INSTRUCTIONS FOR USE

This Clinical Policy provides assistance in interpreting Oxford benefit plans. Unless otherwise stated, Oxford policies do not apply to Medicare Advantage members. Oxford reserves the right, in its sole discretion, to modify its policies as necessary. This Clinical Policy is provided for informational purposes. It does not constitute medical advice. The term Oxford includes Oxford Health Plans, LLC and all of its subsidiaries as appropriate for these policies.

When deciding coverage, the member specific benefit plan document must be referenced. The terms of the member specific benefit plan document [e.g., Certificate of Coverage (COC), Schedule of Benefits (SOB), and/or Summary Plan Description (SPD)] may differ greatly from the standard benefit plan upon which this Clinical Policy is based. In the event of a conflict, the member specific benefit plan document supersedes this Clinical Policy. All reviewers must first identify member eligibility, any federal or state regulatory requirements, and the member specific benefit plan coverage prior to use of this Clinical Policy. Other Policies may apply.

UnitedHealthcare may also use tools developed by third parties, such as the MCG™ Care Guidelines, to assist us in administering health benefits. The MCG™ Care Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

APPLICABLE LINES OF BUSINESS/PRODUCTS

This policy applies to Oxford Commercial plan membership.

BENEFIT CONSIDERATIONS

Before using this policy, please check the member specific benefit plan document and any federal or state mandates, if applicable.

Essential Health Benefits for Individual and Small Group

For plan years beginning on or after January 1, 2014, the Affordable Care Act of 2010 (ACA) requires fully insured non-grandfathered individual and small group plans (inside and outside of Exchanges) to provide coverage for ten categories of Essential Health Benefits ("EHBs"). Large group plans (both self-funded and fully insured), and small group ASO plans, are not subject to the requirement to offer coverage for EHBs. However, if such plans choose to provide coverage for benefits which are deemed EHBs, the ACA requires all dollar limits on those benefits to be removed on all Grandfathered and Non-Grandfathered plans. The determination of which benefits constitute EHBs is made on a state by state basis. As such, when using this policy, it is important to refer to the member specific benefit plan document to determine benefit coverage.
Sural or other nerve grafts to restore erectile function during radical prostatectomy are considered unproven and not medically necessary.

No comparative studies between nerve grafts and standard medical therapy (e.g., intracorporal injection or vacuum erection devices) have been completed. The evidence for nerve grafts for restoration of erectile function is derived mainly from non-randomized studies limited by small sample sizes. A randomized controlled trial was discontinued when it was determined that unilateral nerve-sparing radical prostatectomy was not effective.

**CLINICAL EVIDENCE**

Siddiqui et al. (2014) examined the long term outcome of sural nerve grafting (SNG) during radical retropubic prostatectomy (RRP) performed by a single surgeon. Sixty-six patients with clinically localized prostate cancer and preoperative International Index of Erectile Function (IIEF) score >20 who underwent RRP were included. Neurovascular bundle (NVB) excision was performed if the risk of side-specific extra-capsular extension (ECE) was >25% on Ohori’s nomogram. SNG was harvested by a plastic surgeon, contemporaneously as the urologic surgeon was performing RRP. IIEF questionnaire was used pre- and postoperatively and at follow-up (3 years). Recovery of potency was defined as postoperative IIEF-EF domain score >22. There were 43 (65%) unilateral SNG and 23 (35%) bilateral SNGs. The mean preoperative IIEF score was 23.4+1.6. Long-term assessment 19 patients (28.8%) had IIEF score >22. The IIEF-EF scores for those who had unilateral SNG and bilateral SNG were 12.9+4.9 and 14.8+5.3 respectively. The authors concluded that SNG can potentially improve EF recovery for potent men with higher stage prostate cancer undergoing RP the contemporaneous, multidisciplinary approach provides a good quality graft while expediting the procedure without interrupting the work-flow. However, the evidence is insufficient to conclude that this surgical technique is equivalent to bilateral nerve sparing prostatectomy or that long-term outcomes are improved by nerve grafting.

Davis et al. (2009) wanted to evaluate whether unilateral nerve-sparing (UNS) radical prostatectomy (RP) plus sural nerve grafting (SNG) would result in 50% relative improvement in potency at 2 years compared to UNS RP alone. The
plan was to enroll 200 patients from October 2001–May 2006 in a randomized clinical trial from a single academic center. After 107 patients were randomized in a 3:2 ratio (66 SNG, 41 controls), a protocol-planned interim analysis was performed which reflected potency rates of 18 of 41 (44%) in the SNG group and 10 of 23 (43%) in the control group. Based upon slower-than-estimated accrual (8 per month planned vs 2 per month actual) and a <5% posterior probability that the groups would show a difference, early termination of the trial was recommended by the Data Monitoring Committee. Using data gathered from the 107 participants, the authors concluded that in this single-institution randomized study, unilateral SNG did not result in an increased potency rate at 2 years compared to UNS RP alone based upon a threshold significance level of at least a 20% (absolute) improvement. Secondary endpoints also did not show an improvement in time to potency or urinary function at 1 year. Based upon the power of this study, a smaller benefit could not be excluded. The authors believed that future study designs should anticipate inconsistent compliance with penile rehabilitation and 20–30% patient attrition.

