Universitätsklinikum Essen

Clinical and Experiential Insights into the Treatment of Anorexia Nervosa and Forced Feeding

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Conflict of Interest

- **Funding of metreleptin case studies: Christina Barz Foundation, University of Duisburg-Essen**
- **Named as inventor in 3 patent filings for use of leptin analogs in anorexia nervosa and depression (University of Duisburg-Essen)**
- **Contract between University of Duisburg-Essen and small US company for exploitation of potential licences**
- **Leptin and anorexia nervosa related research funded since 1995 by Deutsche Forschungsgemeinschaft, Bundesministerium für Bildung und Forschung and EU**

Personal Experience with Forced Feeding I

- Experience in Essen (adolescent inpatients)
  - < 5-10 patients; highly experienced treatment team
    - Patients acutely refused to eat (and drink)
    - Highly energetic patients, comorbid depression, self-harm
    - Occurence after initial weight gain/treatment
    - Forced feeding in most cases for a few days only
    - Perception of an increase during Covid pandemic
    - Stress for all involved and in particular for treatment team
    - In single cases discharge after short-term forced feeding
      - Prerequisite: patient agrees to eat (and drink) at home, close monitoring
    - Opportunity to reconsider treatment options

Maternal Account: Patient R

- **Severe AN with fixations during prior inpatient treatment for feeding**
- **Metreleptin for 8 days, 7 X 6mg, 1 X 3mg**
- **Antidepressant effect noticeable to the patient as of dosing day 3**
- **Hunger increased during treatment, fullness decreased**
- **Subsequent daily phone contacts for 3-5 minutes for 3 weeks to reintroduce foods**
- **Weight gain of 20 kg (to 60 kg; 87th BMI centile)**
  - **premorbid overweight (≈ 85th BMI centile) and maternal obesity**

18 month follow-up: social phobia, agoraphobic symptoms

R has made tremendous progress! 😀 Her mood is usually positive and she has lots of energy. She can attend school without any problems, because she eats an extended breakfast at seven. For long school days she takes care to bring ample food supplies to school, which she can eat in the presence of her peers. When she comes home, she is HUNGRY ! Even when I cannot accompany her at meals, she manages to prepare and eat her food herself. She really does an excellent job! I have now allowed her to participate in gymnastics and judo lessons, because she has intermittently reached her premorbid body weight.

I am so happy that you enabled her to open up this damned cage door. Several people have noticed that R is much more content and open for contacts.

Gradl-Dietsch et al., Obes Facts 2023

Personal Experience with Forced Feeding

- **Forensic experience: mandatory hospitalizations of adolescent patients in closed wards (§1631b BGB)**
  - **Highly complex patients**
    - **Suicidal, PTSD, accentuated personality features**
    - **Occurrence after longer treatment episodes**
    - **Therapeutic team under high stress**
    - **Highly energetic patients**

Review and Meta-Analysis of Compulsory Treatments of Eating Disorders: BACKGROUND

- **Ethical, philosophical and legal principles; lack of empirical data**
- **Discrepancies in literature findings principally due to**
  - **Differences in study population composition (age, gender, diagnoses, illness duration)**
  - **Kind of treatment (feeding or artificial nutrition, out- or inpatients)**
  - **Length of compulsory treatment (few days versus many weeks)**
  - **Setting (psychiatric wards, general hospitals, residential homes)**
    - **dependent on national legislations**
  - **Thin border between formal coercion and 'strong persuasion'**
- **Appropriate treatment outcomes?**
- **"Insight": i) awareness of suffering from a mental illness, ii) understanding of cause of such distress, iii) acknowledgment of need for treatment.**

Review and Meta-Analysis of Compulsory Treatments of Eating Disorders: METHODS

- **PRISMA guidelines**
- **Search terms: "treatment refusal", "forced feeding", compulsory/coercive/ involuntary/forced treatment/admission", "eating disorders", "feeding and eating disorders", "anorexia nervosa", "bulimia nervosa"**
- **Publications between 1975 and 2020 in English**
- **905 articles retrieved, 9 included**
  - **United Kingdom (n=4), Australia (n=3), US (n=1), Norway (n=1)**
  - **242 compulsorily and 738 voluntarily treated patients (mostly females)**
  - **4 studies also included patients with BN and EDNOS; majority AN patients**
  - **Range mean age: 16 to 37.6 years**
  - **Range mean illness duration: 1.9 to 18.3 years**

