Is coffee a potential appetite suppressant? Melahat Sedanur Macit¹, Eda Koksal²

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Introduction:Achieving body weight loss is possible through a complex process involving psychosocial, biological, behavioral and environmental factors (1). Accordingly, studies have focused on some functional food ingredients that suppress the accumulation of body fat to support obesity treatment (2, 3, 4, 5, 6, 7).

Material and methods: In the light of this information, coffee stands out with its high polyphenol and caffeine content. During the first 6 weeks of the study, rats were randomly divided into 2 groups: standard diet (STD) (n = 24), and high-fat diet (HFD) (n = 24) group. At the end of six weeks, each group was randomly divided into 4



coffee intervention (control, instant, filter and Turkish coffee) groups. Caffeine intake for rats was determined as 35,4 mg / kg according EFSA guideline and instant, filter and Turkish coffee, were administered to the rats corresponding to this dose. Caffeine, chlorogenic acid, caffeic acid, p-coumaric acid analysis of coffee samples were conducted with Liquid Chromatography Tandem Mass / Mass Spectrometry (LC-MS / MS) and coffee dosages were determined according to analysis results.



Results: When the food consumption of rats is evaluated according to weeks, HFD Turkish (15,76±1,06 g) and HFD filter coffee (16,95±0,87 g) groups'; STD filter (20,47±0,77 g), STD Turkish (21,24±0,94 g) and STD instant coffee (21,93±0,20 g) groups' food consumption was found to be statistically significantly lower than their control groups. High fat diet Turkish coffee group has the lowest food consumption (p<0,05).



Conclusion: The results of this study show that coffee consumption in obese may affect body weight positively in the

long term by decrease in food consumption and energy intake.

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References

Yanovski, S. Z., and Yanovski, J. A. (2018). Toward precision approaches for the prevention and treatment of obesity. *Journal of the American Medical Association*, 319(3), 223-224. Shearer, J., Sellars, E. A., Farah, A., Graham, T. E., and Wasserman, D. H. (2007). Effects of chronic coffee consumption on glucose kinetics in the conscious rat. *Canadian Journal of Physiology and Pharmacology*, 85(8), 823-830.

Shimoda, H., Seki, E., and Aitani, M. (2006). Inhibitory effect of green coffee bean extract on fat accumulation and body weight gain in mice. BMC Complementary and Alternative Medicine, 6, 9.

Shokouh, P., Jeppesen, P. B., Hermansen, K., Laustsen, C., Stødkilde-Jørgensen, H., Hamilton-Dutoit, S. J., Schmedes, M. S., Qi, H., Norlinger, T. S., and Gregersen, S. (2018). Effects of unfiltered coffee and bioactive coffee compounds on the development of metabolic syndrome components in a high-fat-/high-fructose-fed rat model. *Nutrients*, 10(10), 1547.

Shokouh, P., Jeppesen, P. B., Hermansen, K., Norskov, N. P., Laustsen, C., Jacques Hamilton-Dutoit, S., Qi, H., Stødkilde-Jørgensen, H., and Gregersen, S. (2018). A combination of coffee compounds shows insulinsensitizing and hepatoprotective effects in a rat model of diet-induced metabolic syndrome. *Nutrients*, 10(1), 6.

Song, S. J., Choi, S., and Park, T. (2014). Decaffeinated green coffee bean extract attenuates diet-induced obesity and insulin resistance in mice. *Evidence-Based Complementary and Alternative Medicine*, 718379, 1-14.