What have I learned from bariatric patients about their mind and behaviours?

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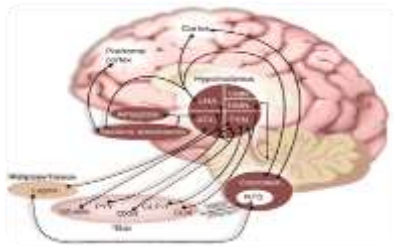
In accordance with «EACCME criteria for the Accreditation of Live Educational Events», I declare that there are no potential conflicts of interest

REGULATORY MECHANISMS OF EATING BEHAVIOR

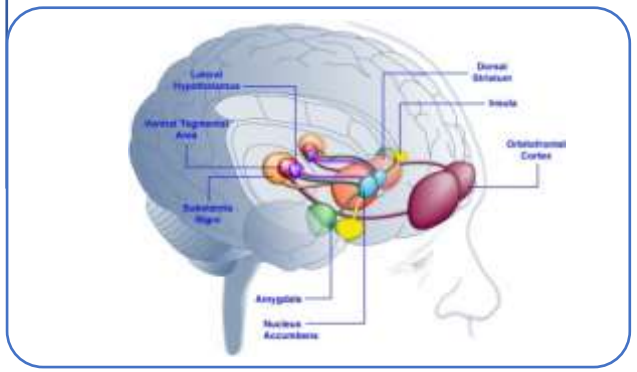
Homeostatic system

PYY, Leptin, insulin, GLP1 (satiety)
Gralin (hunger)
Hypothalamus: *LN e VMN, Arc N.*



Hedonic System

DA Reward System
(pleasure/motivation)
Executive Function
(Voluntary control)



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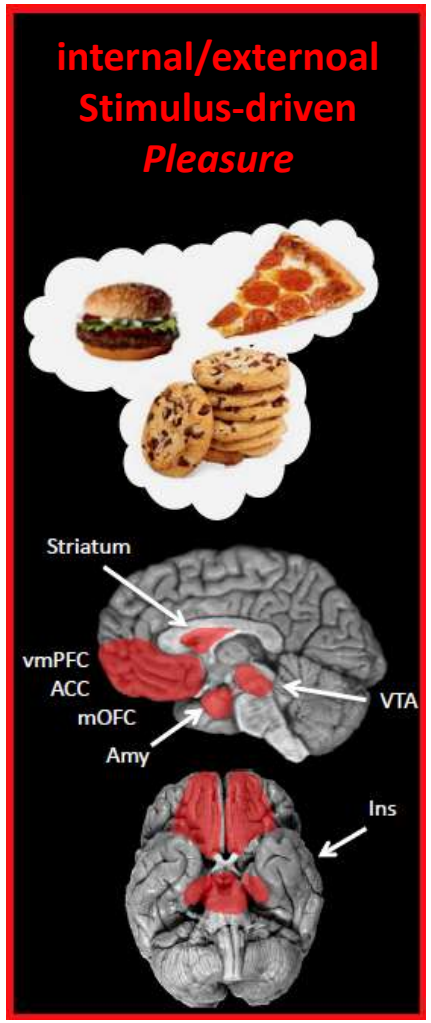
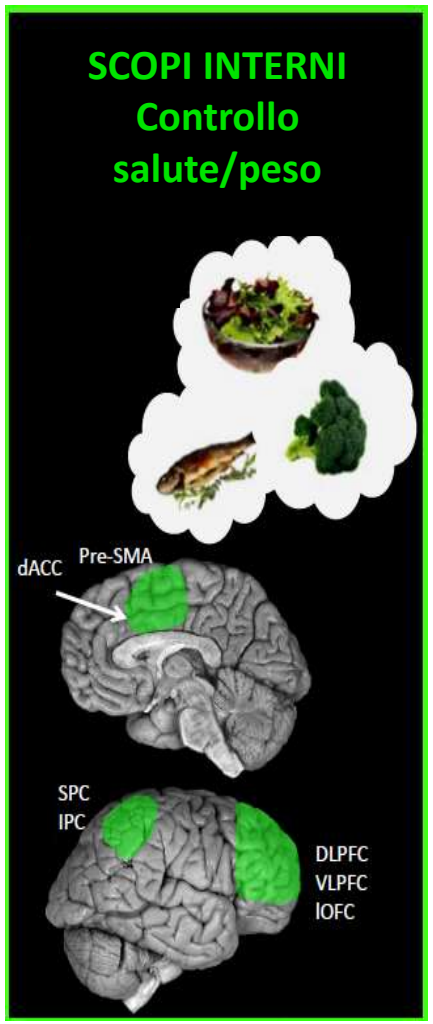
HEDONIC SYSTEM



