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METHOD FOR DEPLOYING A FUSION DEVICE FOR SACROILIAC JOINT FUSION

Abstract

A method for fusing a spinal sacroiliac joint and a surgical kit. The kit includes a bone-void filler, stabilization device or implant, a guide pin, a joint locator, a set of dilation tubes, a reamer, a novel directional cannula, a novel tapping cap, a novel drill guide, a drill bit, and a novel implant positioner. The method includes the steps of locating the sacroiliac joint, retracting the soft tissue exposing the graft site, removing any bone obstructions and preparing a relatively smooth graft site horizontal to the immediate sacroiliac joint, creating a cavity in the ilium and sacrum to a predetermined depth that spans the sacroiliac joint, inserting a novel stabilization implant into the cavity, and seating the implant within the cavity at a predetermined depth.

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Background/Summary

REFERENCE TO PENDING PRIOR PATENT APPLICATIONS [0001] This patent application is a continuation of pending prior U.S. patent application Ser. No. 15/899,577, filed Feb. 20, 2018 by VG Innovations, LLC and Tov Inge Vestgaarden for METHOD FOR DEPLOYING A FUSION DEVICE FOR SACROILIAC JOINT FUSION (Attorney's Docket No. VG-2425.08.CON 3), which patent application in turn is a continuation of prior U.S. patent application Ser. No. 15/195,191, filed Jun. 28, 2016 by VG Innovations, LLC for METHOD FOR DEPLOYING A FUSION DEVICE FOR SACROILIAC JOINT FUSION (Attorney's Docket No. VG-2425.08.CON 2), which patent application in turn is a continuation of prior U.S. patent application Ser. No. 14/537,327, filed Nov. 10, 2014 by VG Innovations, LLC for METHOD FOR DEPLOYING A FUSION DEVICE FOR SACROILIAC JOINT FUSION (Attorney's Docket No. VG-2425.08.CON), which patent application in turn is a continuation of prior U.S. patent application Ser. No. 13/625,180, filed Sep. 24, 2012 by VG Innovations, LLC for METHOD FOR DEPLOYING A FUSION DEVICE FOR SACROILIAC JOINT FUSION (Attorney's Docket No. VG-2425.08). [0002] The four (4) above-identified patent applications are hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0003] This invention relates to surgical methods and apparatus in general, and more particularly to surgical methods and apparatus for fusing sacroiliac joints.

2. Description of the Related Art

[0004] Lower back pain is a common ailment among the population and results in pain and suffering as well as loss of work time. Effective treatments for lower back pain will alleviate considerable patient suffering and provide economic benefits by reducing employee absenteeism. Until recently, many complaints of lower back pain and leg pain have been attributed to herniated discs or other injuries to the spinal column. However, extensive therapy and treatment has often been unsuccessful in alleviating such pain. Recently, it has been found that some of this lower back and leg pain can be attributed to symptomatic sacroiliac joint dysfunction or instability.

[0005] The sacroiliac joint is located at the juncture of the ilium, the upper bone of the pelvis, commonly called the hip bone, and the sacrum at the base of the lumbar spine, where it connects with the L5 vertebra. The function of the sacroiliac joint is the transmission of forces from the spine to the lower extremities and vice-versa. The joint is supported by a range of ligaments, including the sacroiliac ligament at the base of the joint and the anterior sacroiliac ligament at the top of the joint.

[0006] The sacroiliac joint has a limited range of motion. Nutation, the relative movement between the sacrum and ilium, is typically one to two degrees. Despite the limited range of motion, a patient's sacroiliac joint can become damaged resulting in hypermobility of the joint. Hypermobility is very difficult to diagnose due to the small range of motion. Therefore, lower back pain or leg pain caused by sacroiliac joint dysfunction, e.g. degenerative sacroiliitis, inflammatory sacroiliitis, iatrogenic instability of the sacroiliac joint, osteitis condensans ilii, or traumatic fracture dislocation of the pelvis, often goes misdiagnosed or undiagnosed.

[0007] In patients where sacroiliac joint pain is unresponsive to non-operative treatments, e.g. medication, physical therapy, chiropractic care and steroid injections, surgical stabilization is prescribed. Fusion is a surgical treatment to relieve pain generated from joint dysfunction.

