# Journal club 1: Omics data and integrative analysis

In this journal club, we will discuss this review on omics data and its relevance for health and disease. This journal club should help you understand what different omics we have, how they are related and what can be used for what kind of analysis.

Read the article and answer the questions below (not all parts of the article are relevant for the questions!) before the tutorial on Monday.

Selected publication:

Karczewski KJ and Snyder MP. "Integrative omics for health and disease." *Nature Review Genetics* (2018): 19(5):299-310. doi: <https://doi.org/10.1038/nrg.2018.4>

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## Questions

* In which journal is this review published? Is this a good journal?
* Who are the authors of the article and what are their affiliations?
* When was the article published?
* How was the research funded?
* In table 1, six different omics data types are mentioned (genetic variation = genomics, epigenetics, gene expression = transcriptomics, proteomics, metabolomics, microbiome). Use the central dogma of biology to explain what is measured by each omics data type and how they are connected.
* What are Mendelian diseases and which omics data are most commonly used for diagnosis?
* How are common diseases different from Mendelian diseases? What kind of approaches are used to better understand them (link to the different practicals)?
  + Discuss the approach described in Figure 2 (From genome-wide association studies to mechanism) for obesity.
* Summarize the five main challenges mentioned.

If you want to, use mindmaps to structure the information.