

Course 2851 Principles of Metabolism
Metabolism and endocrinology programme, Karolinska Institutet

Lecture 14
Fatty acids and sterols

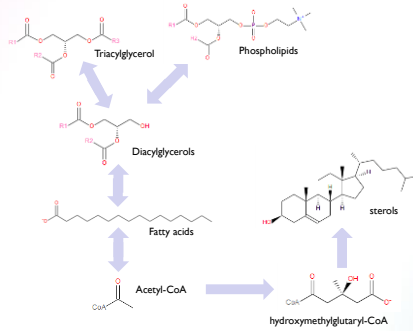
Roland Nilsson, Ph.D

Department of Medicine, Solna
Center for Molecular Medicine
Karolinska Institutet



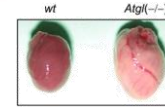
Lipids, quick overview

Wide variety of chemical properties

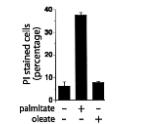


Physical properties are key!

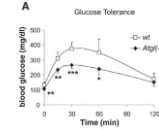
Triglycerides are inert



Fatty acids are toxic



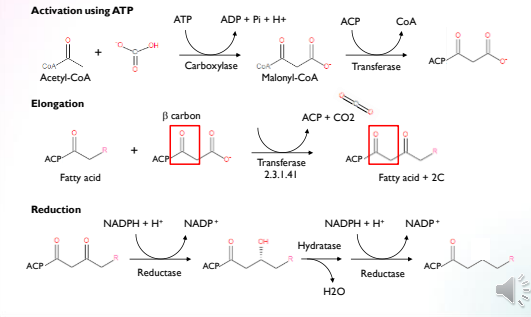
Listenberger et al. PNAS 100: 3077-3082, 2003.



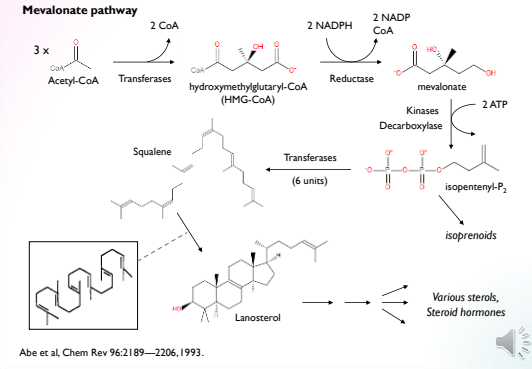
Haemmerle et al. Science 312:734-737, 2006.

Fatty acid synthesis

- Reductive process, forms C-C bonds, uses NADPH
- Chain is elongated 2 carbons at a time, but with a 3-carbon intermediate.



Sterol synthesis



Lipids are functionally specialized!