[0008] Accordingly, it is a general objective of this invention to provide a method to deliver a device for correcting symptomatic sacroiliac joint dysfunction or instability, for enhancing stability for purposes of immobilizing a joint, and for fusing two opposed bone structures across the joint.

SUMMARY OF THE INVENTION

[0009] The long-standing but heretofore unfulfilled need for improved devices and methods for effecting sacroiliac joint fusion is now met by a new, useful, and nonobvious invention.

[0010] The present invention includes a surgical kit for use in a method for fusing a sacroiliac joint, preferably including a stabilization implant, a guide pin, a joint locator, dilation tubes, cutting tools such as a reamer or cannulated reamer, a drill bit, a cutter, and a punch, a novel directional cannula, a novel taping cap, a novel drill guide, and a novel implant positioner.

[0011] The invention further includes a method for fusing a sacroiliac joint with an implant, preferably comprising the steps of locating the sacroiliac joint, inserting a guide pin or a joint locator into the sacroiliac joint normal to the immediate bone surfaces on either side of the joint, retracting soft tissue via dilation tubes, sliding a cannulated reamer over the guide pin or the joint locator until a distal end of the reamer engages the sacroiliac joint creating a relatively flat graft site, removing the reamer and guide pin or joint locator, inserting a directional cannula into the sacroiliac joint aligning the teeth located on the distal end of the cannula with the plane of the joint, tapping a proximal end of the directional cannula to reversibly secure the alignment teeth into the sacroiliac joint, inserting the drill guide into the directional cannula, inserting a drill bit through the drill guide and drilling a cavity within the sacroiliac joint to a predetermined depth, removing the drill bit from within the drill guide, removing the drill guide from within the directional cannula, inserting the implant through the directional cannula until the distal end of the implant engages the cavity, inserting an implant positioner to seat the implant at a prescribed depth completely within the cavity, proportionately distributed in the sacrum and ilium, removing the implant positioner from within the directional cannula, removing the directional cannula, and removing the dilation tube.

[0012] These and other features of the invention will become apparent from the following detailed description of the preferred embodiments of the invention.

[0013] The present invention includes a novel apparatus for effecting sacroiliac joint fusion. The novel structure includes a sacroiliac joint stabilization implant for disposition between the opposing articular surfaces of a sacroiliac joint to immobilize the sacroiliac joint and facilitate fusion between the sacrum and ilium.

[0014] More particularly, in one form of the present invention, the novel sacroiliac joint stabilization implant includes an elongated body having a distal end, a proximal end and a longitudinal axis extending between the distal end and the proximal end. The elongated body has a cross-sectional profile characterized by a primary axis and a secondary axis, and at least one stabilizer extending radially outwardly from the elongated body in the secondary axis.

[0015] The elongated body has a length along the primary axis which is less than the combined width of the sacrum and ilium making up a sacroiliac joint, and at least one stabilizer has a width that is sized to make a press fit into the gap between the sacrum and ilium making up a sacroiliac

