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WEIGHT GAIN MECHANISMS AFTER DEEP BRAIN STIMULATION OF THE SUBTHALAMIC NUCLEUS IN PARKINSON'S DISEASE PATIENTS

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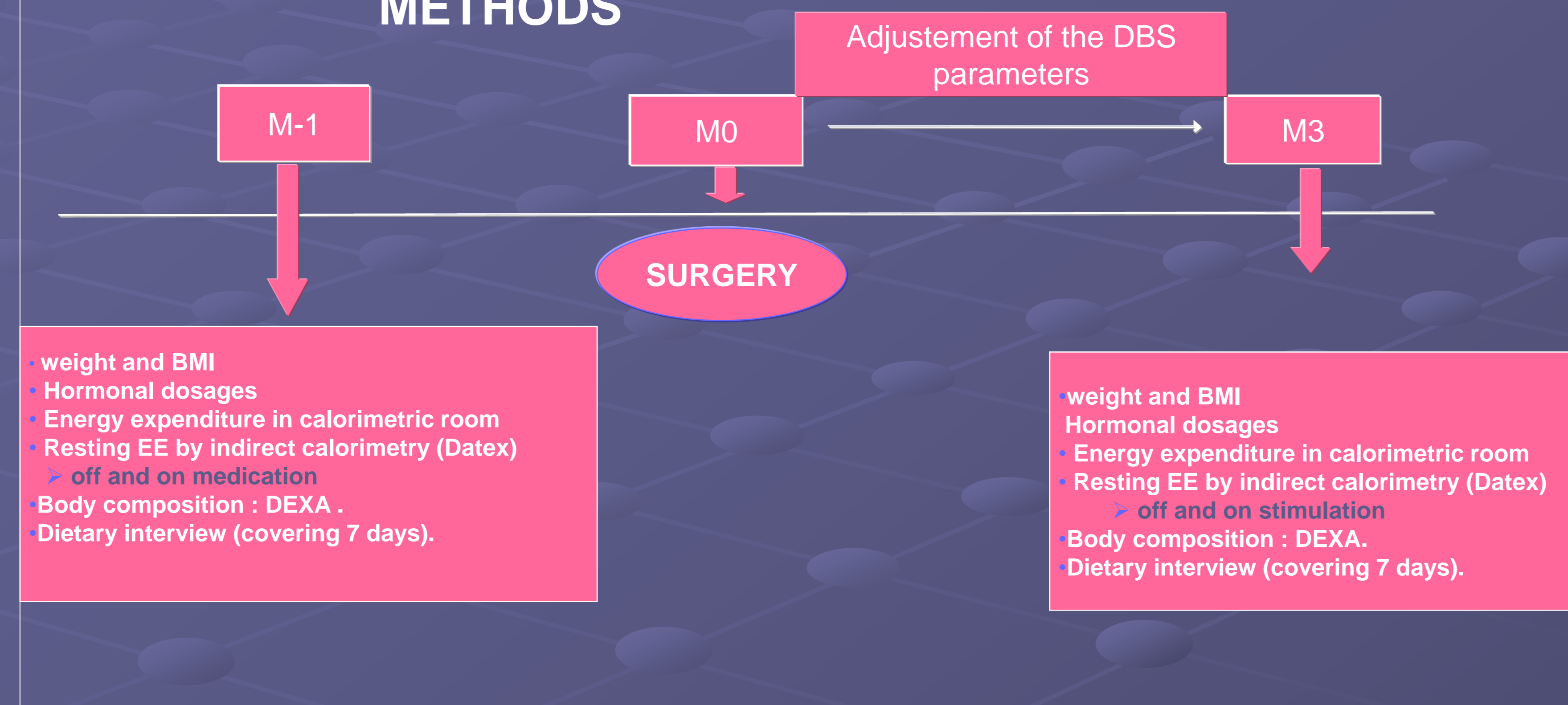
INTRODUCTION : Deep brain stimulation (DBS) of the subthalamic nucleus (STN) improves parkinsonian symptoms and attenuate motor fluctuations, it allows antiparkinsonian medication reduction but one of the frequent adverse effect is an important weight gain.

OBJECTIVES : to study the mechanisms of this body weight gain in Parkinson's disease (PD) patients 3 months after surgery.

