

## Effect of Exercise Training on Body Composition and Metabolic Profile in Older Adults during Cancer Treatment

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**Abstract :** Introduction: Total lean body mass is reduced during cancer treatment. This loss is called cancer cachexia and is accompanied by a progressive loss of fat mass. In older adults, these body composition changes can have a larger impact on metabolic health, physical autonomy, and cancer survival. Although currently untreatable, exercise training could reduce these effects. Hence, the objective of this pilot study is to investigate if 12 weeks of exercise training during cancer treatment can mitigate the loss of muscle mass and fat mass in older adults. Methods: A total of 40 older adults (65-80 years) with an ongoing treatment for a curable cancer are currently recruited and randomised in two groups: 1) Combined training (EX, n=20) and 2) Control group (CON, n=20). All variables are measured before and after 12 weeks of intervention: Anthropometry (weight, height, body mass index), body composition (total fat mass, visceral adipose tissue, total and appendicular muscle mass; DXA), metabolic profile (HDL-C and LDL-C, triglycerides, glucose and insulin levels). Results: Preliminary analyses revealed no impact of exercise training on appendicular muscle mass ( $p=0,31$ ) and fat mass ( $p=0,31$ ). Furthermore, total body weight, waist circumference, HDL-cholesterol, LDL-cholesterol, glucose and insulin levels remained unchanged (all  $p \geq 0.79$ ) after 12 weeks of training. However, statistical analyses revealed that triglyceride levels slightly increased ( $p=0.03$ ), irrespective of the group. Conclusion: Preliminary analyses did not reveal any impact of aerobic and resistance exercise training on body composition in oncogeriatric patients. Furthermore, exercise training seems not efficient to prevent the cancer treatment-related triglyceride levels increase.

**Keywords :** muscle mass, fat mass, metabolic profile, combined training, aging, cancer

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