

## The COLLISION Trial

A scientific summary to support the multi-disciplinary approach to the treatment of small colorectal liver metastases (CRLM)

The Lancet Oncology, 2025

### **Thermal ablation versus surgical resection of small-size colorectal liver metastases (COLLISION): an international, randomized, controlled, phase 3 non-inferiority trial**

*van der Lei S, Puijk RS, Dijkstra M, et al. Thermal ablation versus surgical resection of small-size colorectal liver metastases (collision): An international, randomized, controlled, phase 3 non-inferiority trial. Lancet Oncol 2025;26:187-199.*

The dissemination of clinical evidence is an opportunity to help empower clinicians and medical scientists. By bringing awareness of new studies to tumor boards, it is our hope to inform multi-disciplinary treatment pathways and resultant resource re/allocations.

### **Context**

Colorectal cancer (CRC) is the third most common cancer globally, and the second leading cause of cancer-related deaths worldwide.<sup>1</sup> At least 25-50% of patients with CRC will develop liver metastases,<sup>2</sup> the standard treatment of care for which includes surgical intervention. Yet, surgery poses inherent cost. Surgical resection poses inherent risk. A study was designed in collaboration with both surgeons and interventional radiologists to assess the question, could thermal ablation be used as first line therapy compared to the current gold standard, surgical resection.

### **Study Design**

The COLLISION trial investigates the effectiveness of thermal ablation (experimental group) compared to surgical resection (standard of care) for small-sized CRLM, and shows thermal ablation as a viable alternative. The study outcome and the quality of the data collected may be considered a watershed moment for the IR specialty:

- The study's design, a single-blind randomized controlled trial, is relatively rare in the IR specialty
- The strength of the study results was so convincing that COLLISION was stopped early for meeting its predefined criteria of non-inferiority to the standard of care (surgery)

The multi-specialty collaborative approach has been heralded by the medical community and those who care for patients with this disease process.

This is a pivotal moment for both the surgical and the interventional radiological specialties, both of whom are in the front-line of therapeutic decision-making for this disease state.



## Findings

Results of the COLLISION clinical trial suggest that thermal ablation should be considered as an alternative to surgical resection for small-size CRLM, even if resectable. This means that patients could potentially benefit from a less invasive treatment option that allows for quicker recovery times and fewer complications. This has heralded conversations in the medical community about the renewed opportunity for a multi-disciplinary approach in the treatment, with potential current gold standard, surgical resection.

## Key Take-aways

This is of key value for the awareness of surgical and interventional radiology communities, both of whom are in the front-line of CRLM management.



No significant difference in overall survival between thermal ablation and surgical resection across disease burden-stratified groups  $p=0.83$



Thermal ablation was associated with fewer adverse events (19% vs. 46%) and less frequent serious adverse events (7% vs. 20%)



The length of stay was reduced from 4 days to 1, when patients underwent thermal ablation vs. surgical resection  $p<0.0001$

This is a pivotal moment for both the surgical and the interventional radiological specialties, both of whom are in the front-line of therapeutic decision-making for this disease state.

The COLLISION trial, of strong design and data quality, has shown that thermal ablation can be considered a viable alternative to surgery in terms of outcomes in small-size colorectal liver metastases, with a lesser risk of side effects and a 75% reduction in length of stay. Results are so strong to the community that thermal ablation is recommended for consideration as a first line therapy in future clinical guidelines.

## Implications for clinical practice

The COLLISION trial results challenge the notion that thermal ablation should only be used for unresectable CRLM. The authors advocate for a more individualized treatment approach, considering each patient's clinical characteristics, available medical expertise and facilities. It expands the use of thermal ablation as first-line therapy in either the operating theater or the interventional radiology suite.

For more information, please reference:

[Abstract accessible publicly online \(PubMed\)](#)

[Full text downloadable with membership to Lancet](#)

**"On average, expenses associated with medical supplies make up 15% of total expenses, but can go as high as 30-40% in surgery-intensive hospitals."**

Source: [Pathstone Partners](#)

Accessed March 30, 2025

1. The World Health Organization [Colorectal cancer](#)

2. Martin J, Petrillo A, Smyth EC, Shaïda N, Khwaja S, Cheow HK, Duckworth A, Heister P, Praseedom R, Jah A, Balakrishnan A, Harper S, Liao S, Kosmoliaptsis V, Huguet E. Colorectal liver metastases: Current management and future perspectives. *World J Clin Oncol*. 2020 Oct 24;11(10):761-808. doi: 10.5306/wjco.v11.i10.761. PMID: 33200074; PMCID: PMC7643190.