Review and Meta-Analysis of Compulsory Treatments of Eating Disorders: RESULTS

- **Prior hospitalizations more frequent in compulsory group**
- **Depression, substance abuse and self-harm higher in compulsory patients**
- **Mean illness duration not statistically significant (1.7 years longer in compulsory patients)**
- **8 studies concerned patients with mean BMI ≤ 15 kg/m²**
- **Significantly lower mean admission BMI (0.57 kg/m²; AN patients: 0.84 kg/m²)**
- **Compulsory patients mean discharge BMI 0.38 kg/m² higher**
- **Large variations for length of stay; compulsory patients treated significantly longer (Δ 3 weeks)**
- **Mortality rates not different (reported in 3 studies)**

Atti et al., Eating and Weight Disorders 2021; 26:1037–1048

Review and Meta-Analysis of Compulsory Treatments of Eating Disorders: DISCUSSION and CONCLUSIONS

- **Obliging patients to compulsory treatment does not undermine the efectiveness of the treatment itself and not forcing them does not reduce the probability of a favorable outcome**
- **To reduce perception of coercion, outpatient rather than inpatient compulsory treatment could be helpful**
- **Type of ward (nutritional or internal medicine ward rather than a psychiatric locked ward) in which the compulsory treatment takes place could be relevant to improve patients' acceptability and fight stigma.**

Review and Meta-Analysis of Compulsory Treatments of Eating Disorders: LIMITATION (Patient Perspective not Included)

- **Qualitative design of all publications on patient's (and family's) perspective: exclusion criterion**
  - **Addressing patient's point of view would have been relevant:**
    - **Patients reported that trusting relationship with health professionals could prevent admission to be perceived as coercive**
- **Degree of satisfaction after discharge similar between voluntary and involuntary admissions**
- **According to one study, nearly half of patients who denied need for treatment acknowledged it in just two weeks of inpatient care**
- **Agreement among patients and parents that it would not be right to allow someone to die as a result of respecting their refusal of treatment**

Atti et al., Eating and Weight Disorders 2021; 26:1037–1048

Treating Anorexia Nervosa
Weight Gain is Crucial

- **American Psychiatric Practice Guideline**
  - **The goals of nutritional rehabilitation (…) are to (…) correct biological and *psychological sequelae of malnutrition*, normalize eating patterns, and achieve normal perceptions of hunger and satiety**
  - **Weight gain also results in improvements in psychological complications of semistarvation. …. considerable evidence to suggest that other eating disorder symptoms diminish as weight is restored and maintained**

Crone et al., Am J Psychiatry 2023

https://www.hypnotic-downloads.com/keep-weight-off-after-reaching-your-target
https://www.nationaleatingdisorders.org/learn/general-information/recovery

