



Laboratory *News*

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NEW TEST ANNOUNCEMENT: FREE-LIVING AMOEBIA CULTURE

Thomas Novicki, PhD, DABMM, Clinical Microbiologist

Effective August 11, 2014, Marshfield Labs will make available a culture for the free-living amoeba *Naegleria fowleri* and various species of *Acanthamoeba*. A third pathogenic free-living amoeba species, *Balamuthia mandrillaris*, cannot be isolated with this culture. Free-living amoeba are associated with severe central nervous system (CNS) disease and keratitis. (Ordering and collection details may be found at the end of this article.)

N. fowleri, *Acanthamoeba* spp., and *B. mandrillaris* are the three primary causes of disease due to free-living amoeba. These microorganisms are genetically distinct from the intestinal protozoans such as *Entamoeba histolytica*. They are associated with warm surface waters, soil, and sewage; most infections have been connected to swimming or bathing in warm lakes and slow-moving streams.

There are several major presentations of amoebic disease caused by this group:

- *Naegleria* meningoencephalitis, also known as ‘primary amoebic meningoencephalitis (PAM)’. This is an acute fulminating disease of previously healthy individuals that usually leads to a rapid death. It is more often seen in the warm summer months in the lower tier of the United States, but global climate change may be pushing this range farther north.
- *Acanthamoeba* encephalitis, also known as ‘chronic granulomatous amoebic encephalitis (GAE)’. In contrast to PAM, GAE-afflicted individuals are usually in some form of immunosuppression, and have no recent history of contact with surface waters. While having a more indolent course



than PAM, GAE also almost invariably leads to death.

- *Balamuthia* (leptomyxid) encephalitis. The epidemiology, pathology, pathogenesis, and natural history of disease due to *B. mandrillaris* closely follows that of *Acanthamoeba*-associated GAE.
- *Acanthamoeba* keratitis. This is a painful, vision-threatening amoebic infection of the cornea. Trauma is often an inciting incident as is contact lens use, where contaminated contact lens cleaning and wetting solutions are implicated.

While the diseases due to this class of amoeba are not common, together they lead to high rates of morbidity and mortality.

TEST INFORMATION:

Test Name:

Culture, Free-Living Amoeba

Test Code:

FLAMOB

Specimen Requirements:

Specimen Type	Preferred Container/Tube	Acceptable Container/Tube	Specimen Volume
Corneal scrapings	Provider-plated specimen*		1 plate
CSF, other body fluids	Sterile container		1.0 mL
Brain biopsy and other tissues	Sterile container		1 g
Ear discharge	Aspirate	ESwab™	1.0 mL 1 ESwab
Contact lens	Sterile container with small amount of sterile saline.		1 lens
Contact lens case	Contact case	ESwab of container interior	1 case 1 ESwab
Contact lens solutions	Sterile container	Original container (<100mL)	1.0 mL
Other sites	Sterile container	ESwab	1.0 mL 1ESwab

*Contact the Microbiology Lab for more information on acquiring medium for direct inoculation at bedside.


Reference Value:

No amoeba isolated.

If positive, identification of the amoeba to the species level will be attempted. Detection of amoeba should be considered a medical emergency.

CPT Code:
87081

Contacts:

Interpretive or Technical questions: Thomas Fritsche, MD, PhD or Thomas Novicki, PhD, clinical microbiologist at 715-221-6700. 

NEW TEST CODE - THYROID DIAGNOSTIC CASCADE

Annu Khajuria, PhD and Gene Shaw, MD

Effective Aug 5, 2014, a new test code, Thyroid Diagnostic Cascade, will be made available to providers throughout the Marshfield Clinic system.

The Thyroid Diagnostic Cascade has been designed to be a timely and cost-effective strategy in the initial diagnosis of common adult thyroid disorders. This panel is not intended for use in pediatric patients or in monitoring patients receiving treatment for thyroid disease. This cascade is also not appropriate to use to diagnose a primary thyroid neoplasm.

The diagnostic cascade begins with a thyroid stimulating hormone (TSH), a sensitive and effective screening assay. In patients with an intact pituitary-thyroid axis, TSH provides a physiologic indicator of the functional level of thyroid hormone activity. Increased TSH indicates inadequate thyroid hormone, and suppressed TSH indicates excess thyroid hormone.

If TSH is normal, a euthyroid status is assumed; testing stops and results will be released with an interpretative comment. However, if TSH is abnormal (low or high) a free T4 (FT4) will be performed automatically to confirm the presence of hypothyroidism or hyperthyroidism. Interpretive comments with further test recommendations will be reported based on the TSH and FT4 results. Clinical correlation is very important to avoid possible misinterpretation. For more complex situations, consultation with an endocrinologist is advised. The provider still has the option of ordering TSH or FT4 individually.