Meso-cortico-limbic DA sys is based on fast S-R associations stored in episodic memory and automatically activates responses linked with pleasure and gratification

On the other hand

The prefrontal cortex is the seat of the executive functions and is involved in working memory, the monitoring of voluntary action, attention, reasoning, planning and decision making. Furthermore, it exerts its inhibitory control on automatically generated behaviours



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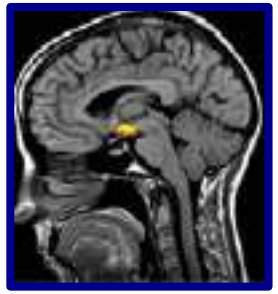
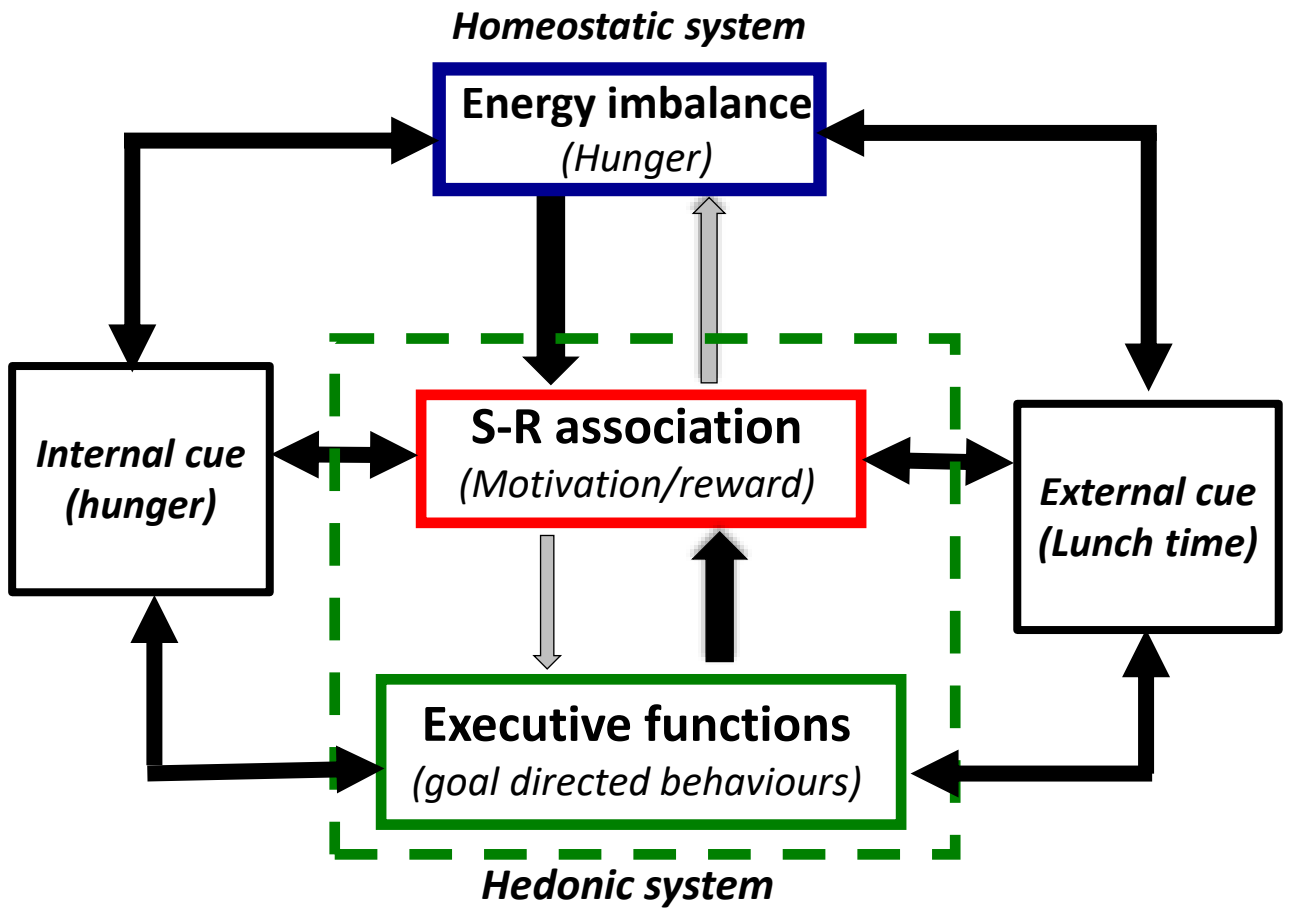
Control of eating behaviors

