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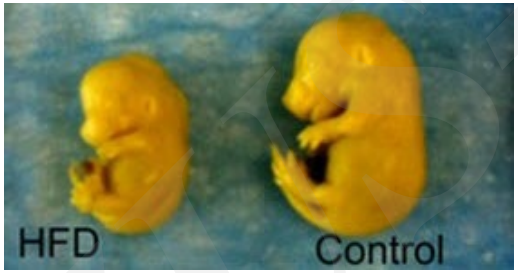
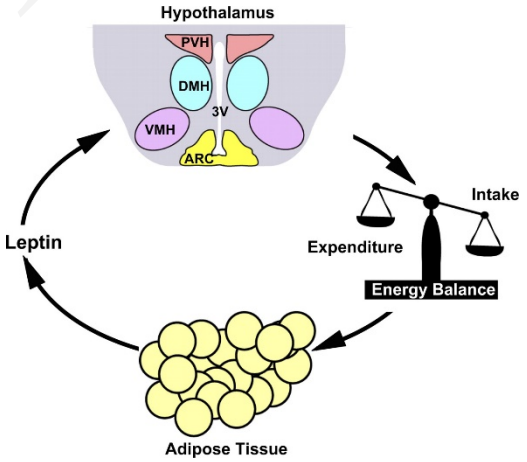
Maternal high-fat diet inversely affects insulin sensitivity in dams and young adult male rat offspring

Key words: Maternal high-fat diet, Glucose tolerance test, Insulin, HOMA-IR, Corticosterone

Research Summary

This paper deals with the effect of high-fat diet consumption during pre-pregnancy, pregnancy and lactation periods on energy balance and response to insulin in both mother and offspring.





The following parameters have been assessed:

- **Plasma leptin levels and intra abdominal fat weight**
- **Corticosterone, insulin and glucose plasma levels**
- **Glucose tolerance**

Key results

Maternal high-fat diet

In Dams:
Insulin sensitivity decrement
Abdominal fat mass increment
Plasma leptin decrement
Plasma corticosterone increment

In offspring:
Insulin sensitivity increment
Abdominal fat mass decrement
Plasma leptin decrement
Plasma corticosterone decrement

It seems that long-term maternal high-fat feeding may act as a stressor and induce insulin resistance in dams and alter neuroendocrine system programming in offspring.