SYNERGY DISC®

US Instructions For Use

℞ only

SYNERGY
SPINE SOLUTIONS®

Manufactured by:
SYNERGY SPINE SOLUTIONS INC.
357 S. McCaslin Blvd, Suite 120
Louisville, Colorado 80027, USA
www.synergyspinesolutions.com
info@synergyspinesolutions.com
Telephone: 647-692-3493

MR MRI Safety Information

A person with Synergy Spine Solutions' Synergy Disc may be safely scanned under the following conditions. Failure to follow these conditions may result in injury.

Parameter	Condition
Device Name	Synergy Disc
Static Magnetic Field Strength (B0)	1.5T and 3T
Maximum Spatial Field Gradient	40 T/m (4,000 G/cm)
RF Excitation	Circularly Polarized (CP)
RF Transmit Coil Type	Integrated Whole Body Transmit Coil
Operating Mode	Normal Operating Mode
Maximum Whole-Body SAR	2 W/kg (Normal Operating Mode)
Maximum Head SAR	3.2 W/kg (Normal Operating Mode)
Scan Duration	2 W/Kg whole-body average SAR for 60 minutes of continuous RF (a sequence or back to back series/scan without breaks)
Image Artifact	The presence of Synergy Disc may produce an image artifact of 1.7 cm when a slice thickness of 3 mm is used. Some manipulation of scan parameters may be needed to compensate for the artifact.

DEFINITIONS OF SYMBOLS ON DEVICE LABEL

- MD — Medical Device
- REF — Catalogue Number
- LOT — Lot Number
- Use-by-date
- Manufacturer
- Do Not Reuse
- UDI — Unique Device Identifier
- Consult Instructions for Use or Consult Electronic Instructions for Use
- MR — MR Conditional
- Caution
- Patient Information Website
- Patient Information
- Location
- Ti PE — Device Materials Titanium and Polyethylene
- ℞ Only — Caution: United States Federal law restricts this device to sale by or on the order of a Physician
- STERILE EO — Protective Packaging over Sterile Barrier Sterilized using Ethylene Oxide
- STERILE EO — Double Sterile Barrier System Sterilized using Ethylene Oxide
- Do not use if package is damaged and Consult Instructions for Use
- USA — Country of Manufacturer United States of America
- Doctor or Healthcare Center
- Address
- 31 — Date
- Phone Number

PURPOSE The Synergy Disc is intended to be a motion-preserving cervical replacement disc and features two lordotic angle options.

DESCRIPTION
The Synergy Disc is a three-component system consisting of:
1. Inferior Titanium Endplate (ASTM F136, F1580)
2. UHMWPE core (ASTM F648)
3. Superior Titanium Endplate (ASTM F136, F1580)

PACKAGING The Synergy Disc is supplied sterile packaged. Do not use the implant if the package integrity has been compromised. After the correct size, height, and angle are determined, use aseptic technique to remove the Implant Loader from the packaging. The Implant Loader holds the implant for assisted loading onto the Inserter surgical instrument.

INDICATIONS FOR USE The Synergy Disc is indicated in skeletally mature patients for reconstruction of the disc at one level from C3-C7 following single-level discectomy for intractable radiculopathy (arm pain and/or a neurological deficit) with or without neck pain, or myelopathy due to a single-level abnormality localized to the level of the disc space and at least one of the following conditions confirmed by radiographic imaging (CT, MRI, X-rays): herniated nucleus pulposus, spondylosis (defined by the presence of osteophytes), and/or visible loss of disc height compared to adjacent levels. The Synergy Disc is implanted using an anterior approach. Patients should have failed at least 6 weeks of conservative treatment or demonstrated progressive signs or symptoms despite nonoperative treatment prior to implantation of the Synergy Disc.

CONTRAINDICATIONS
Contraindications include, but are not limited to:
- Tumor or trauma
- Intractable radiculopathy or myelopathy necessitating surgical treatment at more than one cervical level
- Allergy or sensitivity to the implant materials (e.g., titanium and, polyethylene)
- Bridging osteophytes
- Radiographic instability on lateral, coronal or flexion / extension radiographs: translation greater than 3.5mm and/or greater than 11 degrees of angular difference from either adjacent segments
- Facet joint degeneration
- Active systemic or local infection
- Osteoporosis defined as Dual-Energy X-ray Absorptiometry (DEXA) bone mineral density T-score less than -2.5
- Advanced cervical spine conditions or diseases at the index level other than those included in the Indications for Use (e.g., rheumatoid arthritis, Diffuse Idiopathic Skeletal Hyperostosis (DISH), ankylosing spondylitis)

WARNINGS
- Proper selection of implant size, including lordotic angle, and positioning in the patient of the Synergy Disc is critical for optimum performance. The Synergy Disc system should be used by experienced cervical spine surgeons after receiving suitable training regarding the specific requirements of this device.
- Due to the proximity of the implantation site to vascular and neurological structures, care should be taken to protect these critical areas.
- When reviewing treatment options for a specific patient, it is important to consider factors such as the patient's age, occupation, activity level, and degree of spinal degeneration. Proper patient selection is crucial to success.
- Exercise care not to damage implant (articulation surfaces) during installation. The Synergy Disc Implant and Instruments should be used together for proper implantation.
- The Synergy Disc is single use only. Do not re-sterilize or reuse the Synergy Disc. Re-sterilization and/or reusing the Synergy Disc may result in impaired performance and could cause patient injury and/or the communication of infectious diseases between patients.

PRECAUTIONS
Below is a list of precautions to be aware of as the safety and effectiveness of the Synergy Disc has not been established in patients with the following conditions: Over the age of 70, Previous spine surgery at the level of the currently requiring surgery (other than nominal removal of part of the vertebral bone with spine joints intact), Only symptom is soreness of the neck muscles, Very limited motion of the level requiring surgery, Diseases which affect bone development or mineral levels, Autoimmune diseases, Insulin-dependent diabetes, Current or extended use (more than 6 months) of any drug that may interfere with bone or soft tissue healing.

POTENTIAL RISKS AND ADVERSE EVENTS
Complications that are known to occur with any surgery include: Abscess, Superficial (shallow) infection, Deep wound infection, Pneumonia (lung infection), Atelectasis (collapsed lung), Septicemia (blood poisoning), Edema, Hematoma, Injury to blood vessels, Soft tissue damage, Nerve or muscular damage, Phlebitis (inflammation of the blood vessel in your leg) or thromboembolus (blood clot in the legs),Pulmonary embolism (blood clot in the lung), Hemorrhage (excessive bleeding), Respiratory distress or depression (slow, shallow, or difficulty breathing), Pulmonary edema (abnormal collection of fluid in the lungs), Thromboembolism (blood clot in the vessel), Reactions to the drugs or anesthesia used during and after surgery, Reactions to blood transfusions, Failure of the tissue to heal properly (e.g., hematoma [a pocket of blood caused by bleeding from a broken blood vessel]; would dehiscence [failure of the incision to completely heal which may allow it to reopen]), cellulitis, or wound necrosis, which may require drainage, aspiration (removing a substance using suction), debridement (surgery to clean foreign material and dead tissue out of a wound), or other treatment, Pain at the incision, Complications of unknown pregnancy including miscarriage and fetal birth defects, Inability to resume activities of daily living, Myocardial infarction (heart attack), Stroke, Seizure, convulsion, or change in mental status, Death.
Complications that are known to occur with cervical spine surgery: Damage to nerves that may result in changes in the sensation and/or muscle weakness in your neck, legs, arms, and/or shoulders, Paralysis (loss of ability to move muscles with the loss of feeling also), Paresthesia (a sensation of pricking, tingling, or creeping on the skin), Dysphagia (trouble swallowing), Hoarseness, Dysarthria (difficulty articulating speech that is otherwise linguistically normal), Vocal cord paralysis, Laryngeal palsy, Sore throat, Recurring aspirations (inhaling foreign substances into the lungs), Fistula (abnormal passage), Tracheal, esophageal, and/or pharyngeal perforation (penetration of the windpipe, the tube that goes from the throat to the stomach, and/or the area between the mouth and esophagus that performs the wallowing action), Airway obstruction (blockage of the airway), Spinal stenosis (narrowing of the nerve passages that go from the spine to the rest of your body), Hardening or tearing of the tissue surrounding the implant, Spondylosis, Worsening of the degenerative disc disease condition at adjacent levels, Discitis (inflammation of the disc), Arachnoiditis (inflammation of middle layer of the tissues that cover the spinal cord), or other types of inflammation, External chylorrhea, Damage to nerves, blood vessels, and nearby tissues including, for example, muscle and/or ligament injury, Dural tear or leak, Epidural bleeding (bleeding around the membrane covering the tissue surrounding your spinal cord that may require a blood transfusion or another operation), Epidural hematoma (a pocket of blood caused by a broken blood vessel or bone bleeding in the membrane covering the nerves or the tissues surrounding your spinal cord), Epidural fibrosis (scar tissue formation on the membrane covering the nerves), Instability of the operated or adjacent vertebrae, Blindness by prolonged pressure on the eye during the operation, Urinary or fecal incontinence, Surgery at the wrong level of your spine, Loss of bone around the implant (osteolysis related to debris from implant wear), Injury to the spinal cord or the nerves leaving or entering the spinal cord, Disc herniation ("slipped disc"), Loss of disc height, Injury of the membrane (dura) surrounding the spinal nerves which may or may not result in leakage of the spinal fluid, Impaired muscle or nerve function (symptoms like clumsiness, numbness, foot drop, neurological weakness, etc.), Fracture of the vertebra, spinous process (the part of your spine that you can feel through the skin of your back), or other damage to bony structures during or after surgery, Deterioration of the facet joints in the adjacent vertebrae (worsening of the condition), Postoperative muscle and tissue pain, The chance that the surgery will not reduce the pain or symptoms felt before the surgery, Failure of the fusion to heal, Spontaneous fusion (unplanned, self-generated fusion of the vertebrae), The spine may undergo unfavorable changes or deterioration at the operated level(s) and/or the levels above or below including loss of proper spinal curvature, correction, height, and/or reduction, or malalignment, which may require another surgery.
Complications that are known to occur with cervical disc replacement including the Synergy Disc: Airway obstruction, Wear debris generation, Foreign body (allergic) reaction to implant materials (titanium alloy, UHMPE), Metallosis, Staining, Tumor formation, Autoimmune disease, Early or late loosening of the components; disassembly, Bending or breakage of any or all the components, Implant subsidence (the implant may sink into the bone), Loss of fixation; sizing issues with components, Anatomical or technical difficulties, Bone fracture, Scarring, Bone resorption, Bone formation (including heterotopic ossification (HO)) that may reduce spinal motion or result in a fusion, either at the treated level or at adjacent levels, Development of new radiculopathy, myelopathy, or pain; tissue or nerve damage caused by improper positioning or placement of implants or instruments, Bending or breakage of a surgical instrument, Loss of neurological function, Decreased strength of extremities, Decreased reflexes, Cord or nerve root injury, Interference with radiographic imaging because of the presence of the implant, Need for subsequent surgical intervention, An unfavorable reaction where the bone and implant meet, Possible pain, infection, and permanent damage to the bone or surrounding tissues at the site where bone graft was taken, Implant migration or malposition (the implant could be improperly positioned), either peri-operatively or post-operatively, Adverse reaction or foreign body reaction to implant materials (possible allergic reaction to the metal) or there may be some wearing of the implant material against bone or another part of the implant that creates very small particles; it is possible that these particles may eventually cause the local tissues such as bone, nerves and nearby soft tissue to respond badly, Placement of the device at the wrong level of the spine, Implant may become loose, deform (permanently change shape), fail, break, wear out, or move which may require another surgery to correct the problem and/or remove the implant, Instruments used to insert the implant may break or malfunction in use which may cause damage to the surgical site or surrounding tissues, Pain, discomfort, and/or abnormal sensations caused by the presence of the implant, Implanting the incorrect size may cause the device to be less effective or safe, Surgery may be converted to Anterior Cervical Discectomy and Fusion (ACDF) if poor visualization at the index level due to anatomical limitations.

DEVICE REMOVAL
Contact Synergy Spine Solutions if the removal of an installed Synergy Disc is required so that Synergy Spine Solutions can send an explant kit. Refer to the instructions in the Synergy Disc Surgical Technique Guide regarding the removal of a device. All removed devices and associated data (reason for removal, description of device in situ, and images) must be returned to Synergy Spine Solutions.

I. SUMMARY OF PRIMARY CLINICAL STUDIES

The applicant performed a clinical study to establish a reasonable assurance of safety and effectiveness of the Synergy Disc for reconstruction of the disc at one level from C3-C7 following single-level discectomy for intractable radiculopathy (arm pain and/or a neurological deficit) with or without neck pain, or myelopathy due to a single-level abnormality localized to the level of the disc space and at least one of the following conditions confirmed by radiographic imaging (CT, MRI, X-rays): herniated nucleus pulposus, spondylosis (defined by the presence of osteophytes), and/or visible loss of disc height compared to adjacent levels. The study was performed in the United States (US) under IDE G180090 with anterior cervical discectomy and fusion (ACDF) historical control data from a separate IDE study performed in the US (IDE G040081). A summary of the clinical study is presented below.

A. Study Design

Subjects in the Synergy Disc group of the pivotal clinical trial were treated between January 2021 and May 2023. The prospective, multi-center, non-randomized, historically controlled clinical study was conducted under IDE. The Synergy Disc database for this PMA reflects data collected through May 12, 2025, and includes 177 subjects enrolled across 20 sites. The Synergy Disc group results were compared to historical control data, non-concurrently enrolled, from the ACDF control group of the NuVasive Porous Coated Motion (PCM) Artificial Cervical Disc IDE study (G040081). An observational study design using propensity score (PS) subclassification was used to demonstrate covariate balance and enhance the quality of inferences regarding effectiveness and safety relative to ACDF control. The PS-selected control cohort included 192 subjects. The resultant PS-selected study cohort used for the pre-specified primary analysis population thus included all Synergy Disc subjects and historical control subjects (no PS-trimmed subjects were identified. Completers within the pre-specified primary analysis population are also analyzed.

1. Clinical Inclusion and Exclusion Criteria

To be eligible for the Synergy Disc IDE study, subjects had to be eligible for a fusion procedure and meet all of the inclusion criteria and none of the exclusion criteria in **Table 1**:

Table 1: Study Inclusion/Exclusion Criteria

Study Inclusion Criteria	Study Exclusion Criteria
1) Age 18-70 years; 2) Diagnosis of radiculopathy or myelopathy of the cervical spine, with either radiculopathy symptoms – pain, paresthesia, or paralysis in a specific nerve root distribution C4, C5, C6, or C7, including at least one of the following: a) Arm/shoulder pain (at least 30 mm on 100 mm VAS scale); b) Decreased muscle strength of at least one level on the 0-5 scale described below: i) Abnormal sensation, including hyperesthesia or hypoesthesia; And/or abnormal reflexes; Or myelopathy symptoms including positive Romberg evaluation, abnormal heel/toe walk, pathologic hyperreflexia or clonus in lower extremity, positive Babinski, or positive Hoffman's; 3) Symptomatic at only one level from C3-C4 to C6-C7; 4) Radiographically determined pathology at level to be treated correlating to primary symptoms, including at least one of the following: a) Decreased disc height compared to adjacent levels on radiographic film, CT, or MRI b) Degenerative spondylosis on CT or MRI c) Disc herniation on CT or MRI 5) Neck Disability Index (NDI) Score ≥ 30/100; 6) Unresponsive to non-operative treatment for six weeks, or has presence of progressive symptoms or signs of nerve root/spinal cord compression in the face of conservative treatment; 7) Appropriate for treatment using an anterior surgical approach, including having no more than one previous anterior surgical approach to the cervical spine; 8) Ability and willingness to comply with follow-up regimen; and 9) Written informed consent given by subject	1) Infection at the site of surgery; 2) History of, or anticipated treatment for, active systemic infections, including HIV infection or hepatitis C; 3) Prior attempted or completed cervical spine surgery, except (1) laminoforaminotomy (greater than 6 months prior to scheduled surgical treatment), which includes removal of disc material necessary to perform a nerve root decompression, with less than one-third facetectomy at any level, (2) a successful single-level anterior cervical fusion (greater than 6 months prior to scheduled surgical treatment); 4) More than one immobile vertebral level between C1-T1 from any cause, including but not limited to congenital abnormalities, osteoarthritic "spontaneous" fusions, and prior cervical spinal fusions; 5) Previous trauma to the C3-T1 levels resulting in significant bony or disco-ligamentous cervical spine injury; 6) Axial neck pain in the absence of other symptoms of radiculopathy or myelopathy justifying the need for surgical intervention; 7) Radiographic confirmation of severe facet joint disease or degeneration; 8) Osteoporosis: A screening questionnaire for osteoporosis, SCORE (Simple Calculated Osteoporosis Risk Estimation) for females or MORES (Male Osteoporosis Risk Estimation Score), will be used to screen patients to determine those patients who require a hip/spine DXA, a bone mineral density measurement. A SCORE or MORES ≥ 6 requires a DXA. If DXA is required, exclusion will be defined as a DXA bone density measured T score ≤ –2.5 (The World Health Organization definition of osteoporosis). DXA scans within the last 6 months prior to surgical treatment may be used; 9) Paget's disease, osteomalacia, or any other metabolic bone disease (excluding osteoporosis which is addressed above); 10) Severe diabetes mellitus requiring daily insulin management; 11) Active malignancy: a history of any invasive malignancy (except non-melanoma skin cancer), unless the patient has been treated with curative intent and there have been no clinical signs or symptoms of the malignancy for at least 5 years; 12) Tumor as a source of symptoms; 13) Symptomatic DDD or significant cervical spondylosis at two or more levels; 14) Marked cervical instability on resting lateral or flexion/extension radiographs demonstrated by: a) Translation > 3.5 mm and/or

Study Inclusion Criteria	Study Exclusion Criteria
	b) >11° angular difference to that of either adjacent level; 15) Known or suspected allergy to cobalt, chromium, molybdenum, titanium alloy or polyethylene 16) Severe myelopathy to the extent that the patient is wheelchair bound; 17) Congenital canal stenosis resulting in a canal diameter of < 10 mm, as measured by CT or MRI; 18) Kyphotic segmental angulation of greater than 11 degrees at treatment or adjacent levels; 19) Arachnoiditis; 20) Pregnant (verified in patients of childbearing potential by a negative urine pregnancy test when preadmission testing is obtained), or interested in becoming pregnant during the duration of the study; 21) Autoimmune disorders that impact the musculoskeletal system (e.g., lupus, rheumatoid arthritis; ankylosing spondylitis); 22) Congenital bony and/or spinal cord abnormalities that affect spinal stability; 23) Spinal axis disease (thoracic or lumbar) to the extent that surgical consideration is likely anticipated within 6 months after the cervical procedure; 24) Other degenerative joint disease (e.g. shoulder, hip, knee) to the extent that surgical consideration is likely anticipated within 6 months after the cervical procedure; 25) Diseases or conditions that would preclude accurate clinical evaluation (e.g. neuromuscular disorders such as diffuse idiopathic skeletal hyperostosis (DISH)); 26) Medications that could interfere with fusion or other bone/soft tissue healing (e.g. anticipated continued use of systemic steroid medication postoperatively); 27) Currently experiencing acute episode of major mental illness (psychosis, major affective disorder, or schizophrenia), or manifesting physical symptoms without a diagnosable medical condition to account for the symptoms, which may indicate symptoms of psychological rather than physical origin; 28) Current or recent history of substance (drug or alcohol) per site PI's determination; 29) Morbid obesity, defined as body max index ("BMI") > 40 or more than 100 lbs. over ideal body weight; 30) Currently using, or planning to use, bone growth stimulators in the cervical spine; 31) Use of any other investigational drug or medical device within the last 30 days prior to surgery; 32) Currently a prisoner; 33) Currently pursuing personal litigation (defined as litigation that will likely influence the patient's

Study Inclusion Criteria	Study Exclusion Criteria
	ability or willingness to accurately report their treatment outcomes) related to the neck or cervical spine injury; however, involvement in worker's compensation related litigation is not a required exclusion.

2. Control

As mentioned above, a historical control study design was used with control subjects obtained from the ACDF cohort of a previously completed multi-center, prospective, randomized non-inferiority clinical trial, for the NuVasive PCM Artificial Cervical Disc IDE study (G040081). A detailed comparison of the indications, inclusion/exclusion criteria, and study outcomes of the historical ACDF cohort and the Synergy Disc IDE study protocol concluded that this dataset is an appropriate comparator to support this PMA application.

A PS methodology was applied to address potential selection bias when combining historical control data with the prospectively enrolled investigational cohort. Historical control subjects were selected to achieve similarity in baseline covariates with Synergy Disc subjects within PS subclasses. Statistical and graphical balance assessments demonstrated that Synergy Disc subjects and PS-selected controls had comparable multivariate baseline covariate distributions within PS subclasses.

