get breast implants are more likely to be current smokers than women who get breast reduction surgery or other types of cosmetic surgery.[54] Several large studies (2002, 2006-2007,2009,2012) have found no association between breast implants and respiratory/lung cancer.[50, 52, 53, 55, 56, 61, 62]

Reproductive System Cancers

One study (2001) has reported an increased incidence of cervical/vulvar cancer in women with breast implants.[49] However, there was no increased risk when compared to women who had other types of plastic surgery. Another study (2007) reported an increased incidence of vulvar cancer that has not been explained.[52] Other recent large studies (2000, 2002, 2004, 2006,2009,2012,2017) concluded that the evidence does not support an association between reproductive system cancers and breast implants.[26, 50, 53-56][42, 61, 62]

Other Cancers

There have been several studies published that examined the risk of other types of cancers, e.g., thyroid cancers, urinary system cancers, sarcoma, endocrine cancer, skin cancer, connective tissue cancer, cancer of the eye, and unspecified cancers in women with breast implants. All of those studies found no increased risk in women with breast implants (2000-2001, 2003-2004, 2006-2007,2009,2012).[18, 45, 49, 50, 52-55, 61, 62]

NEUROLOGICAL DISEASE, SIGNS, AND SYMPTOMS

Some women with breast implants have complained of neurological symptoms (such as difficulties with vision, sensation, muscle strength, walking, balance, thinking, or remembering things) or neurological diseases (such as multiple sclerosis), which they believe are related to their implants. One scientific expert panel(2000) found that the evidence for a neurological disease or syndrome caused by or associated with breast implants is insufficient or flawed.[1] Subsequent to that report, one epidemiological study (2001)[97] and one cohort study (2001)[30] examined a variety of neurological diseases in women with breast implants and found no significantly increased risk. The most recent literature (2017) included one large clinical follow-up study of 55,279 women who had breast implantation for both augmentation and reconstruction indications and were followed for more than five years.[42] The rate of physician-diagnosed multiple sclerosis was not observed among women with breast implants at a higher rate than the national norm.

MENTAL HEALTH DISORDERS

Patients should be encouraged to discuss any history of mental health disorders, including a clinical diagnosis of depression, body dysmorphic disorder or eating disorder with you during their consultation visit(s). Patients with a diagnosis of depression or other mental health disorder should be encouraged to wait to schedule surgery until these conditions resolve.

SUICIDE

In several studies and a systematic review (2001-2004,2010,2016), a higher incidence of suicide, depression, and/or anxiety was observed in women with breast implants.[98-104] The reason for the observed increase is unknown, but in one study it was found that women with breast implants had higher rates of hospital admissions due to psychiatric causes prior to surgery, as compared with women who had breast reduction or in the general population of Danish women.[100] One more recent study of 55,279 women who had breast implantation for both augmentation and reconstruction indications and were followed for over five years found that that suicide rate was not significantly higher than the rate in the general female population (2017).[42]

EFFECTS ON CHILDREN

It is not known if a small amount of silicone may pass through from the breast implant silicone shell into breast milk during breast-feeding. Although there are no current established methods for accurately detecting silicone levels in breast milk, a study (2000) measuring silicon (one component of silicone) levels did not indicate higher levels in breast milk from women with silicone gel breast implants when compared to women without implants (based on literature published from 2000.[105]

Four cohort and clinical follow-up studies (2009,2016,2019) were identified that evaluated lactation outcomes among more than 4,000 women with breast implants who attempted to breastfeed a baby. The risk of lactation issues was low in women who have breast implants and the incidence of lactation problems was similar to that reported for post-partum women who did not have breast implants.[106-109]

In addition, concerns have been raised regarding potential damaging effects on children born to mothers with implants. Several studies (2001-2002, 2006) in humans have found that the risk of birth defects or other adverse health effects overall is not increased in children born after breast implant surgery.[110-112] Although low birth weight was reported in one study (2004), other factors (for example, lower pre-pregnancy weight) may explain this finding.[113] This author recommended further research on infant health.

One study (2009) was identified that looked at reproductive problems and found that the rate of reproductive problems (including miscarriage) before breast implantation was lower than that after implantation (25.8% vs 8.6%).[107]

POTENTIAL HEALTH CONSEQUENCES OF GEL BLEED

Small quantities of low molecular weight (LMW) silicone compounds, as well as platinum (in zero oxidation state), have been found to diffuse ("bleed") through an intact implant shell (2000, 2003).[1, 114] The evidence is inconclusive as to whether there are any clinical consequences associated with gel bleed. For instance, studies on implanted women over a long duration have suggested that such bleed may be a contributing factor in the development of capsular contracture (2000)[1] and lymphadenopathy (2005,2016).[115][116] However, evidence against gel bleed being a significant contributing factor to capsular contracture and other local complications, is provided by the fact that there are similar or lower complication rates for silicone gel breast implants than for saline-filled breast implants. Saline-filled breast implants do not contain silicone gel, and, therefore, gel bleed is not an issue for those products. Furthermore, toxicology testing has indicated that the silicone material used in the Study implants does not cause toxic reactions when large amounts are administered to test animals. It should also be noted that studies reported in the literature have demonstrated that the low concentration of platinum contained in breast implants is in the zero oxidation (most biocompatible) state (1987, 1995, 1999).[117-120]

Sientra performed a laboratory test to analyze the silicones and platinum (used in the manufacturing process), which may bleed out of intact implants into the body. Over 99% of the LMW silicones and platinum stayed in the implant. The overall body of available evidence supports that the extremely low level of gel bleed is of no clinical consequence.

SIENTRA'S CLINICAL STUDY

OVERVIEW

Sientra's Silicone Gel Breast Implant Clinical Study (called the "Study") is a prospective, 10-year, multicenter clinical study conducted to examine the safety and effectiveness of Sientra's Silicone Gel Breast Implant in patients undergoing primary augmentation, primary reconstruction, revision-augmentation, and revision-reconstruction of the breast. The Study consists of data from the primary augmentation and revision-augmentation cohorts of Sientra's CORE study, as well as pooled data from Sientra's CORE and Continued Access (CA) studies for the primary reconstruction and revision-reconstruction cohorts. Subjects were eligible for the study if they were female, met certain age limit requirements (18 or older for augmentation, no age limit for primary reconstruction, or revision patients if the original surgery was primary reconstruction), had adequate tissue available to cover the implants, were willingness to follow study requirements, and met the criteria for placement into one of the study cohorts. Subjects were excluded if they had advanced fibrocystic disease considered to be pre-malignant without mastectomy; inadequate or unsuitable tissue; active infection anywhere in the body at the time of surgery; pregnant or lactating; a medical condition in the judgment of the investigator such as obesity, diabetes, autoimmune disease, chronic lung or severe cardiovascular disease, that might result in unduly high surgical risk and/or significant post-operative complications; use of drugs, including any drug that would interfere with blood clotting, that might result in high risk and/or significant post-operative complications; demonstrates psychological characteristics, which are unrealistic or unreasonable with the risks involved with the surgical procedure; where it has been determined by physical examination that the subject may have a connective tissue/autoimmune disorders such as systemic lupus erythematosus, discoid lupus, or scleroderma; existing carcinoma of the breast without accompanying mastectomy; or where MRI scan is prohibited because of implanted metal device, claustrophobia or other conditions.

There were 1,788 patients who participated in the Clinical Study. A total of 1,116 patients had primary augmentation, 363 patients had revision-augmentation, 225 patients had primary reconstruction (152 CORE and 73 CA) and 84 patients (52 CORE and 32 CA) had revision reconstruction with Sientra Implants. Of these patients, 398 primary augmentation patients, 115 revision-augmentation patients, 48 primary reconstruction patients, and 10 revision-reconstruction patients are assessed for implant rupture by MRI at years 3, 4, 6, 8, and 10 years. A total of 37 investigators (including transfer follow-up investigators) followed patients in the four cohorts.

Study patients were expected to complete annual follow-up visits for safety and effectiveness through 10 years. Assessment of the long-term safety of the Study Implants was based on the incidence, severity, method of resolution and duration of all complications, including device failures, and adverse device effects, on a per-implant and per-patient basis. The rate of asymptomatic or "silent" rupture was also assessed via incidence; most silent ruptures were identified via MRI, and others were identified via mammography or at explantation. Originally, 32% of study subjects participated in an MRI cohort to receive MRIs at regular intervals. Upon approval in 2012, all subjects were expected to obtain MRIs at regular intervals. MRI compliance at the 10-year time point was 56.5%. Other potential complications of the breast implant surgery assessed by the Study include possible systemic effects (e.g., autoimmune and/or rheumatologic effects). In addition, all secondary procedures related to the breast, including explant surgery with or without replacement, were recorded. Assessment of long-term effectiveness was based on changes in bra size/chest circumference taken at Years 1 and 2, and patient-reported quality-of-life (QOL) outcomes, including the Short Form Health Survey (SF-36), the Rosenberg Self-Esteem Scale, and the Body Image Scale assessed through 10 years.

Study strengths include the fact that the Study is a multicenter, prospective long-term (10-year) study with a large, robust sample size and adequate statistical power to estimate important health-related endpoints. Patient follow-up met FDA compliance requirements for a long-term study duration of 10 years. Further strengths include the datum that safety endpoints were assessed and collected by surgeons during physical examination of their patients at follow-up office visits (rather than unconfirmed or indirect patient-reported outcomes). Another potential strength is the enrollment of a mix of Sientra's various Implant styles (smooth shell, round/shaped), thereby providing endpoint results including a variety of styles; however, because the enrollment was not stratified to enroll these equally across the study (and not equally within each cohort), this may be a weakness since particular styles were enrolled at higher rates and associated with varying outcomes.

The use of more recent surgical tools and techniques, including surgical mesh, acellular dermal matrix (ADM), insertion devices, etc., together with the Breast Implants, was not studied as part of Sientra's Silicone Gel Breast Implant Clinical Study. This can be viewed as a Study weakness. However, this would be a limitation in any 10-year, long-term study that was based on state-of-the art best practices at the initiation of the Study.

The final, 10-year results of the Study demonstrate that the Implants continue to be safe and effective for use in primary augmentation, revision-augmentation, primary reconstruction, and revision-reconstruction of the breast. The final 10-year safety assessment of the Implants reveals clinically acceptable rates for complications. Additionally, the effectiveness outcomes demonstrate that the majority of subjects continue to report favorable satisfaction and QOL results. Clinical results include data collected through the database closing date of November 15, 2017.

Final 10-year Clinical Study data available for 67% of the eligible primary augmentation patients, 62% of the eligible revision-augmentation patients, 65% of the eligible primary reconstruction patients, and 58% of the revision reconstruction patients, for an overall final Study follow-up compliance of 65%. Table 2 provides a tabulation of the 10-year patient accounting.

