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## The influence of lipids intake of lactating women diet and those of the own human milk in France and feeding lactating women and composition of human milk (HM) from 1997 to 2014 in France

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**Introduction & Objective:** The latest recommendations to increase intakes of Polyunsaturated Fatty Acids (PUFA) n-3. Indeed, linoleic acid (LA) and  $\alpha$ -Linolenic Acid (ALA) are the essential precursors of long chain PUFA, respectively, Arachidonic Acid (ARA) and Docosahexaenoic Acid (DHA), which are essential for cognitive development of the newborn. Furthermore, the LA excess foster obesity. This study looks at the monitor French consumption of PUFA from 1997 to 2014, following the fatty acid composition (FA) of HM that reflects FA consumption of the lactating mother.

**Materials & Method:** Samples of mature HM was collected in the morning between 1 and 3 months post-partum across 4 clinical trials conducted in 1997 (n=16 HM), 2007 (n=142), 2012 (n=22) and 2014 (n=80). The FA composition of HM was determined by direct transesterification and analyzed by GC-FID and compared by ANOVA followed a testing and Kruskal Wallis. Dietary survey was analyzed by the BILNUT software.

**Result:** The data acquired in France between 1997 and 2014 have shown that the rate of ALA increased 84% and those in LA were down 25%. These changes induce a decrease in the ratio LA/ALA 60% (27.6% in 1997-10.7% in 2014). DHA rate improved by 13% between 2007 and 2014 (0.24% to 0.29% of FA in 2014) whereas the ARA is stable. Potentially harmful trans-FAs rates have fallen by 50% since 1997 following the improvement of the quality of French margarines. Dietary surveys have shown a 25% decrease in energy intake in 17 years, a deficiency in calcium, zinc, magnesium, vitamins A, E, D, B5, B6 and B9.

**Conclusion:** The studies conducted since 1997 have shown a modification of the content of n-3 and n-6 of the HM, reflecting changes in feeding habits, closer to the current recommendations. In this context, should be promoted firstly declining ratio LA/ALA (5-10) by the consumption of oil or margarine rich in ALA to optimize biosynthesis of ALA to DHA and DHA provide directly by the consumption of fatty fish.

### Biography

Claude Billeaud has received his MD degree from the Medical University of Bordeaux, France in 1979 after graduation in Human Cytogenetics (1976). Further, he studied pediatrics and has been the Clinical Assistant Director of Bordeaux University in the Departments of Pediatrics, Neonatology and Intensive Care since 1983. He currently serves as a Pediatrician in the Neonatal Unit at the Children's Hospital of Bordeaux, a Scientific Manager of Bordeaux-Marmande Human Milk Bank, a Lecturer and Head of Research (HDR: Habilitation to direct research) in Neonatal Nutrition at the Medical University of Bordeaux. His interest in research led him to graduate in Biology and Health, awarded Masters in Statistics Applied to Clinical Research and completed PhD in Nutrition and Food Science.

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