3. Follow-up Schedule

All subjects were evaluated pre-operatively, at treatment, and post-operatively at the immediate post-operative visit (up to 21 days post-treatment), and at Week 6 (± 14 days), Month 3 (± 2 weeks), Month 6 (± 2 months), Month 12 (± 2 months), Month 24 (± 2 months) and annually thereafter (± 2 months) until the last subject enrolled had completed Month 24 evaluation. The following parameters were measured throughout the study (**Table 2**):

Table 2: Synergy Disc IDE Study Assessment Schedule

VISIT	Enrollment/ Preoperative[10]	Surgery Day 0	Immediate Post-Op (7-21 days)	6-Wk (42 days) ± 14 days	3-Months (90 days) ± 14 days	6-Months (180 days) ± 60 days	12-Months (365 days) ± 60 days	24-Months (730 days) ± 60 days	Annually Thereafter ± 60 days	Unscheduled
Informed Consent Process	X	-	-	-	-	-	-	-	-	-
Inclusion/ Exclusion Criteria	X	X	-	-	-	-	-	-	-	-
Demographics	X	-	-	-	-	-	-	-	-	-
Medical History	X	-	-	-	-	-	-	-	-	-
Pregnancy test	-	X	-	-	-	-	-	-	-	-
MRI or CAT Scan	X	-	-	-	-	-	-	-	-	-
Hip DEXA Scan	X[2]	-	-	-	-	-	-	-	-	-
X-Ray	X[3,7]	X[6]	X[1]	X[1]	X[7]	X[7]	X[7]	X[7]	X[7]	X[7]
Assessments[9]	X[4,5]	-	-	X[4,5]	X[4,5]	X[4,5]	X[4,5]	X[4,5]	X[4,5]	X[4,5]
Record/Review Concomitant Medications	X	-	X	X	X	X	X	X	X	X
Record/Review Adverse Events	-	X	X	X	X	X	X	X	X	X
Record/Review Device Deficiencies	-	X	X	X	X	X	X	X	X	X
Review Rehabilitation[8]	-	-	X	X	X	-	-	-	-	X

[1] No flexion/extension x-ray immediate post-op or 6-wk.
[2] DEXA bone mineral density will be recorded when dictated by osteoporosis screening (SCORE or MORES).
[3] DDD pathology will be confirmed by MRI or CAT Scan.
[4] Patient will complete self-assessment tools: neck pain, arm/shoulder pain (VAS); Patient Satisfaction (not conducted at baseline) ; NDI Questionnaire, SF-36 Health Survey, and Dysphagia Assessment (Bazaz, Hoarseness Scale)
[5] The Investigator will complete the following assessments: physical examination, Nurick/Odom's Criteria, Subject Survey and Neurological Assessment. (*Odom's Criteria will only be assessed post-operatively.)
[6] Intraoperative AP and lateral radiographs should be taken prior to closure to verify proper implant positioning.
[7] Anteroposterior, upright neutral lateral and flexion-extension lateral films must be taken at this visit for all patients.
[8] Rehabilitation can be marked as completed at 3 month visit or continue if necessary per investigator discretion.
[9]The subject reported surveys should be administered prior to any other study visit assessments or procedures being performed to prevent information from the examination biasing the subject's responses.
[10]Enrollment/Preoperative clinical evaluation will occur within 60 days of Surgery. MRI and CAT Scans can be conducted within 6 months of Surgery. X-Rays can be conducted within 3 months of Surgery

4. Clinical Endpoints

The safety of the Synergy Disc was assessed by comparison to the historical ACDF control group with respect to the nature and frequency of AEs (overall and in terms of seriousness, severity, and relationship to the device or procedure), additional index level surgical procedures and maintenance or improvement in neurological status.

The effectiveness of the Synergy Disc was assessed by comparison to the historical ACDF control group with respect to a primary composite endpoint, as described below. Effectiveness was further evaluated by assessing improvement in the Neck Disability Index (NDI), neck and arm/shoulder pain based on a Visual Analog Scale (VAS), and quality of life using the short-form questionnaire

(SF-36), as well as patient satisfaction of the Synergy Disc group compared to the historical ACDF Control group. Similar criteria were used to measure success in both groups.

Primary Endpoint

The study hypothesis was that in subjects with DDD defined as intractable radiculopathy (arm pain and/or a neurological deficit) with or without neck pain or myelopathy due to a single-level abnormality localized to the level of the disc space at one level from C3 to C7 that is unresponsive to conservative management, the Month 24 composite clinical success (CCS) rate of the Synergy Disc would be non-inferior as compared to the historical ACDF control subjects at Month 24. If non-inferiority was determined, the hypothesis that the investigational device is superior to the ACDF control was also tested.

The primary endpoint for the Synergy Disc subjects required the subject to meet all of the following criteria at 24 months:

- At least a 15-point improvement in NDI Score (out of 100) at Month 24 compared to baseline;
- Maintenance or improvement in neurologic status (motor and sensory only) at Month 24 compared to baseline;
- No study failures due to secondary surgical interventions (revision, removal, reoperation, and/or supplemental fixation) at the index level;
- Absence of radiographic failure, defined as any implant or component breakage or migration at the index level; and,
- Absence of device-related serious adverse events (SAEs) as adjudicated by the Clinical Events Committee (CEC).

Similarly, the primary endpoint for the historical ACDF control group subjects was defined as:

- At least a 15-point improvement in NDI Score (out of 100) at Month 24 compared to baseline;
- Maintenance or improvement in neurologic status at Month 24 compared to baseline;
- No study failures due to secondary surgical interventions (revision, removal, reoperation, and/or supplemental fixation) at the index level;
- Fusion occurred; and,
- Absence of device-related SAEs through Month 24.

Device failure is defined as breakage, migration, or mechanical failure of the components. For purpose of determining individual subject success, a SAE is defined as any of the following which are definitely related to the device system or to a device component as determined by the CEC:

- Permanent neurologic damage or permanent nerve root injury related to a level at or below the level treated;
- Implant or component breakage or migration that does not require revision, reoperation or removal, but causes persistent or moderate to severe dysphagia; and/or,
- Subject death.

For the ACDF control group, the same components of the CCS were employed, with the exception that non-fusion was an indicator of overall clinical failure. For the purpose of evaluating whether a fusion has occurred, the following criteria were applied to the ACDF control cohort:

- Translational motion less than or equal to 3 mm;
- Angular motion less than or equal to 2 degrees; and,
- Bridging bone;
- Radiolucent lines around less than 50% of the assembly.

Per the FDA Guidance for the Preparation of IDEs for Spinal Systems (https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-document-preparation-ides-spinal-systems-guidance-industry-andor-fda-staff), the following definitions apply:

- Reoperation - any surgical procedure at the index level that does not involve modification, addition or removal of any components of the device in the postoperative or follow-up period.
- Revision - any procedure in the postoperative or follow-up period that adjusts, modifies, or removes part of the original implant configuration with or without replacement of a component – may include adjusting the position of the original configuration in the postoperative or follow-up period.
- Removal - a procedure where the entire device is removed with or without replacement of the device in the postoperative or follow-up period.
- Supplemental fixation – a procedure in which additional instrumentation not under study is implanted (e.g., supplemental placement of a rod/ screw system).

Secondary Endpoints

The secondary endpoints included:

- Clinically significant improvement in one or more radicular symptoms or myelopathy at Month 24 compared to baseline for each group. The data collected reflect the number of subjects who improved (numbers were stratified to reflect clinical improvement), remain unchanged, and deteriorated at each study time point. These endpoints were graded and defined as follows:
    - Time to recovery (time to first 15-point NDI improvement)
    - A visual analog scale (VAS) was used to evaluate each of the following pain locations:
        - Neck pain;
        - Left arm/shoulder pain;
        - Right arm/shoulder pain;
        - Worse Arm/Shoulder pain;
        - Hoarseness
    - SF-36 at baseline and at each follow-up time-point;
    - Bazaz Dysphagia Score at Month 24 compared to baseline;
    - Results categorized according to Odom's Criteria;
    - Patient Satisfaction;
    - Myelopathy based on the Nurick scale;

In addition to the primary and secondary objectives listed above, various neurologic, operative, and radiographic (quantitative and qualitative) assessments were measured and evaluated.

5. Analysis Populations

The study defined the following populations for analysis:

- Intent-to-Treat (ITT) Analysis Set: The ITT analysis set will include all enrolled subjects, regardless of whether or not that treatment was actually received/completed. A subject must be selected into a PS subclass in order to be included in the ITT analysis set.
- As Treated (AT) Analysis Set: The AT analysis set includes those subjects in which treatment was actually completed with either the Investigational device or the Control device.
- Per-Protocol (PP) Analysis Set: The Per Protocol analysis set will consist of the subset of the AT analysis set with no major protocol violations as determined by the independent CEC, including important violations of inclusion or exclusion criteria and other post-surgical protocol violations expected to have substantial impact on the likelihood of interpreting Month 24 composite clinical success. The Per Protocol Set will be used for primary analysis, as is conservative for a test of non-inferiority. The Intention-to-Treat Set will be used to confirm these results.
- Safety Analysis Set: The safety analysis set included all subjects in the ITT analysis set.

6. Clinical Events Committees

An independent CEC, comprised of three spine surgeons who are not affiliated with the sponsor and did not participate in the study, reviewed all AEs including the appropriate AE term/code and category, relationship to the device and/or procedure, seriousness, and severity. In addition, the CEC adjudicated protocol deviations to determine which deviations were considered major or minor. The recommendation of the CEC overrode the investigator's classification and became part of the clinical trial data set.

The CEC also adjudicated neurologic status at Month 24 for all subjects to determine if neurologic status was maintained, improved or deteriorated relative to baseline.

B. Accountability of PMA Cohort

Table 3 below presents subject accounting and **Figure 3** presents the subject accounting tree for all subjects within the study. A total of 369 subjects (177 investigational subjects; 192 control subjects) comprised the Intent-to-Treat (ITT) Analysis Set.

- Two (2) subjects in the Synergy Disc group were enrolled but not treated with the Synergy Disc. Seven (7) subjects in the ACDF control group were enrolled but not treated, including one (1) subject removed from the study intra-operatively for additional treatment. The resulting 175 Synergy Disc subjects and 184 ACDF Control subjects comprised the As-Treated (AT) Analysis Set.
- Eleven (11) Synergy Disc and twenty-eight (28) ACDF control subjects had a major protocol deviation, resulting in 164 investigational subjects and 156 ACDF control subjects in the Per-Protocol (PP) Analysis Set.

Table 3: Subject Accounting

	Synergy Disc	Control
Enrolled (ITT Analysis Set)	177	192
Treated (AT Analysis Set)	175 (2 Synergy subjects were enrolled but not treated with the Synergy Disc)	184 (7 subjects not treated; 1 subject removed from study intraoperatively due to additional treatment required)
Per Protocol (PP) Analysis Set	164 (11 Synergy subjects had a Major Protocol Deviation)	156 (28 Control subjects had a Major Protocol Deviation)
# of Subjects (PP Analysis Set) yet to reach 24 Months (Day 730) as of Database Lock	5*	0
Theoretical Due (PP Analysis Set) (Day 730) as of Database Lock	159	156
Subjects with Complete Primary Outcome Data (PP Analysis Set)	155	136
Reasons for Missing Primary Outcome • **Not yet overdue (Have not reached Day 790)** • **Below day 730** • **Missing for other reasons (Withdrawal, loss to follow up etc.)**	9 subjects missing at least 1 component of CCS • 5 subjects missed the 24 Month Visit (> Day 790) • 1 subject was withdrawn from the study at 12 Months by site because subject did not return for visits • 3 subjects missing at least one component of primary endpoint	20 subjects missing at least 1 component of the CCS
***Subjects had yet to reach Day 730 at time of Database Lock but completed their Month-24 visit before the Database Lock. Subject data is included in the Per Protocol analysis set.**		

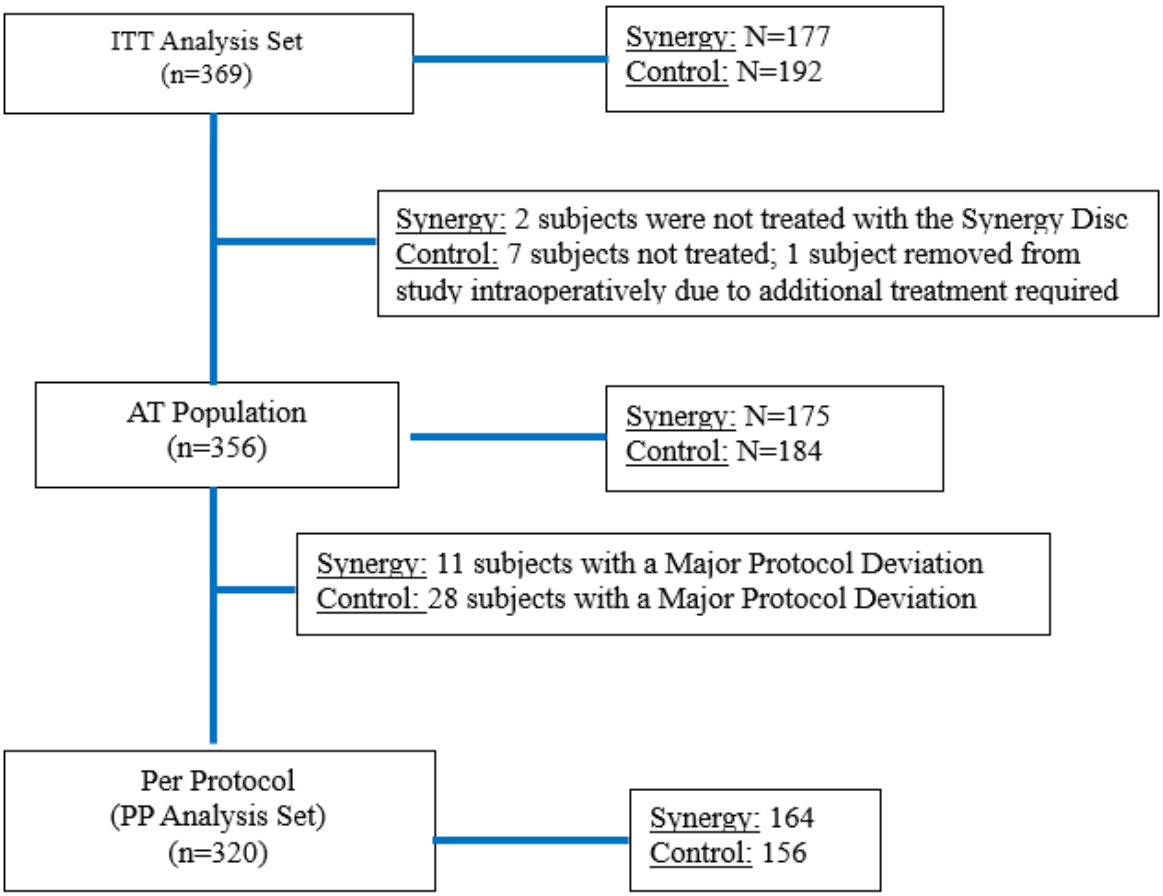

Figure 1: Subject Accounting Tree

C. Study Population Demographics and Baseline Parameters

Table 4 provides a summary of pre-operative and demographic variables for subjects in the ITT Analysis Set for both the investigational and control groups. The demographics of the study population are typical for a cTDR study performed in the US.

Table 4: Pre-Operative and Demographic Variables (ITT Analysis Set)

	Synergy Disc (N=177)					Control (N=192)				
Description	**n**	**Mean**	**S.D.**	**Median**	**Min, Max**	**n**	**Mean**	**S.D.**	**Median**	**Min, Max**
Age (years)	177	46.1	9.8	45	23.0, 70.0	192	43.6	8.6	44	19.0, 63.0
Height (in)	177	67.7	4.3	68	58.0, 77.0	191	67.4	3.8	67	58.0, 75.0
Weight (lbs)	177	189.4	39.6	185	110.2, 297.0	191	176.8	38.7	177	100.0, 295.0
BMI (kg/m^2)	177	29.0	4.9	28.6	18.9, 39.7	192	27.2	4.9	26	19.0, 41.0

Table 5 identifies categorial demographic information for investigational and control subjects in the ITT Analysis Set. The proportions enrolled are consistent with the sex, age, racial and ethnicity of other cTDR studies conducted to support a PMA with one-level indications in the US. The table also presents information on the number of subjects with prior cervical fusion.

Table 5: Categorical Demographic Information (ITT Analysis Population)

	Synergy Disc (N=177)		Control (N=192)	
Description	**n**	**%**	**n**	**%**
Sex				
Male	94	53.1	100	52.1
Female	83	46.9	92	47.9
Race*				
Black or African American	7	4	7	3.6
Native Hawaiian or Other Pacific Islander	1	0.6	0	0
Asian	4	2.3	5	2.6
White	165	93.2	176	91.7
American Indian or Alaska Native	0	0	0	0
Other	3	1.7	4	2.1
Ethnicity				
Hispanic or Latino	11	6.2	0	0
Not Hispanic or Latino	166	93.8	0	0
Missing	0	0	192	100
Educational Status				
Some high school	5	2.8	8	4.2
High school graduate	19	10.7	44	22.9
Some college	62	35	76	39.6
Complete bachelor's degree	56	31.6	31	16.1
Some graduate work	3	1.7	3	1.6
Completed graduate degree (MBA, MD, PhD)	32	18.1	30	15.6
Prior cervical Fusion	18	10.2	22	11.5
N = Total number of subjects n = Number of subjects in each category *More than one can be selected				

D. Intra-Operative Data

Table 6 provides a summary of intra-operative variables for investigational and control subjects in the ITT Analysis Set. In the investigational group, the mean surgery time was 66.5 minutes as compared to a mean surgery time of 85.7 minutes in the control group. The mean estimated blood loss in the investigational group was 21.4 cc as compared to a mean estimated blood loss of 57.9 cc in the control group. Please note, if a subject was discharged on the same day as surgery, that would count as 1 day for length of stay. If discharge is the following day, the length of stay would be 2. The exact times of discharge are not available. Therefore, the 1.3 mean length of stay is not indicative of a length of stay of 31 hours.

Table 6: Intra-Operative Variables (ITT Analysis Set)

	Synergy Disc (N=177)					Control (N=192)				
Description	**n**	**Mean**	**S.D.**	**Median**	**Min, Max**	**n**	**Mean**	**S.D.**	**Median**	**Min, Max**
Surgery time (min)	177	66.5	25.1	62	28.0, 153.0	184	85.7	40.5	72	23.0, 258.0
Estimated blood loss (cc)	175	21.4	17.5	20	0.0, 150.0	184	57.9	46.2	50	0.0, 325.0
Length of hospital stay (days)	175	1.3	0.5	1	1.0, 4.0	184	2.4	0.7	2	1.0, 7.0

E. Safety and Effectiveness Results

1. Safety Results

Adverse Events Summary

The CEC reviewed all safety events through Month 24 for both the Synergy Disc and ACDF Control group including AEs and subsequent surgical interventions (SSIs). This allowed for uniform resolution of study-related events and evaluations and eliminated any site-by-site

variations in reporting. The same AE code list and relationship definitions were applied to both the investigational and control groups by the CEC. All safety tables presented below include the following data:

- N = total number of subjects
- n = total number of subjects in category
- m = number of mentions (events) in each category
- % = total number of subjects in each category divided by total number of subjects (n/N)

Table 7 identifies a summary of AE categories and rates between the investigational and control subjects in the ITT Analysis Set. Overall, the investigational group reported a numerically greater rate of any AEs (79.7% - 141/177) as compared to the rate of any AEs recorded in the control subjects (71.4% - 137/192). However, the investigational group reported a numerically lower rate of SAEs (18.1% - 32/177) as compared to the rate of SAEs calculated for the control group (22.9% - 44/192).

Table 7: Comparisons of Summary Adverse Event Percentages between Synergy Disc and ACDF Groups (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
Description	**n**	**%**	**m**	**n**	**%**	**m**
Any Treatment-emergent Adverse Event	141	79.7	408	137	71.4	271
Mild	115	65	241	76	39.6	105
Moderate	84	47.5	138	85	44.3	118
Severe	28	15.8	28	43	22.4	48
Unknown	1	0.6	1	0	0	0
Any Device Related Treatment-emergent Adverse Event[1]	32	18.1	36	66	34.4	83
Any Definitely Device Related Treatment-emergent Adverse Event	3	1.7	3	1	0.5	1
Any Procedure Related Treatment-emergent Adverse Event[1]	72	40.7	90	75	39.1	104
Any Definitely Procedure Related Treatment-emergent Adverse Event	39	22	44	28	14.6	34
Any Serious Treatment-emergent Adverse Event	32	18.1	35	44	22.9	52
Mild	2	1.1	2	0	0	0
Moderate	8	4.5	8	7	3.6	8
Severe	24	13.6	24	39	20.3	44
Unknown	1	0.6	1	0	0	0
Any Device Related Serious Treatment-emergent Adverse Event[1]	5	2.8	6	21	10.9	21
Any Definitely Device Related Serious Treatment-emergent Adverse Event	2	1.1	2	0	0	0
Any Procedure Related Serious Treatment-emergent Adverse Event[1]	6	3.4	7	23	12	24
Any Definitely Procedure Related Serious Treatment emergent Adverse Event	5	2.8	6	8	4.2	8

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by indent.
m = Number of mentions in each category.
1 Includes 'Possibly Related', 'Probably Related' and 'Definitely Related'.