Table 2
Patient Accounting

Follow-up Year	Study Cohort			
	Primary Augmentation	**Revision Augmentation**	**Primary Reconstruction**	**Revision Reconstruction**
Year 1				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	4 (0 & 4)	7 (1 & 6)	12 (1 & 11)	6 (0 & 6)
Expected	1,112	356	213	78
Other Discontinued (Not Available & Subject Request)	5 (3 & 2)	1 (0 & 1)	5 (0 & 5)	1 (0 & 1)
Lost to Follow-up	9	8	17	7
Actual Evaluated (% Follow-up)	1,018 (92%)	317 (89%)	192 (90%)	68 (87%)
Year 2				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	14 (0 & 14)	15 (2 & 13)	14 (1 & 13)	12 (1 & 11)
Expected	1,102	348	211	72
Other Discontinued (Not Available & Subject Request)	9 (3 & 6)	3 (1 & 2)	6 (0 & 6)	1 (0 & 1)
Lost to Follow-up	23	18	20	13
Actual Evaluated (% Follow-up)	928 (84%)	296 (85%)	176 (83%)	62 (86%)
Year 3				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	23 (0 & 23)	21 (2 & 19)	16 (3 & 13)	14 (2 & 12)
Expected	1,093	342	209	70
Other Discontinued (Not Available & Subject Request)	12 (3&9)	4 (1 & 3)	6 (0 & 6)	3 (0 & 3)

Table 2 Patient Accounting				
Follow-up Year	**Study Cohort**			
	Primary Augmentation	**Revision Augmentation**	**Primary Reconstruction**	**Revision Reconstruction**
Lost to Follow-up	35	25	22	17
Actual Evaluated (% Follow-up)	885 (81%)	27 (80%)	170 (81%)	53 (76%)
Year 4				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	31 (1 & 30)	26 (3 & 23)	21 (4 & 17)	14 (2 & 12)
Expected	1,085	337	204	70
Other Discontinued (Not Available & Subject Request)	19 (3 & 16)	4 (1 & 3)	7 (0 & 7)	3 (0 & 3)
Lost to Follow-up	50	30	28	17
Actual Evaluated (% Follow-up)	865 (80%)	268 (80%)	159 (78%)	53 (76%)
Year 5				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	40 (4 & 36)	35 (4 & 31)	23 (4 & 19)	16 (2 & 14)
Expected	1,076	328	202	68
Other Discontinued (Not Available & Subject Request)	27 (4 & 23)	4 (1 & 3)	8 (0 & 8)	3 (0 & 3)
Lost to Follow-up	67	39	31	19
Actual Evaluated (% Follow-up)	837 (78%)	250 (76%)	148 (73%)	52 (76%)
Year 6				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	52 (5 & 47)	37 (4 & 33)	28 (7 & 21)	18 (2 & 16)
Expected	1,064	326	197	66
Other Discontinued (Not Available & Subject Request)	32 (6 & 26)	5 (1 & 4)	9 (0 & 9)	4 (0 & 4)
Lost to Follow-up	84	42	37	22
Actual Evaluated (% Follow-up)	781 (73%)	238 (73%)	145 (74%)	48 (73%)
Year 7				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	59 (6 & 53)	40 (4 & 36)	31 (9 & 22)	19 (2 & 17)
Expected	1,057	323	194	65
Other Discontinued (Not Available & Subject Request)	36 (6 & 30)	7 (1 & 6)	12 (1 & 11)	6 (0 & 6)
Lost to Follow-up	95	47	43	25
Actual Evaluated (% Follow-up)	723 (68%)	218 (67%)	129 (66%)	43 (66%)
Year 8				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	65 (7 & 58)	44 (4 & 40)	36 (10 & 26)	23 (4 & 19)
Expected	1,051	319	189	61
Other Discontinued (Not Available & Subject Request)	43 (7 & 36)	14 (1 & 13)	14 (3 & 11)	9 (1 & 8)
Lost to Follow-up	108	58	50	32
Actual Evaluated (% Follow-up)	635 (60%)	182 (57%)	116 (61%)	37 (61%)
Year 9				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	77 (8 & 69)	47 (4 & 43)	41 (14 & 27)	26 (6 & 20)
Expected	1,039	316	184	58
Other Discontinued (Not Available & Subject Request)	44 (7 & 37)	15 (1 & 14)	14 (3 & 11)	10 (1 & 9)

Table 2 Patient Accounting				
Follow-up Year	**Study Cohort**			
	Primary Augmentation	**Revision Augmentation**	**Primary Reconstruction**	**Revision Reconstruction**
Lost to Follow-up	121	62	55	36
Actual Evaluated (% Follow-up)	685 (66%)	205 (65%)	123 (67%)	32 (55%)
Year 10				
Theoretically Due	1,116	363	225	84
Discontinued (Deaths & Explants)	88(10 & 78)	51 (4 & 47)	43 (15 & 28)	29 (8 & 21)
Expected	1,028	312	182	55
Other Discontinued (Not Available & Subject Request)	50 (9 & 41)	18 (1 & 17)	16 (3 & 13)	12 (1 & 11)
Lost to Follow-up	138	69	59	41
Actual Evaluated (% Follow-up)	688 (67%)	192 (62%)	118 (65%)	32 (58%)

Demographic information for the Study with regard to race is as follows: 92% of the Study patients were Caucasian; 3% were Hispanic; 2% were Asian, 2% were African American; less than 1% were Indian and less than 2% were other or unknown. The median age at surgery was 36 years for primary augmentation patients, 42 years for revision-augmentation patients, 46 years for primary reconstruction patients, and 51 years for revision-reconstruction patients. Approximately 59% of the Study patients were married. Approximately 74% had some college education. Table 3 presents the Study population demographics at baseline by cohort.

Table 3 Patient Demographics by Cohort				
Characteristic	**Primary Augmentation N=1,116**	**Revision Augmentation N=363**	**Primary Reconstruction N=225**	**Revision Reconstruction N=84**
Age (years)				
≤ 21	47 (4.2%)	3 (0.8%)	9 (4.0%)	0 (0%)
22-25	102 99.1%)	12 (3.3%)	5 (2.2%)	0 (0%)
26-39	566 (50.7%)	128 (35.3%)	55 (24.4%)	8 (9.5%)
40-49	335 (30.0%)	139 (38.3%)	67 (29.8%)	26 (31.0%)
50-59	57 (5.1%)	63 (17.4%)	62 (27.6%)	29 (34.5%)
60-69	8 (0.7%)	18 (5.0%)	17 (7.4%)	14 (16.7%)
70 & over	1 (0.1%)	0 (0%)	10 (4.4%)	7 (8.3%)
Median Age	36 years	42 years	46 years	51 years
Marital Status				
Single	317 (28.4%)	92 (25.3%)	47 (20.9%)	14 (16.7%)
Married	641 (67.4%)	217 (59.8%)	142 (63.1%)	59 (70.2%)
Widowed	9 (0.8%)	9 (2.5%)	6 (2.7%)	5 (6.0%)
Divorced	126 (11.3%)	42 (11.6%)	26 (11.6%)	6 (7.1%)
Separated	21 (1.9%)	3 (0.8%)	1 (0.4%)	0 (0%)
Not Provided	2 (0.2%)	0 (0%)	3 (1.3%)	0 (0%)
Race				
Caucasian	1,014 (90.8%)	338(93.1%)	204 (90.7%)	80 (95.2%)
Black	12 (1.1%)	7 (1.9%)	5 (2.2%)	2 (2.4%)
Hispanic	37 (3.3%)	7 (1.9%)	10 (4.4%)	1 (1.2%)
Asian	29 (2.6%)	8 (2.2%)	1 (0.4%)	0 (0%)
Indian	1 (0.1%)	0 (0%)	1 (0.4%)	0 (0%)
Other	22 (2.0%)	2 (0.6%)	2 (0.9)	1 (1.2%)
Not Provided	1 (0.1%)	1 (0.3%)	2 (0.9%)	0 (0%)
Education				
Less than 12 years	8 (0.7%)	4 (1.1%)	5 (2.2%)	1 (1.2%)
High School Graduate	187 (16.8%)	68 (18.8%)	71 (31.5%)	24 (28.5%)
Some College	368 (33.0%)	95 (26.1%)	52 (23.1%)	24 (29.3%)
College Graduate	399 (35.7%)	150 (41.4%)	61 (27.1%)	22 (26.1%)
Post-Graduate	94 (8.4%)	26 (7.2%)	18 (7.9%)	6 (7.3%)
Not Provided	60 (5.4%	20 (5.5%)	18 (7.9%)	7 (8.5%)

With respect to surgical approach, for primary augmentation patients, the majority of implants (62%) were placed through an inframammary incision; 34% of implants were placed through a periareolar incision, 3.9% were placed through a transaxillary incision and 0.9% included a mastopexy procedure. The placement was submuscular in 57% of implants and subglandular in 43% of implants. Round implants represented 89% of total

implants and shaped implants represented 12% of total implants. Smooth implants represented 58% of implants and textured implants represented 42% of implants.

For revision-augmentation patients, the majority of implants (61%) were placed through an inframammary incision; 33% of implants were placed through a periareolar incision, 3.3% were placed through a transaxillary incision, 2.2% were placed through a mastopexy procedure and 0.3% were placed through a mastectomy or other scar incision. The placement was submuscular in 61% of implants and subglandular in 39% of implants. Round implants represented 86% of implants and shaped implants represented 14% of implants. Smooth implants represented 47% of implants and textured implants represented 53% of implants.

For primary reconstruction patients, the most commonly used surgical approach for implant placement (45%) was through a mastectomy or other scar, 29% were placed through an inframammary incision, and 16% of implants were placed through a periareolar incision, 6.6% were placed through a mastopexy procedure and 3.2% were placed through a transaxillary incision. The placement was submuscular in 73% of implants and subglandular in 27% of implants. Round implants represented 88% of implants and shaped implants represented 12% of implants. Smooth implants represented 47% of implants and textured implants represented 53% of implants.

For revision- reconstruction patients, the majority of implants (55%) were placed through a mastectomy or other scar, 33% were placed through an inframammary incision; 7% of implants were placed through a periareolar incision, and 2% were placed through a transaxillary incision and 0.7% were placed through a mastopexy procedure. The placement was submuscular in 90% of implants and subglandular in 9% of implants. Round implants represented 87% of implants and shaped implants represented 13% of implants. Smooth implants represented approximately 39% of implants and textured implants represented 61% of implants.

The following two tables represent implant placement by cohort (Table 4) and breast implant style by cohort (Table 5).

