



If a conflict arises between a Clinical Payment and Coding Policy (“CPCP”) and any plan document under which a member is entitled to Covered Services, the plan document will govern. If a conflict arises between a CPCP and any provider contract pursuant to which a provider participates in and/or provides Covered Services to eligible member(s) and/or plans, the provider contract will govern. “Plan documents” include, but are not limited to, Certificates of Health Care Benefits, benefit booklets, Summary Plan Descriptions, and other coverage documents. BCBSOK may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. BCBSOK has full and final discretionary authority for their interpretation and application to the extent provided under any applicable plan documents.

Providers are responsible for submission of accurate documentation of services performed. Providers are expected to submit claims for services rendered using valid code combinations from Health Insurance Portability and Accountability Act (“HIPAA”) approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing (“UB”) Editor, American Medical Association (“AMA”), Current Procedural Terminology (“CPT®”), CPT® Assistant, Healthcare Common Procedure Coding System (“HCPCS”), ICD-10 CM and PCS, National Drug Codes (“NDC”), Diagnosis Related Group (“DRG”) guidelines, Centers for Medicare and Medicaid Services (“CMS”) National Correct Coding Initiative (“NCCI”) Policy Manual, CCI table edits and other CMS guidelines.

Claims are subject to the code edit protocols for services/procedures billed. Claim submissions are subject to claim review including but not limited to, any terms of benefit coverage, provider contract language, medical policies, clinical payment and coding policies as well as coding software logic. Upon request, the provider is urged to submit any additional documentation.

## **Onychomycosis Testing**

**Policy Number: CPCPLAB068**

**Version 1.0**

**Approval Date: April 12, 2023**

**Plan Effective Date: June 15, 2023**

### **Description**

BCBSOK has implemented certain lab management reimbursement criteria. Not all requirements apply to each product. Providers are urged to review Plan documents for eligible coverage for services rendered.

### **Reimbursement Information:**

1. For individuals with onychomycosis, direct microscopic examination with potassium hydroxide, fungal culture of desquamated subungual material, or fungal stain of a nail clipping(s) **may be reimbursable**.
2. To screen for, diagnose, or confirm onychomycosis, nucleic acid tests (See **Note 1**), **is not reimbursable**.

3. To screen for, diagnose, or confirm onychomycosis attenuated total-reflectance Fourier transform infrared (ATR-FTIR) spectroscopy **is not reimbursable**.
4. Testing for the presence of fungal-derived sterols, (e.g., ergosterol), **is not reimbursable**.

**Note 1:** Nucleic acid testing (e.g., PCR, PCR-RFLP, and next-generation sequencing [NGS]) of the following microorganisms: *Candida* species, *Aspergillus* species, *Trichophyton rubrum*, *Trichophyton mentagrophytes*, *Epidermophyton floccosum*, *Neoscytalidium dimidiatum*, *Onychocola canadensis*, *Scopulariopsis* species, *Alternaria* species, *Acremonium* species, and *Fusarium* species (Ameen et al., 2014; Bongomin et al., 2018; Wollina et al., 2016).

## Procedure Codes

The following is not an all-encompassing code list. The inclusion of a code does not guarantee it is a covered service or eligible for reimbursement.

Codes
82542, 87101, 87149, 87150, 87153, 87205, 87206, 87220, 87480, 87481, 87482, 87798, 87800, 87801, 88312, 88749

## References:

AAP. (2018a). Tinea Corporis. In D. Kimberlin, M. Brady, M. Jackson, & S. Long (Eds.), *Red Book: 2018 Report of the Committee on Infectious Diseases* (pp. 801-804). American Academy of Pediatrics. <https://redbook.solutions.aap.org/chapter.aspx?sectionid=189640197&bookid=2205>

AAP. (2018b). Tinea Pedis and Tinea Unguium (Onychomycosis). In D. Kimberlin, M. Brady, M. Jackson, & S. Long (Eds.), *Red Book: 2018 Report of the Committee on Infectious Diseases* (pp. 806-808). American Academy of Pediatrics. <https://redbook.solutions.aap.org/chapter.aspx?sectionid=189640199&bookid=2205&resultClick=24>

Abdallah, N. A., Said, M., Mahmoud, M. T., & Omar, M. A. (2019). Onychomycosis: Correlation between the dermoscopic patterns and fungal culture. *J Cosmet Dermatol*. <https://doi.org/10.1111/jocd.13144>