All Adverse Events

Table 8 lists all AEs reported as of the database lock by AE code, with the number of subjects experiencing the events. Percentages are calculated as the number of subjects experiencing an event divided by the number of subjects treated in the ITT Analysis Set. As mentioned above, the

investigational group presented with 408 events occurring in 79.7% (141/177) of subjects, compared to 271 events occurring in 71.4% (137/192) of the control subjects.

The most commonly reported AEs included: Radiculopathy (investigational - 19.8%, 35/177; control - 15.6%, 30/192); Cervical Pain (investigational – 16.4%, 75/177; control - 15.1%, 29/192); and Trauma (investigational - 10.7%, 19/177; control – 6.8% 13/192).

Table 8: All Adverse Events (ITT Analysis Set)

System Organ Class Preferred Term	Synergy Disc (N=177)			Control (N=192)		
	n	%	m	n	%	m
Any Adverse Event	141	79.7	408	137	71.4	271
Musculoskeletal and Connective Tissue Disorders	75	42.4	114	98	51	133
Cervical Pain	29	16.4	32	29	15.1	33
Adjacent Segment Degeneration	3	1.7	3	29	15.1	29
Lumbar Pain	18	10.2	20	13	6.8	14
Musculoskeletal Inflammation	17	9.6	19	12	6.3	16
Joint Pain	12	6.8	13	3	1.6	3
Other Musculoskeletal Pain	11	6.2	11	3	1.6	3
Soft Tissue Injury	2	1.1	3	11	5.7	11
Pseudarthrosis	0	0	0	7	3.6	7
Osteoarthritis	3	1.7	3	3	1.6	3
Fracture, Any Bone	2	1.1	2	3	1.6	3
Other Musculoskeletal and Connective Tissue Disorder	2	1.1	2	3	1.6	3
Herniated Disc	1	0.6	1	2	1	2
Spasms	1	0.6	1	1	0.5	1
Spondyloslistesis	1	0.6	1	1	0.5	1
Sprain	0	0	0	2	1	2
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Joint Instability	0	0	0	1	0.5	1
Joint Stiffness	1	0.6	1	0	0	0
Muscle Weakness	1	0.6	1	0	0	0
Spinal Stenosis	1	0.6	1	0	0	0
Nervous System Disorders	60	33.9	88	47	24.5	58
Radiculopathy	35	19.8	44	30	15.6	36
Compressive Neuropathy	11	6.2	13	10	5.2	11
Numbness/Tingling	12	6.8	13	3	1.6	3
Headache	9	5.1	9	2	1	2
Other Nervous System Disorder	3	1.7	3	0	0	0
Cerebrospinal fluid leak	1	0.6	1	1	0.5	1
Dizziness	2	1.1	2	0	0	0
Horner's Syndrome	0	0	0	2	1	2
Ataxia	1	0.6	1	0	0	0
Cognitive Disturbance	1	0.6	1	0	0	0
Dysesthesia	0	0	0	1	0.5	1
Myelopathy	0	0	0	1	0.5	1
Neurological Deterioration (Motor, Sensory or Reflex)	0	0	0	1	0.5	1
Tremors	1	0.6	1	0	0	0
Other Complications/Events	35	19.8	41	18	9.4	25
Trauma	19	10.7	24	13	6.8	17
Cancer	7	4	7	1	0.5	1
Other Event, Describe	2	1.1	2	4	2.1	6
Adverse Reaction to Medication	4	2.3	4	1	0.5	1
Surgery at a location other than the spine	4	2.3	4	0	0	0
Gastrointestinal Disorders	30	16.9	37	18	9.4	19
Dysphagia	11	6.2	11	15	7.8	15
Constipation	7	4	8	1	0.5	1
Other Gastrointestinal Disorder	6	3.4	6	1	0.5	1
Gastrointestinal Pain	3	1.7	3	0	0	0
Nausea	2	1.1	2	1	0.5	1
Colitis	2	1.1	2	0	0	0
Diarrhea	1	0.6	1	1	0.5	1
Gastroesophageal Reflux Disease	2	1.1	2	0	0	0
Pancreatitis	1	0.6	1	0	0	0
Vomiting	1	0.6	1	0	0	0

System Organ Class Preferred Term	Synergy Disc (N=177)			Control (N=192)		
	n	%	m	n	%	m
Infections and Infestations	29	16.4	35	10	5.2	11
Infection, Not at Surgical Site	15	8.5	18	7	3.6	8
Infection, Surgical Site	7	4	7	1	0.5	1
Rash	4	2.3	4	2	1	2
Sinusitis	5	2.8	5	0	0	0
Sepsis	1	0.6	1	0	0	0
COVID-19 Infection	15	8.5	16	0	0	0
COVID-19	15	8.5	16	0	0	0
Respiratory, Thoracic and Mediastinal Disorders	12	6.8	13	2	1	2
Hoarseness	4	2.3	4	1	0.5	1
Nasal Congestion	3	1.7	3	0	0	0
Pneumonia	2	1.1	2	1	0.5	1
Pulmonary Edema	2	1.1	2	0	0	0
Airw ay Obstruction	1	0.6	1	0	0	0
Sleep Apnea	1	0.6	1	0	0	0
Cardiac Disorders	10	5.6	12	3	1.6	3
Congestive Heart Failure	3	1.7	4	1	0.5	1
Other Cardiac Disorders	3	1.7	3	0	0	0
Atrial Fibrillation	2	1.1	2	0	0	0
Syncope/Fainting	1	0.6	1	1	0.5	1
Hyperlipidemia	1	0.6	1	0	0	0
Mitral Valve Disease	1	0.6	1	0	0	0
Ventricular Arrhythmia	0	0	0	1	0.5	1
Immune System Disorders	8	4.5	8	3	1.6	3
Allergic Reaction	3	1.7	3	1	0.5	1
Inflammation	2	1.1	2	2	1	2
Autoimmune Disorder	3	1.7	3	0	0	0
Vascular Disorders	7	4	8	3	1.6	3
Hypertension	3	1.7	3	0	0	0
Other Vascular Disorder	2	1.1	3	0	0	0
Thromboembolic Event	2	1.1	2	0	0	0
Hypotension	0	0	0	1	0.5	1
Lymphedema	0	0	0	1	0.5	1
Phlebitis	0	0	0	1	0.5	1
Psychiatric Disorders	5	2.8	5	3	1.6	4
Depression	4	2.3	4	2	1	2
Anxiety Disorders	1	0.6	1	0	0	0
Delirium	0	0	0	1	0.5	1
Insomnia	0	0	0	1	0.5	1
Skin and Subcutaneous Tissue Disorders	5	2.8	5	2	1	3
Other Skin and Subcutaneous Tissue Disorder	1	0.6	1	1	0.5	2
Urticaria	2	1.1	2	0	0	0
Itching/Pruritus	1	0.6	1	0	0	0
Wound complications (e.g., dehiscence, bruising) and soft tissue damage	1	0.6	1	0	0	0
Wound secretions / drainage	0	0	0	1	0.5	1
Eye Disorders	6	3.4	6	1	0.5	1
Blurred Vision	2	1.1	2	0	0	0
Conjunctivitis	2	1.1	2	0	0	0
Other Eye Disorders	1	0.6	1	1	0.5	1
Glaucoma	1	0.6	1	0	0	0

System Organ Class Preferred Term	Synergy Disc (N=177)			Control (N=192)		
	n	%	m	n	%	m
Ear and Labyrinth Disorders	4	2.3	4	2	1	2
Vertigo	1	0.6	1	2	1	2
Other Ear and Labyrinth Disorders	2	1.1	2	0	0	0
Impaired Hearing	1	0.6	1	0	0	0
Endocrine Disorders	5	2.8	5	1	0.5	1
Other Endocrine Disorder	2	1.1	2	1	0.5	1
Hypothyroidism	2	1.1	2	0	0	0
Diabetes Mellitus	1	0.6	1	0	0	0
General Disorders and Administrative Site Conditions	4	2.3	4	2	1	2
Fatigue	2	1.1	2	1	0.5	1
Flu-like symptoms	2	1.1	2	0	0	0
Fever	0	0	0	1	0.5	1
Renal and Urinary Disorders	5	2.8	5	1	0.5	1
Urinary Retention	2	1.1	2	1	0.5	1
Renal Calculi	2	1.1	2	0	0	0
Other Renal and Urinary Disorder	1	0.6	1	0	0	0
Blood and Lymphatic System Disorders	1	0.6	1	0	0	0
Anemia	1	0.6	1	0	0	0
Hepatobiliary Disorders	1	0.6	1	0	0	0
Cholecystitis	1	0.6	1	0	0	0

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by indent.
m = Number of mentions in each category.

All Adverse Events Time Course

Table 9 presents all AEs through Month 24 for both treatment groups. Counts in this table represent the number of mentions, i.e., events. The time course interval where the highest number of AEs took place was between Month 12 and Month 24 for both the investigational and control groups.

Table 9: Counts of Specific Adverse Events by Time of Occurrence – (ITT Analysis Population) (I = Synergy Disc, C = ACDF)

System Organ Class Preferred Term	<1		1-3		4-31		32-91		92-181		182-366		367-729		730-790	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Any Adverse Event	0	1	28	18	58	25	67	37	67	43	91	55	94	76	3	17
Musculoskeletal and Connective Tissue Disorders	0	1	4	1	10	10	24	18	18	23	28	29	28	41	2	11
Cervical Pain	0	0	1	1	3	6	6	4	2	7	10	6	9	8	1	1
Musculoskeletal Inflammation	0	0	0	0	2	1	6	5	4	1	3	4	4	3	0	2
Lumbar Pain	0	0	1	0	1	1	5	0	4	2	6	4	3	5	0	2
Adjacent Segment Degeneration	0	0	0	0	0	0	1	1	0	2	2	8	0	14	0	4
Joint Pain	0	0	1	0	1	0	2	0	2	1	2	1	5	1	0	0
Other Musculoskeletal Pain	0	0	0	0	0	0	4	0	4	2	1	0	2	1	0	0
Soft Tissue Injury	0	0	0	0	1	2	0	3	0	2	2	1	0	2	0	1
Pseudarthrosis	0	0	0	0	0	0	0	1	0	0	0	4	0	2	0	0
Osteoarthritis	0	0	0	0	0	0	0	1	0	1	1	0	1	1	1	0
Fracture, Any Bone	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0
Other Musculoskeletal and Connective Tissue Disorder	0	0	0	0	0	0	0	1	2	1	0	0	0	1	0	0
Herniated Disc	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1
Spasms	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Spondylolisthesis	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Sprain	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Cervical Degenerative Disc Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Joint Instability	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Joint Stiffness	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Lumbar Degenerative Disc Disease	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscle Weakness	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Spinal Stenosis	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Nervous System Disorders	0	0	6	4	17	4	15	9	18	12	17	12	15	14	0	3
Radiculopathy	0	0	2	1	7	3	9	6	10	8	8	9	8	7	0	2
Compressive Neuropathy	0	0	1	0	2	0	2	2	2	3	3	3	3	3	0	0
Numbness/Tingling	0	0	1	0	3	1	3	0	2	1	4	0	0	1	0	0
Headache	0	0	1	0	2	0	1	1	2	0	1	0	2	1	0	0
Other Nervous System Disorder	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0
Cerebrospinal fluid leak	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Dizziness	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Horner's Syndrome	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Ataxia	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Cognitive Disturbance	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Dysesthesia	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Myelopathy	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Neurological Deterioration (Motor, Sensory or Reflex)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Tremors	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Other Complications/Events	0	0	0	1	3	2	4	3	8	4	15	7	11	8	0	0
Trauma	0	0	0	0	2	2	3	2	5	4	8	4	6	5	0	0
Cancer	0	0	0	0	0	0	0	0	1	0	4	0	2	1	0	0
Other Event, Describe	0	0	0	0	0	0	0	1	1	0	1	3	0	2	0	0
Adverse Reaction to Medication	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0
Surgery at a location other than the spine	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
Gastrointestinal Disorders	0	0	7	5	10	1	4	4	4	1	5	1	7	5	0	2

System Organ Class Preferred Term	<1		1-3		4-31		32-91		92-181		182-366		367-729		730-790	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Dysphagia	0	0	4	4	3	0	2	4	0	0	1	1	1	4	0	2
Constipation	0	0	3	0	3	1	0	0	1	0	0	0	1	0	0	0
Other Gastrointestinal Disorder	0	0	0	0	0	0	0	0	2	1	1	0	3	0	0	0
Gastrointestinal Pain	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0
Nausea	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0
Colitis	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Diarrhea	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Gastroesophageal Reflux Disease	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Pancreatitis	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Vomiting	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Infections and Infestations	0	0	2	2	7	5	9	0	5	0	3	1	9	2	0	1
Infection, Not at Surgical Site	0	0	0	1	1	3	4	0	5	0	1	1	7	2	0	1
Infection, Surgical Site	0	0	0	0	5	1	2	0	0	0	0	0	0	0	0	0
Rash	0	0	2	1	1	1	0	0	0	0	1	0	0	0	0	0
Sinusitis	0	0	0	0	0	0	3	0	0	0	1	0	1	0	0	0
Sepsis	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
COVID-19 Infection	0	0	0	0	1	0	3	0	4	0	4	0	4	0	0	0
COVID-19	0	0	0	0	1	0	3	0	4	0	4	0	4	0	0	0
Respiratory, Thoracic and Mediastinal Disorders	0	0	3	1	2	0	1	0	3	0	2	0	1	1	1	0
Hoarseness	0	0	1	0	2	0	0	0	1	0	0	0	0	1	0	0
Nasal Congestion	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0
Pneumonia	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0
Pulmonary Edema	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
Airway Obstruction	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Sleep Apnea	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Cardiac Disorders	0	0	1	0	0	1	1	0	1	0	4	1	5	1	0	0
Congestive Heart Failure	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0
Other Cardiac Disorders	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
Atrial Fibrillation	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Syncope/Fainting	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Hyperlipidemia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Mitral Valve Disease	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Ventricular Arrhythmia	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Immune System Disorders	0	0	3	1	1	0	0	0	0	1	2	1	2	0	0	0
Allergic Reaction	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0
Inflammation	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0
Autoimmune Disorder	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0
Vascular Disorders	0	0	0	1	1	0	2	0	2	1	3	0	0	1	0	0
Hypertension	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
Other Vascular Disorder	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
Thromboembolic Event	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Hypotension	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Lymphedema	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Phlebitis	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Psychiatric Disorders	0	0	0	1	1	0	0	0	1	0	1	2	2	1	0	0
Depression	0	0	0	0	0	0	0	0	1	0	1	2	2	0	0	0
Anxiety Disorders	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Delirium	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Insomnia	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Skin and Subcutaneous Tissue Disorders	0	0	0	0	3	0	0	3	1	0	0	0	1	0	0	0

System Organ Class Preferred Term	<1		1-3		4-31		32-91		92-181		182-366		367-729		730-790	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Other Skin and Subcutaneous Tissue Disorder	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0
Urticaria	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Itching/Pruritus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Wound complications (e.g., dehiscence, bruising) and soft ti ssue damage	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Wound secretions / drainage	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Eye Disorders	0	0	0	0	1	0	1	0	0	0	2	0	2	1	0	0
Blurred Vision	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Conjunctivitis	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Other Eye Disorders	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Glaucoma	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Ear and Labyrinth Disorders	0	0	0	0	0	1	0	0	0	1	2	0	2	0	0	0
Vertigo	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
Other Ear and Labyrinth Disorders	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Impaired Hearing	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Endocrine Disorders	0	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0
Other Endocrine Disorder	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
Hypothyroidism	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
Diabetes Mellitus	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
General Disorders and Administrative Site Conditions	0	0	0	0	1	1	1	0	0	0	1	0	1	1	0	0
Fatigue	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0
Flu-like symptoms	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Fever	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Renal and Urinary Disorders	0	0	2	1	0	0	0	0	1	0	1	0	1	0	0	0
Urinary Retention	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
Renal Calculi	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Other Renal and Urinary Disorder	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Blood and Lymphatic System Disorders	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Anemia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Hepatobiliary Disorders	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Cholecystitis	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

All Adverse Events Severity – Investigational Group

Table 10 presents the AEs observed in the investigational group stratified by severity. These AEs were classified as Mild, Moderate, or Severe events. Overall, there were 241 mild AEs, 138 moderate AEs, and 28 Severe AEs reported in the investigational group for the ITT Analysis Set.

Table 10: Treatment Emergent Adverse Events (Severity) by Code (ITT Analysis Set) (Synergy Disc Group, N=177)

	Synergy Disc (N=177)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	n	%	m	n	%	m	n	%	m	n	%	m
Any Adverse Event	115	65	241	84	47.5	138	28	15.8	28	1	0.6	1
Musculoskeletal and Connective Tissue Disorders	49	27.7	66	34	19.2	41	7	4	7	0	0	0
Cervical Pain	21	11.9	24	8	4.5	8	0	0	0	0	0	0
Lumbar Pain	11	6.2	11	7	4	7	2	1.1	2	0	0	0
Adjacent Segment Degeneration	0	0	0	1	0.6	1	2	1.1	2	0	0	0
Musculoskeletal Inflammation	13	7.3	15	4	2.3	4	0	0	0	0	0	0
Joint Pain	5	2.8	5	8	4.5	8	0	0	0	0	0	0
Other Musculoskeletal Pain	6	3.4	6	3	1.7	3	2	1.1	2	0	0	0
Soft Tissue Injury	0	0	0	2	1.1	3	0	0	0	0	0	0
Pseudarthrosis	0	0	0	0	0	0	0	0	0	0	0	0
Osteoarthritis	0	0	0	2	1.1	2	1	0.6	1	0	0	0
Fracture, Any Bone	0	0	0	2	1.1	2	0	0	0	0	0	0
Other Musculoskeletal and Connective Tissue Disorder	2	1.1	2	0	0	0	0	0	0	0	0	0
Herniated Disc	0	0	0	1	0.6	1	0	0	0	0	0	0
Spasms	0	0	0	1	0.6	1	0	0	0	0	0	0
Spondyloslistesis	0	0	0	1	0.6	1	0	0	0	0	0	0
Sprain	0	0	0	0	0	0	0	0	0	0	0	0
Cervical Degenerative Disc Disease	0	0	0	0	0	0	0	0	0	0	0	0
Joint Instability	0	0	0	0	0	0	0	0	0	0	0	0
Joint Stiffness	1	0.6	1	0	0	0	0	0	0	0	0	0
Muscle Weakness	1	0.6	1	0	0	0	0	0	0	0	0	0
Spinal Stenosis	1	0.6	1	0	0	0	0	0	0	0	0	0
Nervous System Disorders	38	21.5	49	26	14.7	33	6	3.4	6	0	0	0
Radiculopathy	16	9	19	16	9	19	6	3.4	6	0	0	0
Compressive Neuropathy	5	2.8	6	7	4	7	0	0	0	0	0	0
Numbness/Tingling	10	5.6	11	2	1.1	2	0	0	0	0	0	0
Headache	8	4.5	8	1	0.6	1	0	0	0	0	0	0
Other Nervous System Disorder	1	0.6	1	2	1.1	2	0	0	0	0	0	0
Cerebrospinal fluid leak	0	0	0	1	0.6	1	0	0	0	0	0	0
Dizziness	1	0.6	1	1	0.6	1	0	0	0	0	0	0
Horner's Syndrome	0	0	0	0	0	0	0	0	0	0	0	0
Ataxia	1	0.6	1	0	0	0	0	0	0	0	0	0
Cognitive Disturbance	1	0.6	1	0	0	0	0	0	0	0	0	0
Dysesthesia	0	0	0	0	0	0	0	0	0	0	0	0
Myelopathy	0	0	0	0	0	0	0	0	0	0	0	0
Neurological Deterioration (Motor, Sensory or Reflex)	0	0	0	0	0	0	0	0	0	0	0	0
Tremors	1	0.6	1	0	0	0	0	0	0	0	0	0
Other Complications/Events	15	8.5	16	17	9.6	20	5	2.8	5	0	0	0
Trauma	10	5.6	11	9	5.1	12	1	0.6	1	0	0	0
Cancer	0	0	0	5	2.8	5	2	1.1	2	0	0	0
Other Event, Describe	2	1.1	2	0	0	0	0	0	0	0	0	0
Adverse Reaction to Medication	3	1.7	3	1	0.6	1	0	0	0	0	0	0
Surgery at a location other than the spine	0	0	0	2	1.1	2	2	1.1	2	0	0	0
Gastrointestinal Disorders	24	13.6	28	6	3.4	7	2	1.1	2	0	0	0
Dysphagia	11	6.2	11	0	0	0	0	0	0	0	0	0
Constipation	6	3.4	7	1	0.6	1	0	0	0	0	0	0
Other Gastrointestinal Disorder	2	1.1	2	3	1.7	3	1	0.6	1	0	0	0
Gastrointestinal Pain	1	0.6	1	2	1.1	2	0	0	0	0	0	0
Nausea	2	1.1	2	0	0	0	0	0	0	0	0	0
Colitis	2	1.1	2	0	0	0	0	0	0	0	0	0
Diarrhea	0	0	0	1	0.6	1	0	0	0	0	0	0
Gastroesophageal Reflux Disease	2	1.1	2	0	0	0	0	0	0	0	0	0
Pancreatitis	0	0	0	0	0	0	1	0.6	1	0	0	0
Vomiting	1	0.6	1	0	0	0	0	0	0	0	0	0

