

Format:

Abstract ▾

Send to ▾

Full text links

[J Nutr.](#) 2006 Mar;136(3):565-9.

Dietary-induced changes in fatty acid composition of human plasma, platelet, and erythrocyte lipids follow a similar time course.

Skeaff CM¹, Hodson L, McKenzie JE.

Author information

- 1 Department of Human Nutrition, University of Otago, Dunedin, New Zealand.
murray.skeaff@stonebow.otago.ac.nz

Abstract

The dietary-induced changes in the fatty acid composition of plasma, platelet, and erythrocyte lipids were measured as a function of time. Healthy adults consumed a diet rich in saturated fat (18% total energy, TE) for 19 d and then crossed over, without washout, to a diet rich in (n-6) polyunsaturated fat (10% TE) for a further 19 d. The fatty acid composition of plasma and blood cell lipids was measured in blood samples collected from fasting subjects on d 0, 1, 2, 5, 8, 12, and 19 of consuming the diet rich in (n-6) polyunsaturated fats. The linoleic acid composition of all plasma, platelet, and erythrocyte lipids increased to a plateau within 19 d, reaching at least 70% of maximum within 5 d. The maximum increase in linoleic acid composition of erythrocyte phosphatidylcholine was 3.8 mol% at d 12; the increase at d 1 was 2 mol% and at d 5 was 3.2 mol%. The decrease in pentadecanoic acid composition followed a similar time course in all lipids with the exception of plasma phospholipids. Our results show that the time course of dietary-induced changes in erythrocyte fatty acid composition is similar to that in plasma and platelet lipids. These results provide convincing, albeit indirect evidence that the exchange of fatty acids from plasma to erythrocytes and platelets is a major determinant of their membrane fatty acid composition.

PMID: 16484525 DOI: [10.1093/jn/136.3.565](https://doi.org/10.1093/jn/136.3.565)

[Indexed for MEDLINE]



Publication types, MeSH terms, Substances

LinkOut - more resources

Save items

Add to Favorites

Similar articles

[Plasma and erythrocyte fatty acids reflect intake](#) [J Nutr. 2014][Effects of dietary saturated and n-6 polyu](#) [Eur J Clin Nutr. 2016][Effect of dietary \(n--3\) fatty aci](#) [Biochim Biophys Acta. 1985]**Review** [Fatty acid composition of the diet: i](#) [Clin Investig. 1992]**Review** [Plasma free fatty acid and lipop](#) [J Mol Neurosci. 2001][See reviews...](#)[See all...](#)Cited by 31 PubMed
Central articles[Effect of supplementation with flaxseed](#) [Eur J Clin Nutr. 2018][Pre-conception maternal erythrocyte satur](#) [Sci Rep. 2018][Omega-6 fatty acid biomarkers](#) [Diabetologia. 2017][See all...](#)

Related information






Articles frequently viewed together

PubChem Compound (MeSH Keyword)

Cited in PMC

Recent Activity

[Turn Off](#) [Clear](#)

-  Dietary-induced changes in fatty acid composition PubMed
-  Plasma and erythrocyte fatty acids reflect intake PubMed
-  Hormone-induced translocation of thyroid PubMed
-  Thyroid hormone receptor localization in target PubMed
-  Retinal S-opsin dominance in Ansell's mole-rats

[See more...](#)

You are here: [NCBI](#) > [Literature](#) > [PubMed](#)

[Support Center](#)

GETTING STARTED

[NCBI Education](#)
[NCBI Help Manual](#)
[NCBI Handbook](#)
[Training & Tutorials](#)
[Submit Data](#)

RESOURCES

[Chemicals & Bioassays](#)
[Data & Software](#)
[DNA & RNA](#)
[Domains & Structures](#)
[Genes & Expression](#)
[Genetics & Medicine](#)
[Genomes & Maps](#)
[Homology](#)
[Literature](#)
[Proteins](#)
[Sequence Analysis](#)
[Taxonomy](#)
[Variation](#)

POPULAR

[PubMed](#)
[Bookshelf](#)
[PubMed Central](#)
[PubMed Health](#)
[BLAST](#)
[Nucleotide](#)
[Genome](#)
[SNP](#)
[Gene](#)
[Protein](#)
[PubChem](#)

FEATURED

[Genetic Testing Registry](#)
[PubMed Health](#)
[GenBank](#)
[Reference Sequences](#)
[Gene Expression Omnibus](#)
[Genome Data Viewer](#)
[Human Genome](#)
[Mouse Genome](#)
[Influenza Virus](#)
[Primer-BLAST](#)
[Sequence Read Archive](#)

NCBI INFORMATION

[About NCBI](#)
[Research at NCBI](#)
[NCBI News & Blog](#)
[NCBI FTP Site](#)
[NCBI on Facebook](#)
[NCBI on Twitter](#)
[NCBI on YouTube](#)
[Privacy Policy](#)

National Center for Biotechnology Information, U.S. National Library of Medicine
8600 Rockville Pike, Bethesda MD, 20894 USA
[Policies and Guidelines](#) | [Contact](#)