joint.
[0016] A novel method for fusing a sacroiliac joint includes the steps of providing a sacroiliac joint stabilization implant having an elongated body having a distal end, a proximal end and a longitudinal axis extending between the distal end and the proximal end. The method further includes the steps of providing the elongated body with a cross-sectional profile characterized by a primary axis and a secondary axis and providing at least one stabilizer that extends radially outwardly from the elongated body in the secondary axis.
[0017] The method steps further include the steps of forming the elongated body so that it has a length along the primary axis which is less than the combined width of the sacrum and the ilium making up a sacroiliac joint and forming the at least one stabilizer so that it has a width sized to make a press fit into the gap between the sacrum and ilium making up a sacroiliac joint.
[0018] Further method steps include the steps of deploying the sacroiliac joint stabilization implant in the sacroiliac joint so that the elongated body is simultaneously positioned within the sacrum and ilium of the sacroiliac joint and so that the at least one stabilizer is positioned within the gap between the sacrum and ilium and maintaining the sacroiliac joint stabilization implant in such position while fusion occurs.
[0019] Still further steps include deploying the stabilization implant in the joint so that the elongated body is simultaneously positioned within both of the bones of the joint and at least one stabilizer is positioned within the gap between the bones and maintaining the stabilization implant in this position while fusion occurs.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0020] These and other objects and features of the present invention will be more fully disclosed by the following detailed description of the preferred embodiments of the invention, which is to be considered together with the accompanying drawings wherein like numbers refer to like parts, and further wherein:
[0021] FIG. **1** illustrates a stabilization implant formed in accordance with the present invention;
[0022] FIG. **2** is a perspective view of a sacroiliac joint;
[0023] FIG. **3**A is a close-up perspective view of said sacroiliac joint and a drilled, bored, punched, or cut cavity;
[0024] FIG. **3**B is a close-up perspective view of said sacroiliac joint and said stabilization implant in the final position in the sacroiliac joint;
[0025] FIG. **4** is a perspective view of a guide pin;
[0026] FIG. **5** is a perspective view of a joint locator;
[0027] FIG. **6** is a perspective view of four dilation tubes of increasing diameters;
[0028] FIG. **7** is a perspective view of a cannulated reamer;
[0029] FIG. **8** is a perspective view of a novel directional cannula;
[0030] FIG. **9** is a perspective view of a novel tapping cap;
[0031] FIG. **10** is a perspective view of a novel drill guide;
[0032] FIG. **11** is a perspective view of a drill bit;
[0033] FIG. **12** is a perspective view of a novel implant positioner;
[0034] FIG. **13** is a perspective view of said dilation tubes positioned over said sacroiliac joint;
[0035] FIG. **14** is a perspective view of a said dilation tubes with said joint locator ensleeved within a lumen of the smallest diameter dilation tube;
[0036] FIG. **15** is a perspective view of said cannulated reamer ensleeved within the lumen of the largest diameter dilation tube, sliding over said joint locator;
[0037] FIG. **16** is a perspective view of a relatively flat graft site created horizontal to said

sacroiliac joint;
[0038] FIG. **16**A is a longitudinal sectional view of said graft site of FIG. **16**;
[0039] FIG. **17** is a perspective view of said directional cannula ensleeved within the lumen of said largest diameter dilation tube;
[0040] FIG. **17**A is a longitudinal sectional view of the distal end of the said directional cannula positioned in the sacroiliac joint of FIG. **17**;
[0041] FIG. **18** is a perspective view of said drill guide ensleeved in the lumen of said directional cannula with a non-centered guide hole positioned over an ilium bone;
[0042] FIG. **19** is a perspective view of said drill guide rotated **180** degrees and subsequently ensleeved in the lumen of said directional cannula with said non-centered guide hole now positioned over a sacrum bone;
[0043] FIG. **20** is a perspective view of said sacrum and ilium bones and a drilled, bored, punched, or cut cavity formed in said sacroiliac joint;
[0044] FIG. **21** is an exploded perspective view of said stabilization implant being loaded into said directional cannula;
[0045] FIG. **22** is a perspective view of said implant and said implant positioner ensleeved in the lumen of the directional cannula prior to final position; and
[0046] FIG. **23** is a perspective view of said stabilization implant in the final position in said sacroiliac joint.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0047] Referring now to FIG. **1**, it will there be seen that the novel sacroiliac stabilization implant, disclosed further in U.S. Pat. No. 8,162,981 to Vestgaarden, entitled “Method and Apparatus for Spinal Facet Fusion,” incorporated herein by reference, is denoted as a whole by the reference numeral **5**. Stabilization implant **5** generally includes body **10** and at least one stabilizer **15**.
[0048] Body **10** is an elongated element having structural integrity. Preferably the distal end of body **10** (and the distal end of stabilizer **15** as well) is chamfered as shown at **20** to facilitate insertion of fusion implant **5** into the sacroiliac joint. Preferably, as depicted in FIG. **1**, body **10** has a rounded rectangular cross-section, or an ovoid cross-section, a laterally-extended cross-section, or some other non-round cross-section, so as to inhibit rotation of body **10** about a longitudinal center axis.
[0049] At least one stabilizer **15** is received in the gap located between the opposing sacroiliac surfaces to prevent rotation of stabilization implant **5** within the sacroiliac joint. In one preferred embodiment of the invention, two stabilizers **15***a* and **15***b* are provided, one disposed along the upper surface of body **10** and one disposed along the lower surface of body **10**. Stabilizers **15** preferably have a width just slightly larger than the gap between the opposing articular surfaces of a sacroiliac joint so that the stabilizers can make a snug fit therebetween.
[0050] Stabilization implant **5** is inserted into a sacroiliac joint using a posterior approach. The posterior approach is familiar to spine surgeons, thereby providing an increased level of comfort for the surgeon.
[0051] In use, and referring now at FIG. **2**, an instrument is first used to determine plane **40** of sacroiliac joint **60**. Identifying the plane of the sacroiliac joint is important, since this is used to identify the proper position for cavity **45** (FIG. **3**A) which is to be formed across the sacroiliac joint to receive stabilization implant **5**.
[0052] At least one of the instruments includes a directional feature which is used to maintain the alignment of the instrumentation with the plane of the sacroiliac joint. A directional cannula may include a flat portion and the remaining instruments may include a flat portion on an opposite portion of the instrument so that the instruments may only be inserted through the cannula at zero degrees (0°), one hundred eighty degrees (180°), or both.
[0053] The directional cannula provides the passageway for the placement and insertion of a stabilization device, as well as for performing drilling/cutting or other preparatory work for