	Synergy Disc (N=177)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**
Infections and Infestations	17	9.6	22	9	5.1	9	4	2.3	4	0	0	0
Infection, Not at Surgical Site	9	5.1	12	4	2.3	4	2	1.1	2	0	0	0
Infection, Surgical Site	2	1.1	2	4	2.3	4	1	0.6	1	0	0	0
Rash	4	2.3	4	0	0	0	0	0	0	0	0	0
Sinusitis	4	2.3	4	1	0.6	1	0	0	0	0	0	0
Sepsis	0	0	0	0	0	0	1	0.6	1	0	0	0
COVID-19 Infection	11	6.2	11	5	2.8	5	0	0	0	0	0	0
COVID-19	11	6.2	11	5	2.8	5	0	0	0	0	0	0
Cardiac Disorders	6	3.4	6	5	2.8	5	0	0	0	1	0.6	1
Congestive Heart Failure	0	0	0	3	1.7	3	0	0	0	1	0.6	1
Other Cardiac Disorders	2	1.1	2	1	0.6	1	0	0	0	0	0	0
Atrial Fibrillation	1	0.6	1	1	0.6	1	0	0	0	0	0	0
Syncope/Fainting	1	0.6	1	0	0	0	0	0	0	0	0	0
Hyperlipidemia	1	0.6	1	0	0	0	0	0	0	0	0	0
Mitral Valve Disease	1	0.6	1	0	0	0	0	0	0	0	0	0
Ventricular Arrhythmia	0	0	0	0	0	0	0	0	0	0	0	0
Respiratory, Thoracic and Mediastinal Disorders	8	4.5	8	4	2.3	4	1	0.6	1	0	0	0
Hoarseness	3	1.7	3	1	0.6	1	0	0	0	0	0	0
Nasal Congestion	3	1.7	3	0	0	0	0	0	0	0	0	0
Pneumonia	2	1.1	2	0	0	0	0	0	0	0	0	0
Pulmonary Edema	0	0	0	1	0.6	1	1	0.6	1	0	0	0
Airway Obstruction	0	0	0	1	0.6	1	0	0	0	0	0	0
Sleep Apnea	0	0	0	1	0.6	1	0	0	0	0	0	0
Immune System Disorders	6	3.4	6	2	1.1	2	0	0	0	0	0	0
Allergic Reaction	2	1.1	2	1	0.6	1	0	0	0	0	0	0
Inflammation	2	1.1	2	0	0	0	0	0	0	0	0	0
Autoimmune Disorder	2	1.1	2	1	0.6	1	0	0	0	0	0	0
Vascular Disorders	4	2.3	4	3	1.7	3	1	0.6	1	0	0	0
Hypertension	3	1.7	3	0	0	0	0	0	0	0	0	0
Other Vascular Disorder	1	0.6	1	1	0.6	1	1	0.6	1	0	0	0
Thromboembolic Event	0	0	0	2	1.1	2	0	0	0	0	0	0
Hypotension	0	0	0	0	0	0	0	0	0	0	0	0
Lymphedema	0	0	0	0	0	0	0	0	0	0	0	0
Phlebitis	0	0	0	0	0	0	0	0	0	0	0	0
Psychiatric Disorders	2	1.1	2	3	1.7	3	0	0	0	0	0	0
Depression	2	1.1	2	2	1.1	2	0	0	0	0	0	0
Anxiety Disorders	0	0	0	1	0.6	1	0	0	0	0	0	0
Delirium	0	0	0	0	0	0	0	0	0	0	0	0
Insomnia	0	0	0	0	0	0	0	0	0	0	0	0
Skin and Subcutaneous Tissue Disorders	3	1.7	3	2	1.1	2	0	0	0	0	0	0
Other Skin and Subcutaneous Tissue Disorder	1	0.6	1	0	0	0	0	0	0	0	0	0
Urticaria	0	0	0	2	1.1	2	0	0	0	0	0	0
Itching/Pruritus	1	0.6	1	0	0	0	0	0	0	0	0	0
Wound complications (e.g., dehiscence, bruising) and soft tissue damage	1	0.6	1	0	0	0	0	0	0	0	0	0
Wound secretions / drainage	0	0	0	0	0	0	0	0	0	0	0	0
Eye Disorders	3	1.7	3	1	0.6	1	2	1.1	2	0	0	0
Blurred Vision	2	1.1	2	0	0	0	0	0	0	0	0	0
Conjunctivitis	1	0.6	1	0	0	0	1	0.6	1	0	0	0
Other Eye Disorders	0	0	0	0	0	0	1	0.6	1	0	0	0
Glaucoma	0	0	0	1	0.6	1	0	0	0	0	0	0
Ear and Labyrinth Disorders	3	1.7	3	1	0.6	1	0	0	0	0	0	0
Vertigo	1	0.6	1	0	0	0	0	0	0	0	0	0
Other Ear and Labyrinth Disorders	2	1.1	2	0	0	0	0	0	0	0	0	0
Impaired Hearing	0	0	0	1	0.6	1	0	0	0	0	0	0
Endocrine Disorders	5	2.8	5	0	0	0	0	0	0	0	0	0
Other Endocrine Disorder	2	1.1	2	0	0	0	0	0	0	0	0	0
Hypothyroidism	2	1.1	2	0	0	0	0	0	0	0	0	0
Diabetes Mellitus	1	0.6	1	0	0	0	0	0	0	0	0	0

	Synergy Disc (N=177)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**
General Disorders and Administrative Site Conditions	4	2.3	4	0	0	0	0	0	0	0	0	0
Fatigue	2	1.1	2	0	0	0	0	0	0	0	0	0
Flu-like symptoms	2	1.1	2	0	0	0	0	0	0	0	0	0
Fever	0	0	0	0	0	0	0	0	0	0	0	0
Renal and Urinary Disorders	4	2.3	4	1	0.6	1	0	0	0	0	0	0
Urinary Retention	2	1.1	2	0	0	0	0	0	0	0	0	0
Renal Calculi	1	0.6	1	1	0.6	1	0	0	0	0	0	0
Other Renal and Urinary Disorder	1	0.6	1	0	0	0	0	0	0	0	0	0
Blood and Lymphatic System Disorders	1	0.6	1	0	0	0	0	0	0	0	0	0
Anemia	1	0.6	1	0	0	0	0	0	0	0	0	0
Hepatobiliary Disorders	0	0	0	1	0.6	1	0	0	0	0	0	0
Cholecystitis	0	0	0	1	0.6	1	0	0	0	0	0	0

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by indent.
m = Number of mentions in each category.

All Adverse Events Severity – Control Group

Table 11 identifies the AEs observed in the control group stratified by severity. These AEs were classified as Mild, Moderate, or Severe events. Overall, there were 105 mild AEs, 118 moderate AEs, and 48 Severe AEs reported in the control group for the ITT Analysis Set.

Table 11: Treatment Emergent Adverse Events (Severity) by Code (ITT Analysis Set) (Control Group, N=192)

	Control (N=192)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	n	%	m	n	%	m	n	%	m	n	%	m
Any Adverse Event	76	39.6	105	85	44.3	118	43	22.4	48	0	0	0
Musculoskeletal and Connective Tissue Disorders	35	18.2	41	58	30.2	67	24	12.5	25	0	0	0
Cervical Pain	11	5.7	11	20	10.4	21	1	0.5	1	0	0	0
Lumbar Pain	4	2.1	4	8	4.2	8	1	0.5	2	0	0	0
Adjacent Segment Degeneration	3	1.6	3	12	6.3	12	14	7.3	14	0	0	0
Musculoskeletal Inflammation	8	4.2	9	5	2.6	7	0	0	0	0	0	0
Joint Pain	2	1	2	1	0.5	1	0	0	0	0	0	0
Other Musculoskeletal Pain	1	0.5	1	1	0.5	1	1	0.5	1	0	0	0
Soft Tissue Injury	3	1.6	3	7	3.6	7	1	0.5	1	0	0	0
Pseudarthrosis	1	0.5	1	4	2.1	4	2	1	2	0	0	0
Osteoarthritis	3	1.6	3	0	0	0	0	0	0	0	0	0
Fracture, Any Bone	0	0	0	2	1	2	1	0.5	1	0	0	0
Other Musculoskeletal and Connective Tissue Disorder	2	1	2	1	0.5	1	0	0	0	0	0	0
Herniated Disc	0	0	0	1	0.5	1	1	0.5	1	0	0	0
Spasms	1	0.5	1	0	0	0	0	0	0	0	0	0
Spondyloslistesis	0	0	0	0	0	0	1	0.5	1	0	0	0
Sprain	1	0.5	1	1	0.5	1	0	0	0	0	0	0
Cervical Degenerative Disc Disease	0	0	0	0	0	0	1	0.5	1	0	0	0
Joint Instability	0	0	0	1	0.5	1	0	0	0	0	0	0
Joint Stiffness	0	0	0	0	0	0	0	0	0	0	0	0
Muscle Weakness	0	0	0	0	0	0	0	0	0	0	0	0
Spinal Stenosis	0	0	0	0	0	0	0	0	0	0	0	0
Nervous System Disorders	26	13.5	28	21	10.9	22	7	3.6	8	0	0	0
Radiculopathy	12	6.3	13	17	8.9	17	6	3.1	6	0	0	0
Compressive Neuropathy	9	4.7	9	2	1	2	0	0	0	0	0	0
Numbness/Tingling	3	1.6	3	0	0	0	0	0	0	0	0	0
Headache	1	0.5	1	1	0.5	1	0	0	0	0	0	0
Other Nervous System Disorder	0	0	0	0	0	0	0	0	0	0	0	0
Cerebrospinal fluid leak	0	0	0	0	0	0	1	0.5	1	0	0	0
Dizziness	0	0	0	0	0	0	0	0	0	0	0	0
Horner's Syndrome	1	0.5	1	0	0	0	1	0.5	1	0	0	0
Ataxia	0	0	0	0	0	0	0	0	0	0	0	0
Cognitive Disturbance	0	0	0	0	0	0	0	0	0	0	0	0
Dysesthesia	0	0	0	1	0.5	1	0	0	0	0	0	0
Myelopathy	0	0	0	1	0.5	1	0	0	0	0	0	0
Neurological Deterioration (Motor, Sensory or Reflex)	1	0.5	1	0	0	0	0	0	0	0	0	0
Tremors	0	0	0	0	0	0	0	0	0	0	0	0
Other Complications/Events	6	3.1	7	10	5.2	13	5	2.6	5	0	0	0
Trauma	5	2.6	6	8	4.2	9	2	1	2	0	0	0
Cancer	0	0	0	0	0	0	1	0.5	1	0	0	0
Other Event, Describe	0	0	0	2	1	4	2	1	2	0	0	0
Adverse Reaction to Medication	1	0.5	1	0	0	0	0	0	0	0	0	0
Surgery at a location other than the spine	0	0	0	0	0	0	0	0	0	0	0	0
Gastrointestinal Disorders	12	6.3	12	5	2.6	5	2	1	2	0	0	0
Dysphagia	12	6.3	12	2	1	2	1	0.5	1	0	0	0
Constipation	0	0	0	1	0.5	1	0	0	0	0	0	0
Other Gastrointestinal Disorder	0	0	0	0	0	0	1	0.5	1	0	0	0
Gastrointestinal Pain	0	0	0	0	0	0	0	0	0	0	0	0
Nausea	0	0	0	1	0.5	1	0	0	0	0	0	0
Colitis	0	0	0	0	0	0	0	0	0	0	0	0
Diarrhea	0	0	0	1	0.5	1	0	0	0	0	0	0
Gastroesophageal Reflux Disease	0	0	0	0	0	0	0	0	0	0	0	0
Pancreatitis	0	0	0	0	0	0	0	0	0	0	0	0
Vomiting	0	0	0	0	0	0	0	0	0	0	0	0

	Control (N=192)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	n	%	m	n	%	m	n	%	m	n	%	m
Infections and Infestations	7	3.6	8	0	0	0	3	1.6	3	0	0	0
Infection, Not at Surgical Site	4	2.1	5	0	0	0	3	1.6	3	0	0	0
Infection, Surgical Site	1	0.5	1	0	0	0	0	0	0	0	0	0
Rash	2	1	2	0	0	0	0	0	0	0	0	0
Sinusitis	0	0	0	0	0	0	0	0	0	0	0	0
Sepsis	0	0	0	0	0	0	0	0	0	0	0	0
COVID-19 Infection	0	0	0	0	0	0	0	0	0	0	0	0
COVID-19	0	0	0	0	0	0	0	0	0	0	0	0
Cardiac Disorders	0	0	0	2	1	2	1	0.5	1	0	0	0
Congestive Heart Failure	0	0	0	0	0	0	1	0.5	1	0	0	0
Other Cardiac Disorders	0	0	0	0	0	0	0	0	0	0	0	0
Atrial Fibrillation	0	0	0	0	0	0	0	0	0	0	0	0
Syncope/Fainting	0	0	0	1	0.5	1	0	0	0	0	0	0
Hyperlipidemia	0	0	0	0	0	0	0	0	0	0	0	0
Mitral Valve Disease	0	0	0	0	0	0	0	0	0	0	0	0
Ventricular Arrhythmia	0	0	0	1	0.5	1	0	0	0	0	0	0
Respiratory, Thoracic and Mediastinal Disorders	1	0.5	1	1	0.5	1	0	0	0	0	0	0
Hoarseness	1	0.5	1	0	0	0	0	0	0	0	0	0
Nasal Congestion	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonia	0	0	0	1	0.5	1	0	0	0	0	0	0
Pulmonary Edema	0	0	0	0	0	0	0	0	0	0	0	0
Airway Obstruction	0	0	0	0	0	0	0	0	0	0	0	0
Sleep Apnea	0	0	0	0	0	0	0	0	0	0	0	0
Immune System Disorders	1	0.5	1	2	1	2	0	0	0	0	0	0
Allergic Reaction	1	0.5	1	0	0	0	0	0	0	0	0	0
Inflammation	0	0	0	2	1	2	0	0	0	0	0	0
Autoimmune Disorder	0	0	0	0	0	0	0	0	0	0	0	0
Vascular Disorders	3	1.6	3	0	0	0	0	0	0	0	0	0
Hypertension	0	0	0	0	0	0	0	0	0	0	0	0
Other Vascular Disorder	0	0	0	0	0	0	0	0	0	0	0	0
Thromboembolic Event	0	0	0	0	0	0	0	0	0	0	0	0
Hypotension	1	0.5	1	0	0	0	0	0	0	0	0	0
Lymphedema	1	0.5	1	0	0	0	0	0	0	0	0	0
Phlebitis	1	0.5	1	0	0	0	0	0	0	0	0	0
Psychiatric Disorders	1	0.5	1	0	0	0	3	1.6	3	0	0	0
Depression	0	0	0	0	0	0	2	1	2	0	0	0
Anxiety Disorders	0	0	0	0	0	0	0	0	0	0	0	0
Delirium	0	0	0	0	0	0	1	0.5	1	0	0	0
Insomnia	1	0.5	1	0	0	0	0	0	0	0	0	0
Skin and Subcutaneous Tissue Disorders	1	0.5	1	1	0.5	2	0	0	0	0	0	0
Other Skin and Subcutaneous Tissue Disorder	0	0	0	1	0.5	2	0	0	0	0	0	0
Urticaria	0	0	0	0	0	0	0	0	0	0	0	0
Itching/Pruritus	0	0	0	0	0	0	0	0	0	0	0	0
Wound complications (e.g., dehiscence, bruising) and soft tissue damage	0	0	0	0	0	0	0	0	0	0	0	0
Wound secretions / drainage	1	0.5	1	0	0	0	0	0	0	0	0	0
Eye Disorders	0	0	0	0	0	0	1	0.5	1	0	0	0
Blurred Vision	0	0	0	0	0	0	0	0	0	0	0	0
Conjunctivitis	0	0	0	0	0	0	0	0	0	0	0	0
Other Eye Disorders	0	0	0	0	0	0	1	0.5	1	0	0	0
Glaucoma	0	0	0	0	0	0	0	0	0	0	0	0
Ear and Labyrinth Disorders	0	0	0	2	1	2	0	0	0	0	0	0
Vertigo	0	0	0	2	1	2	0	0	0	0	0	0
Other Ear and Labyrinth Disorders	0	0	0	0	0	0	0	0	0	0	0	0
Impaired Hearing	0	0	0	0	0	0	0	0	0	0	0	0
Endocrine Disorders	1	0.5	1	0	0	0	0	0	0	0	0	0
Other Endocrine Disorder	1	0.5	1	0	0	0	0	0	0	0	0	0
Hypothyroidism	0	0	0	0	0	0	0	0	0	0	0	0
Diabetes Mellitus	0	0	0	0	0	0	0	0	0	0	0	0

	Control (N=192)											
	Mild			Moderate			Severe			Unknown		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**	**n**	**%**	**m**
Infections and Infestations	7	3.6	8	0	0	0	3	1.6	3	0	0	0
Infection, Not at Surgical Site	4	2.1	5	0	0	0	3	1.6	3	0	0	0
Infection, Surgical Site	1	0.5	1	0	0	0	0	0	0	0	0	0
Rash	2	1	2	0	0	0	0	0	0	0	0	0
General Disorders and Administrative Site Conditions	1	0.5	1	1	0.5	1	0	0	0	0	0	0
Fatigue	1	0.5	1	0	0	0	0	0	0	0	0	0
Flu-like symptoms	0	0	0	0	0	0	0	0	0	0	0	0
Fever	0	0	0	1	0.5	1	0	0	0	0	0	0
Renal and Urinary Disorders	0	0	0	1	0.5	1	0	0	0	0	0	0
Urinary Retention	0	0	0	1	0.5	1	0	0	0	0	0	0
Renal Calculi	0	0	0	0	0	0	0	0	0	0	0	0
Other Renal and Urinary Disorder	0	0	0	0	0	0	0	0	0	0	0	0
Blood and Lymphatic System Disorders	0	0	0	0	0	0	0	0	0	0	0	0
Anemia	0	0	0	0	0	0	0	0	0	0	0	0
Hepatobiliary Disorders	0	0	0	0	0	0	0	0	0	0	0	0
Cholecystitis	0	0	0	0	0	0	0	0	0	0	0	0

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by indent.
m = Number of mentions in each category.

Device-Related Adverse Events

As presented in **Table 12,** there were 36 device-related AEs events in 32 investigational subjects as compared to 83 device-related AEs in 66 control subjects that were determined to be definitely device-related. This resulted in a device-related SAE rate of 18.1% (32/177) for the investigational group, which was numerically lower as compared to the device-related AE rate of 34.4% (66/192) for the control group. The majority of these device-related AEs occurred in the category of musculoskeletal and connective tissue disorders, specifically adjacent segment disease.

Table 12: Counts and Percentages of Subjects with Specific Device-Related Adverse Event– (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**
Any Device Related Adverse Event	32	18.1	36	66	34.4	83
Musculoskeletal and Connective Tissue Disorders	13	7.3	13	48	25	50
Adjacent Segment Degeneration	2	1.1	2	28	14.6	28
Cervical Pain	11	6.2	11	12	6.3	13
Pseudarthrosis	0	0	0	7	3.6	7
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Soft Tissue Injury	0	0	0	1	0.5	1
Nervous System Disorders	15	8.5	16	19	9.9	22
Radiculopathy	12	6.8	13	17	8.9	20
Headache	2	1.1	2	0	0	0
Dysesthesia	0	0	0	1	0.5	1
Myelopathy	0	0	0	1	0.5	1
Numbness/Tingling	1	0.6	1	0	0	0
Gastrointestinal Disorders	4	2.3	4	10	5.2	10
Dysphagia	4	2.3	4	10	5.2	10
Infections and Infestations	2	1.1	2	0	0	0
Infection, Not at Surgical Site	1	0.6	1	0	0	0
Infection, Surgical Site	1	0.6	1	0	0	0
Respiratory, Thoracic and Mediastinal Disorders	1	0.6	1	1	0.5	1
Hoarseness	1	0.6	1	1	0.5	1

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections
m = Number of mentions in each category.
Includes 'Possibly Related', 'Probably Related' and 'Definitely Related'.

In the investigational group, the most device-related AEs (n=9) were reported between Month 6 and Month 12 window (and n=9 device-related AEs between the Month 12 and Month 24 window), while in the control group, the most device-related AEs (n=28) were reported between Month 12 and Month 18.

Procedure-Related Adverse Events

As described in **Table 13,** there were 90 procedure-related AEs in 72 investigational subjects, and 104 procedure-related AEs in 75 control subjects. This resulted in a procedure-related AE rate of 40.7% (72/177) for the investigational group, with the majority of these events described as nervous system disorders. The procedure-related AE rate was similar for the control group at 39.1% (75/192), with the majority of these AEs categorized as musculoskeletal and connective tissue disorders.

In the investigational group, the most procedure-related AEs (n=54) occurred within Month 1, while in the control group, the most procedure-related AEs (n=26) were reported between Month 12 and Month 24.

