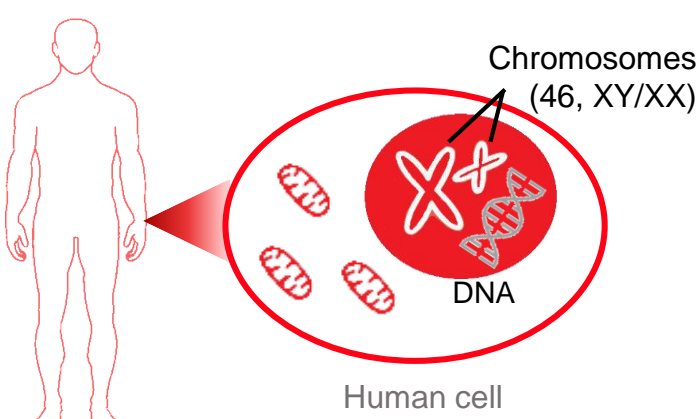


# Molecular genetics: Genome sequencing



## What is a genome?



Every human cell, regardless of its function, houses a complete diploid set of chromosomes in its nucleus, which contains the entire genetic information (genome) of every human being. DNA represents the most original cellular component.

The earlier a leukemia is detected, the greater the likelihood that the patient can be completely cured. Whole genome analysis potentially allows not only the diagnosis of the disease, but can also provide a prognostic assessment.

## What is a genome analysis?

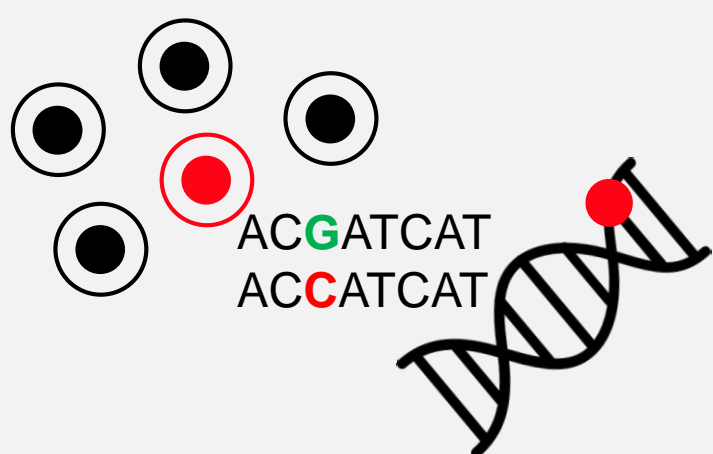


## Whole Genome Sequencing (WGS)



Sequencing is about reading the human genome letter by letter - the entire 3.2 billion ones. The DNA of two people is 99.9% identical, but differs in a large number of polymorphisms.

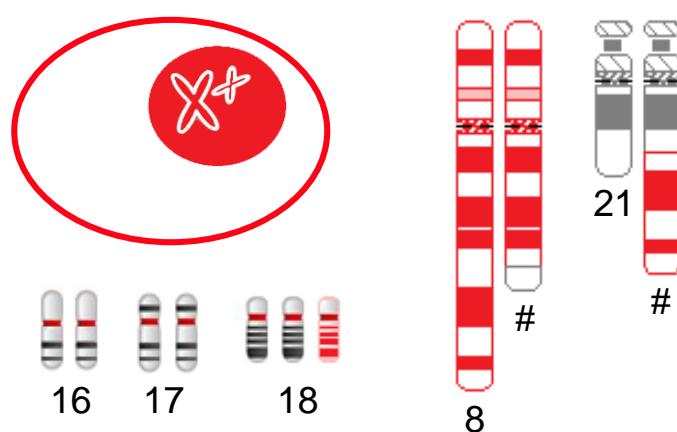
## Somatic mutations



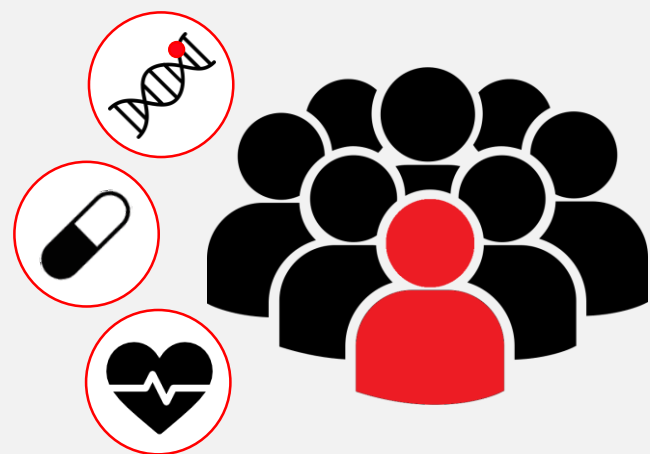
In the course of life, humans accumulate genetic changes (mutations) that occur outside the germline, i.e. in somatic cells. If these mutations occur in genes that are relevant for hematopoiesis, the risk for hematologic neoplasia increases.

Chromosomal aberrations are roughly divided into copy number variations (CNV), i.e. the gain and/or loss of chromosomal material, and structural variations (SV), which describe translocations of chromosomal material.

## Chromosomal aberrations



## Personalized medicine



Each person is individual, and therapy that is tailored to a patient's genetic profile can lead to personalized therapy that has the potential to increase efficacy and reduce side effects.

## Contact

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