ipotalamo



Dopamine sys

Prefrontal cortex



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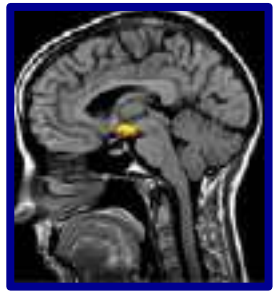

Dopamine sys

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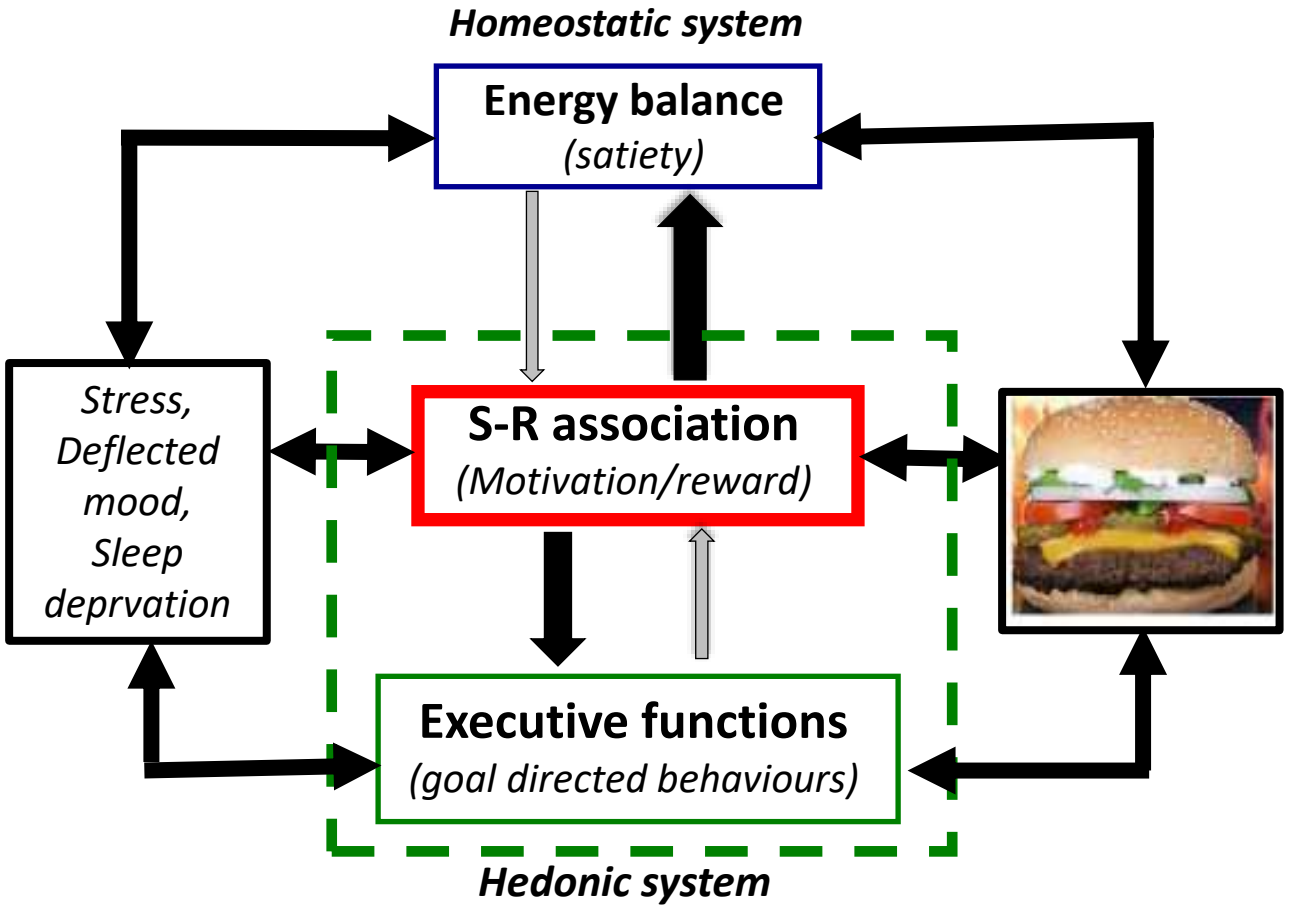

