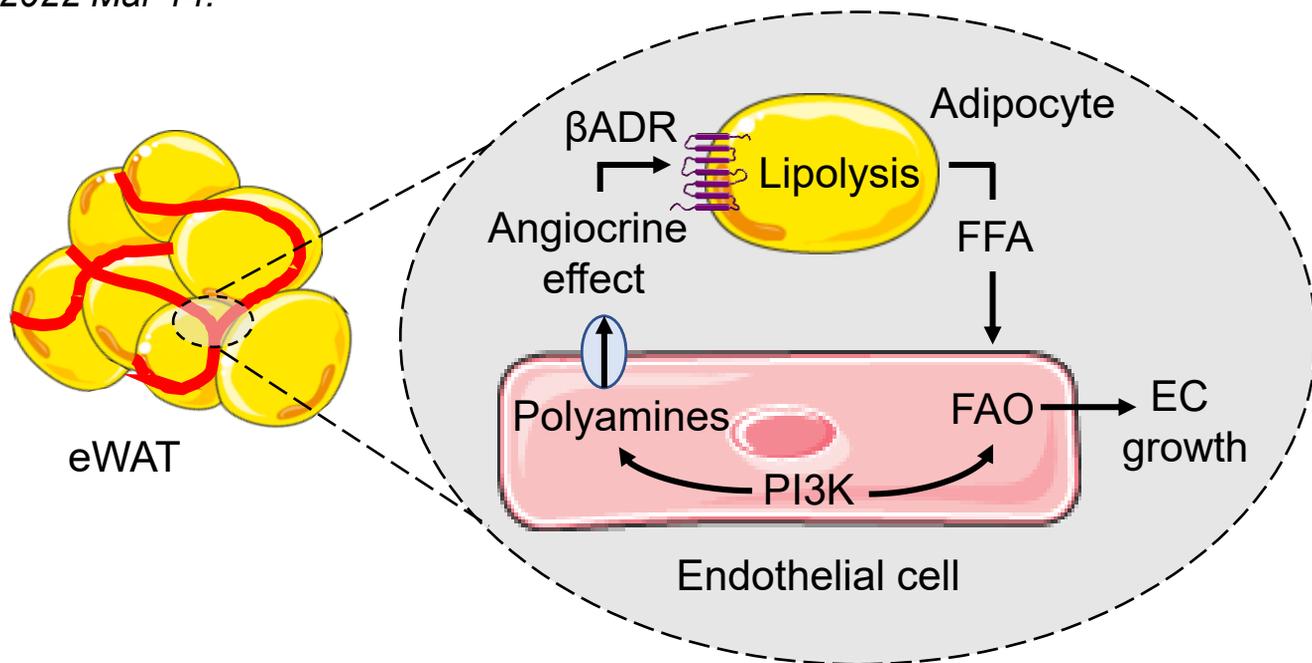


Angiocrine polyamine production regulates adiposity. Monelli E, Villacampa P, Zabala-Letona A, Martinez-Romero A, Llena J, Beiroa D, Gouveia L, Chivite I, Zagmutt S, Gama-Perez P, Osorio-Conles O, Muixi L, Martinez-Gonzalez A, Castillo SD, Martín-Martín N, Castel P, Valcarcel-Jimenez L, Garcia-Gonzalez I, Villena JA, Fernandez-Ruiz S, Serra D, Herrero L, Benedito R, Garcia-Roves P, Vidal J, Cohen P, Nogueiras R, Claret M, Carracedo A, Graupera M. *Nat Metab.* 2022 Mar 14.



Key findings:

- Promoting cell-autonomous angiogenesis through targeted deletion of PTEN in endothelial cells (ECs) increases vascularization specifically in white adipose tissue (eWAT)
- PTEN deletion leads to restoration of adipose tissue function and reduction in body weight and adiposity in pathophysiological conditions
- PTEN deletion promotes PI3K signaling in ECs and stimulates the synthesis of polyamines such as spermidine
- Polyamines act as angiocrine metabolic mediators to activate β -adrenergic receptors in adipocytes, promote lipolysis and induce the expression of genes that mediate FFA transport.
- FFAs released by adipocytes are used by ECs as fuel for fatty acid oxidation and proliferation.
- In summary, ECs undergo cell-autonomous angiogenic signaling in WAT, via the secretion of polyamines that stimulate lipolysis in adipocytes that fuels the growth of ECs.