Table 4
Breast Implant Placement & Surgical Approach by Cohort

Surgical Characteristic	Primary Augmentation N=2,230	Revision Augmentation N=725	Primary Reconstruction N=412	Revision Reconstruction N=139
Implant Placement				
Submuscular	1,273 (57.1%)	440 (60.7%)	300 (72.8%)	125 (89.9%)
Subglandular	957 (42.90%)	285 (39.3%)	112 (27.2%)	14 (10.1%)
Total	2,230	725	412	139
Surgical Approach				
Inframammary	1,374 (61.6%)	441 (60.8%)	117 (28.4%)	47 (33.8%)
Mastectomy scar	0 (0%)	2 (0.3%)	187 (45.4%)	79 (56.8%0
Mastopexy	20 (0.9%)	16 (2.2%)	27 (6.6%)	1 (0.7%)
Periareolar	748 (33.5%)	242 (33.4%)	68 (16.5%)	9 (6.5%)
Transaxillary	88 (3.9%)	24 (3.3%)	13 (3.2%)	3 (2.2%)
Total	**2,230**	**725**	**412**	**139**

Table 5
Breast Implant Style by Cohort

Product Style/Projection[1]	Primary Augmentation N=2,230	Revision Augmentation N=725	Primary Reconstruction N=412	Revision Reconstruction N=139
Round Styles				
Style 10512 (Smooth)/MP	716 (32.1%)	136 (18.8%)	79 (19.2%)	20 (14.4%)
Style 10521 (Smooth)/HP	572 (25.7%)	204 (28.1%)	110 (26.7%)	36 (25.9%)
Style 20610 (Textured)/LP	99 (4.4%)	36 (5.0%)	28 (6.8%)	3 (2.2%)
Style 20621 (Textured)/MP/HP	587 (26.3%)	248 (34.2%)	144 (35%)	63 (45.3%)
Shaped Styles				
Style 20645 (Textured)/LP	54 (2.4%)	12 (1.7%)	10 (2.4%)	11 (7.9%)
Style 20646 (Textured)/HP	0 (0%)	0	1 (0.2%)	3 (2.2%)
Style 20676 (Textured)E/MP	202 (9.1%)	89 (12.3%)	40 (9.7%)	3 (2.2%)

[1]Projections include: LP=Low Profile, MP or E=Moderate Profile, HP=High Profile

The final results of the 10-year Clinical Study are presented in this IFU. Information on the safety and benefits of Sientra Implants is presented below and organized by indication. In addition, updates regarding Sientra's CORE study and postmarket safety information can be reviewed on Sientra's website at the "Commitment to Safety" webpage (https://sientra.com/commitment-to-safety/).

RUPTURE INFORMATION ON SIENTRA'S IMPLANTS

Out of a total cohort of 3,506 implants in 1,788 patients, follow-up compliance rates were 69.9% for the MRI cohort, 48.9% for the non-MRI cohort, with an MRI compliance rate at the 10-year time point of 56.5%. There have been 69 confirmed ruptures (35 confirmed silent rupture, 1 confirmed symptomatic rupture, and 33

unconfirmed silent ruptures)in 63 patients through year 10. These ruptures and suspected ruptures include 24 confirmed and 21 unconfirmed Implant ruptures occurring in 42 primary augmentation patients (bilateral ruptures were reported in 3 patients); six confirmed and five unconfirmed implant ruptures occurring in nine revision-augmentation patients; four confirmed and four unconfirmed implant ruptures occurring in seven primary reconstruction patients; and two confirmed and 3 unconfirmed ruptures occurring in five revision-reconstruction patients. Based on analysis of the patients' data in the MRI cohort, the Kaplan-Meier calculated by-patient risk of rupture through 10-years is 8.6%. By cohort, the 10-year Kaplan-Meier risk of rupture was 8.5% for primary augmentation patients, 5.2% for revision-augmentation patients and 16.5% for primary reconstruction patients. There were no ruptures identified among the revision-reconstruction patients who underwent MRI through 10 years. Since the overall rate includes both the MRI and non-MRI cohorts, the rate of MRI rupture for the MRI cohort may be underestimated. Table 6 provides a summary of the Kaplan-Meier risk of rupture in the MRI cohort through 10 years, Table 7 provides the KM risk of rupture for the non-MRI cohort through 10 years, and Table 8 includes KM risk of overall rupture for both MRI and non-MRI cohorts through 10 years.

- 41% of reported ruptures came from 3 sites with 16% of total subjects enrolled
- 39% of implants with suspected silent ruptures were confirmed to be intact upon explantation or follow-up MRI
- All but 1 of the 36 explanted ruptures were found to be intracapsular

Table 6
KM Risk (95% CI) of Rupture Original (pre-PMA approval) MRI Cohorts

Timepoint	KM Risk (95% CI)			
	Primary Augmentation N=398	Revision Augmentation N=115	Primary Reconstruction N=48	Revision Reconstruction N=10
Year 1	--	--	--	
Year 2	--	--	--	--
Year 3	--	--	--	
Year 4	1.3% (0.5%, 3.1%)	--	--	--
Year 5	2.4% (1.3%, 4.6%)	0.9% (0.1%, 6.4%)	--	--
Year 6	4.2% (2.5%, 6.9%)	2.9% (1.0%, 8.8%)	2.8% (0.4%, 18.1%)	--
Year 7	5.9% (3.8%, 9.0%)	4.0% (1.5%, 10.4%)	2.8% (0.4%, 18.1%)	--
Year 8	6.3% (4.1%, 9.5%)	4.0% (1.5%, 10.4%)	2.8% (0.4%, 18.1%)	--
Year 9	7.9% (5.4%, 11.6%)	4.0% (1.5%, 10.4%)	6.7% (1.7%, 24.6%)	--
Year 10	8.5% (5.8%, 12.4%)	6.8% (3.1%, 14.7%)	16.5% (6.3%, 39.1%)	--

Table 7 KM Risk (95% CI) of Rupture Original (pre-PMA approval) Non-MRI Cohorts				
Timepoint	**KM Risk (95% CI)**			
	Primary Augmentation N=718	**Revision Augmentation N=248**	**Primary Reconstruction N=177**	**Revision Reconstruction N=74**
Year 1	--	--	--	
Year 2	--	0.9% (0.1%, 6.5%)	--	--
Year 3	--	0.9% (0.1%, 6.5%)	--	
Year 4		0.9% (0.1%, 6.5%)	--	--
Year 5		0.9% (0.1%, 6.5%)	--	--
Year 6	0.3% (0.1%, 2.3%)	0.9% (0.1%, 6.5%)		--
Year 7	0.7% (0.2%, 2.7%)	0.9% (0.1%, 6.5%)		4.8% (0.7%, 29.3%)
Year 8	1.0% (0.3%, 3.1%)	0.9% (0.1%, 6.5%)		15.7% (5.3%, 41.3%)
Year 9	2.4% (1.2%, 5.0%)	3.5% (1.1%, 10.4%)	3.9% (1.0%, 14.8%)	15.7% (5.3%, 41.3%)
Year 10	6.3% (3.9%, 10.1%)	3.5% (1.1%, 10.4%)	6.6% (2.1%, 19.3%)	NR*

*NR: Some rates are not reported because number of remaining patients/implants at timepoint is < 10.

Table 8 KM Risk (95% CI) of Overall Rupture (MRI and Non-MRI) Cohorts				
Timepoint	**KM Risk (95% CI)**			
	Primary Augmentation N=1116	**Revision Augmentation N=363**	**Primary Reconstruction N=225**	**Revision Reconstruction N=10**
Year 1	--	--	--	
Year 2	--	0.5% (0.1%, 3.2%)	--	--
Year 3	--	0.5% (0.1%, 3.2%)	--	
Year 4	0.7% (0.3%, 1.7%)	0.5% (0.1%, 3.2%)		
Year 5	1.3% (0.7%, 2.5%)	1.0% (0.2%, 3.8%)		
Year 6	2.4% (1.5%, 3.9%)	2.0% (0.8%, 5.3%)	1.0% (0.2%, 7.1%)	
Year 7	3.4% (2.3%, 5.1%)	2.6% (1.1%, 6.1%)	1.0% (0.2%, 7.1%)	2.4% (0.3%, 15.7%)
Year 8	3.8% (2.5%, 5.6%)	2.6% (1.1%, 6.1%)	1.0% (0.2%, 7.1%)	8.1% (2.7%, 23.3%)
Year 9	5.3% (3.8%, 7.4%)	3.9% (1.9%, 8.0%)	4.9% (1.9%, 12.7%)	8.1% (2.7%, 23.3%)
Year 10	7.8% (5.8%, 10.5%)	5.2% (2.7%, 9.9%)	9.8% (4.7%, 19.8%)	18.5% (7.4%, 41.9%)

Tables 9 through 12 compare KM estimated cumulative incidence of rupture in all four cohorts, based on the last MRI exam through 10 years for both the MRI and non-MRI cohorts where rupture was either suspected or confirmed, or confirmed.

Table 9 Suspected or Confirmed vs Confirmed Kaplan-Meier Estimated Cumulative Incidence of Rupture Based on Last MRI Exam through 10 years

Augmentation Patients

MRI Cohort		Non-MRI Cohort	
Enrolled: 398 patients with 795 implants MRI Follow-up compliance at 10 years: 224/327 patients (68.5%)		Enrolled: 718 patients with 1435 implants MRI Follow-up compliance at 10 years: 261/529 patients (49.3%)	
Suspected or Confirmed 26 patients 28 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 8.5% (5.8%, 12.4%) 4.7% (3.2%, 6.7%)	***Suspected or Confirmed*** 16 patients 17 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 6.3% (3.9%, 10.1%) 3.4% (2.1%, 5.4%)
Confirmed 14 patients 15 implants	 4.8% (2.8%, 8.1%) 2.5% (1.5%, 4.3%)	***Confirmed*** 9 patients 9 implants	 3.6% (1.9%, 6.9%) 1.8% (1.0%, 3.5%)

Table 10 Suspected or Confirmed vs Confirmed Kaplan-Meier Estimated Cumulative Incidence of Rupture Based on Last MRI Exam through 10 years -

Revision Augmentation Patients

MRI Cohort		Non-MRI Cohort	
Enrolled: 115 patients with 230 implants MRI Follow-up compliance at 10 years: 71/94 patients (75.5%)		Enrolled: 248 patients with 495 implants MRI Follow-up compliance at 10 years: 71/168 patients (42.3%)	
Suspected or Confirmed 6 patients 7 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 6.8% (3.1%, 14.7%) 4.0% (1.9%, 8.2%)	***Suspected or Confirmed*** 3 patients 4 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 3.5% (1.1%, 10.4%) 2.4% (0.9%, 6.4%)
Confirmed 2 patients 2 implants	 2.5% (0.6%, 9.8%) 1.3% (0.3%, 5.1%)	***Confirmed*** 3 patients 4 implants	 3.5% (1.1%, 10.4%) 2.4% (0.9%, 6.4%)

Table 11 Suspected or Confirmed vs Confirmed Kaplan-Meier Estimated Cumulative Incidence of Rupture Based on Last MRI Exam through 10 years - Reconstruction Patients			
MRI Cohort		Non-MRI Cohort	
Enrolled: 48 patients with 91 implants MRI Follow-up compliance at 10 years: 23/34 patients (67.6%)		Enrolled: 177 patients with 321 implants MRI Follow-up compliance at 10 years: 49/87 patients (56.3%)	
Suspected or Confirmed 4 patients 4 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 16.5% (6.3%, 39.1%) 8.9% (3.4%, 22.5%)	***Suspected or Confirmed*** 3 patients 4 implants	**Kaplan-Meier estimated rate (95% Confidence Interval)** 6.6% (2.1%, 19.3%) 4.9% (1.8%, 12.6%)
Confirmed 1 patient 1 implant	 4.4% (0.6%, 27.1%) 2.3% (0.3%, 15.1%)	***Confirmed*** 2 patients 3 implants	 4.7% (1.2%, 17.9%) 3.9% (1.2%, 11.6%)

Table 12 Suspected or Confirmed vs Confirmed Kaplan-Meier Estimated Cumulative Incidence of Rupture Based on Last MRI Exam through 10 years Revision Reconstruction Patients			
MRI Cohort		Non-MRI Cohort	
Enrolled: 10 patients with 19 implants MRI Follow-up compliance at 10 years: 3/4 patients (75.0%)		Enrolled: 74 patients with 120 implants MRI Follow-up compliance at 10 years: 14/24 implants (58.3%)	
Suspected or Confirmed	**Kaplan-Meier estimated rate (95% Confidence Interval)**	***Suspected or Confirmed***	**Kaplan-Meier estimated rate (95% Confidence Interval)**
0 patients 0 implants	-- --	5 patients 5 implants	NR* NR*
Confirmed 0 patients 0 implants	 -- --	***Confirmed*** 2 patients 2 implants	 NR* NR*

*Some rates are not reported because number of remaining patients/implants is <10.

