Advanced Parkinson's Disease Patients Eat Less Food in Comparison to Early Parkinson's Patients and Healthy Controls in a Controlled Lunch Setting

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Introduction

- **Unintentional weight loss** and malnutrition have been observed among **Parkinson's disease (PD)** patients (1).
- **Changes in food intake** and eating behavior, potentially caused by fine motor dysfunction and eating-related symptomatology might explain these observations (2).
- **No objective study** has been conducted to evaluate this relationship.

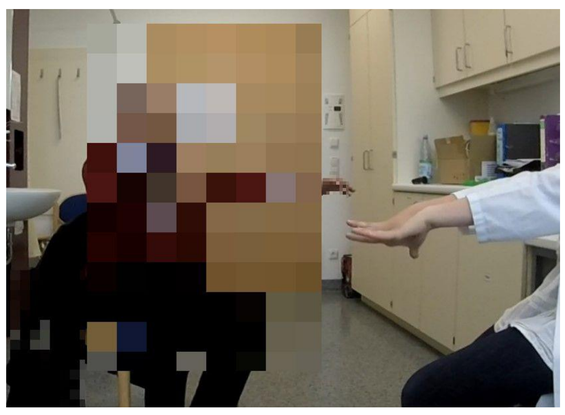

Figure 1-3. The lunch setting, food served and the clinical evaluation.

Aim and Methods

- The aim was to explain variations in food intake among **early** (n = 21; age 61.4 ± 8.7 years; Hoehn and Yahr stage (H&Y) ≤2, disease duration ≤5 years) and **advanced PD patients** (n = 20; age 63.5 ± 7.2; H&Y >2, disease duration ≥7 years) and **healthy controls** (n = 23; age 62.5 ± 7.7).
- Participants freely ate **standardized meals** (served portions: **400 g sausages, 200 g potato salad, and 200 g apple purée**), monitored through cameras at the hospital, while the consumed food was measured with a weighing scale.
- **Multiple regression** models were performed to **explain variations in food intake** (explanatory variables: **PD status**, **gender, number of mouthfuls** and **clinical tremor score**).

Results

- Advanced PD patients ate significantly less food (kcal) than healthy controls and early PD patients in single meals when controlling for gender (**Model 1, Table 1**).
- Adding number of mouthfuls and clinical tremor score in a successive regression model reduced this association (**Model 2, Table 1**).

	Variables	*B*	P
Model 1	Advanced PD	-176	**0.003**
	Gender	273	**0.000**
Model 2	Advanced PD	-57	0.226
	Gender	205	**0.000**
	Mouthfuls	10	**0.000**
	Tremor	-37	**0.013**

Table 1. Regression models. Dependent variable = **food intake (kcal)**. P<0.05 is considered significant.

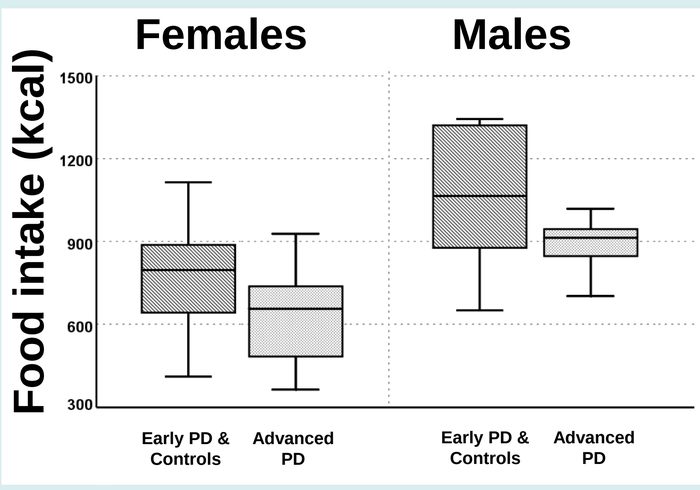

Figure 4. Boxplots illustrating the difference in food intake (kcal) when comparing advanced PD patients vs. healthy controls combined with early PD patients, stratified by gender.

Conclusions

- **Weight loss and malnutrition** among advanced PD patients might be **explained by lower food intake**, mediated by fewer mouthfuls per meal and more severe tremor symptoms.
- Our results indicate that interventions to **reduce tremor symptoms** and to prompt advanced PD patients to **take more mouthfuls** have the potential to be clinically useful in protecting against unintentional weight loss and malnutrition.
- Additional data collection might facilitate the creation of early, eating-based, behavioral tests for the evaluation of the disease's trajectory (3).

References

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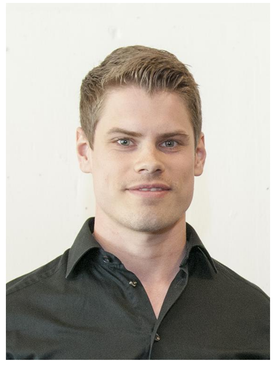
3. www.i-prognosis.eu @iprognosisEU @i_PROGNOSIS



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