This report aims to study architectural Auerbach plexus structure with NADH histochemistry (nicotinamide adenine dinucleotide, reduced form), along ages and their modifications with restricted diet in obese line rats. Experimental groups were: 1) After weaning, male rats were fed ad libitum (ALD) with standard rat chow. Autopsies were done at 2, 4, 8, 12, and 18 months old. 2) After weaning, one group was fed ad libitum, another group of rats were maintained on a restricted diet (RD). Autopsy was performed at 8 months of age. 3) After weaning, male rats were fed ad libitum (ALD) with standard rat chow. At 60 days old one group was continued with standard rat chow. Another group was fed with a restricted diet (RD). Autopsy was performed at 120 days old. After autopsy, segments of small intestine, proximal and distal colon were processed for NADH histochemistry. 1) At 2 months of age some empty spaces (“neuronal ghosts”) were seen between neurons. Later on partial to total disruption of reticular structures was seen along ages. 2) In RD rats of 8 months of age, a mesh-like structure similar to normal control rats was observed. In ALD rats, partial to total disruption of mesh-like structures was seen. 3) In RD rats of 4 months of age, disruption intermingled with normal mesh-like zones was seen, more severe in ALD rats. Changes in Auerbach plexus structure (disruption of mesh-like appearance) in this line of rats were quite different from normal control rats suggesting dismetabolism effects. Dietary restriction delayed alterations in Auerbach plexus structures in obese rats.

Keywords
Obesity, myenteric plexus, diabetes, small intestine, colon.