In addition to the rupture data described in Sientra's prospective Core study, Sientra also collected information via a separate prevalence study. In this study MRI examinations were performed on 274 Implants in 140 women that assessed the rate of asymptomatic (or "silent") rupture in patients who received Silicone-Gel Breast Implants between 1990 and 2000. Overall, the long-term prevalence of rupture in the study was 7.7% by implant and 12.1% by patient, with a median implantation age of 14.4 years. In comparison, those implants with no evidence of rupture via MRI have a median duration of 10.2 years. While recognizing that not all implants in the study were identical to the implants currently manufactured by Sientra, these data support the low rate of rupture found in Sientra's Clinical Study and

suggests that even over the long-term, over 14 years, Sientra's Silicone Gel Breast Implants have a relatively low rate of rupture. Additional information on rupture will be collected through Sientra's ongoing postapproval studies.

PRIMARY AUGMENTATION AND REVISION-AUGMENTATION PATIENTS

The benefits and complications reported in the Study for primary and revision-augmentation patients are described below.

PATIENT ACCOUNTING AND FOLLOW-UP RATES

The Study enrolled 1,116 primary augmentation patients. Of the women expected to be seen at the 10-year follow-up visit, 67% were seen.

The Study enrolled 363 revision-augmentation patients. Of the women expected to be seen at the 10-year follow-up visit, 62% were seen.

EFFECTIVENESS OUTCOMES

The benefits of Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants were determined by measuring bra size/chest circumference change and assessing patient satisfaction using patient-reported quality-of-life (QOL) outcomes, including the Short Form Health Survey (SF-36), the Rosenberg Self-Esteem Scale, and the Body Image Scale. The information was collected before implantation and at scheduled follow-up visits.

Primary Augmentation Patients

For primary augmentation patients, 91% of patients increased their bra cup size by at least one cup size. Eighty-two percent (82%) of patients increased their bra cup size by one to two cups, while 10% gained more than two cup sizes. Of the patients, 6% achieved less than a 1-cup size increase. The change in bra cup size is unknown for the remaining 3% of patients.

The majority of primary augmentation patients were satisfied with their results. Other findings of the Study showed that most patients agreed their breast implants make them feel more feminine (89%) and more attractive (86%). In addition, the majority of women indicated that their breast implants made them feel better about themselves (77%).

For the primary augmentation cohort, prior to implantation and continuing afterwards, the mean SF-36 (Health Survey) QOL scores were significantly higher for the Study population compared to the general female population. For primary augmentation patients, comparisons of Baseline QOL scores to scores at Year 10 showed no clinically significant changes. There were a number of statistically significant decreases in some of the quality of life scales (decreases ranged between -3.7 to -8.9 within the 0-100-point

scales, and effect sizes ranged between 0.33-0.60). Because the magnitude of changes and/or the effect sizes were small, the observed changes were not clinically significant.

For primary augmentation patients, mean total self-esteem scores on the Rosenberg Self-Esteem Scale at Baseline and Year 10 remained above 25, with no statistically significant difference. Scores between 15 and 25 are considered to be within normal range, with higher scores indicating more positive feelings.

Mean scores on the Body Esteem Scale and subscales also remain high from Baseline to Year 10 among women in the primary augmentation cohort. One sub-scale (Sexual attractiveness) had no change while the remaining subscales (Physical Condition and Weight concern subscales) as well as the Overall Body Esteem Scale show statistically significant changes from baseline to Year 10, where the magnitude of change was slight, ranging between -0.2 and -0.3.

Revision-Augmentation Patients

Bra cup size was not measured in revision-augmentation patients.

Through 10-years of the Clinical Study the majority of revision-augmentation patients continued to be satisfied with their results. Another finding of the Study showed that most patients agreed that their breast implants make them feel more feminine (87%) and more attractive (83%). In addition, the majority of women indicated that their breast implants made them feel better about themselves (78%).

For the revision-augmentation cohort, prior to implantation and continuing afterwards, the mean SF-36 (Health Survey) QOL scores were significantly higher for the Study population compared to the general female population.

For revision-augmentation patients, comparison of baseline QOL scores to scores at Year 10 showed no clinically significant changes. There were a number of statistically significant decreases in the quality of life scales. However, the magnitude of the changes and/or the effect sizes were small or very small and therefore the observed changes were judged not to be clinically relevant.

For revision-augmentation patients, mean total scores on the Rosenberg Self-Esteem Scale at Baseline and Year 10 remained above 25, with no statistically significant difference. Scores between 15 and 25 are considered to be within normal range, with higher scores indicating more positive feelings.

Mean scores on the Body Esteem Scale and subscales also remain high from Baseline to Year 10 among women in the revision-augmentation cohort. The Physical Condition and Weight concern subscales, as well as the Overall Body Esteem Scale show statistically significant changes from baseline to Year 10, where the magnitude of change was slight, ranging between -0.2 and -0.3.

SAFETY OUTCOMES

The safety of Sientra Implants was determined by assessing the incidence of complications, including device failures.

Primary Augmentation Patients

Table 13 describes the Kaplan-Meier risk of complications experienced for the primary augmentation patients in the Study at 3, 6, and 10-years.

Table 13
Kaplan-Meier Risk of Complications for Primary Augmentation Patients
(N=1,116 Patients)

Key Complications	3-yr KM Risk (95% CI)	6-yr KM Risk (95% CI)	10-yr KM Risk (95% CI)
Reoperation	12.8% (10.9%, 15.0%)	17.9% (15.7%, 20.5%)	24% (21.4%, 26.8%)
Capsular Contracture (Baker Grade III/IV)	5.9% (4.7%, 7.6%)	9.7% (8.1%, 11.9%)	12.9% (10.8%, 15.2%)
Implant Removal with Replacement	4.4% (3.3%, 5.9%)	7.9% (6.4%, 9.7%)	12.2% (10.3%, 14.5%)
Implant Rupture (MRI cohort)[1]	0	4.2% (2.5%, 6.9%)	8.5% (5.8%, 12.4%)
Implant Removal without Replacement	1.3% (0.8%, 2.3%)	2.7% (1.8%, 3.9%)	4.7% (3.5%, 6.4%)
Other Complications Occurring at a KM Risk ≥1%[2,3]			
Nipple Sensation Changes	2.1% (1.4%, 3.2%)	4.0% (2.9%, 5.4%)	5.9% (4.5%, 7.7%)
Ptosis	1.6% (1.0%, 2.6%)	2.8% (2.0%, 4.1%)	4.6% (3.4%, 6.2%)
Breast Mass/Cyst/Lump	0.5% (0.2%, 1.2%)	2.2% (1.4%, 4.3%)	3.5% (2.5%, 5.0%)
Implant Malposition	1.4% (0.9%, 2.3%)	2.1% (1.4%, 3.2%)	2.7% (1.8%, 4.0%)
Asymmetry	1.0% (0.6%, 1.9%)	1.2% (0.7%, 2.1%)	2.0% (1.3%, 3.2%)
Wrinkling/Rippling	0.8% (0.4%, 1.5%)	1.2% (0.7%, 2.1%)	1.9% (1.2%, 3.1%)
Breast Pain	0.8% (0.4%, 1.6%)	0.8% (0.4%, 1.6%)	1.2% (0.7%, 2.2%)
Seroma/Fluid Accumulation	0.7% (0.3%, 1.4%)	0.8% (0.4%, 1.5%)	1.2% (0.6%, 2.1%)
Hypertrophic/Abnormal Scarring	0.7% (0.3%, 1.4%)	0.9% (0.5%, 1.7%)	1.0% (0.5%, 1.9%)

[1] At 10 years, implant rupture was reported at a risk rate of 0%, 0.3% (0.1%, 2.3%) and 6.3% (3.9%, 10.1%) for the 3 year, 6 year and 10 year timepoints, respectively in the non-MRI cohort.

[2] The following complications were reported at a risk rate of less than 1%: bruising, delayed wound healing, hematoma, implant extrusion, implant palpability, implant visibility, infection, redness, skin sensation changes, swelling, upper pole fullness, and other complications.

[3] None of the following complications occurred: capsule calcification, irritation, lymphadenopathy, lymphedema, necrosis, nipple complications (not related to sensation), pneumothorax, and skin rash.

Revision-Augmentation Patients

Table 14 describes the Kaplan-Meier risk of complications for the revision-augmentation patients in the Study at 3, 6, and 10-years.