appropriate stabilization device embodiments.
[0054] The directional cannula can have an interior central passage of a circular cross section, oval cross section, rectangular cross section or other desired shape that provides the desired guide channel to deliver a stabilization device into cavity **45**.
[0055] After the proper position for cavity **45** has been identified, a drill (or reamer, punch, dremel, router, burr, etc.) is used to form cavity **45** in sacroiliac joint **60**. Cavity **45** is formed across plane **40** so that substantially one-half of cavity **45** is formed in sacrum **50**, and substantially one-half is formed in ilium **55**.
[0056] After cavity **45** has been formed in (or, perhaps more literally, across) the sacroiliac joint **60**, and now referring to FIG. **3**B, stabilization implant S is inserted into cavity **45**. More particularly, stabilization implant **5** is inserted into cavity **45** so that (i) main body **10** spans the gap between opposing sacrum **50** and ilium **55**, and (ii) stabilizers **15** extend between the opposing sacrum and ilium surfaces. Preferably, stabilization implant **5** is slightly oversized relative to cavity **45** so as to create a press fit. Stabilization implant **5** provides the stability and strength needed to immobilize the sacroiliac joint **60** while fusion occurs. Due to the positioning of stabilizers **15** between the opposing sacrum and ilium surfaces, and due to the non-circular cross-section of main body **10**, stabilization implant **5** is held against rotation within cavity **45**, which will in turn holds sacrum **50** and ilium **55** stable relative to one another.
Detailed Surgical Technique
[0057] A preferred surgical technique for using stabilization implant **5** employs guide pin **100** (FIG. **4**), joint locator **105** (FIG. **5**), dilation tubes **110**-**113** (FIG. **6**), cannulated reamer **120** (FIG. **7**), directional cannula **130** (FIG. **8**), tapping cap **135** (FIG. **9**), drill guide **140** (FIG. **10**), drill bit **150** (FIG. **11**), and implant positioner **160** (FIG. **12**)
[0058] First, the sacroiliac joint is localized indirectly by fluoroscopy, or directly by visualization during an open procedure. A path through soft tissue to the sacroiliac joint is then created via surgeon's preference, such as open, minimally-invasive, percutaneous, or arthroscopic.
[0059] A set of dilation tubes **110**-**113** (FIG. **13**) having increasing diameters is then inserted into the soft tissue opening in sequence of increasing diameters to sufficiently retract the soft tissue exposing a graft site.
[0060] Next, joint locator **105** (FIG. **14**) is slid into a lumen of dilation tube **110** until blade **106** engages sacroiliac joint **60** and is aligned with joint plane **40**. Then joint locator **105** is lightly tapped so as to insert joint locator blade **106** into sacroiliac joint **60** until positive stop **107** is engaged.
[0061] Next, internal dilation tubes **110**-**112** are removed from within the lumen of dilation tube **113**.
[0062] Cannulated reamer **120** is then slid over joint locator **105** to remove any bone obstructing the joint and to prepare the graft surface for receiving directional cannula **130** and stabilization implant **5** (FIG. **15**). The distal end of reamer **120** is advanced until it sufficiently engages sacroiliac joint **60**, thereby preparing a relatively flat graft surface perpendicular to sacroiliac joint **60** (FIGS. **16** and **16**A). The position of reamer **120** and joint locator **105** is verified by viewing the coronal and sagittal planes.
[0063] Reamer **120** and joint locator **105** are then removed from within the lumen of dilation tube **113**.
[0064] Next, directional cannula **130** is inserted into the lumen of dilation tube **113** until a distal end of cannula **130** engages sacroiliac joint **60** (FIG. **17**). Directional cannula teeth **131** are then aligned with plane **40** of sacroiliac joint **60**. Once teeth **131** of cannula **130** are aligned with plane **40**, directional cannula **130** is lightly tapped to insert cannula teeth **131** into sacroiliac joint **60** until positive stop **132** engages sacroiliac joint **60** (FIG. **17**A).
[0065] Drill guide **140** is then inserted into a lumen of directional cannula **130** with non-centered guide hole **141** positioned over iliac bone **55** (FIG. **18**). Drill guide **140** is advanced within the

