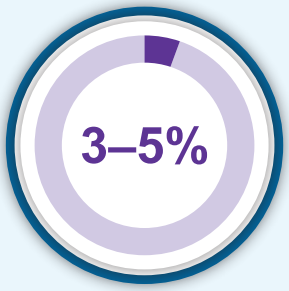
The role of personalised care in cancer of unknown primary

Cancer can form in any tissue of the body. It can also spread to other parts of the body. When cancer spreads it is known as metastasis or metastatic cancer.[1]

Sometimes **the metastatic cancer is found but the place where it began (the primary site) is not**. This is called **cancer of unknown primary**, also known as CUP.[1,2]

There is an urgent need for a better understanding of what causes CUP, to help improve how it is managed.[2,3]



3 to 5% of cancers are CUP[2,4]

Not knowing the **original location** of the cancer makes a diagnosis extremely difficult[3,4]

Treatment is often **limited to chemotherapy**, which can be ineffective[2,3]

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A personalised approach to treating CUP

Most cancer treatments are developed to treat a cancer that has formed in a specific organ or tissue.[5] Without knowing where the cancer began, it is important to understand the cancer's **genetic information.**[3] Two different methods are currently being studied to better understand the genetic information and treat CUP.[6–11]

- **Comprehensive genomic profiling** tests have the potential to identify biomarkers that can be targeted by existing treatments.[9–15]
- **Gene expression profiling** tests have the potential to identify the primary site. This can help guide treatment decisions based on where the cancer started.[6–8,15]

In the future, these methods could help guide decisions about treatment for people with CUP.[6,8,9,11,15]

This new approach to managing cancer is called precision care. Precision care is an important step towards **personalised care.**[3,12,17,18]

What are biomarkers?

Biomarkers are molecules found in cells (e.g. genes) that provide important information about a person's cancer.[16] New biomarkers for different cancer types are constantly being discovered.[17]

How might genetic testing help manage CUP?[1,3,6,9–15,19–22]

Biopsy

A tissue or blood sample may be taken – also known as a **biopsy**

Genetic information

Comprehensive genomic profiling can detect multiple biomarkers with a single test

Gene expression profiling tests might support identification of the primary site

Test results

Test results can provide a more complete picture of CUP, to help inform treatment options (but results are not always conclusive)

Personalised treatments

This information might help your doctor identify a **treatment option** either by:

- selecting treatments that can **target biomarkers**, if they are identified (regardless of the primary site)
- selecting treatments based on the **likely primary site** (separate from biomarker testing)

Biomarker testing could become an important part of managing CUP[9,11,14]

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Treatment options for CUP

When CUP is diagnosed, cancer has already spread from one part of the body to another. This means the cancer may be too advanced to be cured. In this case, the aim of treatment is to shrink the cancer to improve symptoms and help people live longer.[22] To achieve this, chemotherapy, radiation therapy, hormonal treatments and/or surgery may be used.[22]

In the future, genomic testing may help doctors identify biomarkers in some cases of CUP. Based on this information, **targeted treatments** may be selected.[9–11,14,21,22]

Targeted treatments:

- are directed at **specific biomarkers** that contribute to the growth and spread of cancer[21]
- can be **more effective** and cause **fewer side effects** than traditional treatments (chemotherapy and radiation therapy) because they target specific cancer cells, without harming healthy cells[12,23]

Examples: angiogenesis inhibitors and cancer growth inhibitors[24]

What does this mean for me?

Some results from ongoing clinical trials show that targeted treatments may be useful in some people with CUP.[21]

However, currently these new personalised approaches to care for CUP are still being studied.[6,7,9–11]

More evidence is needed to assess whether these approaches can have sufficient benefit in routine care of CUP.[6–9,11,15]

Approximately **2** in **4** people with CUP may be able to be treated with existing targeted treatments.[25]

The future goal is to better understand the genetic information of a person's CUP, so that doctors can choose the best treatment

A diagnosis of CUP can leave you and your loved ones feeling frightened, uncertain and overwhelmed. Keep in the mind the following:

- There are **sources of information and support** for people with CUP.
- **Ask your doctor about testing.** This will help you and your care team understand as much as possible about your cancer and your treatment options.
- **Getting your cancer tested for biomarkers and giving permission to share the information** is also important. If researchers can understand more about the biology of CUP, they may be able to develop more effective care plans or treatments in the future.

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