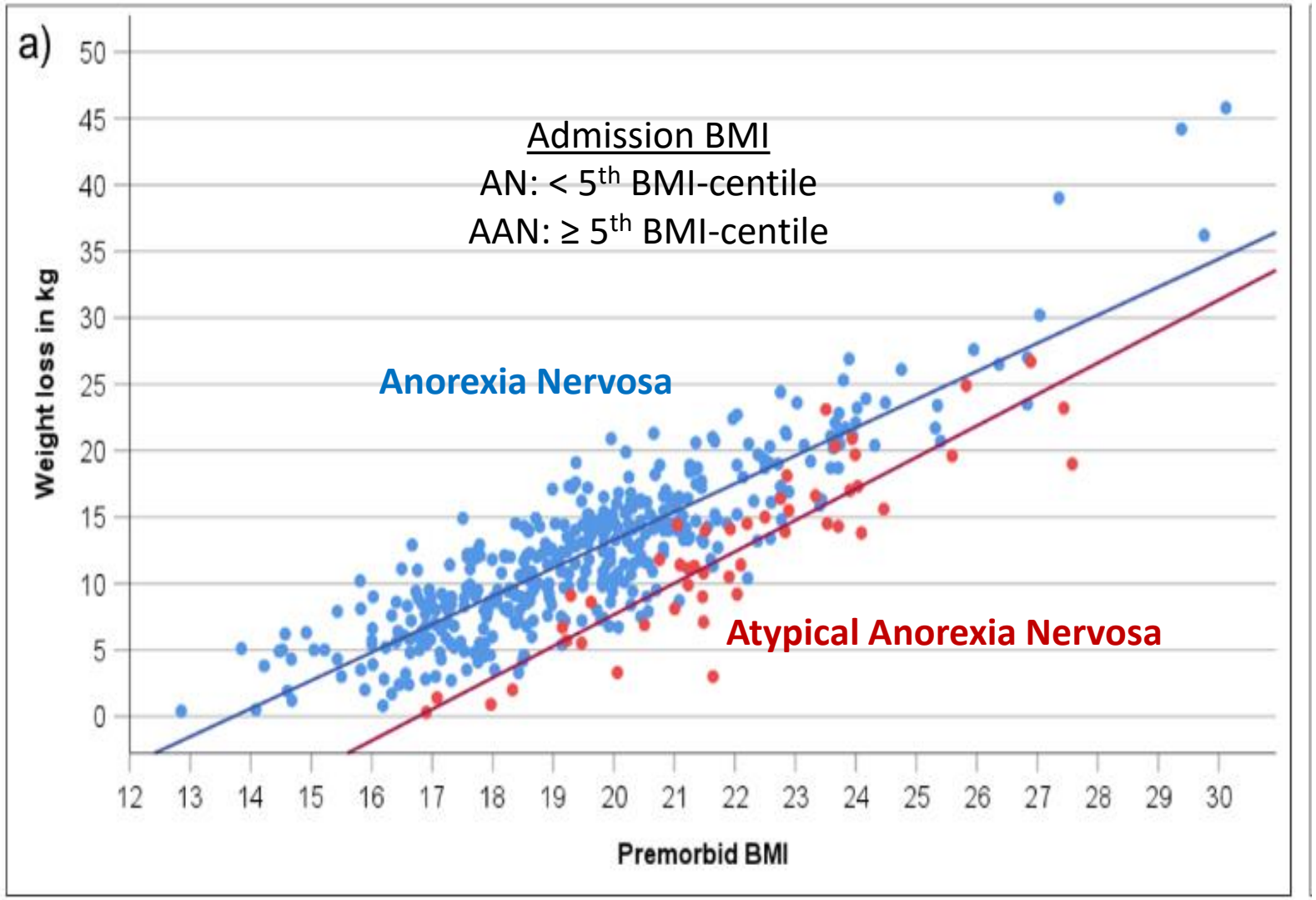
Reasons to Relax

- Patients are different
  - Patients for whom compulsory treatment is considered may be more energetic
    - Prominent role of dynamic mechanisms
- Weight gain crucial, but weight gain required for re-attainment of mental health not realistic and potentially illegal within compulsory treatment
- Long duration of AN
  - Compulsory treatment does not cure

Relationship between Premorbid BMI and Weight Loss in Kg (n = 460)