Table 14
Kaplan-Meier Risk of Complications for Revision-Augmentation Patients
(N=363 Patients)

Key Complications	3-yr KM Risk (95% CI)	6-yr KM Risk (95% CI)	10-yr KM Risk (95% CI)
Reoperation	20.9% (16.9%, 25.6%)	30.6% (25.9%, 35.9%)	38.8% (33.6%, 44.6%)
Implant Removal with Replacement	8.6% (6.1%, 12.1%)	12.2% (9.1%, 16.3%)	18.7% (14.7%, 23.7%)
Capsular Contracture (Baker Grade III/IV)	6.2% (4.0%, 9.4%)	11.5% (8.3%, 15.7%)	13.7% (10.2%, 18.4%)
Implant Removal without Replacement	2.7% (1.4%, 5.2%)	5.6% (3.5%, 8.8%)	9.4% (6.4%, 13.7%)
Implant Rupture (MRI cohort)[1]	0%	2.9% (1.0%, 8.8%)	6.8% (3.1%, 14.7%)
Other Complications Occurring at a KM Risk ≥1%[2,3]			
Implant Malposition	3.3% (1.9%, 5.8%)	4.8% (2.9%, 7.9%)	4.8% (2.9%, 7.9%)
Wrinkling/Rippling	3.0% (1.6%, 5.5%)	4.0% (2.3%, 6.8%)	4.8% (2.9%, 7.9%)
Nipple Sensation Changes	1.8% (0.8%, 4.0%)	2.9% (1.5%, 5.5%)	4.7% (2.7%, 8.0%)
Breast Mass/Cyst/Lump	0%	2.3% (1.1%, 5.1%)	3.7% (1.9%, 7.0%)
Ptosis	1.2% (0.5%, 3.2%)	3.4% (1.8%, 6.2%)	3.4% (1.8%, 6.2%)
Asymmetry	2.0% (1.0%, 4.2%)	2.7% (1.4%, 5.2%)	2.7% (1.4%, 5.2%)
Breast Pain	1.2% (0.5%, 3.2%)	1.5% (0.6%, 3.7%)	2.5% (1.2%, 5.2%)
Hypertrophic/Abnormal Scarring	1.2% (0.5%, 3.2%)	1.6% (0.7%, 3.8%)	1.6% (0.7%, 3.8%)
Seroma/Fluid Accumulation	1.2% (0.4%, 3.1%)	1.6% (0.7%, 3.7%)	1.6% (0.7%, 3.7%)
Infection	1.2% (0.4%, 3.0%)	1.5% (0.6%, 3.6%)	1.5% (0.6%, 3.6%)
Skin Sensation Changes	0.6% (0.2%, 2.4%)	1.0% (0.3%, 3.0%)	1.0% (0.3%, 3.0%)

[1] At 10-years, implant rupture was reported at a risk rate of 0.9% (0.1%, 6.5%), 0.9% (0.1%, 6.5%) and 3.5% (1.1%, 10.4%) for the 3-year, 6 year and 10-year timepoints, respectively in the non-MRI cohort.

[2] The following complications were reported at a risk rate of less than 1%: bruising, delayed wound healing, hematoma, implant extrusion, implant palpability, implant visibility, irritation, necrosis, redness, swelling, upper pole fullness, and other complications.

[3] None of the following complications occurred: capsule calcification, lymphadenopathy, lymphedema, nipple complications (not related to sensation), pneumothorax, and skin rash.

REASONS FOR REOPERATION

Primary Augmentation Patients

There were 291 reoperations performed in 236 primary augmentation patients through 10 years following implantation. Table 15 provides the primary reasons for reoperation in the augmentation cohort at 3, 6, and 10 years. The most common reasons for reoperation through 10 years in these patients were capsular contracture (25%) and patient request for change in the style or size of the implant (21%).

Table 15 Main Reasons for Reoperation At Timepoints Through 10 Years For Primary Augmentation Patients

Main Reasons* for Reoperation	Through 3 Years N= 165 Patients n (%)	Through 6 Years N= 229 Patients n (%)	Through 10 Years N= 291 Patients n (%)
Suspected Rupture	0 (0%)	12 (5.2%)	19 (6.5%)
Infection	6 (3.6%)	7 (3.1%)	7 (2.4%)
Capsular Contracture	40 (24.2%)	58 (25.3%)	72 (24.7%)
Healing Related			
Extrusion	0 (0%)	1 (0.4%)	1 (0.3%)
Necrosis	0 (0%)	0 (0%)	0 (0%)
Hematoma/Seroma	20 (12.1%)	21 (9.2%)	23 (7.9%)
Delayed Wound Healing	3 (1.8%)	3 (1.3%)	3 (1%)
Irritation/Inflammation	0 (0%)	0 (0%)	0 (0%)
Pain	1 (0.6%)	1 (0.4%)	1 (0.3%)
Cosmetic			
Malposition	17 (10.3%)	20 (8.7%)	20 (6.9%)
Upper Pole Fullness	1 (0.6%)	1 (0.4%)	1 (0.3%)
Wrinkling/Rippling	4 (2.4%)	4 (1.7%)	6 (2.1%)
Palpability/Visibility	0 (0%)	0 (0%)	1 (0.3%)
Asymmetry	5 (3%)	8 (3.5%)	10 (3.4%)
Ptosis	18 (10.9%)	23 (10%)	31 (10.7%)
Scarring/Hypertrophic Scarring	10 (6.1%)	10 (4.4%)	10 (3.4%)
Nipple Related	2 (1.2%)	3 (1.3%)	3 (1%)
Breast Cancer	3 (1.8%)	3 (1.3%)	5 (1.7%)
Mass/Lump/Cyst	4 (2.4%)	8 (3.5%)	9 (3.1%)
Skin Related	0 (0%)	0 (0%)	0 (0%)
Style/Size Change	29 (17.6%)	43 (18.8%)	60 (20.6%)
Trauma	0 (0%)	0 (0%)	0 (0%)
Unknown	2 (1.2%)	3 (1.3%)	9 (3.1%)

*Some reoperations were performed for multiple reasons; only the primary reason is provided in the table.

Revision-Augmentation Patients

There were 172 reoperations performed in 123 revision-augmentation patients through 10 years following implantation. Table 16 provides the main reasons for reoperation at 3, 6, and 10 years. In this population, the most common reasons for reoperation through 10 years were patient's desire for a change in the style or size of their implants (17%) and capsular contracture (16%).

Table 16 Main Reasons for Reoperation At Timepoints Through 10 Years For Revision Augmentation Patients

Main Reasons* for Reoperation	Through 3 Years N= 99 Patients n (%)	Through 6 Years N= 140 Patients n (%)	Through 10 Years N= 172 Patients n (%)
Suspected Rupture	0 (0%)	1 (0.7%)	4 (2.3%)
Infection	3 (3%)	4 (2.9%)	4 (2.3%)
Capsular Contracture	15 (15.2%)	20 (14.3%)	28 (16.3%)
Healing Related			
Extrusion	1 (1%)	1 (0.7%)	1 (0.6%)
Necrosis	0 (0%)	1 (0.7%)	1 (0.6%)
Hematoma/Seroma	4 (4%)	5 (3.6%)	5 (2.9%)
Delayed Wound Healing	5 (5.1%)	5 (3.6%)	5 (2.9%)
Irritation/Inflammation	0 (0%)	0 (0%)	0 (0%)
Pain	2 (2%)	7 (5%)	11 (6.4%)
Cosmetic			
Malposition	2 (12.1%)	14 (10%)	14 (8.1%)
Upper Pole Fullness	0 (0%)	0 (0%)	0 (0%)
Wrinkling/Rippling	9 (9.1%)	11 (7.9%)	12 (7%)
Palpability/Visibility	1 (1%)	1 (0.7%)	1 (0.6%)
Asymmetry	7 (7.1%)	10 (7.1%)	11 (6.4%)
Ptosis	6 (6.1%)	13 (9.3%)	13 (7.6%)
Scarring/Hypertrophic Scarring	9 (9.1%)	10 (7.1%)	11 (6.4%)
Nipple Related	1 (1%)	1 (0.7%)	1 (0.6%)
Breast Cancer	2 (2%)	2 (1.4%)	4 (2.3%)
Mass/Lump/Cyst	1 (1%)	5 (3.6%)	7 (4.1%)
Skin Related	0 (0%)	0 (0%)	0 (0%)
Style/Size Change	16 (16.2%)	22 (15.7%)	30 (17.4%)
Trauma	0 (0%)	0 (0%)	0 (0%)
Other**	1 (1%)	1 (0.7%)	1 (0.6%)
Unknown	4 (4%)	6 (4.3%)	8 (4.7%)

*Some reoperations were performed for multiple reasons; only the primary reason is provided in the table.
**Patient reported back pain from the weight of the Implants.

REASONS FOR IMPLANT REMOVAL

Primary Augmentation Patients

The main reasons for implant removal among primary augmentation patients through 10 years are provided in Table 17. There were 283 implants removed from 151 patients. Of these 283 implants, 74% were replaced. The most common reason for implant removal was the patient requesting a different implant style or size (49%).

Table 17
Main Reason for Implant Removal through 10 Years for Primary Augmentation Patients (N=283 Implant Removals)

Reason for Removal	n (%)
Patient Request for Size/Style Change	139 (49.1%)
Capsular Contracture	53 (18.7%)
Suspected Rupture	21 (7.4%)
Unknown	17 (6.0%)
Ptosis	14 (4.9%)
Infection	8 (2.8%)
Wrinkling/Rippling	8(2.8%)
Asymmetry	7 (2.5%)
Hematoma/Seroma	5 (1.8%)
Implant Malposition	5 (1.8%)
Breast Cancer	4 (1.4%)
Delayed Wound Healing	1 (0.4%)
Implant Extrusion	1 (0.4%)

Revision-Augmentation Patients

The main reasons for implant removal among revision-augmentation patients through 10 years are provided in Table 18. There were 144 implants removed from 79 patients. Of these 144 implants, most were replaced (69%). The most common reason for implant removal was the patient requesting a different implant style or size (44%).

Table 18
Main Reason for Implant Removal through 10 Years for Revision-Augmentation Patients (N=144 Implant Removals)

Reason for Removal	n (%)
Patient Request for Size/Style Change	63 (43.8%)
Capsular Contracture	16 (11.1%)
Unknown	15 (10.4%)
Wrinkling/Rippling	11 (7.6%)
Asymmetry	7 (4.9%)
Implant Malposition	6 (4.2%)
Breast Cancer	5 (3.5%)
Suspected Rupture	5 (3.5%)
Infection	4 (2.8%)
Ptosis	4 (2.8%)
Hematoma/Seroma	3 (2.1%)
Other	2 (1.4%)
Scarring/Hypertrophic Scarring	2 (1.4%)
Pain	1 (0.7%)

OTHER CLINICAL FINDINGS

The Study evaluated several long-term health effects that have been reported in breast implant patients. These include cancer, connective tissue disease (CTD), CTD signs and symptoms, lactation complications, reproduction complications, and suicide. These endpoints, along with others, are being further evaluated as part of the Study and a Sientra postapproval study of patients followed through 10 years.

Cancer

For primary augmentation patients, through 10 years, there have been five cases of breast cancer identified (0.6%). Diagnoses of any other (non-breast) cancers have been reported in 12 patients (1.1%) in the augmentation cohort through 10 years. There were four cases of fibrocystic breast disease (0.5%) in the primary augmentation cohort through 10 years.

For revision-augmentation patients, through 10 years, there has been four case of breast cancer (1.6%). Diagnoses of any other (non-breast) cancers have been reported in 4 patients (1.1%) in the revision augmentation cohort through 10 years. There were five cases of fibrocystic disease in the revision-augmentation cohort through 10 years (1.8%).

There were no cases of BIA-ALCL in any of the patient cohorts.

Connective Tissue Disease

Among primary augmentation patients, through Year 10, eleven patients have reported 12 confirmed CTDs:
The diagnoses include: one patient with chronic fatigue syndrome (diagnosed 9 months post implantation); two patients with fibromyalgia (diagnosed 9 months and 5.6 years post implantation); one patient with Grave's disease (diagnosed 4.1 years post implantation); one patient with lupus (diagnosed 2.3 years post implantation); two patients with Reynaud's phenomenon (diagnosed at 9 months and 5.3 years post implantation); four cases of rheumatoid arthritis (diagnosed between 2 months and 6.1 years post implantation); and one patient with Sjögren's syndrome (diagnosed 6.8 years post implantation, who also had a confirmed implant rupture). The 10-year risk of a Primary Augmentation patient diagnosed with any CTD is 1.2%.

