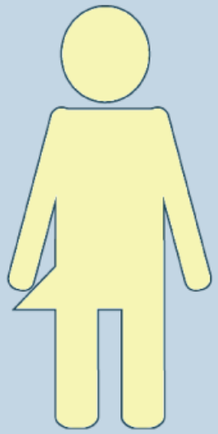
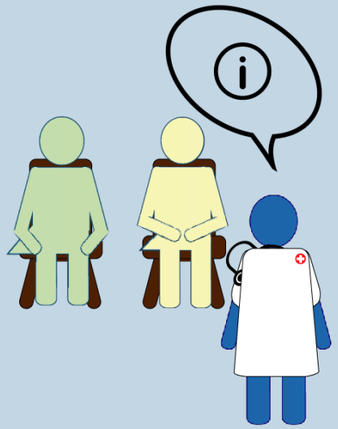
ERN GENTURIS patient journey: Lynch syndrome

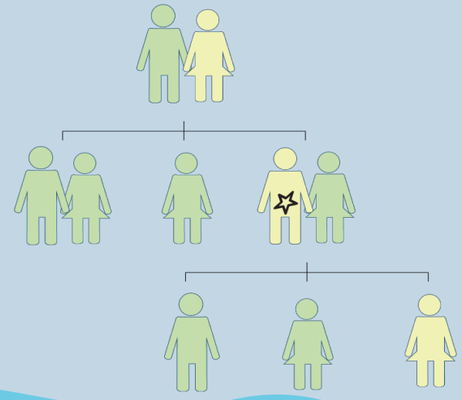
Affected (cancer) patient with unknown genetics



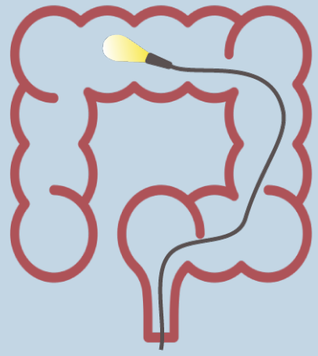
Genetic counselling



Cascade testing (testing of blood relatives)



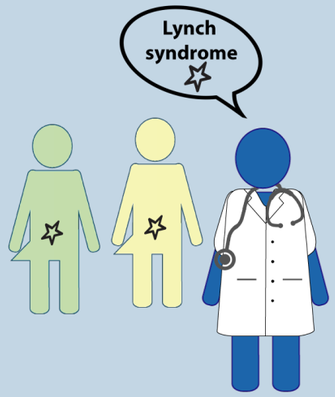
Surveillance, early cancer detection



Eligible for germline genetic testing

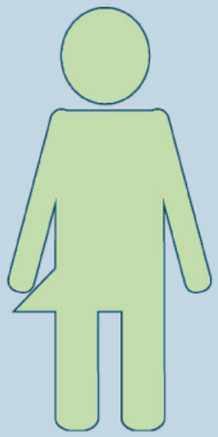
Germline genetic testing

Disclosure of the results

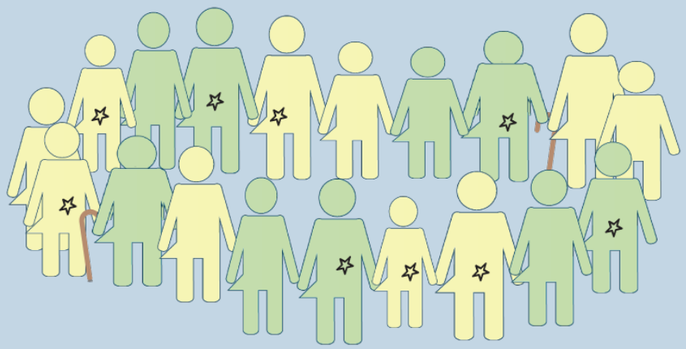


Prevention

Unaffected person with unknown genetics

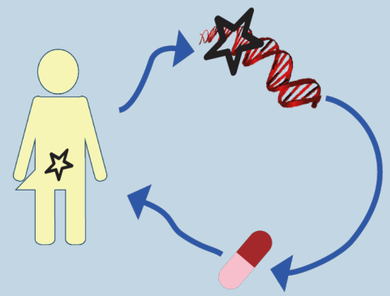


Peer support and emotional support

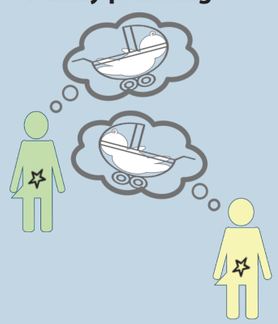


Cancer Diagnosis

Targeted therapy (Personalised cancer treatment)



Family planning



European Reference Network

Genetic Tumour Risk Syndromes (ERN GENTURIS)

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Disclaimer: This patient journey is intended as a general overview of the clinical and diagnostic pathway for Lynch syndrome or its suspicion. It should not replace an individual clinical and genetic counselling at an expertise center. It also does not address all specific challenges within the complex condition of Lynch syndrome. Specific clinical guidelines, diagnostic criteria and nomenclature may change at short notice and therefore are only referred to in this patient journey.

Affected (cancer) patient with unknown genetics

A patient is already diagnosed with cancer but does not know their genetic status.

Unaffected person with unknown genetics

A person is unaffected and does not know their genetic status.