lumen of directional cannula **130** until drill guide **140** reaches a mechanical stop on directional cannula **130**. Then, with drill guide **140** in place, irrigation fluid (e.g., a few drops of saline) is placed into the drill guide hole **141** positioned over iliac bone **55**. Next, drill bit **150** is inserted into guide hole **141** and used to drill a cavity in iliac bone **55**. Drilling continues until drill bit **150** reaches a mechanical stop on drill guide **140**. Then drill bit **150** is removed from the lumen of guide hole **141**. Next, with drill guide **140** remaining in position, irrigation fluid (e.g., a few drops of saline) is placed into central guide hole **142** of drill guide **140**. Drill bit **150** is then inserted in a lumen of guide hole **142** and used to drill a cavity in sacroiliac joint **60**, between sacrum **50** and ilium **55**. Next, drill bit **150** is removed from the lumen of guide hole **142**. Drill guide **140** is then removed from the lumen of directional cannula **130**.

[0066] Drill guide **140** is rotated **180** degrees, and is reinserted into the lumen of directional cannula **130** in order to drill sacrum **50** (FIG. **19**). With drill guide **140** in place, irrigation fluid (e.g., a few drops of saline) is placed into drill guide hole **141**, now positioned over sacrum **50**. Next, drill bit **150** is inserted into the lumen of guide hole **141** and used to drill a cavity in sacrum bone **50**. Drilling continues until drill bit **150** reaches a mechanical stop on drill guide **140**. Then drill bit **150** is removed from the lumen of guide hole **141**. Next, with drill guide **140** remaining in position, irrigation fluid (e.g., a few drops of saline) is placed into central guide hole **142** of drill guide **140**. Next, drill bit **150** is inserted into guide hole **142** and used to drill a cavity in sacroiliac joint **60**, between sacrum **50** and ilium **55**. Next, drill bit **150** is removed from guide hole **142** and drill guide **140** is removed from the lumen of directional cannula **130**.

[0067] This procedure creates cavity **45** (FIG. **20**) that is sufficiently deep and that is proportionately distributed in sacrum **50** and ilium **55** to receive stabilization implant **5**.

[0068] Stabilization implant **5** is then inserted, distal end first, into the lumen of directional cannula **130** (FIG. **21**). Next, implant positioner **160** is inserted into the lumen of directional cannula **130** and advanced until resistance is felt, indicating that the distal end of implant **5** has engaged cavity **45** (FIG. **22**). Next, implant positioner **160** is lightly tapped to drive implant **5** into cavity **45** created laterally across sacroiliac joint **60** (FIG. **23**). Stabilization implant **5** is preferably countersunk 1-2 mm into sacroiliac joint **60**.

[0069] Finally, implant positioner **160** and directional cannula **130** are removed from the lumen of dilation tube **113**. Dilation tube **113** is then removed from the soft tissue and the incision is closed.

[0070] The foregoing steps are repeated for additional locations in the current sacroiliac joint **60** and in contralateral sacroiliac joint **60**.

Alternative Surgical Technique

[0071] First, sacroiliac joint **60** is localized indirectly by fluoroscopy, or directly by visualization during an open procedure. Guide pin **100** is inserted into sacroiliac joint **60**, normal to immediate opposing joint surfaces when sacroiliac joint **60** is exposed, or drilled into joint **60** through the iliac crest when sacroiliac joint **60** is obstructed. The position of guide pin **100** is determined by viewing the coronal and sagittal planes. Guide pin **100** is then lightly tapped to insert guide pin **100** approximately 15-20 mm into sacroiliac joint **60**, along joint plane **40** (FIG. **3**A)

[0072] Next, a set of dilation tubes **110**-**113** (FIG. **6**) having increasing diameters is slid over guide pin **100** into the soft tissue in sequence of increasing diameters to sufficiently retract soft tissue exposing a graft site (FIG. **13**), Once a sufficient surgical area is exposed, internal dilation tubes **110**-**112** are removed from within the lumen of dilation tube **113**.