Sugimoto et al. (2009) evaluated 24 patients who underwent unilateral nerve-sparing with contralateral cavernous nerve-grafting or bilateral nerve-grafting and 64 patients who underwent prostatectomy without nerve-sparing procedure. Patients in the nerve-grafting group who recovered potency demonstrated higher sexual function scores compared with those without nerve-sparing procedure. However, the majority of these patients were not satisfied with their sexual function.

Kuwata et al. (2007) prospectively investigated health-related quality of life (HR-QOL), including sexual function in 66 patients who underwent nerve grafting during a radical prostatectomy in comparison with those who underwent a non-nerve-sparing radical prostatectomy (22 patients had nerve-grafting procedures 44 underwent non-nerve-sparing and non-nerve-grafting procedures). The observation periods ranged from 12-46 months (median: 29 months). For individuals who had nerve-sparing graft procedures (bilateral or unilateral) the sexual function score was significantly better than in the non-nerve-sparing/non-nerve-grafting patients. The sexual bother score, however, was more serious for the patients who underwent nerve-grafting surgery than for the non-nerve-sparing/non-nerve-grafting patients.

Porpiglia et al. (2005) evaluated 29 men who underwent laparoscopic radical prostatectomy with deliberate wide unilateral neurovascular bundle resection and preservation of the contralateral bundle. Fifteen men (group A) had an interposition sural nerve graft on the sectioned bundle, and 14 (group B) had laparoscopic radical prostatectomy with preservation of the unilateral bundle only. Erectile function was evaluated after surgery, and at 3, 8, 12 and 18 months, using the five-item version of the International Index of Erectile Function (IIEF-5) questionnaire. The follow-up was complete for 12 men in group A and 10 in group B. Group A had significantly higher erectile function scores on the IIEF-5 at 12 and 18 months than immediately after surgery, whereas in group B the improvement was not statistically significant. According to the investigators, the study results suggest that laparoscopic sural nerve grafting during radical prostatectomy is feasible and safe; however, it cannot be concluded that sural nerve grafting is more effective than preserving the neurovascular bundle alone in retaining sexual potency.

Saito et al. (2007) evaluated 64 patients who underwent a radical prostatectomy and intraoperative electrophysiological confirmation of cavernous nerve preservation. Twelve patients underwent a unilateral interposition sural nerve graft (UNG) for the resected neurovascular bundle. Twenty-one and 31 patients underwent bilateral nerve-sparing (BNS) and unilateral nerve-sparing (UNS) surgery without a nerve graft, respectively. As the age of patients was significantly younger in the UNG group than in the other groups, age-matched analysis also was conducted. In the age-matched analysis, the postoperative sexual function (SXF) score of the UNG group showed an intermediate level of recovery between those of the BNS and UNS groups at 12 months and reached the same level as the score at 12 months of the UNS group at 18 months postoperatively. The difference in the SXF score between the UNG and UNS groups began to appear after 6 months postoperatively and increased steadily with time. However, the background factors, such as the baseline SXF score, the usage rate of phosphodiesterase 5 inhibitors, and the rate of comorbidities were different between the UNG and UNS groups.

A prospective study by Namiki et al. (2007) evaluated 113 patients undergoing radical retropubic prostatectomy for the rate of recovery of urinary continence and sexual potency. Patients were classified into 3 groups according to the degree of nerve sparing; unilateral nerve preservation with contralateral sural nerve graft interposition, bilateral nerve sparing, and unilateral nerve sparing. The bilateral nerve sparing group showed the fastest recovery, although by 24 months there were no significant differences observed between the bilateral nerve sparing group and the unilateral nerve sparing group with sural nerve grafting. The bilateral nerve sparing group reported a better sexual function score than the unilateral nerve sparing group throughout the postoperative period. During the first year postoperatively, the bilateral nerve sparing group and the unilateral nerve sparing group with sural nerve grafting had better urinary function results than the unilateral nerve sparing group. The authors concluded that the nerve graft procedure may contribute to the recovery of urinary function as well as sexual function after radical retropubic prostatectomy; however these findings need to be validated in a randomized trial.
According to the National Comprehensive Care Network (NCCN) prostate cancer guideline, replacement of resected nerves with nerve grafts has not been shown to be beneficial for recovery of erectile function after radical prostatectomy (NCCN 2016).

Preliminary evidence from some studies suggests that nerve grafting with unilateral nerve sparing radical prostatectomy may improve rates of return of sexual and urinary function. However, the evidence is insufficient to conclude that this surgical technique is equivalent to bilateral nerve sparing prostatectomy or that long-term outcomes are improved by nerve grafting.

**U.S. FOOD AND DRUG ADMINISTRATION (FDA)**

Sural nerve transplant is a procedure, and as such, is not regulated by the FDA.

**REFERENCES**

The foregoing Oxford policy has been adapted from an existing UnitedHealthcare national policy that was researched, developed and approved by UnitedHealthcare Medical Technology Assessment Committee. [2016T0372N]


**POLICY HISTORY/REVISION INFORMATION**

<table>
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<th>Date</th>
<th>Action/Description</th>
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<tr>
<td>10/01/2016</td>
<td>- Reformatted and reorganized policy; transferred content to new template</td>
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<tr>
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<td>- Updated benefit considerations; added instruction to check the member specific</td>
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<td>• Updated supporting information to reflect the most current clinical evidence and references; no change to coverage rationale or list of applicable codes</td>
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