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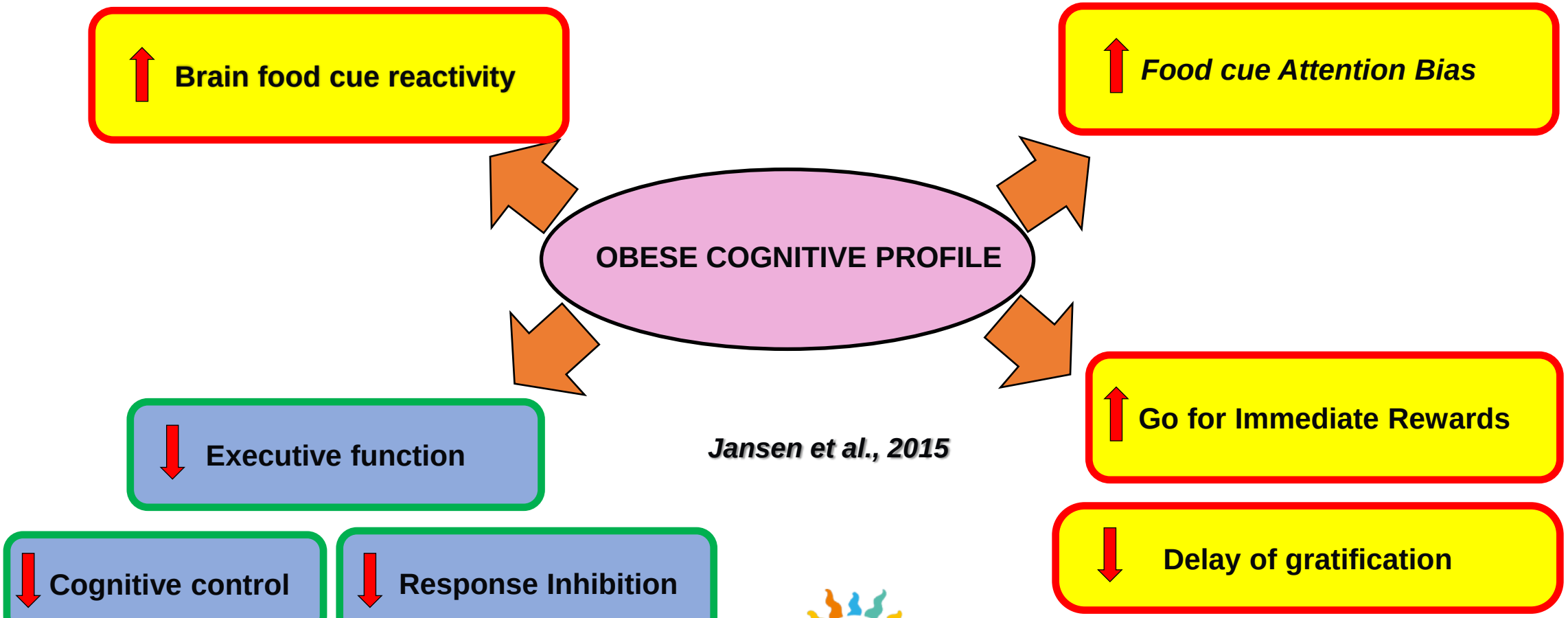
COGNITIVE PROFILE OF OBESE INDIVIDUALS