Among revision-augmentation patients, through Year 10, three patients have reported confirmed CTDs, and none of these patients had confirmed ruptures. The diagnoses include: one patient with fibromyalgia (diagnosed 10 months post implantation); one patient with Grave's disease (diagnosed 8.3 years post implantation); and one patient with scleroderma (diagnosed 9 years post implantation). The 10-year risk of a Revision Augmentation patient diagnosed with any CTD is 1.3%.

CTD Signs and Symptoms

In Sientra's Study, self-reported CTD signs and symptoms were collected. Patients were asked about various signs/symptoms (e.g., malar rash, alopecia, muscle weakness, myalgias, arthralgias, morning stiffness, arthritis, migraine headaches, hemiplegia, ataxia, seizures, muscle weakness, chronic malaise). Compared to before having implants, for the pooled primary augmentation and revision-augmentation cohorts, no significant increases were found in any of the 13 CTD sign/symptom categories (skin, muscle, joint, neurologic, pain, fatigue, fibromyalgia, gastrointestinal, EENT, hematologic, constitutional, endocrine/exocrine, and vascular).

Conversely, compared to before having implants, significant decreases were found for 3 of the 13 CTD sign/symptom categories: Neurological, endocrine/exocrine and vascular. For the category of neurological, the significance is driven by the low number of post-implantation reports of migraine. For the category of endocrine/exocrine, the significance is driven by the low number of post-implantation reports of Hashimoto's thyroiditis, while for the category of vascular the significance is driven by a decrease in telangiectasia post-implantation.

The Sientra Study was not designed to evaluate cause-and-effect associations because there is no comparison group of women without implants, and because other contributing factors, such as medications and lifestyle/exercise, were not studied. Therefore, it cannot be determined whether or not these 3 decreases were due to the Implants.

Lactation Complications

There were 236 primary augmentation patients experiencing at least one postoperative live birth; of these, 88% reported no difficulties with lactation after they received Sientra's Implants. Twenty-seven of the 236 patients (11%) reported postoperative lactation difficulties, such as lack of milk production, mastitis or pain. In addition, one woman (0.4%) who had experienced preoperative lactation difficulties reported postoperative difficulties as well.

There were 47 revision-augmentation patients experiencing at least one postoperative live birth; of these, 89% reported no difficulties with lactation after they received Sientra's Implants. Five of the 47 patients (11%) reported postoperative lactation difficulties, such as lack of milk production or pain.

Reproduction Complications

Of the 1,116 patients in the primary augmentation cohort, 19 (1.7%) reported postoperative pregnancy difficulties through 10 years. Of the 363 patients in the revision augmentation cohort, six (1.7%) reported postoperative pregnancy difficulties.

Suicide

There was one report of suicide in primary augmentation and no reports of suicide in the revision-augmentation patients in the Study through 10 years.

Risk Factor Analysis

Within the augmentation and revision-augmentation cohorts, five endpoints (capsular contracture, infection, rupture, reoperation, and explantation with or without replacement) were explored using a covariate analysis to evaluate their association with patient age, BMI, device characteristics (shaped/round, smooth/textured, size, years of implantation), and surgical characteristics (incision site, betadine/antibiotic pocket irrigation, submuscular/subglandular, general/local anesthesia, surgical facility).

Primary Augmentation

Within the augmentation cohort, most of the analyses were not statistically significant. The few significant findings were:

- Lower capsular contracture risk associated with textured devices, submuscular placement, and longer implantation time.
- Decreased risk of infection associated with lower BMI and longer implantation time.
- Increased risk of rupture associated with longer implantation time.
  Decreased risk of reoperation and risk of explantation associated with increased implantation time; this indicates that these events (as well as infection and

capsular contracture) were more likely to occur early rather than near the end of this 10-year study.

Revision Augmentation

Within the revision-augmentation cohort, infection was not explored because there were too few events and most of the remaining analyses were not statistically significant. The few significant findings were:

- Lower capsular contracture risk associated with younger age at implantation and longer implantation time.
- Decreased risk of reoperation and risk of explantation associated with increased implantation time; this indicates that these events (as well as capsular contracture) were more likely to occur early rather than near the end of this 10-year study.

PRIMARY RECONSTRUCTION AND REVISION-RECONSTRUCTION PATIENTS

PATIENT ACCOUNTING AND FOLLOW-UP RATES

The Study enrolled 225 primary reconstruction patients, which includes 152 patients from the CORE clinical study and 73 patients from the Continued Access (CA) study. Of the women expected to be seen at the 10-year follow-up visit, 65% were seen.

The Study enrolled 84 revision-reconstruction patients, which includes 52 patients from the CORE clinical study and 32 patients from the CA study. Of the women expected to be seen at the 10-year follow-up visit, 58% were seen.

EFFECTIVENESS OUTCOMES

The benefits of Sientra OPUS High-Strength Cohesive Silicone Gel Breast Implants were determined by assessing patient satisfaction using patient-reported quality-of-life (QOL) outcomes, including the Short Form Health Survey (SF-36), the Rosenberg Self-Esteem Scale, and the Body Image Scale. The information was collected before implantation and at scheduled follow-up visits.

Primary Reconstruction Patients

The majority of primary reconstruction patients in this Study were satisfied with their results. The Study showed that most women felt their breast implants make them feel more feminine (77%) and more attractive (71%). In addition, the majority of women indicated that their breast implants made them feel better about themselves (69%).

For the primary reconstruction cohort, prior to implantation and continuing afterwards, the mean SF-36 QOL scores were higher for the Study population compared to the general female population. For primary reconstruction patients, comparison of baseline QOL scores to scores at Year 10 showed no clinically significant changes. There were a number of statistically significant decreases in the quality of life scales. However, effect sizes were small or very small and therefore the observed changes were judged not to be clinically relevant.

For primary reconstruction patients, mean total scores on the Rosenberg Self-Esteem Scale at Baseline and Year 10 remained above 25. Scores between 15 and 25 are considered to be within normal range, with higher scores indicating more positive feelings.

Mean scores for the Body Esteem Scale and subscales (physical condition, sexual attractiveness and weight concern) showed no statistically significant changes from Baseline to Year 10 among women in the primary reconstruction cohort. Scores were relatively high at baseline and remained high postoperatively.

Revision-Reconstruction Patients

The majority of revision-reconstruction patients in this Study were satisfied with their results. The Study showed that most women felt their breast implants made them feel more feminine (92%) and feel more attractive (84%). In addition, the majority of women indicated that their breast implants made them feel better about themselves (85%).

For the revision-reconstruction cohort, prior to implantation and continuing afterwards, the mean SF-36 QOL scores were at least comparable and in most cases higher for the Study population compared to the general female population. Comparisons of Baseline QOL scores to scores at Year 10 showed no clinically significant changes. Only one scale showed a statistically significant decrease, the quality of life scale. However, the median change from baseline was small and therefore, the difference was judged to be clinically irrelevant

For revision-reconstruction patients, mean total scores on the Rosenberg Self-Esteem Scale at Baseline and Year 10 remained above 25. Scores between 15 and 25 are considered to be within normal range, with higher scores indicating more positive feelings.

Scores for the Body Esteem Scale and subscales (physical condition, sexual attractiveness and weight concern) showed no statistically significant changes from Baseline to Year 10 among women in the revision-reconstruction cohort.

SAFETY OUTCOMES

The safety of Sientra's OPUS High-Strength Cohesive Silicone Gel Breast Implants was determined by assessing the incidence of complications, including device failures.

Primary Reconstruction Patients

Table 19 Kaplan-Meier Risk of Complications for Primary Reconstruction Patients (N=225 Patients)			
Key Complications	**3-yr KM Risk (95% CI)**	**6-yr KM Risk (95% CI)**	**10-yr KM Risk (95% CI)**
Reoperation	35.6% (29.6%, 42.4%)	43.4% (36.9%, 50.4%)	48.2% (41.5%, 55.4%)
Implant Removal with Replacement	18.8% (14.0%, 24.9%)	24.8% (19.3%,31.5%)	28.8% (22.8%, 35.9%)
Implant Rupture (MRI cohort)[1]	0%	2.8% (0.4%, 18.1%)	16.5% (6.3%, 39.1%)
Capsular Contracture (Baker Grade III/IV)	9.7% (6.3%, 14.9%)	11.7% (7.8%, 17.2%)	15.8% (11.0%, 22.5%)
Implant Removal without Replacement	6.5% (3.9%, 10.8%)	8.5% (5.3%, 13.3%)	11.1% (7.2%, 17.1%)
Other Complications Occurring at a KM Risk ≥1%[2,3]			
Asymmetry	9.0% (5.7%, 13.9%)	11.5% (7.7%, 17.0%)	11.5% (7.7%, 17.0%)
Infection	5.1% (2.9%, 9.1%)	5.1% (2.9%, 9.1%)	5.1% (2.9%, 9.1%)
Implant Malposition	3.0% (1.4%, 6.6%)	5.1% (2.7%, 9.7%)	5.1% (2.7%, 9.7%)
Breast Pain	3.1% (1.4%, 6.8%)	3.8% (1.8%, 7.8%)	4.5% (2.3%, 9.0%)
Hypertrophic/Abnormal Scarring	2.1% (0.8%, 5.6%)	4.1% (2.0%, 8.4%)	4.1% (2.0%, 8.4%)
Seroma/Fluid Accumulation	2.4% (1.0%, 5.8%)	2.4% (1.0%, 5.8%)	3.6% (1.5%, 8.3%)
Ptosis	2.0% (0.8%, 5.3%)	3.4% (1.5%, 7.6%)	3.4% (1.5%, 7.6%)
Breast Mass/Cyst/Lump	1.0% (0.3%, 4.1%)	2.9% (1.2%, 6.8%)	2.9% (1.2%, 6.8%)
Redness	2.6% (1.1%, 6.1%)	2.6% (1.1%, 6.1%)	2.6% (1.1%, 6.1%)
Nipple Sensation Changes	0.6% (0.1%, 3.8%)	2.5% (1.0%, 6.7%)	2.5% (1.0%, 6.7%)
Wrinkling/Rippling	1.1% (0.3%, 4.2%)	2.3% (0.9%, 6.2%)	2.3% (0.9%, 6.2%)
Implant Extrusion	1.5% (0.5%, 4.5%)	2.1% (0.8%, 5.5%)	2.1% (0.8%, 5.5%)
Delayed Wound Healing	1.9% (0.7%, 5.0%)	1.9% (0.7%, 5.0%)	1.9% (0.7%, 5.0%)
Swelling	1.5% (0.5%, 4.7%)	1.5% (0.5%, 4.7%)	1.5% (0.5%, 4.7%)
Implant Palpability	0.5% (0.1%, 3.2%)	0.5% (0.1%, 3.2%)	1.3% (0.3%, 5.2%)
Upper Pole Fullness	0.6% (0.1%, 3.8%)	1.2% (0.3%, 4.9%)	1.2% (0.3%, 4.9%)
Hematoma	0.4% (0.1%, 3.1%)	1.1% (0.3%, 4.4%)	1.1% (0.3%, 4.4%)
Implant Visibility	1.0% (0.3%, 4.1%)	1.0% (0.3%, 4.1%)	1.0% (0.3%, 4.1%)

[1] At 10 years, implant rupture was reported at a risk rate of 0%, 0% and 6.6% (2.1%, 19.3%) at the 3 year, 6 year and 10 year timepoints, respectively in the non-MRI cohort.

