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Transcriptomic changes fatty liver in aging

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Here, we conducted a systematic analysis using transcriptome data derived from both young and aged rats to investigate the dysregulated molecular mechanisms observed in the liver of older rats. We specifically focused on how young and aged rats respond differently to a high-fat diet (HFD), a factor known to induce liver aging and inflammation. We observed distinct transcriptomic patterns between the livers of aged rats and their younger counterparts when exposed to HFD. Notably, we found that genes involved in fatty acid metabolism and thyroid hormone metabolism exhibited significant upregulation in the younger rats following HFD exposure. Through mapping these genes into a protein-protein physical interaction network, we highlighted promising candidate genes whose upregulation may mimic the protective responses observed in the liver of young rats upon exposure to HFD.