Table 13: Counts and Percentages of Subjects with Specific Procedure Related Adverse Event– (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**
Any Procedure Related Adverse Event	72	40.7	90	75	39.1	104
Musculoskeletal and Connective Tissue Disorders	19	10.7	21	49	25.5	51
Adjacent Segment Degeneration	2	1.1	2	28	14.6	28
Cervical Pain	15	8.5	15	13	6.8	14
Pseudarthrosis	0	0	0	7	3.6	7
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Joint Pain	1	0.6	1	0	0	0
Muscle Weakness	1	0.6	1	0	0	0
Musculoskeletal Inflammation	1	0.6	1	0	0	0
Soft Tissue Injury	0	0	0	1	0.5	1
Spasms	1	0.6	1	0	0	0
Nervous System Disorders	24	13.6	27	24	12.5	27
Radiculopathy	16	9	17	19	9.9	22
Headache	4	2.3	4	1	0.5	1
Numbness/Tingling	4	2.3	4	1	0.5	1
Horner's Syndrome	0	0	0	2	1	2
Ataxia	1	0.6	1	0	0	0
Cerebrospinal fluid leak	1	0.6	1	0	0	0
Myelopathy	0	0	0	1	0.5	1
Gastrointestinal Disorders	15	8.5	15	10	5.2	11
Dysphagia	9	5.1	9	9	4.7	9
Constipation	6	3.4	6	1	0.5	1
Diarrhea	0	0	0	1	0.5	1
Infections and Infestations	11	6.2	11	5	2.6	6
Infection, Surgical Site	7	4	7	1	0.5	1
Infection, Not at Surgical Site	1	0.6	1	3	1.6	4
Rash	3	1.7	3	1	0.5	1
Respiratory, Thoracic and Mediastinal Disorders	5	2.8	5	2	1	2
Hoarseness	4	2.3	4	1	0.5	1
Pneumonia	0	0	0	1	0.5	1
Pulmonary Edema	1	0.6	1	0	0	0
Skin and Subcutaneous Tissue Disorders	3	1.7	3	1	0.5	1
Itching/Pruritus	1	0.6	1	0	0	0
Urticaria	1	0.6	1	0	0	0
Wound complications (e.g., dehiscence, bruising) and soft tissue damage	1	0.6	1	0	0	0
Wound secretions / drainage	0	0	0	1	0.5	1
Renal and Urinary Disorders	2	1.1	2	1	0.5	1
Urinary Retention	2	1.1	2	1	0.5	1
Cardiac Disorders	1	0.6	1	1	0.5	1
Syncope/Fainting	1	0.6	1	1	0.5	1
Immune System Disorders	2	1.1	2	0	0	0
Allergic Reaction	1	0.6	1	0	0	0
Inflammation	1	0.6	1	0	0	0
Other Complications/Events	1	0.6	1	1	0.5	1
Adverse Reaction to Medication	1	0.6	1	1	0.5	1
Vascular Disorders	1	0.6	1	1	0.5	1
Phlebitis	0	0	0	1	0.5	1
Thromboembolic Event	1	0.6	1	0	0	0
General Disorders and Administrative Site Conditions	0	0	0	1	0.5	1
Fever	0	0	0	1	0.5	1
Hepatobiliary Disorders	1	0.6	1	0	0	0
Cholecystitis	1	0.6	1	0	0	0
Psychiatric Disorders	0	0	0	1	0.5	1
Delirium	0	0	0	1	0.5	1

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by
m = Number of mentions in each category.
Includes 'Possibly Related', 'Probably Related' and 'Definitely Related'.

Serious Adverse Events

Table 14 identifies SAEs by AE term, with number of subjects experiencing events (n) and number of reported events (m), for the ITT Analysis Set. A total of 35 SAEs were reported in 32 investigational subjects as compared to 52 SAEs that were reported in 44 control subjects. This resulted in a SAE rate of 18.1% (32/177) for the investigational group which was numerically lower than the calculated SAE rate of 22.9% (44/192) for the control group. The most commonly reported SAE in the investigational group was radiculopathy (n=7), while the most commonly reported SAEs in the control group was adjacent segment degeneration (n=13).

In the investigational group, the most SAEs (n=13) were reported between Month 6 and Month 12, while in the control group, the most SAEs (n=19) were reported between Month 12 and Month 24.

Table 14: Counts and Percentages of Subjects with Specific Serious Adverse Event– (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**
Any Serious Adverse Event	32	18.1	35	44	22.9	52
Musculoskeletal and Connective Tissue Disorders	7	4	7	25	13	26
Adjacent Segment Degeneration	2	1.1	2	13	6.8	13
Lumbar Pain	3	1.7	3	1	0.5	2
Cervical Pain	0	0	0	3	1.6	3
Pseudarthrosis	0	0	0	3	1.6	3
Other Musculoskeletal Pain	1	0.6	1	1	0.5	1
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Fracture, Any Bone	0	0	0	1	0.5	1
Herniated Disc	0	0	0	1	0.5	1
Osteoarthritis	1	0.6	1	0	0	0
Spondyloslistesis	0	0	0	1	0.5	1
Nervous System Disorders	8	4.5	8	5	2.6	6
Radiculopathy	7	4	7	5	2.6	5
Cerebrospinal fluid leak	0	0	0	1	0.5	1
Other Nervous System Disorder	1	0.6	1	0	0	0
Other Complications/Events	6	3.4	6	5	2.6	6
Trauma	2	1.1	2	3	1.6	3
Cancer	1	0.6	1	1	0.5	1
Other Event, Describe	0	0	0	2	1	2
Surgery at a location other than the spine	2	1.1	2	0	0	0
Adverse Reaction to Medication	1	0.6	1	0	0	0
Infections and Infestations	3	1.7	3	3	1.6	3
Infection, Not at Surgical Site	1	0.6	1	3	1.6	3
Infection, Surgical Site	1	0.6	1	0	0	0
Sepsis	1	0.6	1	0	0	0
Cardiac Disorders	2	1.1	2	3	1.6	3
Congestive Heart Failure	1	0.6	1	1	0.5	1
Other Cardiac Disorders	1	0.6	1	0	0	0
Syncope/Fainting	0	0	0	1	0.5	1
Ventricular Arrhythmia	0	0	0	1	0.5	1
Gastrointestinal Disorders	2	1.1	2	3	1.6	3
Dysphagia	0	0	0	2	1	2
Other Gastrointestinal Disorder	1	0.6	1	1	0.5	1
Pancreatitis	1	0.6	1	0	0	0
Psychiatric Disorders	0	0	0	3	1.6	3
Depression	0	0	0	2	1	2
Delirium	0	0	0	1	0.5	1
Respiratory, Thoracic and Mediastinal Disorders	3	1.7	3	0	0	0
Pulmonary Edema	2	1.1	2	0	0	0
Pneumonia	1	0.6	1	0	0	0
Eye Disorders	1	0.6	1	1	0.5	1
Other Eye Disorders	1	0.6	1	1	0.5	1
COVID-19 Infection	1	0.6	1	0	0	0
COVID-19	1	0.6	1	0	0	0
Ear and Labyrinth Disorders	0	0	0	1	0.5	1
Vertigo	0	0	0	1	0.5	1
Renal and Urinary Disorders	1	0.6	1	0	0	0
Renal Calculi	1	0.6	1	0	0	0
Vascular Disorders	1	0.6	1	0	0	0
Other Vascular Disorder	1	0.6	1	0	0	0

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by
m = Number of mentions in each category.

Device-Related Serious Adverse Events

Table 15 lists SAEs that were determined by the CEC to be device-related for the ITT Analysis Set. There were 5 device-related SAEs in 2.8% (5/177) of the investigational subjects, which was less than the 21 device-related SAEs reported in 10.9% (21/192) of the control subjects. The most commonly reported device-related SAE in the investigational group was radiculopathy (n=3), while the most commonly reported device-related SAEs in the control group was adjacent segment degeneration (n=13).

Table 15: Device-Related Serious Adverse Events by Code (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**
Any Device Related Serious Adverse Event	5	2.8	6	21	10.9	21
Musculoskeletal and Connective Tissue Disorders	1	0.6	1	18	9.4	18
Adjacent Segment Degeneration	1	0.6	1	13	6.8	13
Pseudarthrosis	0	0	0	3	1.6	3
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Cervical Pain	0	0	0	1	0.5	1
Nervous System Disorders	3	1.7	3	2	1	2
Radiculopathy	3	1.7	3	2	1	2
Infections and Infestations	2	1.1	2	0	0	0
Infection, Not at Surgical Site	1	0.6	1	0	0	0
Infection, Surgical Site	1	0.6	1	0	0	0
Gastrointestinal Disorders	0	0	0	1	0.5	1
Dysphagia	0	0	0	1	0.5	1

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections
m = Number of mentions in each category.
Includes 'Possibly Related', 'Probably Related' and 'Definitely Related'.

Procedure-Related Serious Adverse Events

Table 16 reports all SAEs that were determined by the CEC to be procedure-related for the ITT Analysis Set. There were 6 procedure-related SAEs in 3.4% (6/177) of the investigational subjects, which was less than the 23 procedure-related SAEs reported in 12.0% (23/192) of the control subjects. Similar to the device-related SAEs, the most commonly reported procedure-related SAE in the investigational group was radiculopathy (n=3), while the most commonly reported procedure-related SAEs in the control group was adjacent segment degeneration (n=13).

Table 16: Procedure-Related Serious Adverse Events by AE Code (ITT Analysis Set)

	Synergy Disc (N=177)			Control (N=192)		
System Organ Class Preferred Term	**n**	**%**	**m**	**n**	**%**	**m**
Any Procedure Related Serious Adverse Event	6	3.4	7	23	12	24
Musculoskeletal and Connective Tissue Disorders	1	0.6	1	19	9.9	19
Adjacent Segment Degeneration	1	0.6	1	13	6.8	13
Pseudarthrosis	0	0	0	3	1.6	3
Cervical Pain	0	0	0	2	1	2
Cervical Degenerative Disc Disease	0	0	0	1	0.5	1
Nervous System Disorders	3	1.7	3	2	1	2
Radiculopathy	3	1.7	3	2	1	2
Infections and Infestations	2	1.1	2	0	0	0
Infection, Not at Surgical Site	1	0.6	1	0	0	0
Infection, Surgical Site	1	0.6	1	0	0	0
Cardiac Disorders	0	0	0	1	0.5	1
Syncope/Fainting	0	0	0	1	0.5	1
Gastrointestinal Disorders	0	0	0	1	0.5	1
Dysphagia	0	0	0	1	0.5	1
Psychiatric Disorders	0	0	0	1	0.5	1
Delirium	0	0	0	1	0.5	1
Respiratory, Thoracic and Mediastinal Disorders	1	0.6	1	0	0	0
Pulmonary Edema	1	0.6	1	0	0	0

N = Total number of subjects.
n = Number of subjects in each category.
The percentage calculation is based on the total number of subjects in the sections denoted by indent.
m = Number of mentions in each category.
Includes 'Possibly Related', 'Probably Related' and 'Definitely Related'.

Subsequent Surgical Intervention

Table 17 reports SSIs that were prospectively classified as revisions, removals, reoperations or supplemental fixations, reviewed by the CEC, and qualified as study failures, in the ITT Analysis Set. A total of 5 SSIs were reported in 4 investigational subjects, while a total of 8 SSIs occurred in 8 control subjects.

Table 17: Surgical Intervention Time Course by Treatment Type – (ITT Analysis Set)

SSI Type	Event Time Course (months)						Total	
	<6 Months		6-12 Months		12-24 Months			
	I	C	I	C	I	C	I	C
Reoperation	1				1		2	0
Revision		1		1		3	0	5
Removal			2	1		2	2	3
Supplemental Fixation					1		1	0
Total	**1**	**1**	**2**	**2**	**2**	**5**	**5**	**8**

2. Effectiveness Results

The clinical trial was designed to test the non-inferiority of the investigational device as compared to the historical ACDF control when used at a single-level in the spine through the use of a primary composite endpoint.

Overall Success

Overall success was determined based upon the PP Analysis Set at Month 24. **Table 18** identifies overall success for Completers in the primary analysis population.

Table 18: Overall Effectiveness (Completers of the Primary Analysis Population (PP Analysis Set))

Row		Synergy Disc			Control		
		N	n	%	N	n	%
1	>= 15-point decrease in NDI calculated score	155	141	91.0%	136	98	72.1%
2	Maintenance or improvement in neurological status	155	150	96.8%	136	129	94.8%
3	No study failure due to secondary surgical interventions	155	151	97.4%	136	129	94.8%
4	Absence of device-related Serious Adverse Event	155	150	96.8%	136	118	86.8%
5	Fusion occurred (Control) / Absence of radiographic failure (Synergy Disc)	155	153	98.7%	136	120	88.2%
6	Composite Clinical Success (Completers)	155	135	87.1%	136	77	56.6%
--	Non-Inferiority[a]	95% CI (One-Sided)			p-value		
--		0.1847			<0.0001		
--	Superiority[a]	Estimate		95% CI (Two-Sided)		p-value	
--		0.2679		0.1687 – 0.3671		<0.0001	

N = Total number of subjects with available data (Completers) for the primary endpoint (CCS) assessment

[a]Statistical test data in this table reflect observed data on completers (no imputations) with PS adjustments

The success rates above show the number of subjects meeting success criteria in each category divided by the total number of composite completer subjects. The Statistical Analysis Plan (SAP) indicated that a one-sided 95% confidence interval would be presented for non-inferiority, and a two-sided 95% confidence interval would be presented for superiority. At Month 24, the overall success rate was 87.1% (135/155) for the investigational group as compared to 56.6% (77/136) for the control group.

The primary endpoint (non-inferiority), and subsequently superiority, was also met based on the pre-specified primary analysis method (with multiple imputation and PS adjustment) for the PP Analysis Set (see also **Table 19** in the section below**)**.

The CCS in the control arm was driven by the NDI success rate of 72.1% (since the minimum of each component of the composite determines the maximum of the CCS in a subject-level composite); therefore, the statistic tests of non-inferiority and superiority depend upon this NDI success rate. The generalizability of the results depends on how representative this NDI success rate is of clinical norms for ACDF surgery.

Primary Endpoint Assessment for Various Populations, Imputations, and Adjustments

Additional primary analyses and sensitivity analyses demonstrated consistent results in the outcomes for Completers of the primary analysis population, as assessed across various populations, imputations, and adjustments. **Table 19** depicts the outcomes for each population pre-specified in the statistical analysis plan with and without multiple imputation with propensity score adjustments. As can be seen by the results, the claim of non-inferiority and superiority for the investigational group as compared to the control group at Month 24 is further supported through these additional analyses.

Table 19: Primary Endpoint Results for Various Populations and Imputations

Description	Population	Non-inferiority 90% CI	One-sided p-value	Estimated Difference	Superiority 95% CI	Two-sided p-value
MI, PS Adjusted	ITT	(20%, 36%)	<0.0001	28.0 %	(18%, 38%)	<0.0001
	As Treated	(20%, 36%)	<0.0001	28.3 %	(19%, 38%)	<0.0001
	PP*	**(19%, 36%)**	**<0.0001**	**27.2 %**	**(17%, 37%)**	**<0.0001**
No MI, PS Adjusted	ITT	(18%, 34%)	<0.0001	26.2 %	(17%, 36%)	<0.0001
	As Treated	(18%, 34%)	<0.0001	26.2 %	(17%, 36%)	<0.0001
	PP	(18%, 35%)	<0.0001	26.8 %	(17%, 37%)	<0.0001

***Pre-specified primary endpoint for the study**

Primary Endpoint Subcomponents

Synergy Disc subjects had higher observed success rates than control subjects in each individual component of the CCS.

NDI is scored on a 50-point scale (10 questions with a score of 0-5 for each) that is then normalized to a scale of 100. A higher NDI score is representative of greater symptomatology. At Month 24, 91.0% (141/155) of investigational subjects reported an improvement in NDI score of greater than or equal to 15 points, as compared to 72.1% (98/136) of control subjects that reported an improvement in NDI score of greater than or equal to 15 points (completer analysis, missing values were considered failures).

Neurologic status at all time points is assigned by the investigator or delegated clinician. Neurologic status at Month 24 postoperative compared to pre-operative was reviewed and adjudicated by the CEC. Neurologic status data are censored following intra-operative deviation or SSI. A total of 96.8% (150/155) of the investigational subjects and 94.8% (129/136) of the control subjects were assessed to have maintained or improved neurologic status (completer analysis, missing values considered failures).

A total of 151 (97.4%) of the investigational subjects were a success compared to 129 (94.8%) of the control subjects for freedom from SSI through Month 24.

A total of 150 (96.8%) investigational subjects were a success compared to 118 (86.8%) of control subjects in regards to any failure by AE as adjudicated by the CEC.

For the radiographic failure component, a total of 153 (98.7%) investigational subjects were considered to be successful through Month 24, as compared to 120 (88.2%) of control subjects through Month 24 (completer analysis, missing values considered failures).

Secondary Endpoint Analyses

In addition to the CCS subcomponents, a number of secondary endpoints were evaluated in the ITT Analysis Set, including: NDI, VAS, SF-36, Bazaz Dysphagia Score, Odom's Criteria, Patient Satisfaction, and Nurick Scale for Myelopathy.

The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Neck Disability Index

Table 20 shows the mean NDI score for the ITT Analysis Set over time through Month 24. In the investigational group, the mean NDI score decreased from 57.9 at screening to 13.3 at Month 24. In the control group, the mean NDI score decreased from 55.4 at screening to 25.0 at Month 24.

Table 20: NDI score values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	N	Mean	SD	Med	Min	Max	N	Mean	SD	Med	Min	Max	delta	95% CL
Screening	176	57.9	16.09	57.0	30	96	191	55.4	13.88	54	28	92	2.5	(-0.61, 5.59)
6 Week	162	19.6	15.57	17	0	68	166	33.8	18.53	32	0	80	-14.2	(-17.93,-10.50)
3 Month	158	15.2	15.19	10	0	62	172	27.9	20.68	24	0	80	-12.6	(-16.55, -8.74)
6 Month	164	14.4	15.75	10	0	82	162	25.3	20.61	22	0	92	-10.9	(-14.91, -6.90)
12 Month	167	13.4	15.01	8	0	72	157	27	21.13	24	0	80	-13.6	(-17.65, -9.59)
24 Month	156	13.3	16.2	6	0	66	150	25	21.08	18	0	76	-11.7	(-15.92, -7.44)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Table 21 presents the number and percentage of subjects showing an improvement in NDI score greater than 15 points as compared to all subjects in the study at each follow up time point for both the investigational and control groups. At Month 24, 91.67% (143/156) of investigational subjects achieved greater than a 15-point improvement in NDI score as compared to baseline, while 75.17% (112/149) of control subjects achieved greater than a 15-point improvement in NDI score as compared to baseline.

Table 21: NDI 15-Point Responder (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N = 177)			Control (N = 192)		
Visit	N	N	%	N	N	%
6 Week	162	139	85.80%	165	102	61.82%
3 Month	158	139	87.97%	171	129	75.44%
6 Month	164	150	91.46%	161	131	81.37%
12 Month	167	153	91.62%	156	119	76.28%
24 Month	156	143	91.67%	149	112	75.17%

VAS – Neck Pain

Table 22 reports the mean VAS – Neck Pain score for the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Neck Pain score decreased from 68.7 at

screening to 15.6 at Month 24. In the control group, the mean VAS – Neck Pain score decreased from 74.7 at screening to 30.2 at Month 24.

Table 22: VAS Pain (Neck) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	N	Mean	SD	Med	Min	Max	N	Mean	SD	Med	Min	Max	delta	95% CL
Screening	176	68.7	21.51	72	0	100	192	74.7	17.93	78	2	100	-6.0	(-10.05, -1.89)
6 Week	165	20.9	21.52	13	0	86	175	32.5	24.07	28	0	100	-11.6	(-16.48, -6.72)
3 Month	158	17.8	21.58	9	0	78	175	28.2	23.82	21	0	94	-10.4	(-15.33, -5.50)
6 Month	164	16.5	21.34	6.5	0	94	165	28.6	24.09	22.0	0	84	-12.1	(-17.04, -7.17)
12 Month	167	15.6	21.72	5	0	100	160	33.5	27.16	27	0	99	-17.9	(-23.29,-12.56)
24 Month	155	15.6	20.86	5	0	100	150	30.2	28.02	19.5	0	93	-14.5	(-20.12, -8.95)

***** The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Table 23 presents the number and percentage of subjects showing an improvement in VAS – Neck Pain score greater than 20 points as compared to all subjects in the study at each follow up time point for both the investigational and control groups. At Month 24, 83.87% (130/155) of investigational subjects achieved greater than a 20-point improvement in VAS – Neck Pain score as compared to baseline, while 75.33% (113/150) of control subjects achieved greater than a 20-point improvement in VAS – Neck pain score as compared to baseline.

Table 23: VAS Pain (Neck) Responder (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N = 177)			Control (N = 192)		
Visit	N	N	%	N	n	%
6 Week	165	136	82.42%	175	143	81.71%
3 Month	158	131	82.91%	175	147	84.00%
6 Month	164	140	85.37%	165	135	81.82%
12 Month	167	144	86.23%	160	119	74.38%
24 Month	155	130	83.87%	150	113	75.33%

VAS – Left Shoulder/Arm Pain

Table 24 describes the mean VAS – Left Shoulder/Arm Pain score for the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Left Shoulder/Arm Pain score decreased from 46.4 at screening to 10.8 at Month 24. In the control group, the mean VAS – Left Shoulder/Arm Pain score decreased from 52.0 at screening to 22.7 at Month 24.

