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AVOCADO OILS AND HEPATIC LIPID METABOLISM IN GROWING RATS

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Abstract—The effect of various avocado oils on liver metabolism was studied in growing female rats. The rats were fed diets containing 10% (w/w) avocado oil for 4 wk. In comparison with rats fed refined avocado oil obtained from cored fruit by centrifugal separation, rats fed unrefined avocado oil obtained by organic solvent extraction from intact fruit, or its unsaponifiable components, showed a significant increase in total liver lipogenesis as well as in phospholipid and triglyceride synthesis. Rats fed avocado-seed oil exhibited enhanced [1-¹⁴C]acetate incorporation into total liver lipids but showed the same distribution of label in the three main lipid classes as that of rats fed refined avocado oil. In addition, a significant reduction of triglycerides and protein content of plasma very-low-density lipoprotein and high-density lipoprotein fractions was observed in rats fed avocado-seed oil as compared with rats fed refined oil. Electron micrographs suggested that the alterations in hepatic lipogenesis are related to the marked proliferation of the smooth endoplasmic reticulum, which is known to be associated with induction of enzymes involved with lipid biosynthesis. The differences between the animals fed seed oil and those fed the unrefined oils, in the distribution of label within the main lipid classes, indicate that more than one factor is involved in the alterations caused by these oils.