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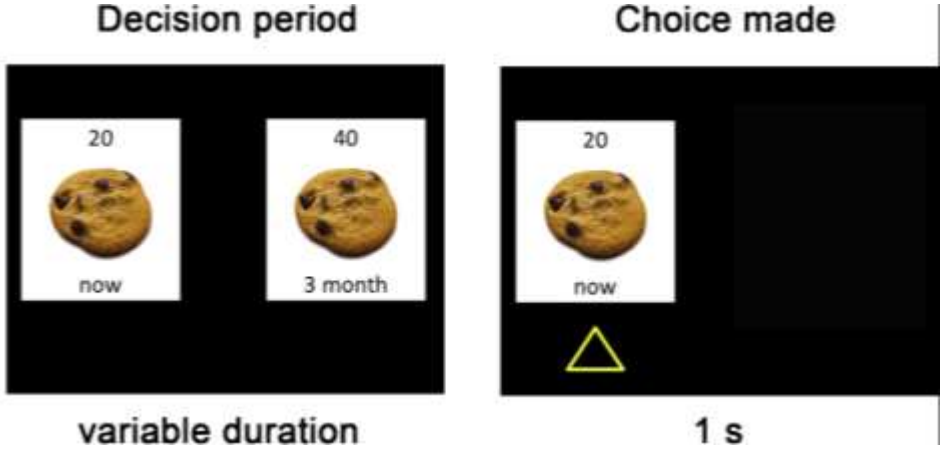
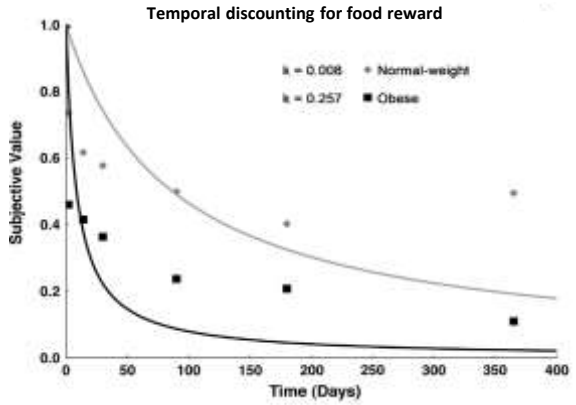
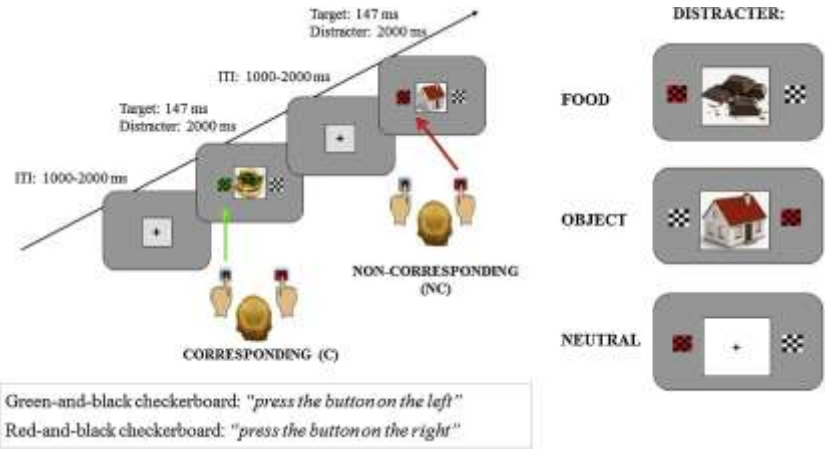
High level impulsivity and low cognitive and attention and cognitive control