Ability\_Diagnostics. (2020). *Onychomycosis (Nail Fungus)*. Retrieved 1/25/21 from <https://www.abilitydiagnostics.com/nails>

Achterman, R. R., & White, T. C. (2013). Dermatophytes. *Curr Biol*, 23(13), R551-552. <https://doi.org/10.1016/j.cub.2013.03.026>

Aly, R., Winter, T., Hall, S., & Vlahovic, T. (2018). Topical Tavaborole in the Treatment of Onychomycosis Complicated by Dermatophytoma: A Post-hoc Assessment of Phase II Subjects. *J Drugs Dermatol*, 17(3), 347-354. <https://www.ncbi.nlm.nih.gov/pubmed/29537453>

Ameen, M., Lear, J. T., Madan, V., Mohd Mustapa, M. F., & Richardson, M. (2014). British Association of Dermatologists' guidelines for the management of onychomycosis 2014. *Br J Dermatol*, 171(5), 937-958. <https://doi.org/10.1111/bjd.13358>

- Angulo-Rodríguez, A., Hernández-Ramírez, H., Vega-Memije, M. E., Toussaint-Caire, S., & Moreno-Coutiño, G. (2021). Subclinical Onychomycosis in Apparently Healthy Adults. *Skin Appendage Disord*, 7(3), 180-182. <https://doi.org/10.1159/000513316>
- Arndt, K., LeBoit, P., & Wintroub, B. (2016). Onychomycosis: Diagnosis, Treatment, and Prevention Strategies *Seminars in Cutaneous Medicine and Surgery*, 35. [https://www.globalacademycme.com/sites/default/files/documents/cme\\_activity/scms\\_supl\\_o\\_onychomycosis0316\\_v7\\_web.pdf](https://www.globalacademycme.com/sites/default/files/documents/cme_activity/scms_supl_o_onychomycosis0316_v7_web.pdf)
- BakoDx. (2023). Onychodystrophy PCR Testing. <https://bakodx.com/services/onychodystrophy-pcr-test-terbinafine-resistance/>
- Bao, F., Fan, Y., Sun, L., Yu, Y., Wang, Z., Pan, Q., Yu, C., Liu, H., & Zhang, F. (2018). Comparison of fungal fluorescent staining and ITS rDNA PCR-based sequencing with conventional methods for the diagnosis of onychomycosis. *J Eur Acad Dermatol Venereol*, 32(6), 1017-1021. <https://doi.org/10.1111/jdv.14843>
- Bodman, M. A., & Krishnamurthy, K. (2022). Onychomycosis. In *StatPearls*. StatPearls Publishing LLC. <https://www.ncbi.nlm.nih.gov/books/NBK441853/>
- Bongomin, F., Batac, C. R., Richardson, M. D., & Denning, D. W. (2018). A Review of Onychomycosis Due to Aspergillus Species. *Mycopathologia*, 183(3), 485-493. <https://doi.org/10.1007/s11046-017-0222-9>
- Bortolussi, R., & Martin, S. (2007, June 20, 2019). *Antifungal agents for common outpatient paediatric infections*. <https://www.cps.ca/en/documents/position/antifungal-agents-common-infections>
- Caldwell, B., Uchmanowicz, K., Kawalec, J. S., Petrofski, S., & Kurzel, C. (2020). Commercial Multiplex Polymerase Chain Reaction versus Periodic Acid-Schiff Testing for the Diagnosis of Onychomycosis. *J Am Podiatr Med Assoc*, 110(6). <https://doi.org/10.7547/18-048>
- Carney, C., Tosti, A., Daniel, R., Scher, R., Rich, P., DeCoster, J., & Elewski, B. (2011). A new classification system for grading the severity of onychomycosis: Onychomycosis Severity Index. *Arch Dermatol*, 147(11), 1277-1282. <https://doi.org/10.1001/archdermatol.2011.267>
- CDC. (2022). *Fungal Nail Infections*. Retrieved 11/23/20 from <https://www.cdc.gov/fungal/nail-infections.html>
- Daggett, C., Brodell, R. T., Daniel, C. R., & Jackson, J. (2019). Onychomycosis in Athletes. *Am J Clin Dermatol*, 20(5), 691-698. <https://doi.org/10.1007/s40257-019-00448-4>
- De Bruyne, S., Speeckaert, R., Boelens, J., Hayette, M. P., Speeckaert, M., & Delanghe, J. (2019). Infrared spectroscopy as a novel tool to diagnose onychomycosis. *Br J Dermatol*, 180(3), 637-646. <https://doi.org/10.1111/bjd.17199>
- Ely, J. W., Rosenfeld, S., & Seabury Stone, M. (2014). Diagnosis and management of tinea infections. *Am Fam Physician*, 90(10), 702-710. <https://www.aafp.org/afp/2014/1115/p702.html>
- EuroImmun. (2023). EUROArray Dermatomycosis. <https://www.dermatophyte-pcr.com/physicians-laboratories/euroarray-method.html>