[2] The following complications were reported at a risk rate of less than 1% through ten years: nipple complications (not related to sensation), skin rash, skin sensation changes and other complications.

[3] None of the following complications occurred: bruising, capsule calcification, irritation, lymphadenopathy, lymphedema, necrosis and pneumothorax.

Revision-Reconstruction Patients

Table 20 describes the Kaplan-Meier risk of complications for the revision-reconstruction patients in the Study.

Table 20
Kaplan-Meier Risk of Complications Reported for Revision-Reconstruction Patients through 10 Years (N=84 Patients)

Key Complications	3-yr KM Risk (95% CI)	6-yr KM Risk (95% CI)	10-yr KM Risk (95% CI)
Reoperation	39.4% (29.5%, 51.1%)	46.3% (35.9%, 58.0%)	56.7% (45.4%, 68.5%)
Implant Removal with Replacement	20.0% (12.5%, 31.0%)	26.0% (17.4%, 37.8%)	40.5% (29.1%, 54.4%)
Implant Removal without Replacement	10.8% (5.5%, 20.6%)	14.3% (7.9%, 25.1%)	18.9% (11.0%, 31.6%)
Capsular Contracture (Baker Grade III/IV)	7.9% (3.6%, 16.8%)	12.1% (6.1%, 23.2%)	14.3% (7.5%, 26.4%)
Implant Rupture (MRI cohort)[1]	0%	0%	--
Other Complications Occurring at a KM Risk ≥1%[2]			
Asymmetry	11.1% (5.7%, 21.1%)	14.7% (8.1%, 25.9%)	16.9% (9.6%, 28.8%)
Implant Malposition	6.5% (2.8%, 15.0%)	8.4% (3.8%, 18.1%)	11.5% (5.3%, 23.9%)
Breast Mass/Cyst/Lump	2.9% (0.7%, 11.0%)	4.6% (1.5%, 13.7%)	4.6% (1.5%, 13.7%)
Breast Pain	1.3% (0.2%, 8.9%)	3.1% (0.8%, 11.9%)	3.1% (0.8%, 11.9%)
Hypertrophic/Abnormal Scarring	2.9% (0.7%, 11.0%)	2.9% (0.7%, 11.0%)	2.9% (0.7%, 11.0%)
Wrinkling/Rippling	2.9% (0.7%, 11.2%)	2.9% (0.7%, 11.2%)	2.9% (0.7%, 11.2%)
Nipple Sensation Changes	0%	0%	2.3% (0.3%, 15.1%)
Infection	1.2% (0.2%, 8.3%)	1.2% (0.2%, 8.3%)	1.2% (0.2%, 8.3%)
Seroma/Fluid Accumulation	1.2% (0.2%, 8.3%)	1.2% (0.2%, 8.3%)	1.2% (0.2%, 8.3%)

[1] No ruptures were reported in the revision-reconstruction MRI cohort; however, 5 patients (2 confirmed and 3 unconfirmed) were reported as ruptures in the non-MRI cohort.

[2] None of the following complications occurred: bruising, capsule calcification, delayed wound healing, hematoma, implant extrusion, implant palpability, implant visibility, irritation, lymphadenopathy, lymphedema, necrosis, nipple complications (not related to sensation), pneumothorax, ptosis, redness, skin rash, skin sensation changes, swelling, upper pole fullness and other complications.

REASONS FOR REOPERATION

Primary Reconstruction Patients

There were 124 reoperations performed in 99 primary reconstruction patients through 10 years following implantation. Table 21 provides the main reasons for reoperation in the primary reconstruction cohort at 3, 6, and 10 years. In this population, the most common reason for reoperation, through 10 years, was the patient's desire for a change in the style or size of the implant (20%).

Table 21 Main Reasons for Reoperation At Timepoints Through 10 Years For Primary Reconstruction Patients

Main Reasons* for Reoperation	Through 3 Years N= 85 Patients n (%)	Through 6 Years N= 110 Patients n (%)	Through 10 Years N= 124 Patients n (%)
Suspected Rupture	1 (1.2%)	2 (1.8%)	5 (4%)**
Infection	10 (11.8%)	10 (9.1%)	10 (8.1%)
Capsular Contracture	6 (7.1%)	8 (7.3%)	9 (7.3%)
Healing Related			
Extrusion	2 (2.4%)	2 (1.8%)	2 (1.6%)
Necrosis	0 (0%)	0 (0%)	0 (0%)
Hematoma/Seroma	3 (3.5%)	5 (4.5%)	5 (4%)
Delayed Wound Healing	3 (3.5%)	3 (2.7%)	3 (2.4%)
Irritation/Inflammation	0 (0%)	0 (0%)	0 (0%)
Pain	0 (0%)	0 (0%)	1 (0.8%)
Cosmetic			
Malposition	3 (3.5%)	6 (5.5%)	7 (5.6%)
Upper Pole Fullness	0 (0%)	0 (0%)	0 (0%)
Wrinkling/Rippling	0 (0%)	0 (0%)	1 (0.8%)
Palpability/Visibility	1 (1.2%)	1 (0.9%)	1 (0.8%)
Asymmetry	16 (18.8%)	19 (17.3%)	20 (16.1%)
Ptosis	5 (5.9%)	7 (6.4%)	7 (5.6%)
Scarring/Hypertrophic Scarring	2 (2.4%)	4 (3.6%)	4 (3.2%)
Nipple Related	5 (5.9%)	5 (4.5%)	5 (4%)
Breast Cancer	0 (0%)	2 (1.8%)	3 (2.4%)
Mass/Lump/Cyst	3 (3.5%)	5 (4.5%)	6 (4.8%)
Skin Related	1 (1.2%)	1 (0.9%)	2 (1.6%)
Style/Size Change	21 (24.7%)	24 (21.8%)	25 (20.2%)
Trauma	0 (0%)	0 (0%)	0 (0%)
Unknown	3 (3.5%)	6 (5.5%)	8 (6.5%)

*Some reoperations were performed for multiple reasons; only the primary reason is provided in the table.
** Two of the five patients were confirmed non-ruptured via explant.

Revision-Reconstruction Patients

There were 55 reoperations performed in 42 revision-reconstruction patients through 10 years following implantation. Table 22 provides the main reasons for reoperation in the revision-reconstruction cohort at 3, 6, and 10 years. In this population, the most common reasons for reoperation through 10 years was asymmetry (24%).

Table 22 Main Reasons for Reoperation At Timepoints Through 10 Years For Revision Reconstruction Patients

Main Reasons* for Reoperation	Through 3 Years N= 39 Patients n (%)	Through 6 Years N= 46 Patients n (%)	Through 10 Years N= 55 Patients n (%)
Suspected Rupture	0 (0%)	0 (0%)	1 (1.8%)
Infection	1 (2.6%)	1 (2.2%)	1 (1.8%)
Capsular Contracture	6 (15.4%)	8 (17.4%)	12 (21.8%)
Healing Related			
Extrusion	0 (0%)	0 (0%)	0 (0%)
Necrosis	0 (0%)	0 (0%)	0 (0%)
Hematoma/Seroma	1 (2.6%)	1 (2.2%)	1 (1.8%)
Delayed Wound Healing	0 (0%)	0 (0%)	0 (0%)
Irritation/Inflammation	0 (0%)	0 (0%)	0 (0%)
Pain	1 (2.6%)	2 (4.3%)	2 (3.6%)
Cosmetic			
Malposition	5 (12.8%)	5 (10.9%)	5 (9.1%)
Upper Pole Fullness	0 (0%)	0 (0%)	0 (0%)
Wrinkling/Rippling	1 (2.6%)	1 (2.2%)	1 (1.8%)
Palpability/Visibility	0 (0%)	0 (0%)	0 (0%)
Asymmetry	8 (20.5%)	9 (19.6%)	13 (23.6%)
Ptosis	0 (0%)	0 (0%)	0 (0%)
Scarring/Hypertrophic Scarring	0 (0%)	1 (2.2%)	1 (1.8%)
Nipple Related	3 (7.7%)	3 (6.5%)	3 (5.5%)
Breast Cancer	1 (2.6%)	1 (2.2%)	1 (1.8%)
Mass/Lump/Cyst	2 (5.1%)	2 (4.3%)	2 (3.6%)
Skin Related	0 (0%)	0 (0%)	0 (0%)
Style/Size Change	9 (23.1%)	9 (19.6%)	9 (16.4%)
Trauma	1 (2.6%)	1 (2.2%)	1 (1.8%)
Unknown	0 (0%)	2 (4.3%)	2 (3.6%)

* Some reoperations were performed for multiple reasons; only the primary reason is provided in the table.

REASONS FOR IMPLANT REMOVAL

Primary Reconstruction Patients

The main reasons for explantation among primary reconstruction patients through 10 years are provided in Table 23. There were 111 implants removed from 73 patients. Of these 111 implants, most were replaced (77%). The most common reason for implant removal was the patient requested an implant style or size change (36%).

Table 23
Main Reason for Implant Removal Through 10 Years for Primary Reconstruction Patients (N=111 Explants)

Reasons for Implant Removal	n (%)
Patient Request for Size/Style Change	40 (36.0%)
Asymmetry	18 (16.2%)
Unknown	11 (9.9%)
Implant Malposition	9 (8.1%)
Infection	9 (8.1%)
Capsular Contracture	8 (7.2%)
Suspected Rupture[1]	6 (5.4%)
Scarring/Hypertrophic Scarring	3 (2.7%)
Implant Extrusion	2 (1.8%)
Wrinkling/Rippling	2 (1.8%)
Breast Cancer	1 (0.9%)
Delayed Wound Healing	1 (0.9%)
Hematoma/Seroma	1 (0.9%)

[1] Two of the 6 devices were confirmed non-ruptured at explantation.

Revision-Reconstruction Patients

The main reasons for explantation among revision-reconstruction patients through 10 years are provided in Table 24. There were 50 implants removed from 36 patients. Of these 50 implants, most were replaced (72%). The most common reason for implant removal was the patient requested an implant style or size change (28%).

