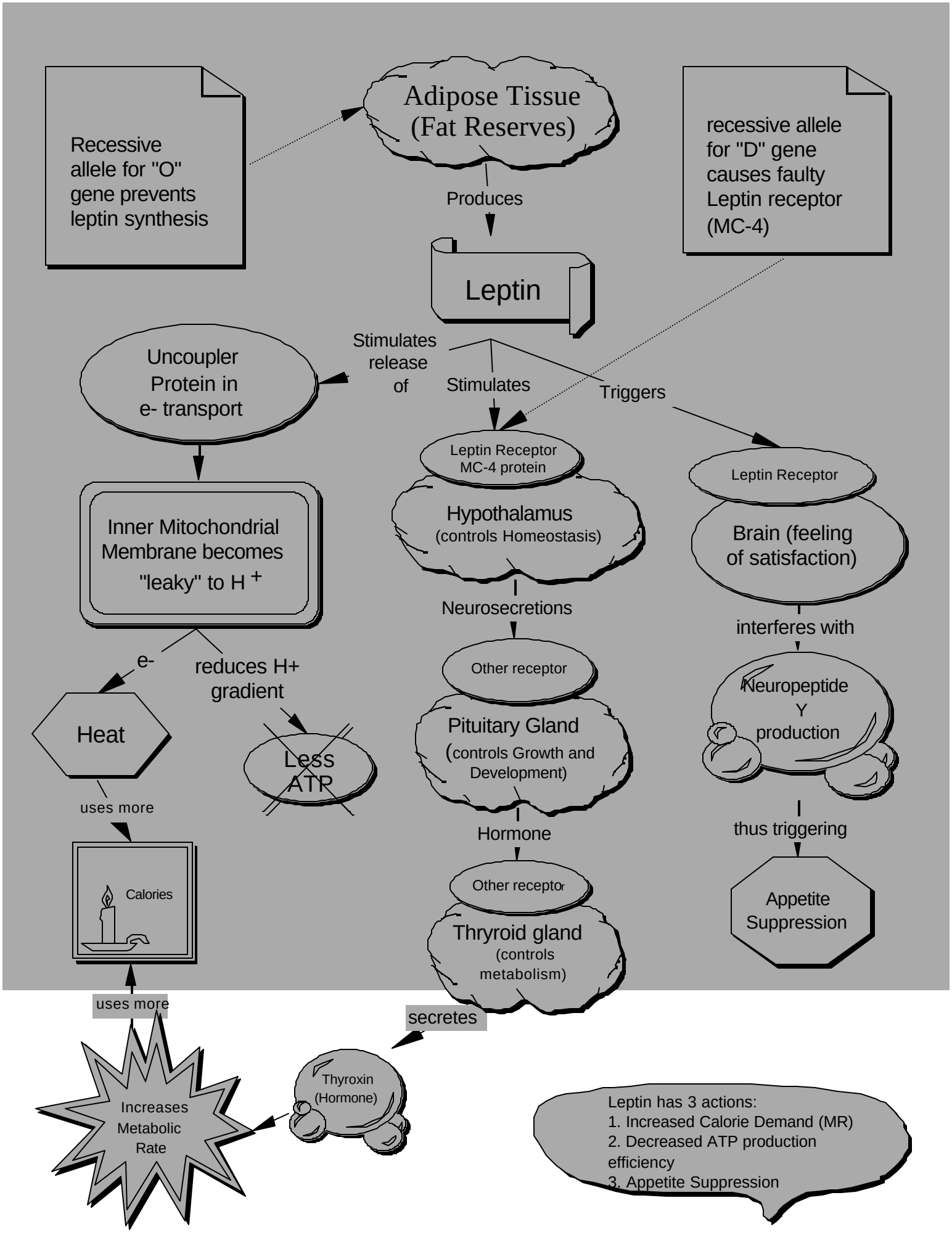
Recessive allele for "O" gene prevents leptin synthesis
Adipose Tissue (Fat Reserves)
recessive allele for "D" gene causes faulty Leptin receptor (MC-4)
Produces
Leptin
Stimulates release of
Stimulates
Triggers
Uncoupler Protein in e- transport
Leptin Receptor MC-4 protein
Hypothalamus (controls Homeostasis)
Leptin Receptor
Brain (feeling of satisfaction)
Inner Mitochondrial Membrane becomes "leaky" to H +
Neurosecretions
interferes with
e-
reduces H+ gradient
Other receptor
Pituitary Gland (controls Growth and Development)
Neuropeptide Y production
Heat
Less ATP
uses more
Hormone
thus triggering
Calories
Other receptor
Thryroid gland (controls metabolism)
Appetite Suppression
uses more
secretes
Thyroxin (Hormone)
Increases Metabolic Rate
Leptin has 3 actions:
1. Increased Calorie Demand (MR)
2. Decreased ATP production efficiency
3. Appetite Suppression