Gallo, L., Cinelli, E., Fabbrocini, G., & Vastarella, M. (2019). A 15-year retrospective study on the prevalence of onychomycosis in psoriatic vs non-psoriatic patients: A new European shift from dermatophytes towards yeast. *Mycoses*, 62(8), 659-664. <https://doi.org/10.1111/myc.12925>

Ghannoum, M., Mukherjee, P., Isham, N., Markinson, B., Rosso, J. D., & Leal, L. (2018). Examining the importance of laboratory and diagnostic testing when treating and diagnosing onychomycosis. *Int J Dermatol*, 57(2), 131-138. <https://doi.org/10.1111/ijd.13690>

Gupta, A. K., Versteeg, S. G., & Shear, N. H. (2017). Onychomycosis in the 21st Century: An Update on Diagnosis, Epidemiology, and Treatment. *J Cutan Med Surg*, 21(6), 525-539. <https://doi.org/10.1177/1203475417716362>

Gupta, A. K., Versteeg, S. G., & Shear, N. H. (2018). Confirmatory Testing Prior to Initiating Onychomycosis Therapy Is Cost-Effective. *J Cutan Med Surg*, 22(2), 129-141. <https://doi.org/10.1177/1203475417733461>

Gupta, A. K., Versteeg, S. G., Shear, N. H., Piguet, V., Tosti, A., & Piraccini, B. M. (2019). A Practical Guide to Curing Onychomycosis: How to Maximize Cure at the Patient, Organism, Treatment, and Environmental Level. *Am J Clin Dermatol*, 20(1), 123-133. <https://doi.org/10.1007/s40257-018-0403-4>

Gustafson, E., Bakotic, W., Bennett, L., Page, L., & McCarthy, L. (2019). DNA-based detection for onychomycosis correlates better to histopathology than does fungal culture. *Dermatol Online J*, 25(7). <https://pubmed.ncbi.nlm.nih.gov/31450272/>

Haghani, I., Shams-Ghahfarokhi, M., Dalimi Asl, A., Shokohi, T., & Hedayati, M. T. (2019). Molecular identification and antifungal susceptibility of clinical fungal isolates from onychomycosis (uncommon and emerging species). *Mycoses*, 62(2), 128-143. <https://doi.org/10.1111/myc.12854>

Ho, W. T., Li, Y., & Yang, S. (2019). Liquid chromatography-tandem mass spectrometry is effective for analysis of ergosterol in fungal-infected nails. *Clin Exp Dermatol*, 44(4), e133-e139. <https://doi.org/10.1111/ced.13933>

Ipsium Diagnostics. (2022). *PCR TESTING*. Retrieved 11/23/2020 from <https://ipsiumdiagnostics.com/homepage/pcr-testing/>

Joyce, A., Gupta, A. K., Koenig, L., Wolcott, R., & Carviel, J. (2019). Fungal Diversity and Onychomycosis An Analysis of 8,816 Toenail Samples Using Quantitative PCR and Next-Generation Sequencing. *J Am Podiatr Med Assoc*, 109(1), 57-63. <https://doi.org/10.7547/17-070>

Koo, S. H., Teoh, Y. L., Koh, W. L., Ochi, H., Tan, S. K., Sim, D. M. F., Jiang, B., Tan, A. L., Tan, T. Y., & Lim, S. P. R. (2019). Development and validation of a real-time multiplex PCR assay for the detection of dermatophytes and *Fusarium* spp. *J Med Microbiol*, 68(11), 1641-1648. <https://doi.org/10.1099/jmm.0.001082>

LabCorp. (2023). *Fungus (Mycology) Culture*. <https://www.labcorp.com/tests/008482/fungus-mycology-culture>

Leung, K., J, M. L., Leong, K. F., Hon, K. L., Barankin, B., A, A. M. L., & A, H. C. W. (2020). Onychomycosis: An Updated Review. *Recent Pat Inflamm Allergy Drug Discov*. <https://doi.org/10.2174/1872213x13666191026090713>