Table 24
Main Reason for Implant Removal through 10 Years
for Revision-Reconstruction Patients (N=50 Explants)

Reasons for Implant Removal	n (%)
Patient Request for Size/Style Change	14 (28.0%)
Asymmetry	9 (18.0%)
Capsular Contracture	9 (18.0%)
Implant Malposition	4 (8.0%)
Pain	4 (8.0%)
Unknown	3 (6.0%)
Trauma	2 (4.0%)
Breast Cancer	1 (2.0%)
Hematoma/Seroma	1 (2.0%)
Infection	1 (2.0%)
Wrinkling/Rippling	1 (2.0%)

OTHER CLINICAL FINDINGS

The Study evaluated several long-term health effects that had been previously reported in breast implant patients. These include rupture, cancer, connective tissue disease (CTD), CTD signs and symptoms, lactation complications, reproduction complications and suicide.

Cancer

One primary reconstruction patient reported breast cancer during the 10 years following implantation and 3 recurrent cases of breast cancer were reported (2.9%). Diagnoses of any other (non-breast) cancers have been reported in 16 patients (7.1%) in the primary reconstruction cohort through 10 years. The other types of cancer include duodenum, ovarian, pancreatic, skin, and metastatic cancers. There were no cases of fibrocystic breast disease reported through 10 years in primary reconstruction patients.

Two revision-reconstruction patients reported breast cancer through 10 years in the Study. This represents a risk of 3.2%. Diagnoses of any other (non-breast) cancers have been reported in seven patients (8%) in the revision-reconstruction cohort through 10 years. The other types of cancers reported in the revision-reconstruction cohort include lung, skin and metastatic cancers. There was one case of fibrocystic disease among revision-reconstruction patients through 10 years (1.7%).

There were no cases of BIA-ALCL in any of the patient cohorts.

Connective Tissue Disease (CTD)

Among primary reconstruction patients through Year 10, one patient has been diagnosed with CTD, Sjögren's Syndrome (5.1 years post-implantation). Based on this, the 10-year risk among primary reconstruction patients of Sjögren's Syndrome is 0.7%.

Two of the 84 revision-reconstruction patients in the Study were diagnosed with a CTD in the 10 years after receiving implants; the diagnoses were one case of Hashimoto's Thyroiditis (1.1 year post implantation) and one case of Sjögren's Syndrome (3.7 years post-implantation, who also had a confirmed implant rupture). Based on this, the 10-year risk of Hashimoto's Thyroiditis is 1.4% while the risk of Sjögren's Syndrome is 1.8%, while the risk of having at least one CTD is 3.2%

CTD Signs and Symptoms

In Sientra's Study, numerous self-reported CTD signs and symptoms were collected. Compared to before having implants, for the pooled primary reconstruction and revision-reconstruction cohorts, no significant increases or decreased were found across the 13 sign/symptom categories.

The Sientra Study was not designed to evaluate cause-and-effect associations because there is no comparison group of women without implants, and because other contributing factors, such as medications and lifestyle/exercise, were not studied. Therefore, this evaluation is beyond the Study's scope.

Lactation Complications

There were 22 primary reconstruction patients who delivered a baby after reconstruction with Study Implants. None of these patients reported difficulties with lactation after they received the Implants.

There were three revision-reconstruction patient who delivered a baby after reconstruction with Study Implants; this patient reported no problems with lactation.

Reproduction Complications

Of the 225 patients in the primary reconstruction cohort, 2 (0.9%) reported postoperative difficulties through 10 years. Of the 84 patients in the revision-reconstruction cohort, none (0%) had postoperative difficulties.

Suicide

There were no reports of suicide in primary reconstruction or revision-reconstruction patients in the Study through 10 years.

Risk Factor Analysis

Within the reconstruction and revision-reconstruction cohorts, five endpoints (capsular contracture, infection, rupture, reoperation, and explantation with or without replacement) were explored using a covariate analysis to evaluate their association with patient age, BMI, device characteristics (shaped/round, smooth/textured, size, years of implantation), and surgical characteristics (incision site, betadine/antibiotic pocket irrigation, submuscular/subglandular, general/local anesthesia, surgical facility).

Reconstruction

Within the reconstruction cohort, most of the analyses were not statistically significant. Only one factor was found to be significant: implantation time. The analysis found that four of the explored events (capsular contracture, infection, reoperation and explantation) were more likely to occur early rather than near the end of this 10-year study. Rupture was not explored because there were too few events.

Revision-Reconstruction

Within the revision-reconstruction cohort, infection and rupture were not explored because there were too few events and most of the remaining analyses were not statistically significant. The few significant findings were:

- Lower capsular contracture risk associated with textured devices and longer implantation time.
- Decreased risk of reoperation and risk of explantation associated with increased implantation time; this indicates that these events (as well as capsular contracture) were more likely to occur early rather than near the end of this 10-year study.

INSTRUCTIONS FOR USE

Back-up Implants should be available during the procedure.

Do not use more than one implant per breast.

The product is intended for single use only. Do not reuse explanted implants.

PREOPERATIVE PATIENT PROCEDURES

Sientra relies on the surgeon to know and follow proper surgical procedures when implanting, explanting or performing revising surgery with Sientra's Implants. Proper surgical planning, such as allowance for adequate tissue coverage, implant placement, incision site, implant size, shape, and style, should be made preoperatively. The surgeon should take into consideration the contraindications, warnings and precautions described in this document, as well as the patient's medical history, desires, and expectations, and physical condition.

INSTRUCTIONS FOR OPENING AND INSPECTING THE STERILE PACKAGE

- Examine the implant's sealed outer box before entering the surgical area to verify package integrity. **Do not utilize any implant with packaging that appears to be damaged in any way.**
- Open the outer box and remove the interior double blister packaging.
- Separate the product accessories, such as the Instructions for Use, the Device Identification Card, Breast Implant Tracking Form, and the adhesive labels.
- Attach the adhesive labels with the product data to the patient's operative report and patient Device Identification (ID) Card. Make sure to provide the Device ID card to the patient after surgery.
- Open the outer blister package to gain access to the inner sterile blister packaging, taking care not to contaminate the inner sterile blister packaging by touching it to the outside of the outer blister.
- Open the sterile inner blister package being careful to avoid contact with dust, lint and talc, and place the implant onto the surgical tray.

Do not implant any device that

- Appears to have particulate contamination, damage, or loss of shell integrity,
- Appears to have leaks or nicks, or
- Is damaged or contaminated.

The Sientra Implants are sterilized by dry heat. Do not re-sterilize the product**.**

INTRAOPERATIVE CONSIDERATIONS

Take note of the following intraoperative considerations:

- Have a spare Implant available during the surgical procedure and all follow-up procedures, revisions and capsulotomies.
- The periumbilical approach has not been studied in Sientra's Study and should not be used for a variety of reasons, including potential damage to the implant shell.
- To avoid damaging the device, ensure that the incision is sufficiently large to facilitate insertion without excessive manipulation and handling of the device.

Do not use lubricants to facilitate placement.

Use extreme care to avoid damaging the breast implant with sharp surgical instruments such as needles and scalpels, or with cautery devices or blunt instruments such as clamps or forceps, or by over handling and manipulation during introduction into the surgical pocket.

Do not use excessive force during breast implant placement.

Please refer to the *Warnings* and *Precautions* sections in this document for additional information about intraoperative considerations.

POSTOPERATIVE CONSIDERATIONS

Postoperative hematoma and seroma may be minimized by meticulous attention to hemostasis during surgery, and possibly also by postoperative use of a closed drainage system. Persistent, excessive bleeding must be controlled before implantation. Any postoperative evacuation of hematoma or seroma must be conducted with care to avoid damage to the implant from sharp instruments.

MANAGING A RUPTURED IMPLANT

Physicians should recommend implant removal to their patients if a rupture is confirmed.

In the event of rupture of a breast implant, the following technique is useful for removal of the silicone mass. Wearing double talc-free surgical gloves on one hand, use the index finger to penetrate the silicone mass. With the other hand, exert pressure on the breast to facilitate manipulation of the silicone mass into the double-gloved hand. Once the silicone is in hand, pull the outer glove over the silicone mass and remove. To remove any residual silicone, blot the surgical pocket with gauze sponges. Avoid contact between surgical instruments and the silicone. If contact occurs, use isopropyl alcohol to remove the silicone from the instruments. Ruptured breast implants must be reported and should be returned to Sientra in an Explant Return Kit. In the event of breast implant rupture, contact Sientra at 1-(888) 478-5782.

ADDITIONAL PRODUCT-SPECIFIC INFORMATION

RETURNED MERCHANDISE POLICY

Product returns should be processed through a Sientra Sales Representative or through the Sientra Customer Experience Team at 1-(888) 478-5782. All package seals must be intact to be eligible for return.

EXPLANTED DEVICE RETURNS AND REPORTING

Explanted devices must be returned to Sientra and the reason for explantation must be provided. All explanted devices must be returned in a Sientra Explant Return Kit. Please contact the Sientra Customer Experience Team at 1-(888) 478-5782 for a Sientra Explant Return Kit and instructions.

PRODUCT REPLACEMENT POLICY AND LIMITED WARRANTIES

The Sientra Platinum20™ Limited Warranty and Lifetime Product Replacement Program provides lifetime replacement and limited financial reimbursement in the event of shell leakage or breakage resulting in implant rupture, or complications of capsular contracture Baker Grade III/IV, double capsule, late forming seromas and BIA-ALCL, subject to certain conditions as discussed in the Sientra Platinum20 Limited Warranty literature. Our standard Platinum20 Limited Warranty program applies to every Sientra breast implant recipient subject to their participation in Sientra's Device Tracking program and to the conditions discussed in the Sientra Platinum20 Limited Warranty literature. For more information, please contact Sientra Customer Service at 1-(888) 478-5782.

PRODUCT ORDERING

To order or for product information, please contact Sientra's Customer Experience Team at 1-(888) 478-5782.

ACCESS TO ELECTRONIC INFORMATION

The *Patient Educational Brochures*, *Patient Decision Checklist,* and *Device Tracking Form* can be found on Sientra's website at www.sientra.ca. The electronic version of this IFU can also be found on Sientra's website.

REPORTING PROBLEMS

In addition to informing your doctor, you can report a problem to Sientra and/or to Health Canada. Your doctor or other healthcare provider may do this, or you may report it yourself.

You can report any serious problem directly to Health Canada through the following:

- a telephone call (1-800-267-9675),
- by mandatory medical device problem reporting form (https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/dhp-mps/alt_formats/pdf/medeff/report-declaration/md-mm_form-eng.pdf)
- or by using the following adverse reaction form: https://www.canada.ca/en/health-canada/services/drugs-health-products/medeffect-canada/adverse-reaction-reporting/medical-device.html

DEVICE MANUFACTURER

Sientra's Silicone Gel Breast Implants are manufactured for and sold by:

Sientra, Inc.
3333 Michelson Drive, Suite 650, Irvine, California 92612
United States of America
Canada Toll-Free Phone: 1-(888) 478-5782
Phone: 1-(805) 478-5782
Fax: (805) 562-8401
www.sientra.ca

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