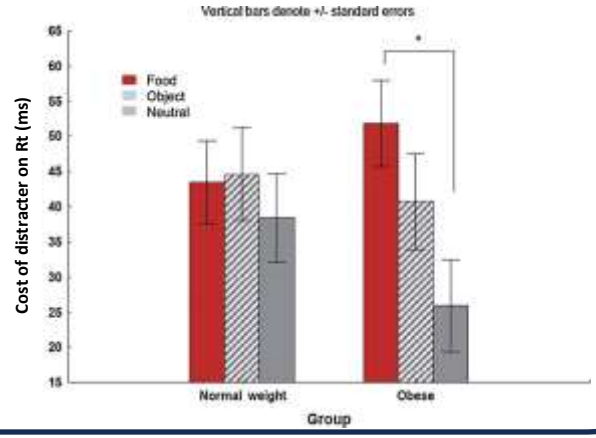
Schiff et al., 2016





Testa et al., 2020





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Consequence of high impulsivity and low cognitive and attention control

Unattractive and frustrating constraints requiring commitment and effort

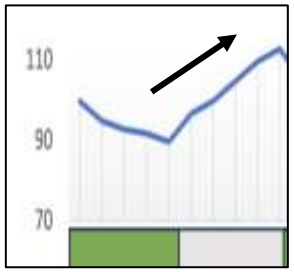
unsatisfactory weight loss
Anger and frustration

Loss of cognitive control and monitoring over eating behaviors

Automatic activation of response schema associated with food reward

MALADAPTIVE UNHEALTHY EATING BEHAVIORS

- ***Emotional (disregulation) eating***
- ***LOCe***
- ***Binge eating (subjective and objective)***
- ***Craving***
- ***Grazing***
- ***Sweeteating***
- ***Gorging***
- ***Snaking/nibbling***



Weight regain

Motivation towards weight loss

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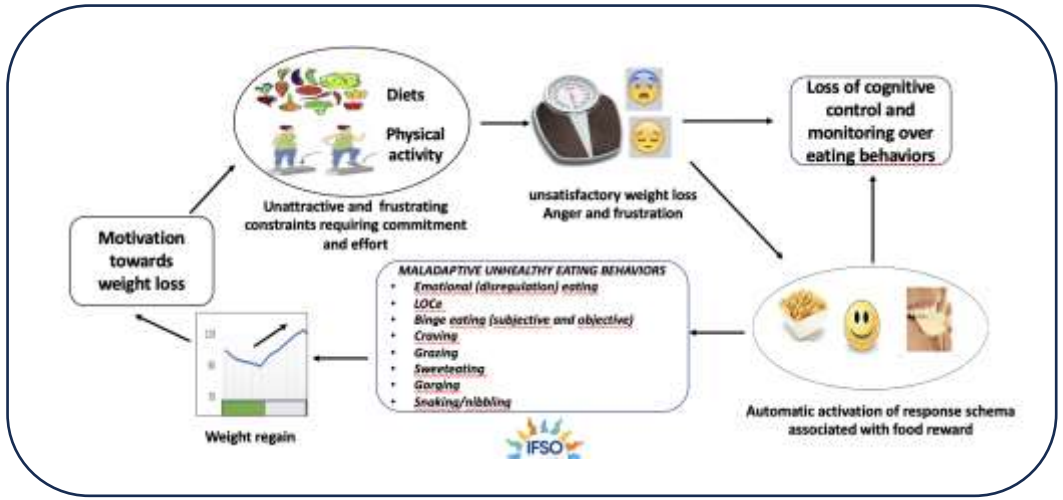
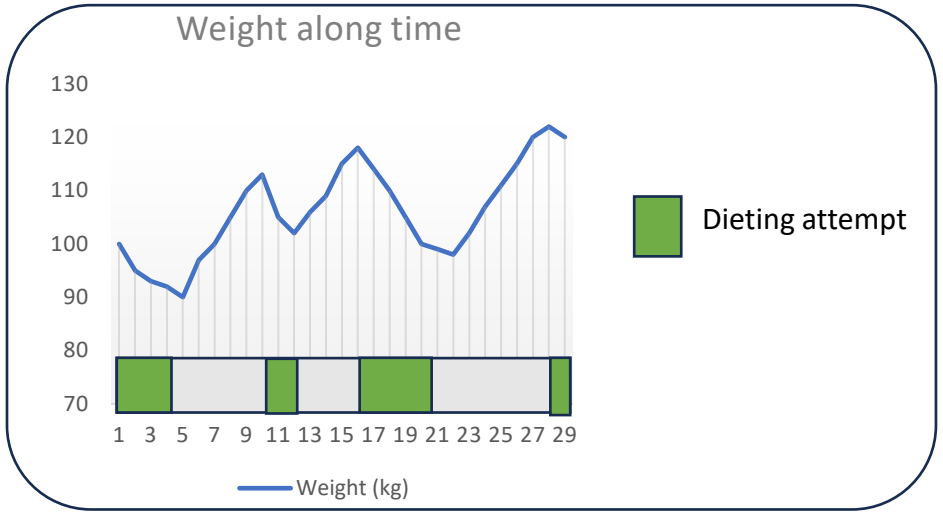
Consequence of high impulsivity and low cognitive and attention control





