# Article information:

Adipocyte iron levels impinge on a fat-gut crosstalk to regulate intestinal lipid absorption and mediate protection from obesity: Cell Metabolism  
<https://www.cell.com/cell-metabolism/fulltext/S1550-4131(21)00271-0>

# Article summary:

1. Transferrin receptor 1 (TFRC) expression is differentially required for distinct subtypes of adipocytes.

2. Lowering iron in adipocytes leads to healthier white adipose tissue (WAT) and activates an adipose-gut crosstalk to regulate gut lipid absorption.

3. Adipocyte iron levels play an important role in the maintenance of systemic metabolism through an adipocyte-enterocyte axis, controlling caloric influx into the system after feeding by regulating intestinal lipid absorption.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Adipocyte Iron Levels Impinge on a Fat-Gut Crosstalk to Regulate Intestinal Lipid Absorption and Mediate Protection from Obesity: Cell Metabolism” is a well-written and comprehensive review of the role of iron in obesity and diabetes development. The authors provide evidence that TFRC-mediated iron uptake is essential for postnatal survival of BAT and iWAT, but not gWAT, and that limiting iron specifically in adipocytes dramatically reduces adiposity and significantly improves systemic metabolism by controlling intestinal fat absorption.

The article is generally reliable, as it provides evidence from both mouse models and humans to support its claims. The authors also provide detailed descriptions of their experiments, which allows readers to understand their methods clearly. Furthermore, the authors acknowledge potential limitations of their study, such as the lack of data on other tissues or organs that may be affected by altered iron metabolism.

However, there are some points that could be improved upon in this article. For example, while the authors discuss how dietary macronutrients can affect obesity and diabetes development, they do not mention how micronutrients may also play a role in these conditions. Additionally, while the authors discuss epidemiological studies linking overconsumption of dietary iron with increased risk of developing diabetes, they do not mention any studies linking underconsumption with increased risk as well. Finally, while the authors discuss how pancreatic β cells are predisposed for iron accumulation and are susceptible to oxidative damage due to iron overload conditions, they do not mention any potential protective effects that higher levels of iron may have on pancreatic β cells or other tissues or organs affected by altered iron metabolism.

In conclusion, this article provides a comprehensive overview of the role of iron in obesity and diabetes development and is generally reliable in its claims; however, there are some points that could be improved upon such as discussing potential protective effects higher levels

# Topics for further research:

* Role of micronutrients in obesity and diabetes
* Dietary iron underconsumption and diabetes risk
* Protective effects of iron on pancreatic β cells
* Iron overload and oxidative damage
* Macronutrient consumption and obesity
* Iron metabolism and other tissues/organs

# Report location:

<https://www.fullpicture.app/item/4b71d21b3235ad6e120656c70ae556e6>