

Corporate Medical Policy

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

File Name: intra_articular_hyaluronan_injections_for_treatment_of_osteoarthritis_of_the_knee
Origination: 12/1997
Last CAP Review: 6/2019
Next CAP Review: 6/2020
Last Review: 6/2019

Description of Procedure or Service

Intra-articular injection of hyaluronan (HA) into osteoarthritic joints is thought to replace endogenous HA, restore the viscoelastic properties of the synovial fluid, and improve pain and function. The majority of studies to date have assessed HA injections for knee osteoarthritis, and this is the U.S. Food and Drug Administration (FDA) -approved indication. Other joints, such as the hip and shoulder, are currently being investigated for intra-articular HA treatment of osteoarthritis (OA).

Hyaluronan (HA), also known as hyaluronate or hyaluronic acid, is a naturally occurring macromolecule that is a major component of synovial fluid and is thought to contribute to its viscoelastic properties. Chemical crosslinking of hyaluronan increases its molecular weight; crosslinked hyaluronans are referred to as hylans. In osteoarthritis, the overall length of HA chains present in cartilage and the HA concentration in the synovial fluid are decreased. Intra-articular injection of HA (IAHA) has been proposed as a means of restoring the normal viscoelasticity of the synovial fluid in patients with osteoarthritis. This treatment has been called viscosupplementation. Currently, no curative therapy is available for OA, and thus the overall goals of management are to reduce pain and prevent disability.

The FDA has not approved intra-articular hyaluronan for joints other than the knee.

*****Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

Policy

BCBSNC will provide coverage for intra-articular hyaluronan injections when it is determined to be medically necessary because the medical criteria and guidelines noted below are met and a preferred product is used. Preferred products include Durolane®, Gelsyn-3™ and Synvisc/Synvisc-One®.

Benefits Application

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

When Intra Articular Hyaluronan Injections are covered

Intra-articular hyaluronan injections may be considered medically necessary for the treatment of pain in osteoarthritis of the knee when the following criteria are met:

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

1. The patient has tried and failed or has a clinical contraindication/intolerance to Synvisc/Synvisc-One® and Durolane®/Gelsyn-3™; AND
2. The patient is not scheduled to undergo a total knee replacement within 6 months of starting therapy; AND
3. Conservative therapy consisting of exercise, physical therapy or weight loss, and pharmacologic therapy consisting of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs) has failed to provide functional improvement after at least 3 months, or the individual is unable to tolerate conservative therapy; AND
4. The patient has at least one of the following:
 - a. Evidence of joint space narrowing, subchondral sclerosis, osteophytes, and subchondral cysts present on radiographs; OR
 - b. Knee pain accompanied by at least 5 of the following:
 - i. Crepitus
 - ii. Erythrocyte sedimentation rate (ESR) less than 40 mm/hr
 - iii. Bony enlargement
 - iv. Bony tenderness
 - v. Less than 30 minutes of morning stiffness
 - vi. No palpable warmth of synovium
 - vii. Over 50 years of age
 - viii. Rheumatoid factor less than 1:40 titer (agglutination method)
 - ix. Synovial fluid signs (clear fluid of normal viscosity and white blood cells less than 2000/mm³)

Additional treatment series of intra articular hyaluronan injections may be considered medically necessary when the following criteria are met:

- Initial criteria for use of intra articular hyaluronan injections were met, AND
- Medical record documentation shows a reduction in the dose of analgesics/anti-inflammatory medication and significant improvement in pain and functional capacity following the previous series of injections, AND
- At least 6 months have lapsed since the completion of the prior treatment course.

When Intra Articular Hyaluronan Injections are not covered

The use of intra-articular hyaluronan injections in the knee is not covered when the above criteria are not met.

Intra-articular injections in joints other than the knee and for indications outside of osteoarthritis of the knee are considered investigational.

Policy Guidelines

In May 2013, the American Academy of Orthopaedic Surgeons (AAOS) published the second edition of an evidence based guideline titled, "Treatment of Osteoarthritis of the Knee." In these guidelines, the AAOS does not recommend using hyaluronic acid for patients with symptomatic osteoarthritis of the knee. This rationale is based on limitations in the literature, which include variable quality of studies, a large degree of heterogeneity in outcomes, and possible publication bias.