TEST INFORMATION

Test Name:

Thyroid Diagnostic Cascade

Test Code:

THYDC

Specimen Type:

Preferred specimen: Serum or lithium heparized plasma. Details are outlined in Test Reference Manual. Fasting is not essential.

Performing Lab:

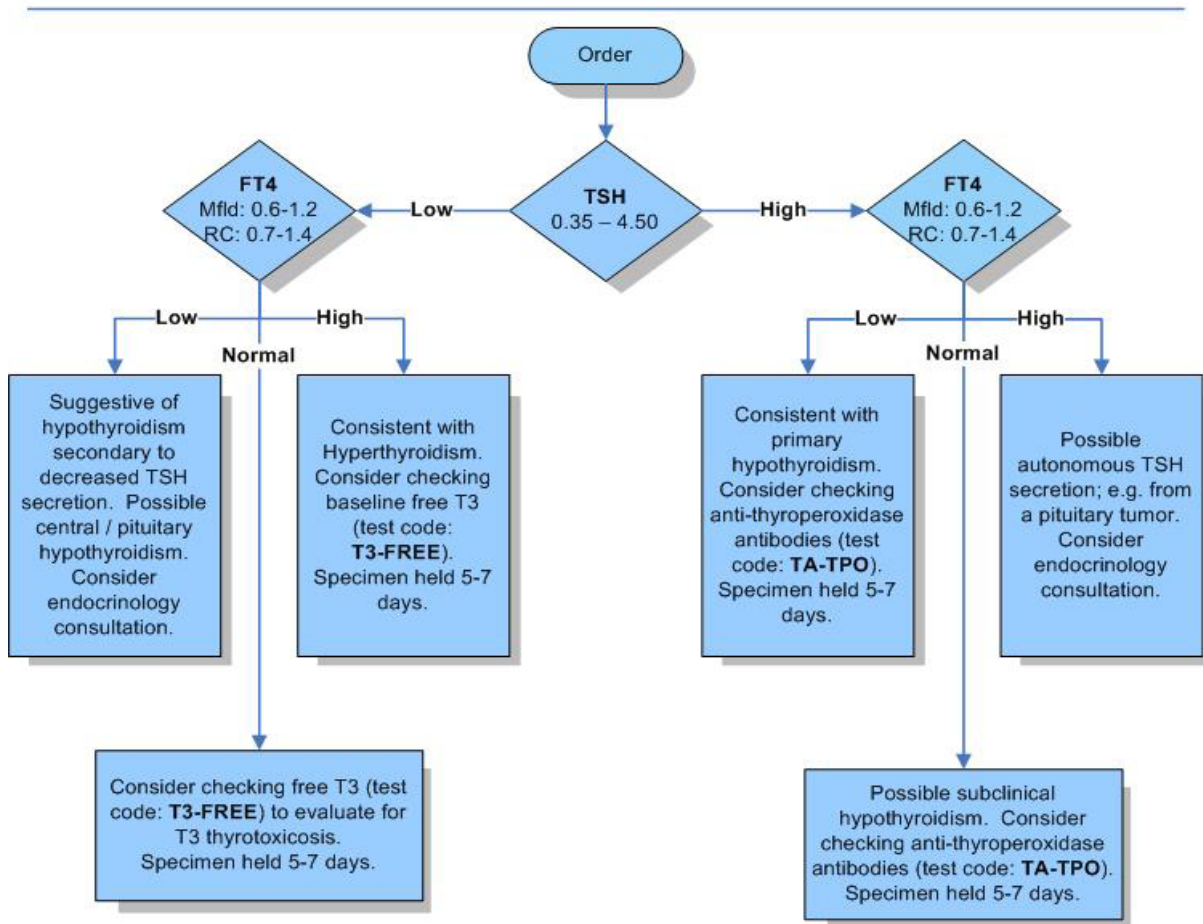
Marshfield Labs system. Any site that can currently order TSH will be able to order this test code.

CPT Code:

84443: TSH

84439: Free T4, if needed, at an additional charge.

Thyroid Function Ordering Algorithm



The thyroid function ordering algorithm is appropriate for obtaining a diagnosis for common adult thyroid disorders. This algorithm is not intended for use in pediatric patients or in monitoring patients receiving treatment for thyroid disease with either ablative or suppressive therapy. This algorithm is also not appropriate to diagnose a primary thyroid neoplasm.

Contact Information:
Marshfield Labs Customer Service: 800-222-5835

Questions or Comments:
Please refer questions or comments to:

- Annu Khajuria, Ph.D., Clinical Chemist
- Joyce Flanagan, Ph.D., Clinical Chemist
- Gene R. Shaw, M.D., Clinical Pathologist
- Bryan Robeson, M.T., (ASCP), Technical Manager

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