



**Title:** Diagnostic accuracy of whole-body MRI versus standard imaging pathways for metastatic disease in newly diagnosed colorectal cancer: the prospective Streamline C trial

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**Published:** Lancet Gastroenterol Hepatol May 2019 dx.doi.org/10.1016/S2468-1253(19)30056-1

### **What is known about this subject?**

Colorectal cancer is the second commonest cause of cancer death in the UK, accurate staging is fundamental to planning optimal treatment and patient outcomes. Current pathways to detect metastatic disease rely on multiple high technology platforms such as CT, MRI and PET-CT which are both expensive, irradiating and can introduce delays into treatment pathways. Modern MRI can image the whole body within 1 hour and has been advocated as a more accurate, efficient and safer alternative to traditional staging. The Streamline C study sought to compare the diagnostic accuracy and efficiency of whole body MRI scanning compared to standard pathways in patients with colorectal cancer.

### **What this study adds?**

#### **Design**

Streamline C was a prospective, multicentre study involving 16 units within the UK which recruited adult patients with colorectal cancer. The study was performed as a cohort study with the addition of whole body MRI to routine staging investigations for eligible patients following MDT discussion. Standard pathway and MRI reporting radiologists were blinded to the results of each other.

#### **Primary endpoints**

Difference in per patient sensitivity for metastases between standard pathways and whole body MRI.

#### **Secondary endpoints**

Difference in per patient specificity for metastatic disease, differences in treatment decisions, staging efficiency (time, number of tests and cost), per organ sensitivity and specificity for metastatic disease and per patient agreement for local T and N stage.

#### **Results**

Of the 1020 screened, 370 patients were recruited to the study of which 299 completed the trial. 23% of patients had metastatic disease at diagnosis. Whole body MRI had similar sensitivity for detection of metastatic disease compared to standard pathways (67% vs 63%  $p=0.51$ ). Whole body MRI was associated with a 5 day reduction in staging time (13 vs 8) and required fewer tests (1 vs 2) with a lower cost (£216 vs £285).

#### **Conclusions**

Whole body MRI is safe with a similar staging accuracy to conventional pathways and is associated with a shorter staging time, number and cost.

#### **Implications for colorectal practice?**

Cancer pathways and in particular the 62-day target remain a major issue for most colorectal units within the UK. The 62-day target is especially susceptible to being breached in complex patients with advanced disease who require multiple investigations often across multiple sites. The Streamline C study has revealed that these staging times could potentially be shortened with no adverse effect of diagnostic accuracy or MDT decision making. Widespread implementation of such a radical change to staging pathways would not be easy due the necessary infrastructure change required, although it is conceivable that increased provision would ultimately reduce costs. Further large scales studies are required to validate these findings but this paper has the potential to significantly change colorectal practice in the future.