Humana. **Claims Payment Policy**

# Subject: Laboratory – Onychomycosis Testing

**Application:** Medicare Advantage Products
**Policy Number**: LAB2023048

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## Medicare Advantage Payment Policy

*As a Medicare Advantage plan, we have developed payment policies to explain coverage more fully for services. The criteria outlined will apply to Medicare Advantage plans except when the procedure(s) has established criteria through the Original Medicare National Coverage Determinations (NCDs) and Local Coverage Determinations (LCDs) as outlined below.*

*In addition to this policy, claims payments are subject to other plan requirements for the processing and payment of claims, including, but not limited to, requirements of medical necessity and reasonableness and applicable referral or authorization requirements.*

1. For individuals with an onychomycosis (tinea unguium) infection that is resistant to anti-fungal drug therapy, nucleic acid amplification testing (NAAT) for Candida (CPT code 87480, CPT code 87481) **IS REIMBURSABLE.**
2. NAAT (CPT code 87149, CPT code 87150, CPT code 87153, CPT code 87482, CPT code 87798, CPT code 87801) **IS NOT REIMBURSABLE** for individuals with the following conditions or symptoms:
    - Onychomycosis
    - Disorders of the toenail (i.e., onycholysis, nail dystrophy, Beau's lines, yellowing of the nail)
3. For the diagnosis of onychomycosis, the use of attenuated total reflectance Fourier-transform infrared (ATR-FTIR) spectroscopy (CPT code 88749) **IS NOT REIMBURSABLE**.
4. For the diagnosis of onychomycosis, testing (CPT code 82542) for the presence of fungal-derived sterols **IS NOT REIMBURSABLE**.

*Applicable procedures for Medicare Advantage plans*

| Procedure Code | Code Description |
|---|---|
| 82542 | Column chromatography, includes mass spectrometry, if performed (i.e., HPLC, LC, LC/MS, LC/MS-MS, GC, GC/MS-MS, GC/MS, HPLC/MS), non-drug analyte(s) not elsewhere specified, qualitative or quantitative, each specimen |
| 87149* | Culture, typing; identification by nucleic acid (DNA or RNA) probe, direct probe technique, per culture or isolate, each organism probed |
| 87150* | Culture, typing; identification by nucleic acid (DNA or RNA) probe, amplified probe technique, per culture or isolate, each organism probed |
| 87153* | Culture, typing; identification by nucleic acid sequencing method, each isolate (i.e., sequencing of the 16S rRNA gene) |
| 87480* | Infectious agent detection by nucleic acid (DNA or RNA); Candida species, direct probe technique |
| 87481* | Infectious agent detection by nucleic acid (DNA or RNA); Candida species, amplified probe technique |
| 87482* | Infectious agent detection by nucleic acid (DNA or RNA); Candida species, quantification |

| Procedure Code | Code Description |
|---|---|
| 87798* | Infectious agent detection by nucleic acid (DNA or RNA), not otherwise specified; amplified probe technique, each organism |
| 87801* | Infectious agent detection by nucleic acid (DNA or RNA), multiple organisms; amplified probe(s) technique |
| 88749 | Unlisted in vivo (i.e., transcutaneous) laboratory service |

*The payment criterion for CPT code 87149, CPT code 87150, CPT code 87153, CPT code 87480, CPT code 87481, CPT code 87482, CPT code 87798, and CPT code 87801 applies to all Medicare jurisdictions, except those states awarded to CGS Administrators, LLC; Noridian Healthcare Solutions, LLC; Palmetto GBA; and Wisconsin Physicians Service Insurance Corporation

## Original Medicare LCDs

| Contractor Name | Policy Title | Policy Number | Procedure Code |
|---|---|---|---|
| CGS Administrators, LLC | MolDX: Molecular Syndromic Panels for Infectious Disease Pathogen Identification Testing | L39038 | 87149<br>87150<br>87153<br>87480<br>87481<br>87482<br>87798<br>87801 |
| Noridian Healthcare Solutions, LLC | MolDX: Molecular Syndromic Panels for Infectious Disease Pathogen Identification Testing | L39001 | 87149<br>87150<br>87153<br>87480<br>87481<br>87482<br>87798<br>87801 |
| Noridian Healthcare Solutions, LLC | MolDX: Molecular Syndromic Panels for Infectious Disease Pathogen Identification Testing | L39003 | 87149<br>87150<br>87153<br>87480<br>87481<br>87482<br>87798<br>87801 |
| Palmetto GBA | MolDX: Molecular Syndromic Panels for Infectious Disease Pathogen Identification Testing | L38988 | 87149<br>87150<br>87153<br>87480<br>87481<br>87482<br>87798<br>87801 |
| Wisconsin Physicians Service Insurance Corporation | MolDX: Molecular Syndromic Panels for Infectious Disease | L39044 | 87149<br>87150<br>87153 |

| Contractor Name | Policy Title | Policy Number | Procedure Code |
|---|---|---|---|
| | Pathogen Identification Testing | | 87480<br>87481<br>87482<br>87798<br>87801 |

## 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://doi.org/10.1542/9781610021470

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://doi.org/10.1542/9781610021470

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

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_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, September 13, 2022). *Fungal Nail Infections*. 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

Ipsum Diagnostics. (2022). *PCR TESTING*. Retrieved 11/23/2020 from https://ipsumdiagnostics.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://www.ncbi.nlm.nih.gov/pubmed/29531588

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. (2024). 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

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. (2023). *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/10.1111/myc.13405

Trevisan, F., Werner, B., & Pinheiro, R. L. (2019). Nail clipping in onychomycosis and comparison with normal nails and ungual 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