For individuals who have osteoarthritis of joints other than the knee who receive IA hyaluronan injections, the evidence includes RCTs, systematic reviews of RCTs, and observational studies. Relevant outcomes are symptoms, functional outcomes, and treatment-related morbidity. Meta-analyses of RCTs either have not found statistically significant benefits of the procedure on health outcomes or have found benefits that were statistically, but likely not clinically, significant (eg,

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

0.27-point improvement on a 10-point visual analog scale for hip osteoarthritis). The evidence is insufficient to determine the effects of the technology on health outcomes.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: J7318, J7320, J7321, J7322, J7323, J7324, J7325, J7326, J7327, J7328, J7329, J3490

| Code | Drug Name | # of Billable Units per Injection | # of Injections per Treatment Course |
|-------|------------------------------|-----------------------------------|--------------------------------------|
| J7318 | Durolane | 60 | 1 |
| J7320 | GenVisc | 25 | 3-5 |
| J7321 | Hyalgan, Supartz FX, Visco-3 | 1 | 3-5 |
| J7322 | Hymovis | 24 | 2 |
| J7323 | Euflexxa | 1 | 3 |
| J7324 | Orthovisc | 1 | 3-4 |
| J7325 | Synvisc | 16 | 3 |
| J7325 | Synvisc-One | 48 | 1 |
| J7326 | Gel-One | 1 | 1 |
| J7327 | Monovisc | 1 | 1 |
| J7328 | Gelsyn-3 | 168 | 3 |
| J7329 | TriVisc | 25 | 3 |

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

MEDLINE search January 1996 through December 1997

USPDI

Consultant Review, March 1997

Medical Policy Advisory Group, 5/28/98

Specialty Matched Consultant Advisory Group 11/1999

Medical Policy Advisory Group, 12/2/1999

BCBSA Medical Policy Reference Manual 8/18/2000, 2.01.31

Medical Policy Advisory Group - 10/2000

BCBSA Medical Policy Reference Manual 5/31/01; 2.01.31

Specialty Matched Consultant Advisory Panel - 8/2002

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 4/29/03

Hammesfahr JF, Knoop AB, Stitik T. (June 2003). Safety of intra-articular hyaluronates for pain associated with osteoarthritis of the knee. *Am J Orthop*, 32(6), 277-83. Retrieved from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12834190.

Hamburger MI, Lakhanpal S, Mooar PA, Oster D. (April 2003). Intra-articular Hyaluronans: a review of product-specific safety profiles. *Semin Arthritis Rheum*, 32(5), 296-309. Retrieved from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12701040.

Waddell DD, Cefalu CA, Bricker DC. (2003). An open-label study of a second course of hylan G-F 20 for the treatment of pain associated with knee osteoarthritis. *Curr Med Res Opin*, 19(6), 499-507. Retrieved from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14594522.

Waddell DD. (2003). The tolerability of viscosupplementation: low incidence and clinical management of local adverse events. *Curr Med Res Opin*, 19(7), 575-80. Retrieved from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14626291.

Lo GH, LaValley M, McAlindon T, Felson DT. (December 2003). Intra-articular hyaluronic acid in treatment of knee osteoarthritis: a meta-analysis. *JAMA*, 290(23), 3115-21. Retrieved from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14679274.

Caborn D, Rush J, Lanzer W, Parenti D, Murray C; Synvisc 901 Study Group. (February 2004). A randomized, single-blind comparison of the efficacy and tolerability of hylan G-F 20 and triamcinolone hexacetonide in patients with osteoarthritis of the knee. *J Rheumatol*, 31(2), 333-43.

Lee S, Park D, Chmell SJ. (April 2004). Viscosupplementation with hylan G-F 20 (Synvisc): pain and mobility observations from 74 consecutive patients. *J Knee Surg*, 17(2), 73-7.

Goldberg VM, Coutts RD. (February 2004). Pseudoseptic reactions to hylan viscosupplementation: diagnosis and treatment. *Clin Orthop*, (419), 130-7.

Specialty Matched Consultant Advisory Panel - 7/2004

BCBSA TEC Special Report [Electronic Version]. February 2005.

Bellamy N, Campbell J, Robinson V, Gee T, Bourne R, Wells G. Viscosupplementation for the treatment of osteoarthritis of the knee. *The Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD005321. DOI: 10.1002/14651858.CD005321.