Table 24: VAS (Left Arm/Shoulder) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	N	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max	delta	95% CL
Screening	176	46.4	35.48	50.5	0	100	192	52	33.18	55.5	0	100	-5.7	(-12.69, 1.38)
6 Week	165	12.7	18.25	4	0	88	174	19.8	24.62	9	0	99	-7.2	(-11.80, -2.57)
3 Month	158	12.1	20.44	2	0	94	174	20.6	26.15	8	0	100	-8.6	(-13.64, -3.55)
6 Month	164	10.7	17.72	2	0	100	165	19.3	23.93	9	0	86	-8.6	(-13.16, -4.02)
12 Month	167	12.3	20.3	2	0	100	160	22.7	26.01	12	0	97	-10.5	(-15.56, -5.37)
24 Month	155	10.8	17.9	2	0	83	150	22.7	24.93	14.5	0	89	-11.9	(-16.78, -6.97)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Table 25 identifies the number and percentage of subjects showing an improvement in VAS – Left Shoulder/Arm Pain score greater than 20 points as compared to all subjects in the study at each follow up time point for both the investigational and control groups. At Month 24, 55.48% (86/155) of investigational subjects achieved greater than a 20-point improvement in VAS – Left Shoulder/Arm Pain score as compared to baseline, while 52.67% (79/150) of control subjects achieved greater than a 20-point improvement in VAS – Left Shoulder/Arm Pain score as compared to baseline.

Table 25: VAS Left Arm/Shoulder 20-Point Responder (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N = 177)			Control (N = 192)		
Visit	**N**	**N**	**%**	**N**	**n**	**%**
6 Week	165	91	55.15%	174	106	60.92%
3 Month	158	88	55.70%	174	96	55.17%
6 Month	164	89	54.27%	165	99	60.00%
12 Month	167	92	55.09%	160	83	51.88%
24 Month	155	86	55.48%	150	79	52.67%

VAS – Right Shoulder/Arm Pain

Table 26 reports the mean VAS – Right Shoulder/Arm Pain score for the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Right Shoulder/Arm Pain score decreased from 46.4 at screening to 10.5 at Month 24. In the control group, the mean VAS – Right Shoulder/Arm Pain score decreased from 49.4 at screening to 24.1 at Month 24.

Table 26: VAS (Right Arm/Shoulder) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**	**Delta**	**95% CL**
Screening	176	46.8	34.34	51.5	0	100	192	49.4	33.21	59	0	100	-2.6	(-9.55, 4.31)
6 Week	165	13.8	19.17	4	0	90	175	20.7	24.86	11	0	91	-6.9	(-11.61, -2.17)
3 Month	158	12.6	19.54	3	0	82	175	21.3	23.98	13	0	94	-8.7	(-13.39, -4.00)
6 Month	164	10.7	16.34	3	0	79	165	22.2	25.58	14	0	95	-11.5	(-16.16, -6.85)
12 Month	167	11.3	19.06	2	0	100	160	23.5	27.38	12	0	98	-12.2	(-17.34, -7.03)
24 Month	155	10.5	18.42	2	0	88	150	24.1	27.86	12.5	0	92	-13.6	(-18.94, -8.25)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Table 27 presents the number and percentage of subjects showing an improvement in VAS – Right Shoulder/Arm Pain score greater than 20 points as compared to all subjects in the study at each follow up time point for both the investigational and control groups. At Month 24, 59.35% (92/155) of investigational subjects achieved greater than a 20-point improvement in VAS – Right Shoulder/Arm Pain score as compared to baseline, while 52.00% (78/150) of control subjects achieved greater than a 20-point improvement in VAS – Right Shoulder/Arm Pain score as compared to baseline.

Table 27: VAS Right Arm/Shoulder 20-Point Responder (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N = 177)			Control (N = 192)		
Visit	**N**	**N**	**%**	**N**	**n**	**%**
6 Week	165	100	60.61%	175	96	54.86%
3 Month	158	94	59.49%	175	97	55.43%
6 Month	164	103	62.80%	165	92	55.76%
12 Month	167	99	59.28%	160	87	54.38%
24 Month	155	92	59.35%	150	78	52.00%

A greater percentage of Synergy Disc subjects achieved 20-point improvement at VAS Right Arm pain compared to the ACDF Control group.

VAS – Worst Shoulder/Arm Pain

Table 28 reports the mean VAS – Worst Shoulder/Arm Pain score for the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Worst Shoulder/Arm Pain score decreased from 69.9 at screening to 15.0 at Month 24. In the control group, the mean VAS – Worst Shoulder/Arm Pain score decreased from 75.2 at screening to 32.2 at Month 24.

Table 28: VAS (Worst Arm/Shoulder) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**	**delta**	**95% CL**
Screening	176	69.9	23.50	73.5	2	100	192	75.2	17.83	78.5	5	100	-5.3	(-9.60, -0.98)
6 Week	165	19.1	20.85	11	0	90	175	27.7	28.02	17	0	99	-8.6	(-13.85, -3.35)
3 Month	158	17.8	22.91	7	0	94	175	29.1	27.6	21	0	100	-11.2	(-16.66, -5.76)
6 Month	164	15.9	20.35	7	0	100	165	28.9	27.80	20	0	95	-13.0	(-18.30, -7.73)
12 Month	167	16.7	22.33	4	0	100	160	32.4	29.52	22	0	98	-15.7	(-21.42, -9.99)
24 Month	155	15	21.11	4	0	88	150	32.2	29.07	23.5	0	92	-17.2	(-22.92,-11.43)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Table 29 lists the number and percentage of subjects showing an improvement in VAS – Worst Shoulder/Arm Pain score greater than 20 points as compared to all subjects in the study at each follow up time point for both the investigational and control groups. At Month 24, 82.58% (128/155) of investigational subjects achieved greater than a 20-point improvement in VAS – Worst Shoulder/Arm Pain score as compared to baseline, while 70.67% (106/150) of control subjects achieved greater than a 20-point improvement in VAS – Worst Shoulder/Arm Pain score as compared to baseline.

Table 29: VAS Worst Arm/Shoulder 20-Point Responder (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N = 177)			Control (N = 192)		
Visit	**N**	**N**	**%**	**N**	**n**	**%**
6 Week	165	139	84.24%	175	143	81.71%
3 Month	158	129	81.65%	175	135	77.14%
6 Month	164	140	85.37%	165	127	76.97%
12 Month	167	138	82.63%	160	112	70.00%
24 Month	155	128	82.58%	150	106	70.67%

VAS – Hoarseness

Table 30 reports the mean VAS – Hoarseness score (0=hoarseness has no impact; 100=hoarseness has maximal impact, negative or adverse effect) for question, "How did hoarseness affect your post-operative recovery?", in the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Hoarseness score decreased from 11.8 at screening to 5.5 at Month 24. In the control group, the mean VAS – Hoarseness score decreased from 13.8 at Week 6 (no screening value) to 9.4 at Month 24.

Table 30: VAS (Hoarseness) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	N	Mean	SD	Med	Min	Max	N	Mean	SD	Med	Min	Max	Delta	95% CL
Screening (Baseline)	176	11.8	19.78	3	0	95	0	-	-	-	-	-	-	-
6 Week	160	15.1	20.15	5	0	79	175	13.8	18.55	6	0	94	1.3	(-2.83, 5.49)
3 Month	158	8.8	14.44	2	0	69	169	10.1	15.82	2	0	75	-1.3	(-4.57, 2.03)
6 Month	166	8.7	16.88	1	0	89	161	8.9	15.7	2	0	85	-0.2	(-3.75, 3.35)
12 Month	166	7.9	15.56	1	0	89	158	10.5	18.45	3	0	99	-2.6	(-6.37, 1.11)
24 Month	155	5.5	11.55	1	0	77	147	9.4	17.92	2	0	100	-3.9	(-7.36, -0.48)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

VAS - Dysphagia

Table 31 reports the mean VAS – Dysphagia score (0=dysphagia has no impact; 100=dysphagia has maximal impact, negative or adverse effect) for question, "How does swallowing difficulty affect your post-operative recovery?", in the ITT Analysis Set over time through Month 24. In the investigational group, the mean VAS – Dysphagia score decreased from 10.4 at screening to 8.0 at Month 24. In the control group, the mean VAS – Dysphagia score decreased from 28.3 at Week 6 (no screening value) to 11.5 at Month 24.

Table 31: How did swallowing difficulty affect your post-operative recovery? (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	n	Mean	SD	Med	Min	Max	N	Mean	SD	Med	Min	Max	delta	95% CL
Screening (Baseline)	176	10.4	18.29	2	0	95	0	-	-	-	-	-	-	-
6 Week	160	22.4	23.58	14.5	0	79	175	28.3	26.66	18	0	98	-5.9	(-11.33, -0.47)
3 Month	158	14.6	20.81	3.5	0	69	169	15.3	19.83	6	0	100	-0.7	(-5.14, 3.70)
6 Month	166	11	19.14	2	0	89	161	14	19.84	4	0	83	-3	(-7.21, 1.27)
12 Month	166	10.6	18.12	1.5	0	89	158	13.7	21.04	4	0	100	-3.1	(-7.34, 1.23)
24 Month	155	8	14.05	1	0	77	147	11.5	19.49	3	0	100	-3.5	(-7.39, 0.35)

* The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

SF-36 – Physical Component Score

Table 32 present the results of the SF-36 Physical Component Score (PCS) for subjects in the ITT Analysis Set, except SSI. In the investigational group, the mean PCS at screening was 33.03, improving to a mean PCS of 49.54 at Month 24. In the control group, the mean PCS at screening was 34.60, increasing to 45.23 at Month 24.

Table 32: SF-36 (Physical Component Score – PCS) values over time ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	n	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max	delta	95% CL
Screening	176	33.03	7.738	33.50	15.6	54.4	191	34.60	6.457	34.20	20.2	51.5	-1.564	(-3.034,-0.094)
6 Week	160	45.92	8.704	46.2	18.9	60.3	174	39.92	8.65	39.05	19	61.2	6.001	(4.132, 7.871)
3 Month	157	49.01	8.483	50.1	16.7	60.5	175	43.81	9.797	42.63	17.8	63.9	5.2	(3.211, 7.189)
6 Month	166	49.14	8.973	50.92	12.3	64.2	165	45.11	10.144	44.94	25.2	66.3	4.029	(1.958, 6.099)
12 Month	167	49.84	9.407	52.56	7	63.3	160	44.08	10.457	42.65	17.1	60	5.763	(3.601, 7.925)
24 Month	156	49.54	9.776	52.46	19.8	63.2	150	45.23	10.56	47.54	20.1	64.2	4.31	(2.022, 6.598)

***** The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

SF-36 – Mental Component Score

Table 33 presents the results of the SF-36 Mental Component Score *(*MCS) scores for subjects in the ITT Analysis Set, except SSI. In the investigational group, the mean MCS at screening was 43.44, improving to a mean MCS of 52.08 at Month 24. In the control group, the mean MCS at screening was 42.00, increasing to 49.80 at Month 24.

Table 33: SF-36 (Mental Component Score – MCS) values over time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)*

	Synergy Disc (N=177)						Control (N=192)							
Visit	n	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max	delta	95% CL
Screening	176	43.44	13.007	44.32	11.9	67.3	191	42.00	12.031	42.01	13.8	65.0	1.442	(-1.128, 4.012)
6 Week	160	51.28	10.652	54.01	11.2	71.5	174	48.34	12.068	51.86	19.7	66.3	2.944	(0.485, 5.403)
3 Month	157	51.74	11.426	55.93	14.3	67.8	175	48.35	12.357	52.94	15.5	67.3	3.391	(0.812, 5.970)
6 Month	166	51.39	11.225	55.44	9.3	71.5	165	50.41	11.008	55.13	17.3	67.6	0.98	(-1.424, 3.384)
12 Month	167	51.72	11.103	55.09	6.4	68.8	160	49.98	10.97	53.4	18.5	66.9	1.747	(-0.655, 4.149)
24 Month	156	52.08	10.175	55.72	-0.3	64.9	150	49.8	11.108	54.24	16.3	63.9	2.288	(-0.107, 4.683)

***** The confidence intervals were calculated without multiplicity adjustment. As such, these confidence intervals should not be used to draw any statistical conclusion.

Bazaz Dysphagia Score

Table 34 reports the results of the Bazaz Dysphagia Score for subjects in the ITT Analysis Set, except SSI. The Bazaz Dysphagia Score is graded as follows:

- **None** (Liquid - None, Solid - None)
- **Mild** (Liquid - None, Solid - Rare)
- **Moderate** (Liquid - None or Rare, Solid - Occasionally (only with specific solids))
- **Severe** (Liquid - None or Rare, Solid - Frequent (Majority of solids))

By Month 24, the majority of subjects (76.3% (135/177) – investigational; 60.4% (116/192) – Control) reported no dysphagia using the Bazaz Dysphagia Score.

Table 34: Bazaz Dysphagia Score Change Over Time (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Screening				Week 6				Month 3			
	Synergy Disc		Control		Synergy Disc		Control		Synergy Disc		Control	
Description	n	%	n	%	N	%	n	%	n	%	N	%
None	137	77.4	152	79.2	99	55.9	84	43.8	129	72.9	121	63
Mild	22	12.4	23	12	43	24.3	44	22.9	17	9.6	39	20.3
Moderate	17	9.6	14	7.3	17	9.6	38	19.8	10	5.6	13	6.8
Severe	0	0	3	1.6	2	1.1	5	2.6	2	1.1	1	0.5
	Month 6				Month 12				Month 24			
	Synergy Disc		Control		Synergy Disc		Control		Synergy Disc		Control	
Description	n	%	n	%	N	%	n	%	n	%	n	%
None	144	81.4	126	65.6	144	81.4	121	63	135	76.3	116	60.4
Mild	15	8.5	18	9.4	14	7.9	23	12	14	7.9	18	9.4
Moderate	6	3.4	17	8.9	7	4	16	8.3	6	3.4	13	6.8
Severe	1	0.6	1	0.5	1	0.6	1	0.5	0	0	1	0.5

Odom's Criteria
Odom's criteria were assessed for each subject by the physician as described below:

- **Excellent:** No complaints referable to cervical disease and able to carry out daily activities without impairment.
- **Good:** Intermittent discomfort related to cervical disease but no significant interfering with daily activities.
- **Satisfactory:** Subjective improvement but physical activities significantly limited.
- **Poor:** No improvement or worse as compared with condition before operation.

At Month 24, 81.8% (135/165) were categorized as "Excellent" in the investigational group, compared to 54.6% (83/152) in the control group.

Treatment Satisfaction
A Treatment Satisfaction questionnaire was administered to all subjects, except SSI.

In response to the question, "How satisfied are you with your treatment?," 84.5% (131/155) in the investigational group responded "Very Satisfied," compared to 61.6% (93/151) in the control group, at Month 24.

In response to the question, "Would you recommend the same treatment to a friend with the same health problem?," 84.5% (131/155) responded "Definitely Yes" in the investigational group as compared to 67.5% (102/151) in the Control group, at Month 24.

In response to the question, "How effective is this treatment in eliminating your symptoms?" 64.5% (100/155) responded "Very effective, relieved all of my symptoms" in the investigational group as compared to 33.8% (51/151) in the control group, at Month 24.

Myelopathy – Nurick Scale
Myelopathy was evaluated in all subjects (except SSI) using the Nurick scale which is measured using the following criteria:

- **Grade 0**: Signs and symptoms of root involvement without spinal cord disease
- **Grade 1**: Signs of spinal cord disease without difficulty in walking

- **Grade 2**: Slight difficulty in walking that does not prevent full time employment
- **Grade 3**: Difficulty in walking that prevents full-time employment or daily tasks but does not require assistance with walking
- **Grade 4**: Able to walk only with someone else's help or with the aid of a frame
- **Grade 5**: Chair bound or bedridden

At Month 24, 98% (148/158) in the investigational group, and 94% (142/151) in the control group, were assessed as Grade 0.

Radiographic Assessments - Quantitative

Angular Motion

Angular motion (rotation) at the index level was assessed using the definition of the change in angle between the adjacent endplates of the motion segment in the sagittal plane from flexion to extension. **Table 35** presents the angular motion at the index level in the ITT Analysis Set, except SSI. In the investigational group, mean angular motion decreased from 8.22 degrees at screening to 6.47 degrees at Month 24. In the control group, mean angular motion decreased from 7.1 degrees at screening to 0.8 degrees at Month 24, which is to be expected for a fusion procedure.

Table 35: Angular Motion (Index Level) [degrees] (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)						Control (N=192)					
Visit	N	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max
Screening (Baseline)	165	8.22	4.325	7.9	0.6	21	175	7.8	4.332	7.1	-0.5	19.6
3 Month	148	6.58	3.459	6	0.4	18.3	167	1.7	1.501	1.4	-0.3	9.1
6 Month	156	7.01	3.658	7.05	0.7	15.5	162	1.38	1.341	0.95	0	7.6
12 Month	160	6.47	3.896	6.1	0.1	20.1	154	1.04	1.064	0.8	-0.2	6.6
24 Month	150	6.47	3.949	6.3	0.2	19.5	150	0.8	0.834	0.6	-0.1	6.3

Translational Motion

Translational motion at the index level was assessed using the definition of displacement of the posterior-inferior corner of the superior vertebra in a direction defined parallel to the superior endplate of the inferior vertebra from flexion to extension.

Table 36 presents the amount of translational motion at the index level in the ITT Analysis Set, except SSI. In the investigational group, mean translational motion decreased from 0.91 mm at screening to 0.78 mm at Month 24. In the control group, mean translational motion decreased from 0.88 mm at screening to 0.09 mm at Month 24, which is to be expected for a fusion procedure.

Table 36: Translational Motion (Index Level) [mm] (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)						Control (N=192)					
Visit	N	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max
Screening (Baseline)	162	0.91	0.622	0.8	0	3.1	167	0.88	0.661	0.7	-0.2	3
3 Month	145	0.84	0.574	0.7	0	3.2	161	0.18	0.227	0.1	-0.5	1.1
6 Month	153	0.88	0.575	0.7	0	2.8	156	0.13	0.163	0.1	-0.1	0.7
12 Month	158	0.78	0.563	0.65	0	3.2	148	0.11	0.132	0.1	-0.2	0.6
24 Month	147	0.78	0.592	0.7	0	3.3	144	0.09	0.114	0.1	-0.1	0.7

Average Disc Height

Average disc height is calculated as the simple mean of the anterior and posterior disc heights. **Table 37** describes the average disc height at the index level in the ITT Analysis Set, excluding SSI. In the investigational group, the mean average disc height increased from 3.27 mm at screening to 4.79 mm at Month 24. In the control group, the mean average disc height increased from 3.41 at screening to 4.70 mm at Month 24.

Table 37: Average Disc Height (Index Level) [mm] (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)						Control (N=192)					
Visit	N	Mean	SD	Med	Min	Max	n	Mean	SD	Med	Min	Max
Screening (Baseline)	171	3.27	0.729	3.2	1.4	5	168	3.41	0.858	3.4	1.1	5.7
Immediate post-operative	166	5.33	0.804	5.3	3	7.3	163	5.32	1.192	5.3	2.2	8.1
3 Month	154	5.11	0.797	5.1	2.9	6.9	165	4.88	1.292	4.9	1.6	7.9
6 Month	160	5.01	0.867	5	2.3	6.9	157	4.72	1.316	4.6	1.6	8
12 Month	161	4.92	0.986	5	0.3	6.8	151	4.73	1.351	4.7	1.7	8
24 Month	152	4.79	1.050	4.8	-0.1	6.8	142	4.70	1.290	4.6	1.6	7.9

Shell Angle

Shell angle is defined as the angle between the inferior surface of the superior device component (or "shell") and the superior surface of the inferior device component when the subject is in a neutral neck position. **Table 38** identifies the shell of investigational subjects in the ITT Analysis Set, excluding SSI. In investigational subjects, the mean shell angle increased from 3.82 degrees immediately post-operative to 4.49 degrees at Month 24.

Table 38: Shell Angle [degrees] Over Time, Synergy Disc (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)					
Visit	n	Mean	SD	Med	Min	Max
Immediate post-operative	172	3.82	2.889	4.0	-5.8	12.4
3 Month	161	4.40	2.914	4.3	-5.8	13.1
6 Month	164	4.40	3.070	4.3	-5.8	13.0
12 Month	167	4.52	3.189	4.2	-5.7	15.8
24 Month	156	4.49	3.195	4.4	-5.7	14.9

Disc Angle

Disc angle is defined as the angle formed between the endplates of adjacent vertebrae with the subject in a neutral neck position. A disc angle greater than 0 degrees corresponds to local lordosis and a disc angle less than 0 degrees corresponds to local kyphosis. **Table 39** presents the disc angle at the index level in the ITT Analysis Set, excluding SSI. In the investigational group, mean disc angle increased from 2.64 degrees at screening to 6.48 degrees at Month 24. In the control group, mean disc angle increased from 2.85 degrees at screening to 8.1 degrees at Month 24.