Eligible for germline genetic testing

Lynch syndrome should be suspected for a patient with cancer, if:

- unusual young age of onset
- two or more Lynch syndrome-related tumours
- personal history of additional Lynch syndrome-related tumours
- family history of Lynch syndrome-related tumours (especially colorectal or endometrial cancer)
- in tumour tissue: mismatch repair deficiency (i.e. microsatellite instability and/or immunohistochemical loss of MLH1, MSH2, MSH6 or PMS2)

Lynch syndrome should be suspected in an unaffected person, if:

- known Lynch syndrome in the family
- family history of Lynch syndrome-related tumours (especially colorectal or endometrial cancer) at young age and/or in multiple members of the same family branch

Genetic counselling

Persons eligible for germline genetic testing and their family need thorough information before and after testing regarding:

- clinical manifestations and natural history of Lynch syndrome
- process of genetic counselling and implications of germline genetic testing for consult and blood relatives
- possible outcomes of germline genetic testing
- surveillance and follow-up
- specific cancer treatment
- legal, social, insurance and financial aspects of diagnosis
- emotional support including peer support
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Germline genetic testing and disclosure of the results

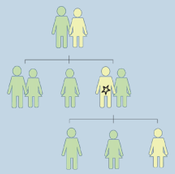
Patients can find general information regarding germline genetic testing here:

https://www.coe.int/en/web/bioethics/information-brochure-on-genetic-tests-for-health-purposes

Germline genetic testing should at least consider Lynch syndrome-associated genes.

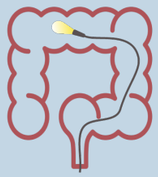
Disclosure of the testing results sshould be accompanied by genetic counselling.

Ildeally Lynch syndrome should be diagnosed before treatment starts as it might influence preventive and/or therapeutic decisions.



Cascade testing (testing of blood relatives)

Cascade testing is the process of performing genetic counselling and germline genetic testing of blood relatives at risk for inheriting Lynch syndrome. The geneticist will determine for which family members germline genetic testing would be relevant and invite them for genetic counselling or provide a family letter that can be distributed by the index patient. **Testing of these family members and follow-up with appropriate clinical measures where needed may save lives and improve quality of life.**
First-degree relatives have a risk up to 50% of having Lynch syndrome. Depending on the genetic status of their relatives, second-degree (and further) relatives might also be at risk for Lynch syndrome.
Family members who decide to get germline genetic testing will be ffered a test to look for the specific gene alteration present in the family.



Surveillance, early cancer detection

There are specific surveillance programs in place for Lynch syndrome patients. These might differ between countries. Patients should ask their physicians or contact expert centres about recommendations in their country.
Current recommendations at European level can be found on the ERN GENTURIS website (www.genturis.eu).

Surveillance programs for hereditary cancer syndromes aim at early cancer detection, because early detection of cancer generally allows better treatment and prognosis. Therefore, it is important to regularly participate in the provided surveillance programs.

Prevention

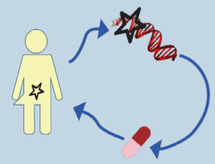
Preventive surgery and removal of pre-cancerous lesions

For Lynch syndrome patients, preventive surgery (such as risk-reducing hysterectomy in women) can be an option to reduce tumour risk. This is especially important to consider if there is an upcoming surgery for another reason. Patients should ask their physicians about recommendations in their country.
Current recommendations at European level can be found on the ERN GENTURIS website (www.genturis.eu).

Removal of pre-malignant lesions also prevents cancer development (e.g. removal of polyps/adenomas in colonoscopy screening) and is recommended.

Chemoprevention

Medications to reduce tumour risk in Lynch syndrome patients are under development. For example, it has been shown, that daily intake of aspirin for some years can reduce risk for colorectal and other cancers, but there is no general recommendation yet. Patients should ask their physicians about recommendations in their country. Current recommendations at European level can be found on the ERN GENTURIS website (www.genturis.eu).



Targeted therapy (Personalised cancer treatment)

For some hereditary tumours there are already specific treatments in place. This might affect surgery or oncologic therapy. For Lynch syndrome-related tumours (and for non-hereditary cancers with mismatch repair deficiency) therapy with immune checkpoint blockade should be considered.
Oncologists should be aware of the possible impact of cancer diagnoses and treatment in patients with Lynch syndrome or contact expert centres regarding information on treatment.

Family planning

Hereditary diseases can affect children as well. Therefore, gathering information on recurrence risk and sometimes additional risks for children is important at the time of family planning. There might also be options for prenatal testing and preimplantation genetic diagnostics in your country.

In the rare case that both parents have Lynch syndrome, there might be a risk of severe recessive condition called CMMRD in children. In case of family planning, you may wish to discuss this with a genetic counsellor.

Peer support and emotional support

Patients and their family might seek support repeatedly, at different timepoints, e.g. at the time of new cancer diagnosis, family planning, decision making for risk reducing surgery.

Peer support, emotional support and support of local psycho-oncologist:

– in ongoing cancer therapy
- how to decide about genetic testing
- how to inform family members on their genetic risk
- how to cope with elevated tumour risk
- how to deal with social and economic consequences/issues

Patient organisation can be found on:
https://www.genturis.eu/l=eng/patient-area/patient-associations.html

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