

Comprehensive biomarker testing may provide more information on your thyroid cancer and may help you and your doctor find an appropriate treatment.

Abnormal genes, which are a type of biomarker, may be causing your thyroid cancer to grow and spread. Comprehensive biomarker testing (sometimes called “somatic testing”) helps determine which abnormal genes may be causing your cancer.

RET (which stands for “rearranged during transfection”) is one of several known biomarkers in thyroid cancer, along with BRAF, NTRK, and ALK.

Knowing your cancer’s biomarker status may help you and your doctor choose a treatment that’s right for you.

How common are abnormal RET genes in advanced thyroid cancers?

Abnormal RET genes may be found in several types of advanced thyroid cancers.

PAPILLARY THYROID CANCER¹⁻³

ABOUT
10%–20%

MEDULLARY THYROID CANCER⁴

ABOUT
90%

FOLLICULAR THYROID CANCER⁵

ABOUT
30%–35%

HÜRTHLE CELL THYROID CANCER⁶

ABOUT
35%–40%

RET can also be found in advanced anaplastic and poorly differentiated thyroid cancers.

When should I get tested for biomarkers, including RET?

Talk to your doctor about testing your cancer for biomarkers and when it might be appropriate.

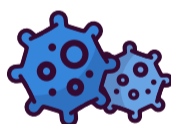
How do I get tested for biomarkers, including RET?

Your doctor will perform a comprehensive biomarker test to find out your cancer’s biomarker status.

BIOMARKER TESTING CAN BE PERFORMED 2 WAYS. YOUR DOCTOR WILL DECIDE WHICH OPTION IS BEST FOR YOU.

TUMOR BIOPSY:

A sample of your tumor tissue



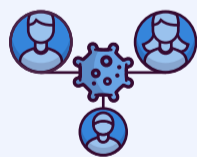
LIQUID BIOPSY:

A sample of your blood



If you’ve already had a tumor biopsy, your doctor may be able to use that sample for biomarker testing.

If I have thyroid cancer, should I get genetic testing?



If you have been diagnosed with medullary thyroid cancer (MTC), your doctor may perform genetic testing, in addition to comprehensive biomarker testing, because **about 25% of MTC runs in the family**.⁷



Genetic testing (sometimes called “germline testing”) can look to see if abnormal RET genes may run in your family.

If your genetic testing is positive for abnormal RET genes, speak to immediate family members (parents, siblings, and children) about your MTC and suggest that they talk to a doctor about genetic testing.

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Have questions?

It’s always important to talk to your doctor. Below are a few questions you may want to ask about biomarker testing.

- Has my cancer been tested for all known biomarkers, including RET?
- How will my biomarker status affect my treatment?
- Should my parents, siblings, and kids get genetic testing?

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References

1. Drilon A, Hu ZI, Lai GGY, Tan DSW. Targeting RET-driven cancers: lessons from evolving preclinical and clinical landscapes. *Nat Rev Clin Oncol*. 2018;15(3):151-167.
2. Kato S, Subbiah V, Marchlik E, Elkin SK, Carter JL, Kurzrock R. RET aberrations in diverse cancers: next-generation sequencing of 4,871 patients. *Clin Cancer Res*. 2017;23(8):1988-1997.
3. Santoro M, Carlomagno F, Hay ID, et al. Ret oncogene activation in human thyroid neoplasms is restricted to the papillary cancer subtype. *J Clin Invest*. 1992;89(5):1517-1522.
4. Romei C, Ciampi R, Casella F, et al. RET mutation heterogeneity in primary advanced medullary thyroid cancers and their metastases. *Oncotarget*. 2018;9(11):9875-9884.
5. Borowczyk M, Szczepanek-Parulska E, Dębicki S, et al. Differences in mutational profile between follicular thyroid carcinoma and follicular thyroid adenoma identified using next generation sequencing. *Int J Mol Sci*. 2019;20(13):3126.
6. de Vries MM, Celestino R, Castro P, et al. RET/PTC rearrangement is prevalent in follicular Hürthle cell carcinomas. *Histopathology*. 2012;61(5):833-843.
7. American Society of Clinical Oncology (ASCO). Thyroid cancer: introduction. <https://www.cancer.net/cancer-types/thyroid-cancer/introduction>. Accessed October 19, 2021.