Loss of attention and monitoring control over eating behaviours

Impulse toward immediate food reward

Effects of the vicious circle at a psychological level

- Low self-esteem and depression symptoms
- Feeling of inability to reach the goal of losing weight
- Social stigma-induced predisposition to negative self-judgment
- Sense of inadequacy and experience of their condition as a fault

Puhl et al., 2021

Patients with obesity are frail with:

- higher risk of suffering from depression (17%) or having an eating disorder (16%)
- High levels of psychosocial distress and impulsivity also in absence of a psychopathological condition

Dawes et al., 2016

To worsen the picture:

- Development of health issues and physical pain
- Higher difficulty to achieve personal well-being
- Higher difficulty in the management of everyday life

- In the absence of other coping strategies to bear the effort of a life lacking satisfaction and pleasure
- Loss of control of eating and persistence of impulsive eating seem to be the only way to obtain gratification, at the cost of the maintaining of excessive weight

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Passiveness of Bariatric patients faced to their health commitments

- Lost all hope of losing weight through their efforts and fed up with fighting, patients come to **bariatric surgery** considering such procedures **their last chance to lose weight** and sometimes the only way to regain their self-esteem and psychological well-being.
- They frequently develop a **passive attitude towards the bariatric journey and** their agency in building healthier food and non-food habits for long-term weight-management after surgery
- Their **attention** often leads them to **focus more on some among the information provided** by professionals such as surgeons, dieticians or psychologists, and less on other factors

MORE ATTENTION PAID TO:

- Surgical procedures and their advantages,
- Exams to be performed before surgery,
- Waitlist before the procedure
- Recovery time after surgery

LESS ATTENTION PAID TO:

- Risks, consequences or side effects of surgery,
- Dietary behaviours to follow before and after surgery
- The need to introduce regular physical activity and in general of healthier sleep-habits, moderate alcohol consumption and smoking

Focus on the problem not on the solution

With regard to their personal commitment (i.e., diet and physical activity), there is a hyperfocus on potential obstacles that make the required activities difficult to perform: daily commitments, working hours, family or child rearing, etc... all potentially valid reasons.

However, what is implicitly lost amid these justifications is the very perception that

…… **their health and well-being are values to be preserved.**

Information processing and understanding

Furthermore, it should be emphasized that along the pre-surgical journey, patients receive a lot of information from different professionals (e.g. surgeons, psychologists, dieticians, etc.).

In some fragile obese patients, this may create a working memory overload, difficulties in information processing and misunderstandings, contributing to the creation of not entirely **realistic expectations** regarding the surgical outcomes.

