



Cachexia is a frequent problem in cancer patients which is characterized by involuntary weight loss, impaired performance and reduced quality-of-life. In general, administration of nutritional support does not improve the condition, and adequate treatment is not available. The mechanisms underlying cancer cachexia are poorly understood, but factors such as elevated lipolysis and proteolysis may play a role.

In recent years, n-3 fatty acids from fish have aroused interest as a potential promising tool in the treatment of cancer cachexia. Animal studies have shown that n-3 fatty acids, with eicosapentaenoic acid (EPA; 20:5n-3) being the active component, attenuate weight loss in tumor-bearing mice. Furthermore, EPA was shown to inhibit lipolysis and proteolysis *in vitro*. Recent uncontrolled clinical studies suggest that supplementation of EPA may also reverse weight loss in patients with pancreatic cancer.

The aims of the studies reported in the present thesis were to determine whether lipid metabolism is altered in cancer patients, and to determine whether supplementation of EPA reduces lipolysis and lipid oxidation in healthy subjects and in weight-losing cancer patients. Furthermore, we aimed to obtain pilot information on the long-term clinical effects of EPA supplementation in these cancer patients.