

Glossary

1. Cholesterol- a sterol found in cell membranes of all animal tissues that is also necessary for production of bile and steroid hormones
2. Chylomicrons- lipoprotein particles formed in the intestine after lipid absorption to transport dietary triglycerides and cholesterol through the lymph and into the systemic circulation
3. Diacylglycerols (diglycerides)- lipids with only two fatty acids attached to the glycerol molecule
4. Essential fatty acids - fatty acids that the body needs but cannot synthesize; the primary essential fatty acids are linoleic and α -linolenic acids
5. Glycolipids- membrane lipids with one or more sugar molecules attached to the polar head group; high concentrations in the brain
6. Isoprenoids- members of a large family of lipids with a carbon skeleton based on five-carbon isoprene units with alternating single- and double-bond structure (conjugated double bonds); long isoprenoid structures function as antioxidants by quenching free radicals; examples include fat-soluble vitamins, carotenoids, and other phytochemicals- lycopene and limonene-as well as steroid hormones
7. Lecithin (phosphatidylcholine) -a phospholipid containing choline; found in the membranes of biologic organisms; is part of bile, where it emulsifies fats, and is part of lipoproteins, where it transports triglyceride and cholesterol
8. Medium-chain triglycerides (MCTs) -a fat with fatty acid chain lengths of between 6 and 12 carbons, which are short enough to be water soluble; requires less bile salt for solubilization, is not reesterified in the enterocyte, and is transported as free fatty acid bound to albumin through the portal system
9. Monoglycerols (monoacylglycerides) -lipids with only one fatty acid attached to the glycerol molecule
10. Monounsaturated fatty acids (MFAs) -fatty acids containing one double bond
11. Omega-3 fatty acid -a fatty acid with the first double bond located at the third carbon from the methyl end (e.g., eicosapentaenoic acid)
12. Omega-6 fatty acid- a fatty acid with the first double bond located at the sixth carbon from the methyl end (e.g., linoleic acid)

13. Phospholipids- a lipid molecule used to construct biologic membranes; composed of two fatty acids and one of several polar groups linked to glycerol phosphate
14. Polyunsaturated fatty acids (PUFAs) -fatty acids containing at least two double bonds
15. Saturated fatty acids (SFAs) -fatty acids in which all available carbon binding sites are saturated with hydrogen
16. Short-chain fatty acids (SCFAs) -fatty acids with 4 to 6 carbons; the fatty acids acetate (2 carbons), butyrate (4 carbons), and proprionate (3 carbons), which account for 85% of all SCFAs produced in the human colon; are readily absorbed by the intestinal and colonic mucosa
17. Trans-fatty acids -stereo isomers of the naturally occurring cis-fatty acid in which hydrogen is added back across the double bond; result from a hydrogenation process and are naturally occurring to a limited extent in milk and in meat from ruminants, where microflora convert cis- to trans-fatty acids; present to a much greater extent in processed foods
18. Triglycerides (triacylglycerols) -lipids consisting of three fatty acid chains esterified to a glycerol phosphate molecule