

Smarter decisions, better outcomes: How a new molecular test improves patient care

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Emily Warrender

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Oliver Bathe, Professor of Surgery and Oncology at the University of Calgary and CEO of Qualisure Diagnostics, examines how a new molecular test can lead to smarter decisions and better patient care outcomes in his third article

For people diagnosed with [papillary thyroid cancer \(PTC\)](#), treatment decisions often must be made with limited information. Patients may be asked to choose between major surgery, radioactive iodine, or active monitoring – all without knowing how aggressive their cancer truly is. Physicians do their best using tumor size, imaging, and pathology, but these tools offer only a partial picture.

A new molecular test, Thyroid GuidePx, changes that. By providing clear, individualized recurrence risk before surgery, this molecular test helps align treatment intensity with actual tumor biology. The result is better outcomes, fewer complications, and more confident decisions for both doctors and patients.

A test that reshapes the entire treatment pathway

Thyroid GuidePx® enters the care process at a critical time – just after diagnosis and before definitive treatment. Its ability to predict structural recurrence helps clinicians make more accurate, informed choices at each step.

Initial surgery: Avoiding unnecessary total thyroidectomy

Many patients with [low-risk PTC](#) could safely have a lobectomy (removal of half the thyroid), but instead undergo a total thyroidectomy to “play it safe.” This more aggressive surgery permanently removes the thyroid, requiring lifelong hormone replacement and increasing risks of complications like vocal cord paralysis or low calcium.

Thyroid GuidePx® identifies patients with biologically [indolent cancers](#) with a very low recurrence rate. For these patients, a lobectomy is often sufficient. In some cases, especially for small tumors, active surveillance may even be appropriate. With a clear molecular risk profile, physicians and patients can proceed conservatively without compromising safety.

Avoiding repeat surgeries (completion thyroidectomy)

Patients who start with a lobectomy are sometimes found, after surgery, to have higher-risk features. In those cases, they may need a second operation to remove the rest of the thyroid – a process known as completion thyroidectomy. This two-step approach is stressful, increases

surgical risk, and delays recovery.

Thyroid GuidePx® can help avoid this scenario by identifying PTCs with a high recurrence risk before the first surgery. Knowing this, surgeons can plan a total thyroidectomy from the outset, reducing the need for repeat procedures.

Radioactive iodine (RAI): More targeted use

After a total thyroidectomy, RAI is commonly used to reduce the chance of recurrence. But RAI isn't necessary for every patient, and it can cause dry mouth, taste changes, salivary gland damage, and, in rare cases, secondary cancers. In women of reproductive age – a group commonly affected by PTC – fertility concerns are especially important. Molecular classification helps clarify when RAI is likely to help.

Supporting conservative treatment options

Not all PTCs require surgery. For certain small, low-risk tumours, active surveillance or radiofrequency ablation (RFA) is now being considered as an alternative. These options reduce the risks and long-term impacts of surgery, but success depends on careful patient selection.

Thyroid GuidePx® supports these conservative strategies by identifying tumors that are biologically unlikely to recur. For patients with such low-risk PTCs, doctors can confidently recommend less invasive care.

More personalized follow-up plans

After treatment, thyroid cancer patients are typically monitored for many years with blood tests, imaging, and regular clinic visits. While follow-up is important, it can be excessive in cases where the risk of recurrence is extremely low.

Molecular risk classification offers a more efficient approach. Patients with low-risk tumors may require less frequent monitoring, while those with higher-risk tumors can be followed more closely. This targeted strategy uses resources more effectively and reduces the burden of ongoing care.

Better information, less uncertainty

Uncertainty is one of the hardest parts of any cancer diagnosis. Patients often feel overwhelmed by the complexity of treatment decisions and worry about making the wrong choice. Even physicians may struggle to offer clear recommendations in borderline cases.

Thyroid GuidePx® reduces this uncertainty. It provides doctors with a high-confidence tool for stratifying risk, enabling patients to proceed with a care plan tailored to their individual situation. Treatment discussions become more straightforward, and decisions are grounded in data, not guesswork.

Financial impact: Reducing the cost of overtreatment

While PTC has a high survival rate, the financial burden it creates is significant. Thyroid cancer is associated with one of the highest rates of bankruptcy among cancer patients – largely due to prolonged treatment timelines, multiple surgeries, and long-term hormone replacement therapy.

By reducing overtreatment and optimizing care, Thyroid GuidePx® has the potential to lower costs for both patients and healthcare systems. Avoiding unnecessary total thyroidectomy, repeat surgeries, radioactive iodine, and excessive surveillance all contribute to improved efficiency.

A better standard of care

For decades, thyroid cancer treatment has relied on visual assessments and broad risk categories. Thyroid GuidePx® introduces a new standard – one rooted in biology. Analysing gene expression before treatment enables a more precise, personalised approach to care.

The test supports better surgical planning, more targeted use of adjuvant therapy, and a smarter framework for long-term follow-up. It gives clinicians and patients the information they need to make decisions with clarity and confidence.

Primary Contributor

Oliver Bathe
Qualisure Diagnostics

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