Samson DJ, Grant MD, Ratko TA, Bonnell CJ, Ziegler KM, Aronson N. Treatment of Primary and Secondary Osteoarthritis of the Knee. Evidence Report/Technology Assessment No. 157 (Prepared by Blue Cross and Blue Shield Association Technology Evaluation Center Evidence-based Practice Center under Contract No. 290-02-0026). AHRQ Publication No. 07-E012. Rockville, MD: Agency for Healthcare Research and Quality. September 2007. Retrieved from <http://archive.ahrq.gov/downloads/pub/evidence/pdf/oaknee/oaknee.pdf>

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

Dagenais S. Intra-articular hyaluronic acid (viscosupplementation) for knee osteoarthritis. [Issues in emerging health technologies issue 94]. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2006. Retrieved 5/20/08 from http://www.cadth.ca/media/pdf/E0010_viscosupplementation_cetap_e.pdf

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 12/13/07

National Institute for Health and Clinical Excellence (NICE). National Collaborating Centre for Chronic Conditions. Osteoarthritis: national clinical guideline for care and management in adults. London: Royal College of Physicians, 2008. Retrieved from <http://www.nice.org.uk/nicemedia/pdf/CG059FullGuideline.pdf>

Chevalier X, Jerosch P, Goupille P, et al. (March 2009). Single, intra-articular treatment with 6 ml hylan G-F 20 in patients with symptomatic primary osteoarthritis of the knee: a randomised, multicentre, double-blind, placebo controlled trial. *Ann Rheum Dis.* 69(1): 113–119. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2789938/?tool=pubmed>

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 07/09/09

Specialty Matched Consultant Advisory Panel review 7/2010

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 02/10/11

Specialty Matched Consultant Advisory Panel review 7/2011

American College of Rheumatology Subcommittee on Osteoarthritis Guidelines. Recommendations for the Medical Management of Osteoarthritis of the Hip and Knee. 2000. Retrieved from: <http://www.rheumatology.org/practice/clinical/guidelines/oa-mgmt.asp>.

American Academy of Orthopaedic Surgeons. Treatment of osteoarthritis of the knee (nonarthroplasty). 2008. Retrieved from: <http://www.aaos.org/research/guidelines/OAKguideline.pdf>.

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 2/9/12

Specialty Matched Consultant Advisory Panel review 7/2012

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 2/14/13

American Academy of Orthopaedic Surgeons (AAOS). Treatment Of Osteoarthritis Of The Knee. Evidence-Based Guideline 2nd Edition. May 18, 2013.

Specialty Matched Consultant Advisory Panel review 7/2013

Medical Director review 7/2013

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 9/12/13

Medical Director review 10/2013

U.S. Food and Drug Administration (FDA). PMA approval for Monovisc™ (Anika Therapeutics, Inc.) <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/Recently-ApprovedDevices/ucm388319.htm>

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

Specialty Matched Consultant Advisory Panel review 7/2014

Medical Director review 7/2014

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 10/9/14

Specialty Matched Consultant Advisory Panel review 6/2015

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 4/14/2016

Specialty Matched Consultant Advisory Panel 6/2016

Altman R, Asch E, Bloch D, et al. Development of criteria for the classification and reporting of osteoarthritis. Classification of osteoarthritis of the knee. Diagnostic and Therapeutic Criteria Committee of the American Rheumatism Association. *Arthritis Rheum* 1986; 29:1039. Accessed April 27, 2017 at <http://onlinelibrary.wiley.com/doi/10.1002/art.1780290816/pdf>

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 4/13/2017

Specialty Matched Consultant Advisory Panel 6/2017

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 4/12/2018

Specialty Matched Consultant Advisory Panel 6/2018

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.31, 4/8/2019

Specialty Matched Consultant Advisory Panel 6/2019

Policy Implementation/Update Information

| | |
|-------|---|
| 12/97 | Original policy developed. Reviewed by the Plan's Medical Director and determined investigational. |
| 3/98 | Reviewed: Continues to appear investigational due to approval as device and no long term outcomes. |
| 6/98 | Reviewed: Medical Policy Advisory Group recommends approval of one time treatment cycle for individuals with osteoarthritis of the knee who have failed to respond to conservative therapy. Policy name changed from Sodium Hyaluronate. |
| 9/98 | Code changes. J3490 deleted. Codes W5184 and W5179 added. |
| 6/99 | Reformatted, Description of Procedure or Service changed, Medical Term Definitions added. |
| 12/99 | Reaffirmed, Medical Policy Advisory Group |
| 10/00 | Revised. Changed the indications to include repeat treatment cycles when specific criteria are met. Added comment that treatment cycles should include no more than 3 injections for Synvisc and 5 injections for Hyalgan. System coding changes. Medical Policy Advisory Group - Approved. |
| 5/01 | Changes in formatting. |