Non-parametric Spearman correlations

AN: ρ= 0.84
AAN: ρ= 0.89



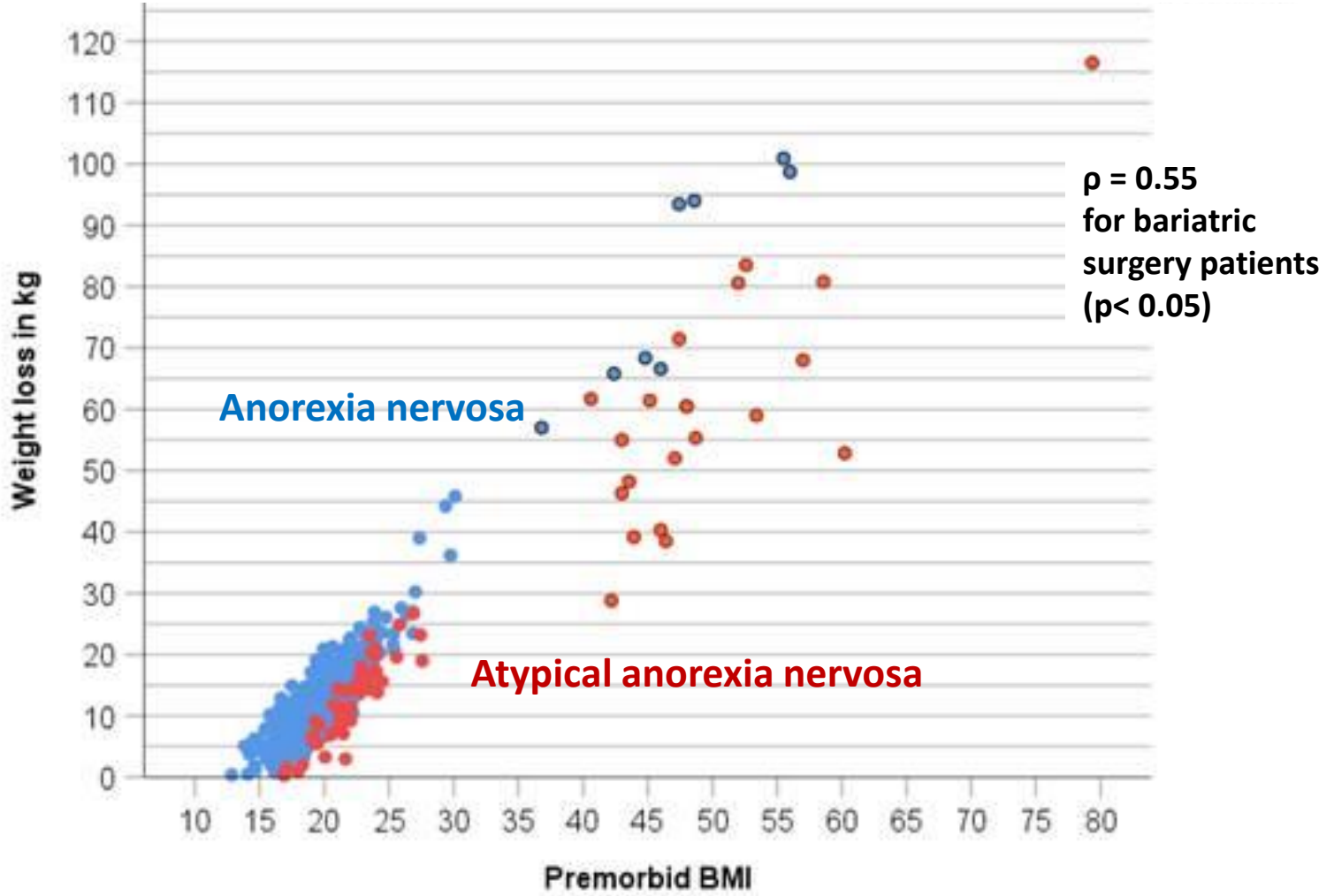
Premorbid BMI estimated from recalled weight prior to onset of weight loss and measured height at admission

Hebebrand et al.,
Int J Eat Dis, 2024

Relationship between Premorbid BMI and Weight Loss in Kg

- **460 patients with AN**
  BMI < 5th centile
- **49 patients with AAN**
  BMI ≥ 5th centile
- **29 patients with an AN-like phenotype after bariatric surgery**

AN: BMI < 18.5 kg/m²
AAN: BMI ≥ 18.5 kg/m²



Hebebrand et al., in preparation

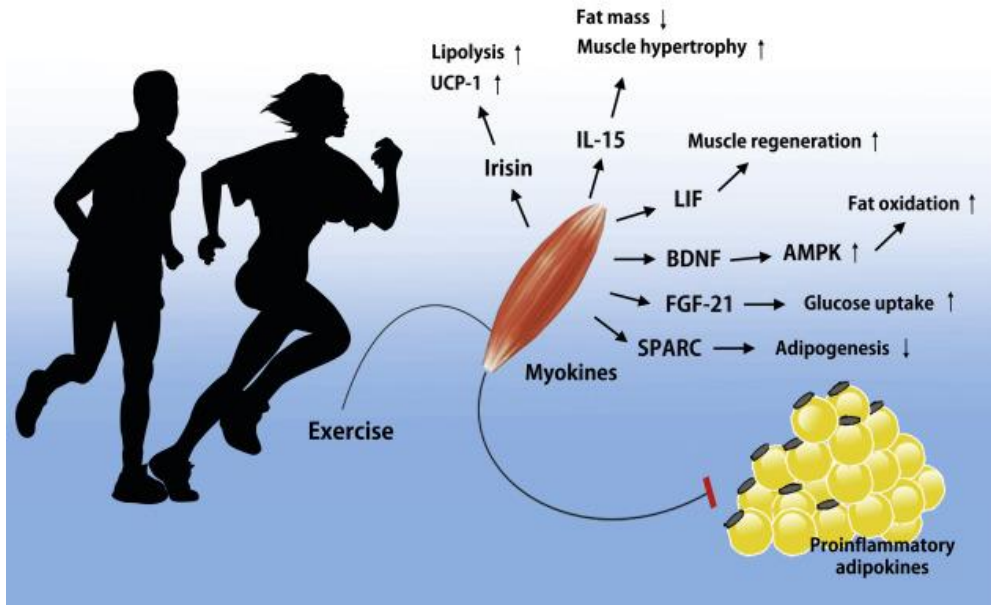
How does Weight Gain Lead to Mental Improvement?

