Effect of three different culinary methods (Kirata, Mirisata, Ambulthial) on Eicosapentaenoic acid (EPA) and Decosahexaenoic acid (DHA) contents of three fish species (yellowfin tuna, swordfish, and spotted sardinella)

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Marine fish is very popular in Sri Lanka, although very little is known about the possible different behaviors of the fatty acids contained in fish by different culinary methods. Wet heat cooking; Kirata, Mirisata, Ambulthial are the main culinary methods of fish in Sri Lanka. The aim of the study is to investigate the effect of above three culinary methods on EPA and DHA contents of yellowfin tuna (*Thunnus albacares*), swordfish (*Xiphias gladius*) and spotted sardinella (*Amblygaster sirm*) in order to determine the healthiest option. Based on the Total Diet Study Guidance, 33 (11x 3) fish samples (1 kg in each) were collected from a fish stalls, fish venders, Ceylon Fisheries Cooperation outlets, and Supermarket outlets in Gampaha. Raw and cooked; Kirata, Mirisata and Ambulthial samples were analyzed for fatty acid composition by gas chromatography equipped with flame ionization detector (GC-FID). Ambulthial is generally the healthiest option presented in this study, as the result showed the highest retention of EPA and DHA compared to the Kirata and Mirisata culinary methods. However, the choice of cooking ingredients and the moisture level may also influence the retention of EPA and DHA contents in cooked fish.

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