Lipner, S. R., Joseph, W. S., Vlahovic, T. C., Scher, R. K., Rich, P., Ghannoum, M., Daniel, C. R., & Elewski, B. (2021). Therapeutic Recommendations for the Treatment of Toenail Onychomycosis in the US. *J Drugs Dermatol*, 20(10), 1076-1084. <https://pubmed.ncbi.nlm.nih.gov/34636509/>

Lipner, S. R., & Scher, R. K. (2019). Onychomycosis: Clinical overview and diagnosis. *J Am Acad Dermatol*, 80(4), 835-851. <https://doi.org/10.1016/j.jaad.2018.03.062>

Lubis, N. Z., Muis, K., & Nasution, L. H. (2018). Polymerase Chain Reaction-Restriction Fragment Length Polymorphism as a Confirmatory Test for Onychomycosis. *Open Access Maced J Med Sci*, 6(2), 280-283. <https://doi.org/10.3889/oamjms.2018.098>

Martinez-Herrera, E. O., Arroyo-Camarena, S., Tejada-Garcia, D. L., Porras-Lopez, C. F., & Arenas, R. (2015). Onychomycosis due to opportunistic molds. *An Bras Dermatol*, 90(3), 334-337. <https://doi.org/10.1590/abd1806-4841.20153521>

MicroGenDX. (2023). Podiatry Nail/Wound Care <https://microgendx.com/podiatry-nail/>  
Mourad, B., Ismail, M., Hawwam, S., Msseha, M., & Hassan, R. (2019). Evaluation Of The Efficacy Of Fluorescent Staining And Chicago Sky Blue Staining As Methods For Diagnosis Of Dermatophytosis In Hair And Nails. *Clin Cosmet Investig Dermatol*, 12, 751-758. <https://doi.org/10.2147/ccid.S215661>

NovaDX. (2023). *NAIL DIAGNOSIS*. Retrieved 2/13/2023 from <https://www.novadx.com/nail>  
Rios-Yuil, J. M. (2017). Onychomycosis Laboratory Diagnosis: Review. *Current Fungal Infection Reports*, 11(3). <https://link.springer.com/article/10.1007/s12281-017-0285-6>

Romaszkiewicz, A., Bykowska, B., Zablotna, M., Sobjanek, M., Slawinska, M., & Nowicki, R. J. (2018). The prevalence and etiological factors of onychomycosis in psoriatic patients. *Postepy Dermatol Alergol*, 35(3), 309-313. <https://doi.org/10.5114/pdia.2017.68299>

SSI. (2022). *Instructions For Use PCR KITS*. <https://ssidiagnostica.com/international/solutions/pcr/>

Trave, I., Cozzani, E., Canepa, P., Verdiani, S., & Parodi, A. (2021). Real-life applicability of the Euroarray dermatomycosis kit in the diagnosis of onychomycosis. *Mycoses*, n/a(n/a). <https://doi.org/https://doi.org/10.1111/myc.13405>

Trevisan, F., Werner, B., & Pinheiro, R. L. (2019). Nail clipping in onychomycosis and comparison with normal nails and unguual psoriasis. *An Bras Dermatol*, 94(3), 344-347. <https://doi.org/10.1590/abd1806-4841.20198301>

Velasquez-Agudelo, V., & Cardona-Arias, J. A. (2017). Meta-analysis of the utility of culture, biopsy, and direct KOH examination for the diagnosis of onychomycosis. *BMC Infect Dis*, 17(1), 166. <https://doi.org/10.1186/s12879-017-2258-3>

Vikor. (2020). *Nail-ID™*. <https://www.vikorscientific.com/test-menu/nail-id/>

Westerberg, D. P., & Voyack, M. J. (2013). Onychomycosis: Current trends in diagnosis and treatment. *Am Fam Physician*, 88(11), 762-770. <https://www.aafp.org/afp/2013/1201/p762.html>

Wollina, U., Nenoff, P., Haroske, G., & Haenssle, H. A. (2016). The Diagnosis and Treatment of Nail Disorders. *Dtsch Arztebl Int*, 113(29-30), 509-518. <https://doi.org/10.3238/arztebl.2016.0509>

### Policy Update History:

11/1/2022	New policy
6/15/2023	Document updated with literature review. Reimbursement information revised for clarity. References revised; some added, others removed.