- Direct effects of increased energy intake?
  - Elevation of energy intake alone not effective
    - If prolonged, inseparable from weight gain
- Direct and indirect effects of weight gain?
  - Non-adipose tissue mass
  - Adipose tissue mass

How does Weight Loss Lead to Mental Deterioration?

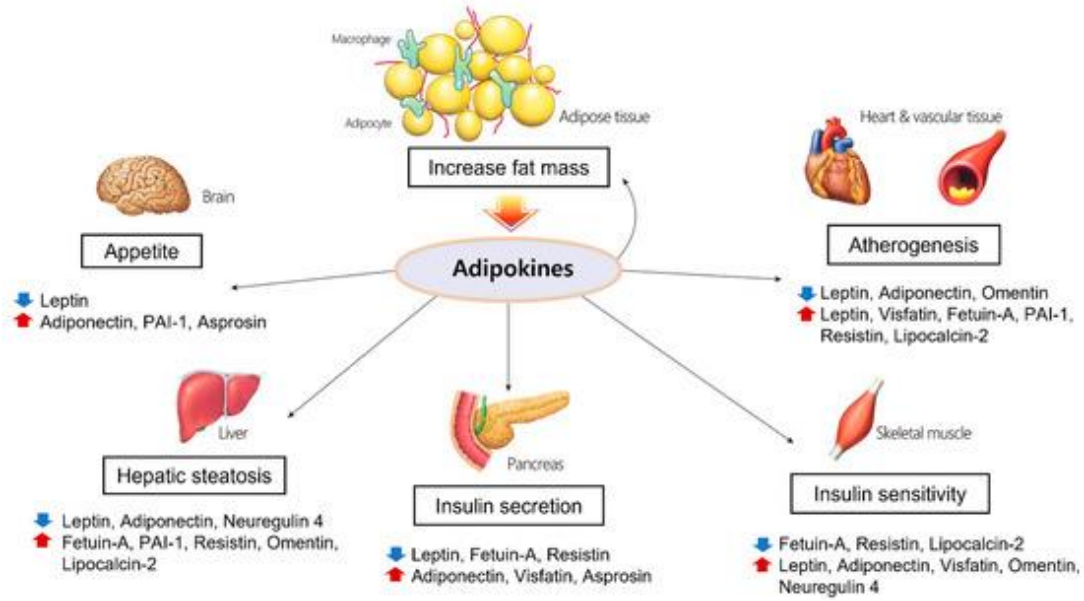
Weight Loss
Loss in Fat Free Mass and Fat Mass

- **Fat Free Mass**
  - **e.g. brain, liver, bone, muscle**
    - **e.g. muscle**
      - **myokines**



So et al., Integ Med Research 2014

- **Fat Mass**
  - **largest endocrine tissue**
  - **adipokines**
    - **e.g. leptin, visfatin, adiponectin**
    - **> 100 known adipokines**



Kim et al., Molecules 2022

Weight Loss-Induced Entrapment

- **Entrapment cardinal symptom of AN/atypical AN**
  - **persistent and impairing preoccupation with food and/or weight, reduced nutritional intake, and weight phobia in the context of psychological and physiological adaptations to starvation**
- **Hypothesis: weight loss is trigger of AN/atypical AN (single disorder)**
- **Different reasons for weight loss: intentional, otherwise behaviorally motivated, unintentional**
  - **Different premorbid BMIs**
- **Patients must cope with entrapment**
  - **Compulsory treatment of patients with high comorbidity, accentuated personality features; association with premorbid overweight?**

Hebebrand et al., Int J Eat Dis 2024 Spotlight

Treatment Team and Compulsory Treatment

- **Transparent and participative decision making process**
  - **Cave: ambivalent or resistant team**
  - **Supervision**
  - **Critical reflection of all options and potential consequences**