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

- 9/02 Specialty Matched Consultant Advisory Panel meeting 8/2002. Revised policy to include Supartz. Added term Supartz to the Policy Key Word section. Code J7315 deleted and code Q3030 added. System coding changes.
- 3/25/04 Added code J7317 to the Billing/Coding section. Removed code Q3030 from the Billing/Coding section. Benefits Application and Billing/Coding sections updated for consistency.
- 8/12/04 Specialty Matched Consultant Advisory panel review 07/15/2004 with no changes made to policy criteria. References added. Statement added, "e.g., rest, anti-inflammatory medications, physical therapy" to define conservative measures.
- 9/9/04 Title changed from "Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee." to "Intra Articular Hyaluronan Injections for Osteoarthritis of the Knee" for purpose of reducing characters.
- 1/05/06 Added policy number to Key Words. CPT Code J7318 added to Billing/Coding section.
- 2/16/06 Deleted code J7318 from Billing/Coding section. This code was never made valid by Centers for Medicare & Medicaid Services (CMS).
- 3/2/06 Statement regarding documentation of conservative therapy moved from Billing/Coding section to section "When Intra-articular Hyaluronan Injections are covered." Statement regarding allergies to chickens or eggs deleted from the "not covered" section. Information regarding Euflexxa added to "Policy Guidelines" section. Euflexxa is free of animal proteins and can be administered to patients who are allergic to chickens, eggs or feathers.
- 8/21/06 References updated. Specialty Matched Consultant Advisory panel review 7/24/06. No changes to policy criteria. (adn)
- 9/18/06 Information regarding repeated treatment cycles deleted from the When Covered section. The following statement added to When Not Covered section: "Repeated treatment cycles are considered investigational." Also added a statement to Policy Guidelines section "There is limited evidence regarding the effectiveness of multiple courses of intra-articular hyaluronan injections, therefore repeated treatment cycles are considered investigational. BCBSNC does not provide coverage for investigational services." Notification date 9/18/06. Effective date 11/27/06. (adn)
- 2/12/07 Billing/Coding section updated to reflect 2007 code changes. (adn)
- 6/18/07 Code J7319 removed from policy. No longer a valid code.
- 12/31/07 Coding update. Deleted codes Q4083, Q4084, Q4085 and Q4086. Added codes J7321, J7322, J7323 and J7324 to Billing/Coding section. (adn)
- 2/11/08 Reformatted the When Covered section into a numbered list and added the following statement: "Repeated courses of intra-articular hyaluronan injections may be considered medically necessary under the following conditions: Significant pain relief was achieved with the prior course of injections; and at least six months have passed since the prior course." The statement regarding repeated treatment cycles was deleted from the Not Covered section. Rationale regarding repeated treatment cycles and use of hyaluronan on joints other than the knee added to the Policy Guidelines section. (adn)
- 8/25/08 Item A.1. in the When Covered section revised to read: Diagnosis of osteoarthritis substantiated by x-ray or other imaging or arthroscopic findings. References updated. Specialty Matched Consultant Advisory Panel review 6/17/08. No change to policy statement. (adn)
- 3/2/09 Description section revised for clarity. Medical Policy changed to Evidence Based Guideline.

