

29. Lymphoma/Cancer Metabolism

2 units Andrew Intlekofer – March 30 and 31, 2026

- Definition of lymphoma
- Lymphoma classification
- Why are there so many types of lymphoma?
- Review of B cell development
- Mechanisms of lymphomagenesis
- Epidemiology
- Clinical presentation
- Diagnosis
- Staging
- Prognosis

Disease-specific examples of clinical features and therapies

- Hodgkin lymphoma (existing therapies are highly effective but too toxic)
 - Disease features
 - Standard therapy
 - Toxicities of old therapies
 - New 'targeted' therapies
 - Antibody drug conjugates
 - Checkpoint blockade
- Diffuse large B cell lymphoma (existing therapies are not effective enough)
 - Disease features
 - Standard therapies are inadequate
 - New 'targeted' therapies
 - CAR T cells
 - Antibody drug conjugates
 - Anti-CD19 antibody
 - IMiDs

Cancer Metabolism: Andrew Intlekofer – March 31, 2026

Paper: Martínez-Reyes...Chandel. Mitochondrial ubiquinol oxidation is necessary for tumour growth. *Nature*, 2020. 585(7824):288-292. doi: 10.1038/s41586-020-2475-6. PMID: 32641834.

- 1) What is cellular metabolism?
 - a. Normal cells obey signals for nutrient uptake
 - b. Cancer cells bypass signals to become autonomous
 - c. Oncogenes and tumor suppressors regulate metabolism
- 2) Functions of cancer metabolism
 - a. Biomass
 - b. Bioenergetics
 - c. Redox balance
 - d. Blockade of differentiation

3) Key metabolic pathways

- a. Glycolysis
- b. Glutaminolysis
- c. TCA/Krebs
- d. ETC/OXPHOS
- e. NAD/H
- f. NADP/H

4) Metabolic regulation of epigenetics

- a. De/acetylation
- b. De/methylation
- c. IDH mutations
- d. Succinate/fumarate

5) Why do cancer cells require functional mitochondria → paper discussion