For example, when they receive information on the effects of sleeve gastrectomy in reducing the sense of “physiological hunger”, patients do not consider the fact that what made them fat was more frequently "hedonic hunger” evoked by “emotional eating”, which does not depend on the ghrelin-releasing cells at the bottom of the stomach which modulate the sense of physiological hunger in the hypothalamus.

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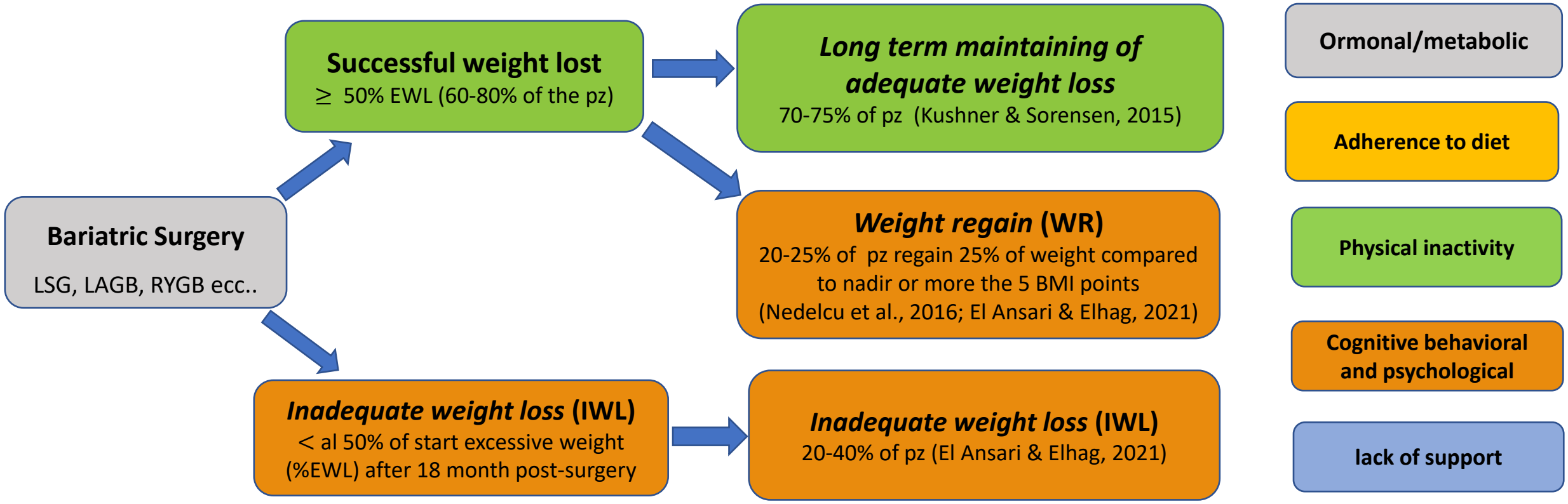
After more than forty years … we know that the story is more complex



How to help out bariatric patient?

For these reasons, to reduce the risk of WR and IWL, it is important in our clinical practice to encourage patients to **play an active role** within the journey both before and after the surgery, **helping and motivating them** to:

1. **Create realistic expectations** about the relationship between weight loss, thinness, and self-esteem, particularly in childhood obesity
2. **Pay attention to lifestyle changes** and the healthy behaviours to maintain over time
3. **Monitor their behaviours in a reflexive way** and not to fall prey to negative thought about themselves or their attitude to unhealthy behaviors
4. **Develop more functional coping strategies**, which respond to the **real** needs of the moment
5. **Adapt** to and **accept** the changes induced by bariatric surgery regarding their body (i.e., weight, body image) and everyday lives (i.e., interpersonal relations)
6. **Resist** the urge to **give up** and **stay committed to the long-term follow-up program**

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Take home message

In conclusion bariatric patients need:

1. To **reinforce** the idea that **they have agency** and **play an essential role** in the management of their well-being, and not only weight-wise
2. To **internalize** that failure is a common experience and not a fault.

….. And this is only part of the story

Thank you for your attention

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