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Novel mechanisms of adipocyte proteostasis and inflammation

Introduction: Adipocytes are important regulators of nutrient homeostasis and energy balance. While adipocyte health is an important denominator of insulin sensitivity, adipose tissue inflammation is linked to cardiometabolic disease.

Methods: We used cell systems, transgenic mice, and human samples.

Results: Our results show that Nfe2l1 in adipocytes is required for proper proteostasis in adipocytes. Loss of proteasomal activity or Nfe2l1 is linked to ATF3-mediated adipocyte inflammation, insulin resistance, and lipodystrophy. Interestingly, dietary cholesterol drives this phenotype, as using different high-fat diet resulted in different outcomes in obesity and cardiovascular disease in these mice.

Conclusion: Nfe2l1 is an important nutrient sensor linked to metabolic health in cardiometabolic diseases

References:

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