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

| | |
|----------|---|
| 1/5/10 | HCPCS Code J7322 replaced with Code J7325. |
| 8/17/10 | Specialty Matched Consultant Advisory Panel review 7/ 2010. Removed Guideline number. Extensively revised Description section. Updated References. (mco) |
| 4/26/11 | References updated. No changes to guideline statements. (mco) |
| 8/16/11 | Specialty Matched Consultant Advisory Panel review. No changes to guideline statements. (mco) |
| 12/30/11 | New code J7326 added to “Billing/Coding” section. Effective date 1/1/2012. (mco) |
| 5/1/12 | Description section updated. “Not Recommended” section updated. References updated. Medical Director review 4/2012. (mco) |
| 8/7/12 | Specialty Matched Consultant Advisory Panel review. No changes to Guideline Statements. (mco) |
| 4/16/13 | Description section updated. References updated. (mco) |
| 8/13/13 | Description section updated. References updated. Specialty Matched Consultant Advisory Panel review 7/2013. Medical Director review 7/2013. (mco) |
| 10/15/13 | Evidence Based Guideline converted to Corporate Medical Policy. Description section revised. Information regarding preferred medications Euflexxa® and Synvisc/Synvisc One®, added to Policy Statement. “When Covered” section revised as follows: “Euflexxa® and Synvisc/Synvisc One® injections may be considered medically necessary for the treatment of pain in osteoarthritis of the knee when conservative treatment has failed. Non-preferred intra-articular hyaluronan injections may be covered if the patient has previously used at least one of the preferred drugs as indicated above, and such drug has been detrimental to the patient’s health or has been ineffective in treating the patient’s condition.” “When not Covered” section revised to state: “The use of intra-articular hyaluronan injections in the knee is not covered when the above criteria are not met. Intra-articular injections in joints other than the knee are considered investigational.” Medical Director review. References updated. Notification given 10/15/13 for effective date 12/31/13. (mco) |
| 10/29/13 | Added the following statement to the “When Covered” section: “Non-preferred intra-articular hyaluronan injections may be covered if the patient is currently receiving treatment with a non-preferred drug.” Effective date remains 12/31/13. (mco) |
| 4/1/14 | References updated to include the U.S. Food and Drug Administration (FDA) PMA approval for Monovisc™ (Anika Therapeutics, Inc.). J3490 added to Billing/Coding section. (mco) |

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

- 8/12/14 Medical Director review 7/2014. Specialty Matched Consultant Advisory Panel review 7/2014. No changes to Policy Statements. (mco)
- 12/30/14 Code J7327 added to Billing/Coding section for effective date 1/1/2015. (sk)
- 7/28/15 Reference added. Specialty Matched Consultant Advisory Panel review 6/24/2015. (sk)
- 12/30/15 Codes J7328 and Q9980 added to Billing/Coding section. (sk)
- 4/1/16 Code C9471 added to Billing/Coding section. (sk)
- 7/26/16 Reference added. Specialty Matched Consultant Advisory Panel review 6/29/2016. (sk)
- 12/30/16 Codes J7320 and J7322 added to Billing/Coding section. Codes C9471 and Q9980 deleted from Billing/Coding section. (sk)
- 6/30/17 References added. Policy Guidelines updated. Additional criteria added to When Covered section. Specialty Matched Consultant Advisory Panel review 6/28/2017. **Notification given 6/30/17 for effective date 9/29/17.** (sk)
- 4/13/18 Code C9465 added to Billing/Coding section. (sk)
- 7/13/18 Reference added. Specialty Matched Consultant Advisory Panel review 6/27/2018. (sk)
- 9/28/18 Policy updated to reflect preferred products: Synvisc, Synvisc-One, Durolane, and Gelsyn-3. Added the following to “When Covered” section: “The patient has tried and failed or has a clinical contraindication/intolerance to Synvisc/Synvisc One® and Durolane / Gelsyn-3™; AND the patient is not scheduled to undergo a total knee replacement within 6 months of starting therapy.” Additional clarification added to “When Not Covered” section that indications outside of osteoarthritis of the knee are considered investigational. Table added to Billing/Coding section with product specific billing information. **Notification given 10/1/18 for effective date 1/1/19.** (krc)
- 11/9/18 Revised policy coverage criteria for clarification. No change to policy intent. Medical Director review. Notification remains effective for 1/1/19. (krc)
- 12/31/18 Added HCPCS codes J7318 and J7329 to Billing/Coding section and deleted code C9465 effective 1/1/19. (krc)
- 1/15/19 Updated table in Billing/Coding section to include TriVisc code, units, and injection quantity. No change to policy intent. (krc)
- 1/29/19 Updated number of billable units per injection for code J7318 within table in Billing/Coding section. No change to policy intent. (krc)
- 7/1/19 Reference added. Specialty Matched Consultant Advisory Panel review 6/19/2019. No change to policy intent. (krc)

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational

Intra Articular Hyaluronan Injections for Treatment of Osteoarthritis of the Knee

purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.