Table 39: Disc Angle (Index Level) [degrees] (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)						Control (N=192)					
Visit	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**
Screening (Baseline)	174	2.64	4.792	2.2	-7.3	15.6	176	2.85	4.556	2.4	-9.0	20.1
Immediate post-operative	169	7.58	4.555	7.5	-4.0	19.3	171	9.20	4.617	9.3	-3.8	24.5
3 Month	157	7.26	4.763	7.2	-4.0	20.6	170	9.26	5.288	9.5	-4.9	24.6
6 Month	163	6.80	4.763	6.7	-5.6	21.9	162	8.88	5.353	9.2	-5.4	23.8
12 Month	164	6.69	4.877	6.7	-4.5	22.1	157	8.40	5.273	8.5	-5.4	24.0
24 Month	155	6.48	4.938	6.6	-3.7	22.8	148	8.14	5.264	8.1	-5.5	24.2

Segmental Lordosis

Segmental lordosis is defined as the angle formed between the endplates of adjacent vertebrae when the patient subject is in a neutral neck position. **Table 40** presents the segmental lordosis of investigational subjects in the ITT Analysis Set, excluding SSI. In investigational subjects, the mean segmental lordosis decreased from 1.03 degrees at screening to 4.83 degrees at Month 24.

Table 40: Segmental Lordosis (Index Level) [degrees] (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Synergy Disc (N=177)					
Visit	**n**	**Mean**	**SD**	**Med**	**Min**	**Max**
Screening (Baseline)	174	1.03	5.275	0.4	-9.0	17.6
Immediate post-operative	169	5.96	4.944	6.2	-10.2	22.2
3 Month	157	5.62	5.101	5.0	-8.3	23.5
6 Month	163	5.18	5.142	4.6	-7.7	24.8
12 Month	164	5.07	5.279	4.7	-9.5	24.9
24 Month	155	4.83	5.221	4.5	-7.8	25.7

Radiographic Assessments – Qualitative

Device Condition

Device Condition was assessed for both the investigational and control group in the ITT Analysis Set, excluding SSIs. In the investigational group, there were 6 potential device integrity observations that were indeterminate, and 1case that was unable to be assessed, through Month 24. At Month 24, 99.4% (156/157) of investigational devices were classified as intact (i.e., no evidence of device disassembly, fracture or loosening). In the control group, there 11 graft failures, and 3 screw failures, through Month 24. At Month 24, 98% (148/151) of control ACDF hardware was classified as intact (i.e., no failed graft, loose screws or fractured hardware).

Device Migration

There were no confirmed cases of device migration (i.e., evidence of anterior-posterior or lateral change in implant position greater than 3 mm) in the ITT Analysis Set, excluding SSIs, through Month 24.

Device Protrusion

In the investigational group, there 9 cases where it could be determined that there was less than or equal to a 10% protrusion of the device beyond the margin of the disc space in the ITT Analysis Set, excluding SSIs, through Month 24. At Month 24, 96.8% (152/157) of investigational devices were classified as having no confirmed evidence of protrusion.

Device Subsidence
Device subsidence (i.e., cranial or caudal subsidence of the implant greater than 3mm) was assessed in the ITT Analysis Set, excluding SSIs, through Month 24. In the investigational group, there were 10 confirmed cases of device subsidence through Month 24, and no confirmed cases in the control group through month 24. At Month 24, 97.5% (153/157) of investigational devices and 100% (151/151) of ACDF control hardware did not have evidence of subsidence.

Heterotopic Ossification
Table 41 reports on evidence of HO in the investigational group of the ITT Analysis Set, excluding SSIs, through Month 24, using the following HO definitions:

- **None**: No evidence of osteophyte formation or heterotopic ossification.
- **Class I**: HO is present in islands of bone within soft tissue but is not influencing the range of motion of the vertebral motion segment. Bone is not between the planes formed by the two vertebral endplates.
- **Class II**: HO or post-operative osteophytes are present between the two planes formed by the vertebral endplates but are not significantly blocking or articulating between adjacent vertebral endplates or osteophytes.
- **Class III**: The range of motion of the vertebral endplates is blocked by the formation of HO and/or postoperative osteophytes on flexion-extension or lateral bending radiographs.
- **Class IV**: An apparent continuous connection of bone exists across the adjacent vertebral endplate caused by bridging osteophytes or heterotopic ossification.

There is increasing progression of HO over time, with Class II being the predominant type at later timepoints. At Month 24, 54.1% (85/157) of investigational subjects were assessed to have Class II HO.

Table 41: Heterotopic Ossification (Index Level) (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

Synergy Disc (N = 177)										
	6 Week		3 Month		6 Month		12 Month		24 Month	
Description	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
None	0	0	107	66	80	48.5	35	20.8	11	7
Class I	0	0	45	27.8	48	29.1	55	32.7	40	25.5
Class II	0	0	7	4.3	33	20	68	40.5	85	54.1
Class III	0	0	2	1.2	2	1.2	6	3.6	15	9.6
Class IV	0	0	0	0	2	1.2	3	1.8	6	3.8
Indeterminate	0	0	0	0	0	0	1	0.6	0	0
Unable to Assess	0	0	1	0.6	0	0	0	0	0	0
Not Required	0	0	0	0	0	0	0	0	0	0

Adjacent Level Disc Disease (Kellgren-Lawrence)
Table 42 and **Table 43** identify evidence of Adjacent Level Disc Degeneration – Kellgren-Lawrence (ALDD) in the investigational group of the ITT Analysis Set, excluding SSIs, through Month 24, using the following definitions:

- **Grade 0:** No degenerative changes.
- **Grade 1:** Minimal osteophytosis only.

- **Grade 2:** Definite anterior osteophytosis with possible narrowing of disc space and some sclerosis of vertebral plates.
- **Grade 3:** Moderate narrowing of disc space with definite sclerosis of vertebral plates and osteophytosis.
- **Grade 4:** Severe narrowing of disk space with sclerosis of vertebral plates and multiple large osteophytes.
- **NA:** Pre-existing fusion or the subject was surgically fused at the adjacent level.

The assessment of adjacent level disc disease (Kellgren-Lawrence) is graded by the reviewers based on an assessment from x-rays of three component factors: disc space narrowing (assessed relative to a nearby normal disc), osteophyte formation and endplate sclerosis.

At the spinal level above the index procedure, there is increasing progression of ALDD over time, with Grade 0 or 1 being the predominant type at later timepoints. At Month 24, 38.2% (60/157) of investigational subjects were assessed to have Grade 0 ALDD, and 39.5% (62/157) of investigational subjects were assessed to have Grade 1 ALDD.

At the spinal level below the index procedure, there is also increasing progression of ALDD over time, with Grade 0 or 1 being the predominant type at later timepoints. At Month 24, 33.1% (52/157) of investigational subjects were assessed to have Grade 0 ALDD, and 36.9% (58/157) of investigational subjects were assessed to have Grade 1 ALDD.

Table 42: Kellgren-Lawrence Adjacent Level Disc Disease, Synergy Disc (Above Index Level) (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Immediate Post Operative		6 Week		3 Month		6 Month		12 Month		24 Month	
Description	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Grade 0	111	64.2	112	65.5	102	63	102	61.8	83	49.4	60	38.2
Grade 1	39	22.5	33	19.3	35	21.6	39	23.6	54	32.1	62	39.5
Grade 2	18	10.4	21	12.3	20	12.3	20	12.1	24	14.3	27	17.2
Grade 3	0	0	0	0	1	0.6	1	0.6	2	1.2	3	1.9
Grade 4	0	0	0	0	0	0	0	0	0	0	0	0
Indeterminate	0	0	0	0	0	0	0	0	0	0	0	0
Unable to Assess	0	0	0	0	1	0.6	0	0	0	0	0	0
Not Applicable	5	2.9	5	2.9	3	1.9	3	1.8	5	3	5	3.2

Table 43: Kellgren-Lawrence Adjacent Level Disc Disease, Synergy Disc (Below Index Level) (ITT Analysis Set, Excluding subjects with SSIs at Index Level)

	Immediate Post Operative		6 Week		3 Month		6 Month		12 Month		24 Month	
Description	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Grade 0	112	64.7	108	63.2	98	60.5	95	57.6	76	45.2	52	33.1
Grade 1	15	8.7	18	10.5	18	11.1	22	13.3	39	23.2	58	36.9
Grade 2	8	4.6	8	4.7	5	3.1	5	3	7	4.2	8	5.1
Grade 3	5	2.9	5	2.9	6	3.7	8	4.8	8	4.8	9	5.7
Grade 4	0	0	0	0	0	0	0	0	0	0	0	0
Indeterminate	22	12.7	21	12.3	23	14.2	24	14.5	28	16.7	20	12.7
Unable to Assess	0	0	0	0	1	0.6	0	0	0	0	0	0
Not Applicable	11	6.4	11	6.4	11	6.8	11	6.7	10	6	10	6.4

3. Exploratory Analysis

Prior Fusion

There was enrollment of subjects with prior cervical fusion under this IDE clinical trial. Although the sample size was limited (n=14), 85.7% (12/14) of these subjects demonstrated overall success at Month 24 as shown in **Table 44** below.

Table 44: Month 24 Overall Efficacy - Synergy Disc Group Stratified by Prior Fusion (PP Analysis Set)

Description	Prior Fusion			No Prior Fusion		
	(N=15)			(N=149)		
	N	N	%	N	n	%
Fusion occurred/Absence of radiographic failure	13	13	100.0%	142	142	100.0%
>= 15-point decrease in NDI calculated score	14	13	92.9%	141	129	91.5%
Maintenance or improvement in neurological status	14	13	92.9%	143	140	97.9%
No study failure due to secondary surgical interventions	15	14	93.3%	149	146	98.0%
Absence of device-related Serious Adverse Event	15	14	93.3%	149	145	97.3%
Composite Clinical Success	14	12	85.7%	141	123	87.2%

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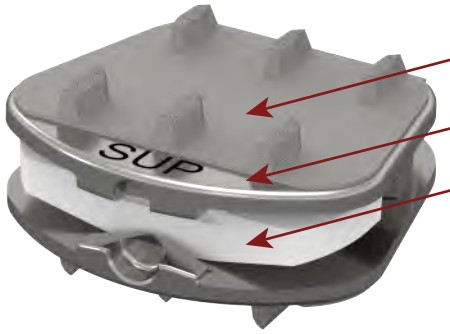
TABLE OF CONTENT

IMPLANTS

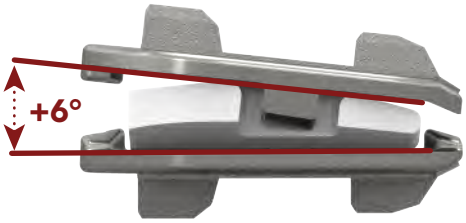
Biomaterials with a long history of clinical use in the cervical spine



Titanium (CPTi) Plasma Spray Coating
Superior & Inferior Endplates

Titanium Alloy (Ti6Al4V) Endplates

Polyethylene Core

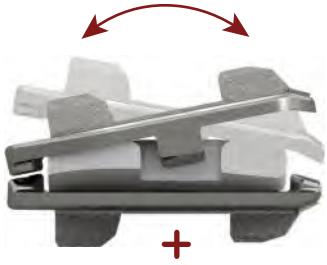


Surgeon selectable **0°** or **6°** Lordotic Core

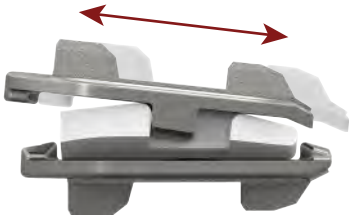
Kinematics

+ Indicates center of rotation for each motion type

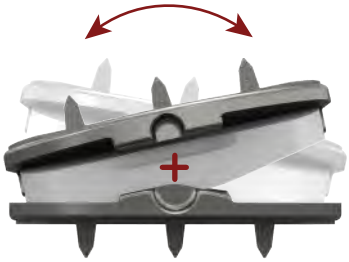
20°-22° Flexion-Extension



2mm A-P Translation



±12° Lateral Bending



±12° Axial Rotation

IMPLANTS

Synergy Spine Solutions offers the **Synergy Disc Implant** in six footprint sizes, three-heights, and two corrective lordotic angles to accommodate varying patient needs and sagittal alignment.

Footprint (A-P x Lateral)	Height	Lordotic Correction Angle
X-Small 12mm x 15mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°
Small 14mm x 15mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°
Small-Wide 14mm x 17mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°
Medium 16mm x 17mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°
Medium-Wide 16mm x 19mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°
Large 18mm x 19mm	5mm	0°
		6°
	6mm	0°
		6°
	7mm	6°

i. Patient Positioning

Neutral Posture

Place patient's neck in a neutral position by placing a tightly rolled towel under the neck and a support donut under the head.

Use fluoroscopy to ensure proper cervical alignment (avoid hyper-extension of the neck). Use surgical tape or wrap to secure the patient's head to the table to prevent movement.

Tech Tip

The use of head weights or traction is not recommended. Adjacent disc spaces can be distracted, giving a false impression of disc height.

Identify Midline

Expose target disc level, mark midline using AP fluoroscopy and/or the longus coli muscles. Accurately identifying midline will optimize implant insertion.

ii. Pin Placement

Place Pins

Use the **Driver** to place the **Distraction Pins** mid-body in the sagittal and coronal planes, and parallel to the vertebral body endplates at the index level(s). If **Distraction Pins** are placed too close to endplates it can interfere with pilot cuts and placement of the implant.

Verify **Distraction Pin** placement with fluoroscopy.

iii. Discectomy & Decompression

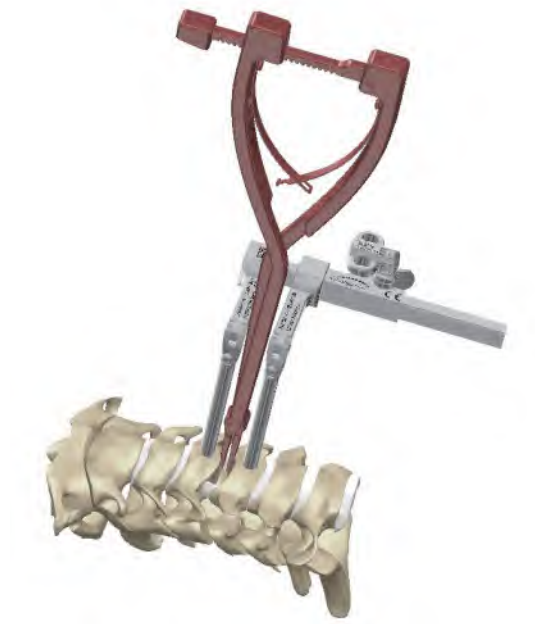
Attach Pin Distractor

Slide the **Pin Distractor** arms over each **Distraction Pin**. The arms will lock onto each **Distraction Pin** automatically. Each lock will create a tactile sensation when engaging.

Verify that the **Pin Distractor** arms are securely locked.

Tech Tip

The **Pin Distractor** should not be used to distract the segment. Distraction and remobilization are achieved with the **Intervertebral Distractor** and is maintained with the **Pin Distractor**.



Discectomy & Decompression

Perform a standard total discectomy and decompression. Use manual instruments when bony remodeling is necessary.

Minimal endplate drilling and manipulation is recommended.

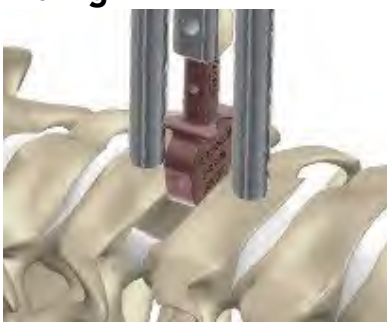
Tech Tip

Create a wide annulotomy to facilitate the surgical procedure. See "Inserter Removal" procedure steps for more detail.

SURGICAL CHECKPOINT

There should be no bony obstruction posteriorly that would interfere with the trial and optimum placement of the implant. If the medial aspect uncus is not removed there could be a risk the end plates will ride upwards and prevent posterior placement of the Implant.

1. Trialing



Trial Implant Selection

Select an appropriately sized **Trial** and affix it to the **Universal Handle**.

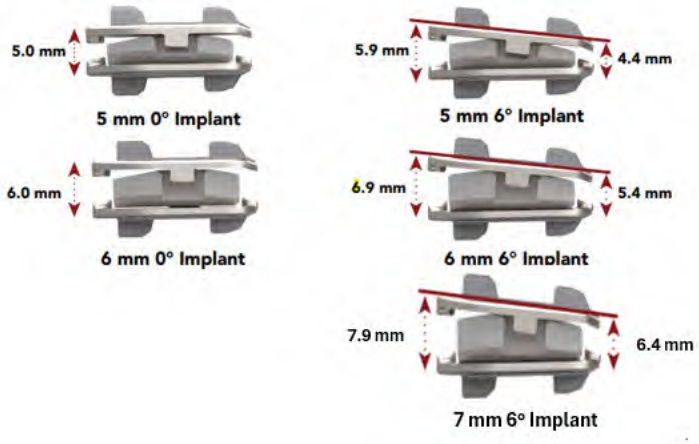
Use fluoroscopy during insertion of **Trial**.

Release **Pin Distractor** to assess lordotic angle of the disc space.

SURGICAL CHECKPOINT

It is recommended that a 6° lordotic implant with a 5mm height be used to prevent overstuffing of the joint and to optimize sagittal balance. Maximize endplate coverage with the largest appropriate footprint from the trial.

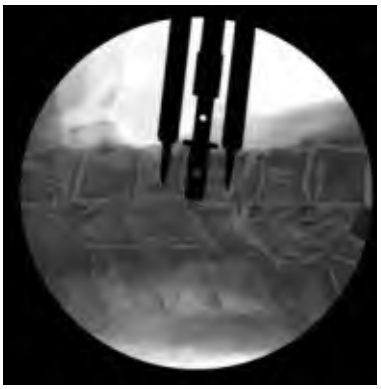
Trial Evaluation & Lordosis Measurement



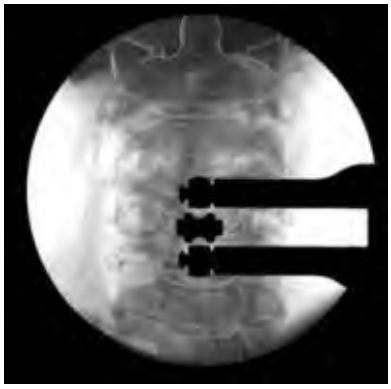
Tech Tips

With a "true" lateral image, the **Trial** will have a perfect circle. Superimposed facets should be visible

AP spot fluoroscopy can be helpful to determine midline position of the **Trial**.

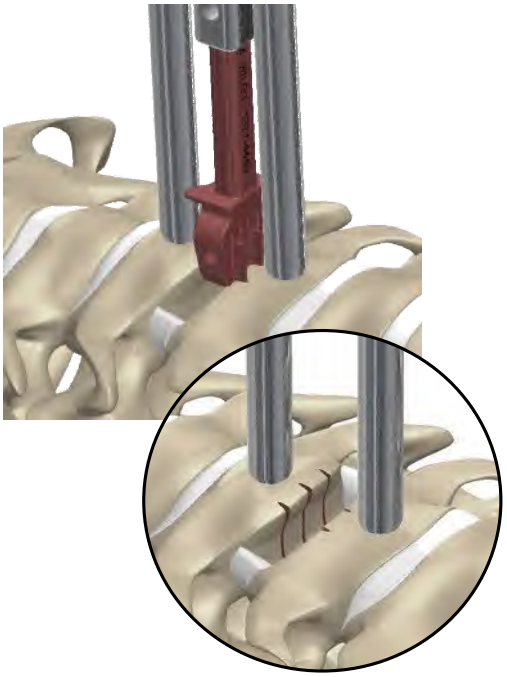


Lateral View



Antero Posterior View

2. Pilot Cut Preparation



Pilot Cut

Select the **Pilot Cutter** matched to the final **Trial** footprint size (S/M/L) and affix it to the **Universal Handle**.

Align the **Pilot Cutter** with the sagittal midline and insert the leading edge of the **Pilot Cutter** into the disc space. Verify that the trajectory of the **Pilot Cutter** is aligned with the sagittal plane.

Release the **Pin Distractor**. Manually compress the **Pin Distractor** during insertion of the **Pilot Cutter**.

Use the **Hammer** to tap the **Pilot Cutter** into the disc space up to the depth stop under fluoroscopy.

Reapply disc space distraction with the **Pin Distractor**.

Remove the **Pilot Cutter** by tapping out of the disc space using the **Hammer**.

Flush out the disc space to ensure no bone fragments remain after using the **Pilot Cutter**.

Tech Tip

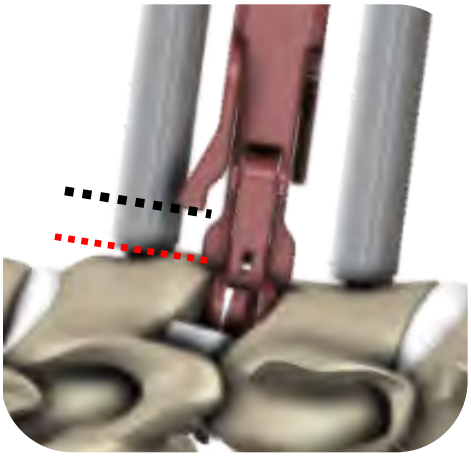
All **Pilot Cutters** have a parallel configuration to ensure proper engagement with vertebral endplates while the endplates are held parallel by the **Pin Distractor**.