[0073] Next, referring to FIG. **15**, cannulated reamer **120** is slid over guide pin **100** within the lumen of dilation tube **113** to remove any bone obstructing sacroiliac joint **60** and to prepare the graft surface for receiving directional cannula **130** and fusion implant **5**. The distal end of reamer **120** is advanced until it sufficiently engages sacroiliac joint **60**, thereby preparing a relatively flat graft surface perpendicular to sacroiliac joint **60** (FIG. **16**A). The position of reamer **120** is verified by viewing the coronal and sagittal planes.

[0074] Next, reamer **120** and guide pin **100** are removed from within the lumen of dilation tube

113.
[0075] The previously disclosed steps of paragraphs through are followed to complete the procedure.
[0076] Numerous advantages are achieved by the present invention. For example, the present invention provides a fast, simple, minimally-invasive and easily reproduced approach for effecting sacroiliac joint fusion.
[0077] While stabilization implant **5** has been disclosed above in the context of fusing a sacroiliac joint, it should also be appreciated that stabilization implant **5** may be used to stabilize and fuse any joint having anatomy similar to the sacroiliac joint, i.e., a pair of opposing bony surfaces defining a gap therebetween, with the stabilizer of the stabilization implant being sized to be positioned within the gap. By way of example but not limitation, the stabilization implant may be used in small joints such as the fingers, toes, etc.
[0078] It should be understood that many additional changes in the details, materials, steps and arrangements of parts, which have been herein described and illustrated in order to explain the nature of the present invention may be made by those skilled in the art while still remaining within the principles and scope of the invention.
[0079] It will be seen that the advantages set forth above, and those made apparent from the foregoing description, are efficiently attained. Since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matters contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Claims

1. A method for fusing a sacroiliac joint, comprising the steps of: creating a cavity in an iliac bone and a sacrum spanning said sacroiliac joint; and filling said cavity with a bone void filler.
2. A method for fusing a sacroiliac joint according to claim 1, further comprising the step of: accessing the sacroiliac joint.
3. A method for fusing a sacroiliac joint according to claim 1, further comprising the steps of: retracting soft tissue to expose the sacroiliac joint.
4. A method for fusing a sacroiliac joint according to claim 1, further comprising the steps of: punching a cavity in an iliac bone and a sacrum spanning said sacroiliac joint.
5. A method for fusing a sacroiliac joint according to claim 1, further comprising the steps of: drilling a cavity in an iliac bone and a sacrum spanning said sacroiliac joint.
6. A method for fusing a sacroiliac joint according to claim 1, further comprising the steps of: inserting a stabilization device into said cavity.
7. A method for fusing a sacroiliac joint according to claim 6 wherein the stabilization device is associated with a bone growth promoter.
8. A method for fusing a sacroiliac joint according to claim 1, further comprising the steps of: localizing the sacroiliac joint; abrading sacroiliac joint surfaces; inserting a directional cannula into the sacroiliac joint until a distal end of said directional cannula engages the sacroiliac joint so that alignment teeth distally located on said directional cannula align in the sacroiliac joint; inserting a drill guide into a lumen of said directional cannula until a positive stop on said directional cannula is engaged; inserting a drill bit through said drill guide hole and drilling a cavity within the sacrum and iliac bones to a predetermined depth; removing said drill bit from a lumen of said drill guide; removing said drill guide from said lumen of said directional cannula; inserting a stabilization device through said lumen of said directional cannula into said cavity; and removing said directional cannula from said sacroiliac joint.
9. A method for fusing a sacroiliac joint according to claim 8, further comprising the steps of: inserting a joint locator into the sacroiliac joint until a distal end of said joint locator engages the

sacroiliac joint so that a joint locator blade distally located on said joint locator aligns in the sacroiliac joint; abrading sacroiliac joint surfaces using said joint locator blade; sliding a directional cannula over said joint locator until a distal end of said directional cannula engages the sacroiliac joint so that alignment teeth distally located on said directional cannula align in the sacroiliac joint; removing said joint finder from a lumen of said directional cannula.

