Role of orexin and opioid dynorphin peptides in obesity behavioral dysregulation

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"" why the study of obesity is relevant today

Obesity health risks

- Fast growth in modern society "" fast rate of growth points that purely biological causes are unlikely
- Environmental variables are critical in obesity

"" Environmental variables become relevant when they interact with behavior through 'decision making'

Homeostatic and hedonic feeding behavior

- Definition

"" This should provide a model that explains feeding behavior as a series of decisions ("feeding bouts") and how value is assigned to each dietary option

- Behavioral controllers of feeding behavior
  - 'Reinforcement learning' action/state/value/reward model

"" How are these behavioral controllers affected by the environmental variables

Behavioral controllers under the cafeteria diet

"" If obesity happens in a particular environment, how the behavioral controllers are dysregulated in order to consume more calories than those used

- Definition of cafeteria diet
- Cafeteria diet induced obesity
- Decision-making dysregulations

"" What obesity does at the level of behavior should be clear up to this point, now it should state how obesity does this.

Feeding neurobiology in obesity

"" This section should be the longest

"" State-dependent effects should be reviewed both ways (1) ox/dyn (injection) effect in obese animals; (2) ox/dyn levels in obese animals

"" Site-specific is related to PVN versus Ventral tegmental area

- Orexin and dynorphin regulating hedonic intake
  - State-dependent effect (obese / non-obese)
  - Site-specific effect
- How these peptides could regulate controllers value functions
  - Modulation of the reward properties of food "" leptin, ghrelin, insulin (?)

"" By this point it should be clear how orexin/dynorphin modulate neural activity and how that neural activity is related to the 'behavioral controllers'

Conclusions