There is no lordotic **Pilot Cutter**.

3. Implant Insertion

Open "JAWS"

Closed "JAWS"



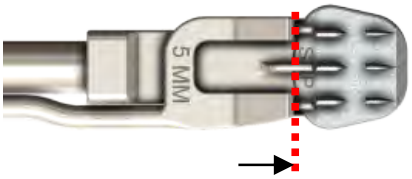
<u>Connect Implant to Inserter</u>
Remove the **Implant Clip** with the **Implant** from the package and orient the "SUP" markings on the **Inserter** and **Implant Clip**.

Open the **Inserter** jaws and slide the outer two "tines" of the **Inserter** over the **Implant Clip** so the **Inserter** contacts with the anterior aspect of the **Implant**.

Close the **Inserter** jaws by twisting the **Inserter** handle clockwise and ensure the **Implant** is secured to the **Inserter**.

Tech Tip
Once engaged with the **Inserter**, the endplates for all **Implants**, including lordotic devices will be parallel. Once inserted into the disc space and released from the **Inserter**, the 6° implants will assume the lordotic angle.

<u>Insert Implant</u>
Verify that the **Depth Stop** is at the hard stop that locates the anterior aspect of the **Implant**. This is to prevent over insertion.

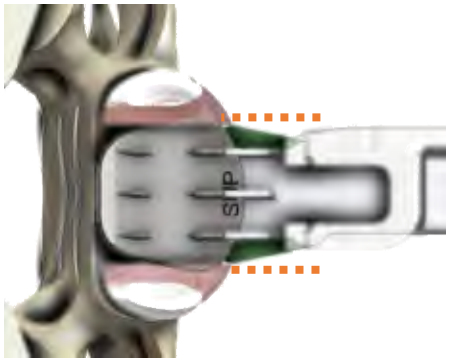


Insert **Implant** to desired depth under fluoroscopy with **Depth Stop**

Maximizing end plate coverage will avoid heterotopic ossification.

To place the **Implant** more posterior, rotate the knob on the **Depth Stop** counterclockwise to set the stop to the desired depth and impact the **Inserter** accordingly.

Tech Tip
Each full turn (or 8 clicks) of the **Depth Stop** control knob equals 1mm of depth.



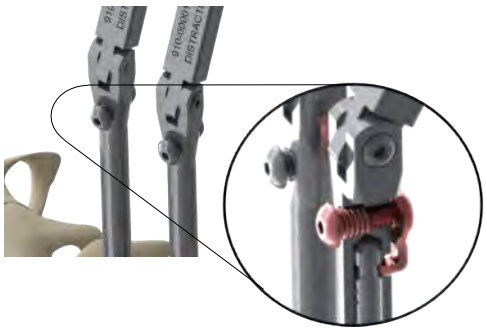
Remove Inserter

When the **Implant** is adequately placed, twist the **Inserter** handle counterclockwise to release the **Inserter** jaws from the **Implant** and carefully remove the **Inserter**.

Tech Tips

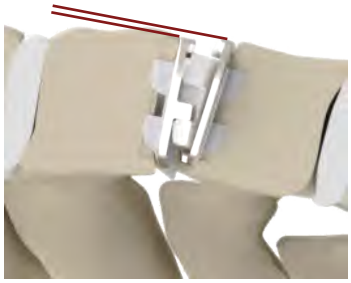
The **Inserter** jaws should have a margin clear from tissue on both sides of the **Inserter** for jaws to release.

The **Inserter** cannot be reattached to the **Implant** once released.



Remove Pin Distractor

Press the release buttons located below the hinge to release the **Pin Distractor** pin locks from the **Distraction Pins**. Remove the **Distraction Pins** from the vertebral bodies.



Movement on Inserter Release

Tech Tip

The **Implant** superior endplate may translate when the **Inserter** is released or when the **Pin Distractor** is removed. The **Tamp** is designed to make fine tuning adjustments to the **Implant** endplate at the discretion of the surgeon.

Before Tamp

After Tamp

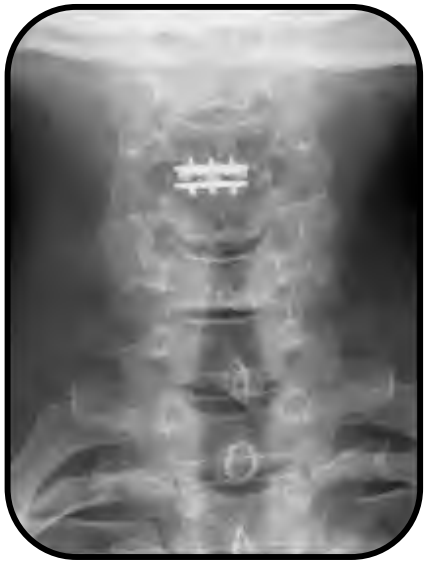
Final Seating

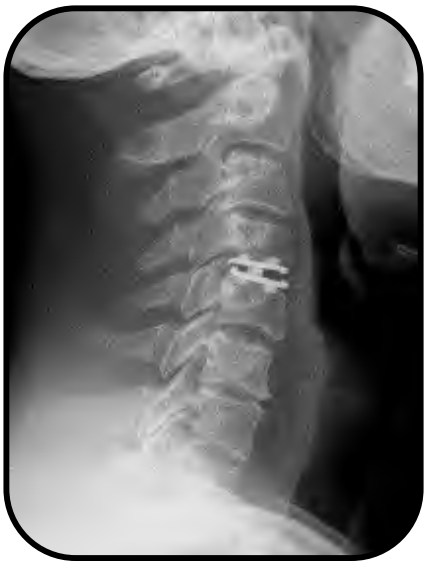
If desired, use the **Tamp** and **Mallet** with fluoroscopy to finely adjust the **Implant** until the position is satisfactory.

Ensuring proper placement and alignment of the **Implant** will allow the patient to have the optimal range of motion.

Confirm Final Placement of Device

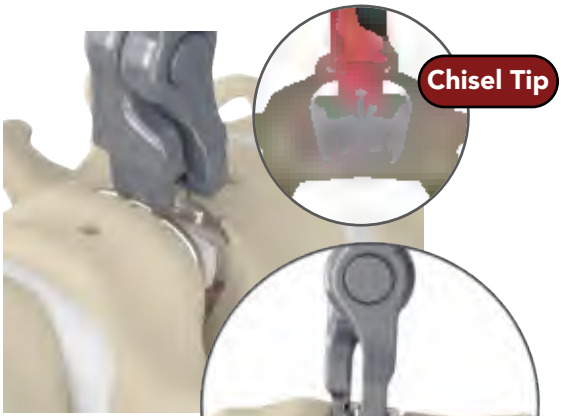
Take final AP and lateral fluoroscopy images to confirm correct placement of the device





Removal

If an implant must be removed, a **Remover** has been supplied with the surgical instrument kit. If the device is to be explanted, follow the **Explant & Retrieval** procedure on **page 13.**



Removal should only be done under fluoroscopy visualization

Insert and align the chisel tip of the **Remover** into the gap between the superior device endplate and the vertebral body endplate.

Tech Tip

Exercise extreme caution not to push the Synergy Disc Endplate posteriorly during removal.

Clamp the **Remover** handles to engage the device endplate.

Back tap the **Remover** with the **Hammer** to remove the **Implant**.

The core and endplates may separate when removed from the disc space. Ensure that all components are collected.

Indications for Use

The Synergy Disc is indicated in skeletally mature patients for reconstruction of the disc at one level from C3-C7 following single-level discectomy for intractable radiculopathy (arm pain and/or a neurological deficit) with or without neck pain, or myelopathy due to a single-level abnormality localized to the level of the disc space and at least one of the following conditions confirmed by radiographic imaging (CT, MRI, X-rays): herniated nucleus pulposus, spondylosis (defined by the presence of osteophytes), and/or visible loss of disc height compared to adjacent levels. The Synergy Disc is implanted using an anterior approach. Patients should have failed at least 6 weeks of conservative treatment or demonstrated progressive signs or symptoms despite nonoperative treatment prior to implantation of the Synergy Disc.

Contraindications

Contraindications include, but are not limited to:

- Tumor or trauma
- Intractable radiculopathy or myelopathy necessitating surgical treatment at more than one cervical level
- Allergy or sensitivity to the implant materials (e.g., titanium and, polyethylene)
- Bridging osteophytes
- Radiographic instability on lateral, coronal or flexion / extension radiographs: translation greater than 3.5mm and/or greater than 11 degrees of angular difference from either adjacent segments
- Facet joint degeneration
- Active systemic or local infection
- Osteoporosis defined as Dual-Energy X-ray Absorptiometry (DEXA) bone mineral density T-score less than -2.5
- Advanced cervical spine conditions or diseases at the index level other than those included in the Indications for Use (e.g., rheumatoid arthritis, Diffuse Idiopathic Skeletal Hyperostosis (DISH), ankylosing spondylitis).

Precautions

Below is a list of precautions to be aware of as the safety and effectiveness of the Synergy Disc has not been established in patients with the following conditions:

- Over the age of 70
- Previous spine surgery at the level of the currently requiring surgery (other than nominal removal of part of the vertebral bone with spine joints intact)
- Only symptom is soreness of the neck muscles
- Very limited motion of the level requiring surgery
- Diseases which affect bone development or mineral levels
- Autoimmune diseases
- Insulin-dependent diabetes
- Current or extended use (more than 6 months) of any drug that may interfere with bone or soft tissue healing

Explant / Retrieval Procedure

Should the clinician determine that an explant or revision procedure of the Synergy Disc Implant be required, please contact Synergy Spine Solutions Inc. with as much notice as possible before the scheduled surgical procedure to request a Synergy Disc Retrieval Kit.

I. Once Synergy Spine Solutions receives the request and clinical data needed, a Retrieval Kit will be mailed overnight to the clinical site.
   a. The kit contains the necessary materials for packaging and shipping retrieved devices. All materials provided in the retrieval kit should assure that the mailing of the device back to Exponent is compliant with all IATA shipping regulations as discussed in ASTM F2995.
      i. The kit contains tissue cartridges and jars for the collection of tissues.
      ii. The kit contains separate bags and jars for each device component (superior endplate, polyethylene core, and inferior endplate).
   b. Included in the retrieval kit are instructions and retrieval and tissue data forms for collecting clinical information with regard to the implant components and associated tissues.
      i. The instructions contain an itemized list of materials needed for collecting the retrieved implant and any surrounding tissue.
      ii. The retrieval data form collects a subset of clinical information and information specific to the revision surgery. The data form includes a place for the surgeon or other representative to indicate if the device components were damaged during the revision surgery.
      iii. The tissue data forms collect information about the location and appearance of the retrieved tissues.

II. At the revision surgery, the clinician or company representative should take photographs of the device and any associated tissues.
   a. In addition to the photographs, the clinician or company representative should note if damage to the device occurred in vivo or during the removal process.
   b. Photographs of the associated tissues should be taken while the tissue is immersed in formalin.

III. After the revision surgery, the surgeon or Synergy Spine Solutions representative should package up the retrieved device and associated tissues (if available). Devices should not be sterilized or cleaned prior to shipment. At the same time, the data form should be completed. The device and associated data should be mailed back (overnight shipping when available) to Exponent using the provided pre-addressed box.

WARNINGS

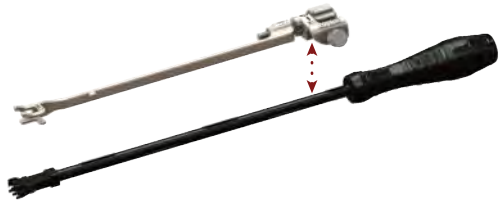
- Proper selection of implant size, including lordotic angle, and positioning in the patient of the Synergy Disc is critical for optimum performance. The Synergy Disc system should be used by experienced cervical spine surgeons after receiving suitable training regarding the specific requirements of this device.
- Due to the proximity of the implantation site to vascular and neurological structures, care should be taken to protect these critical areas.
- When reviewing treatment options for a specific patient, it is important to consider factors such as the patient's age, occupation, activity level, and degree of spinal degeneration. Proper patient selection is crucial to success.
- Exercise care not to damage implant (articulation surfaces) during installation. The Synergy Disc Implant and Instruments should be used together for proper implantation.
- The Synergy Disc is single use only. Do not re-sterilize or reuse the Synergy Disc. Re-sterilization and/or reusing the Synergy Disc may result in impaired performance and could cause patient injury and/or the communication of infectious diseases between patients

MRI SAFETY INFORMATION

MRI Safety Information

A person with Synergy Spine Solutions' Synergy Disc may be safely scanned under the following conditions. Failure to follow these conditions may result in injury.

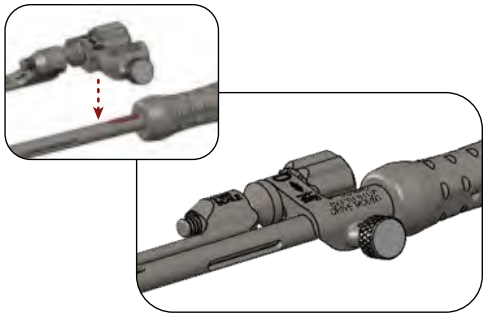
Parameter	Condition
Device Name	Synergy Disc
Static Magnetic Field Strength (B0)	1.5T and 3T
Maximum Spatial Field Gradient	40 T/m (4,000 G/cm)
RF Excitation	Circularly Polarized (CP)
RF Transmit Coil Type	Integrated Whole Body Transmit Coil
Operating Mode	Normal Operating Mode
Maximum Whole-Body SAR	2 W/kg (Normal Operating Mode)
Maximum Head SAR	3.2 W/kg (Normal Operating Mode)
Scan Duration	2 W/kg whole-body average SAR for 60 minutes of continuous RF(a sequence or back to back series/ scan without breaks)
Image Artifact	The presence of Synergy Disc may produce an image artifact of 1.7 cm when a slice thickness of 3 mm is used. Some manipulation of scan parameters may be needed to compensate for the artifact.



Modular Depth Stop Assembly

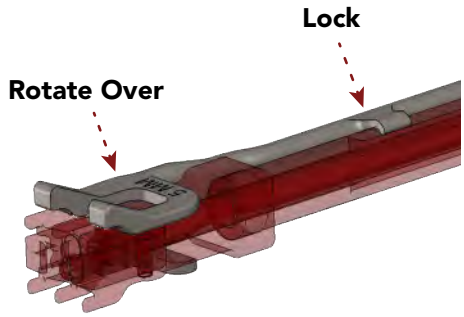
Tech Tip

You can orient the depth stop to be on the superior or inferior aspect of the inserter.



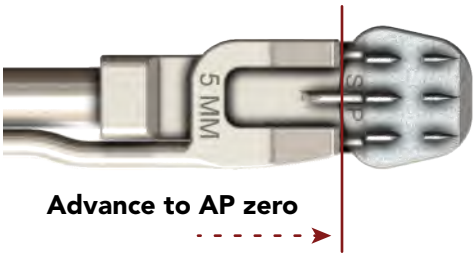
With the Depth Stop in the desired inferior or superior orientation, place the thumb screw "saddle mount" at the distal end of the Inserter handle over the shaft against the handle and tighten.

Rotate the forked end of the Depth Stop onto the tip of the inserter into the desired superior or inferior orientation.



Check to make sure the slot lock of the depth stop is engaged within the slot of the inserter.

Rotate the knurled knob clockwise to advance the stop until it reaches the anterior aspect of the implant/inserter interface. This prevents over insertion.



Insert implant under fluoroscopic guidance adjusting the depth stop as needed to advance and position the implant to the ideal position.

Instruments - Streamlined instrumentation and surgical approach

Driver

Trials

Small, Medium, Large
5mm & 6mm
Parallel 0° & Lordotic 6°

Pin Distractor

Pilot Cutter

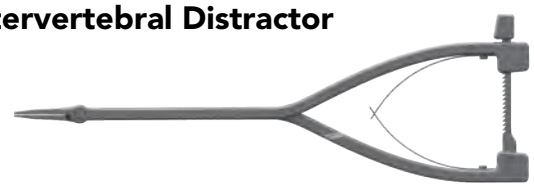
Small, Medium, Large

Distraction Pins

Ø3.5 x 12, 14, 16mm & Ø4.0 x 12, 14mm

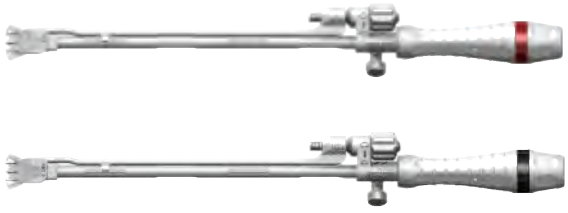
Universal Handles

Intervertebral Distractor



Inserter with Modular Depth Stop

5mm & 6mm

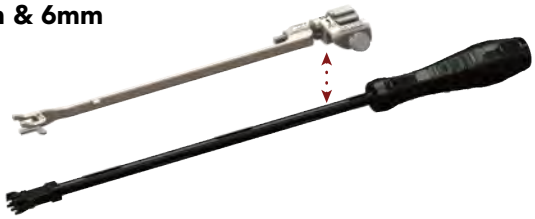


Tamp

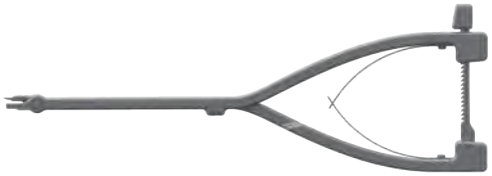
Hammer

Modular Depth Stop

5mm & 6mm



Remover



INSTRUMENT CATALOG

PRODUCT CODE	PRODUCT DESCRIPTION
1077-7000	**Synergy Disc Surgical Instrument Set**
1077-4440	Pilot Cutter, Small
1077-4441	Pilot Cutter, Medium
1077-4442	Pilot Cutter, Large
1077-4470-001	Disc Trial, Small, 5mm, 0°
1077-4470-003	Disc Trial, Small, 5mm, 6°
1077-4470-011	Disc Trial, Small, 6mm, 0°
1077-4470-013	Disc Trial, Small, 6mm, 6°
1077-4471-001	Disc Trial, Medium, 5mm, 0°
1077-4471-003	Disc Trial, Medium, 5mm, 6°
1077-4471-011	Disc Trial, Medium, 6mm, 0°
1077-4471-013	Disc Trial, Medium, 6mm, 6°
1077-4472-001	Disc Trial, Large, 5mm, 0°
1077-4472-003	Disc Trial, Large, 5mm, 6°
1077-4472-011	Disc Trial, Large, 6mm, 0°
1077-4472-013	Disc Trial, Large, 6mm, 6°
1077-5101-001	Inserter, 5mm
1077-5101-002	Inserter, 6mm
1077-5170	Intervertebral Distractor
1077-5190	Remover
1077-5280	Tamp
1077-5290	Hammer
1077-5400	Universal Handle
910-00001	Pin Distractor
910-00002-12	3.5mm x 12mm, Standard Distraction Pin
910-00002-14	3.5mm x 14mm, Standard Distraction Pin
910-00002-16	3.5mm x 16mm, Standard Distraction Pin
910-00002-22	4.0mm x 12mm, Rescue Distraction Pin
910-00002-24	4.0mm x 14mm, Rescue Distraction Pin
910-00016	Driver
910-00024	Depth Stop Drive Mount
910-00025-001	Depth Stop, 5mm
910-00025-002	Depth Stop, 6mm

IMPLANT CATALOG

PRODUCT DESCRIPTION			PRODUCT CODE
X-Small 12mm x 15mm	5mm	0°	1077-3050
		6°	1077-3056
	6mm	0°	1077-3060
		6°	1077-3066
	7mm	6°	1077-3076
Small 14mm x 15mm	5mm	0°	1077-3150
		6°	1077-3156
	6mm	0°	1077-3160
		6°	1077-3166
	7mm	6°	1077-3176
Small-Wide 14mm x 17mm	5mm	0°	1077-3450
		6°	1077-3456
	6mm	0°	1077-3460
		6°	1077-3466
	7mm	6°	1077-3476
Medium 16mm x 17mm	5mm	0°	1077-3250
		6°	1077-3256
	6mm	0°	1077-3260
		6°	1077-3266
	7mm	6°	1077-3276
Medium-Wide 16mm x 19mm	5mm	0°	1077-3550
		6°	1077-3556
	6mm	0°	1077-3560
		6°	1077-3566
	7mm	6°	1077-3576
Large 18mm x 19mm	5mm	0°	1077-3350
		6°	1077-3356
	6mm	0°	1077-3360
		6°	1077-3366
	7mm	6°	1077-3376

SYNERGY DISC®

https://synergyspinesolutions.com

patents: https://synergyspinesolutions.com/patents

synergyspinesolutions.com/eifu

2/2026

Synergy Spine Solutions Inc.
357 S. McCaslin Blvd, Ste 120
Louisville, CO 80027
United States of America

℞ Only

140-00004 REV H
Artwork: 655-00018-02 REV H

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