10.-**12**. (canceled)

13. A method for fusing a sacroiliac joint located between an iliac bone and a sacrum, said method comprising: providing an implant comprising: a body having a distal end, a proximal end, a top surface and a bottom surface; a first stabilizer extending outwardly from said top surface of said body, and a second stabilizer extending outwardly from said bottom surface of said body, said fist stabilizer and said second stabilizer being diametrically opposed from one another; forming an opening in the sacroiliac joint such that a portion of the opening is formed in the iliac bone and a portion of the opening is formed in the sacrum; and inserting said implant into said opening such that a portion of said body of said implant contacts the iliac bone, a portion of said body of said implant contacts the sacrum, and said first stabilizer and said second stabilizer of said implant are disposed in the joint space, between the iliac bone and the sacrum, such that the first and second stabilizers extend parallel to the joint line.

14. A method according to claim 13 wherein said body of said implant comprises a non-circular cross-section.

15. A method according to claim 14 wherein said body of said implant comprises an ovoid cross-section.

16. A method according to claim 13 wherein said first stabilizer comprises a distal end and a proximal end, said second stabilizer comprises a distal end and a proximal end, and further wherein at least one of said distal end of said first stabilizer and said distal end of said second stabilizer is chamfered.

17. A method according to claim 16 wherein said distal end of said body of said implant is chamfered, and further wherein said chamfered distal end of said body of said implant is aligned coincident with said chamfered distal end of at least one of said first stabilizer and said second stabilizer.

18. A method according to claim 13 further comprising: providing a directional cannula comprising: a tube having a distal end, a proximal end, and a lumen extending therebetween; a pair of alignment teeth disposed at said distal end of said tube of said directional cannula; and inserting said alignment teeth of said directional cannula into the sacroiliac joint until said distal end of said tube of said directional cannula engages the ilium and the sacrum.

19. A method according to claim 18 further comprising: providing a drill guide comprising: a tube having a distal end and a proximal end, said tube being sized to be received in said lumen of said directional cannula; a central guide hole extending between said proximal end of said tube of said drill guide and said distal end of said tube of said drill guide, said central guide hole being sized to receive a drill bit; an non-centered guide hole extending between said proximal end of said tube of said drill guide and said distal end of said tube of said drill guide, said non-centered guide hole extending parallel to said central guide hole and said central guide hole being sized to receive a drill bit; inserting said drill guide into said directional cannula such that said central guide hole of said drill guide is aligned with the sacroiliac joint, and such that said non-centered guide hole is aligned with one of the ilium and the sacrum; inserting a drill into said central guide hole of said drill guide and drilling a hole into a portion of the ilium and the sacrum opening on the sacroiliac joint; inserting a drill into said non-centered guide hole of said drill guide and drilling a hole into one of the ilium and the sacrum; removing said drill guide from said directional cannula, rotating said drill guide 180°, and inserting said rotated drill guide into said directional cannula such that said non-centered guide hole is aligned with the other of the ilium and the sacrum; and inserting a drill into said non-centered guide hole of said drill guide and drilling a hole into the other of the

ilium and the sacrum.
20. A method according to claim 19 wherein the holes that are drilled into the sacrum and the ilium combine to form a cavity sized to receive said body of said implant.
21. A method according to claim 20 wherein said body of said implant is sized to be slightly larger than said cavity formed in the sacrum and the ilium, such that said body of said implant makes a press fit with the sacrum and the ilium when said implant is inserted into said cavity.
22. A method according to claim 21 wherein said implant is countersunk in said cavity.
23. A method according to claim 13 wherein said body of said implant comprises a cross-sectional profile characterized by a primary axis and a secondary axis, and further wherein said first stabilizer and said second stabilizer extend outwardly from said top and bottom surface of said body, respectively, parallel to said secondary axis.
24. A method according to claim 23 wherein the width of said first stabilizer and said secondary stabilizer measured along said primary axis is sized to make a press fit into the gap between the iliac bone and the sacral bone.
25. A method according to claim 13 wherein said opening formed in the sacroiliac joint is formed using a posterior approach, and further wherein said implant is inserted into said opening using a posterior approach.
26. A method according to claim 13 wherein said portion of said opening formed in the iliac bone is substantially one half of said opening, and said portion of said opening formed in the sacral bone is substantially one half of said opening.