PATIENTS

Number : 17.
 Gender (M/F) : 14/3.
 Age (year) : 59,9 ± 6,3.
 Disease duration (year) : 9,3 ± 3,4.
 LEDD (mg/day) : 1156 ± 374,5.
 Levodopa challenge before surgery: 79,9% improvement.
 Hoehn & Yahr on medication : 1,86 ± 0,61.

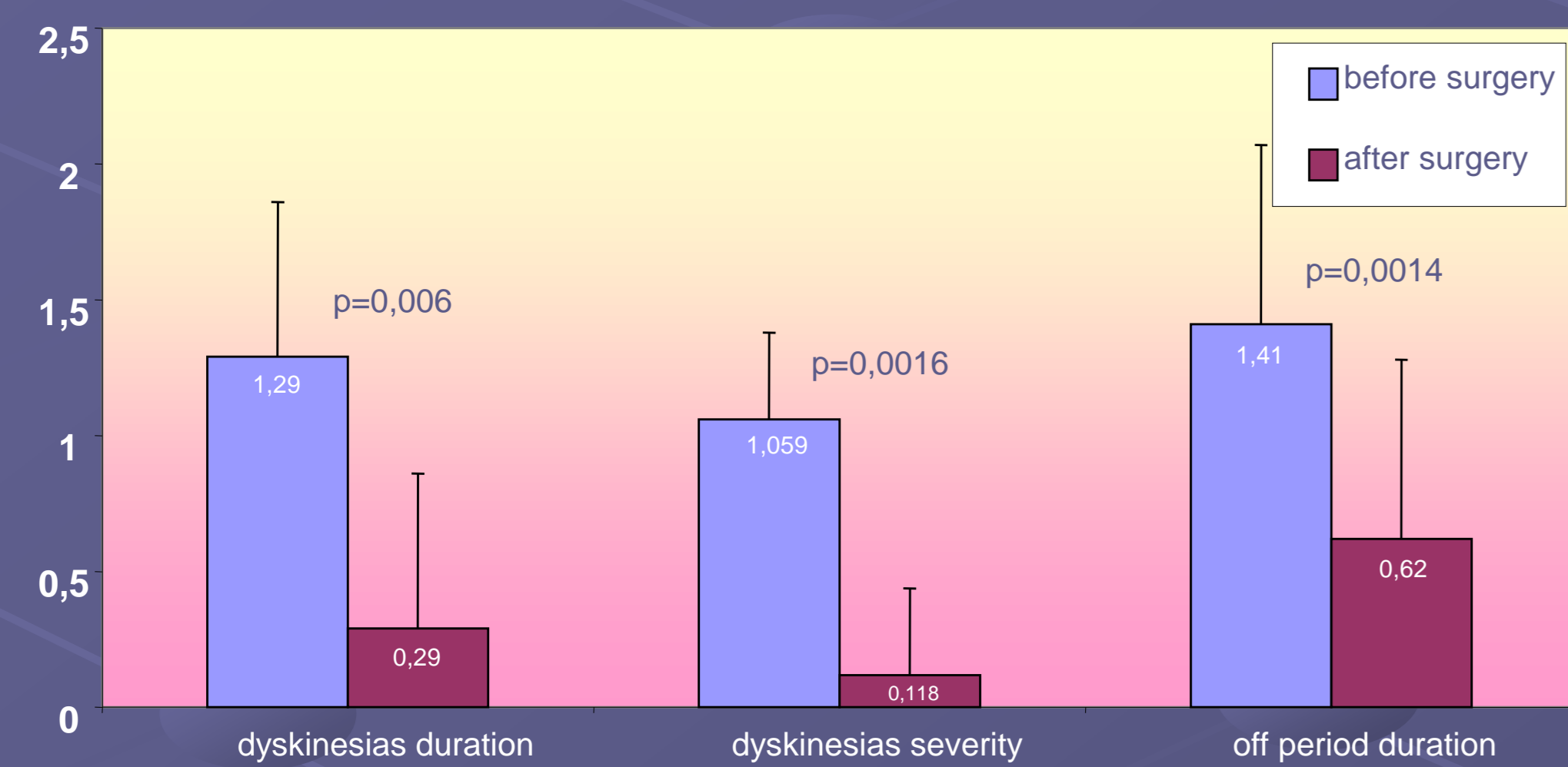
METHODS



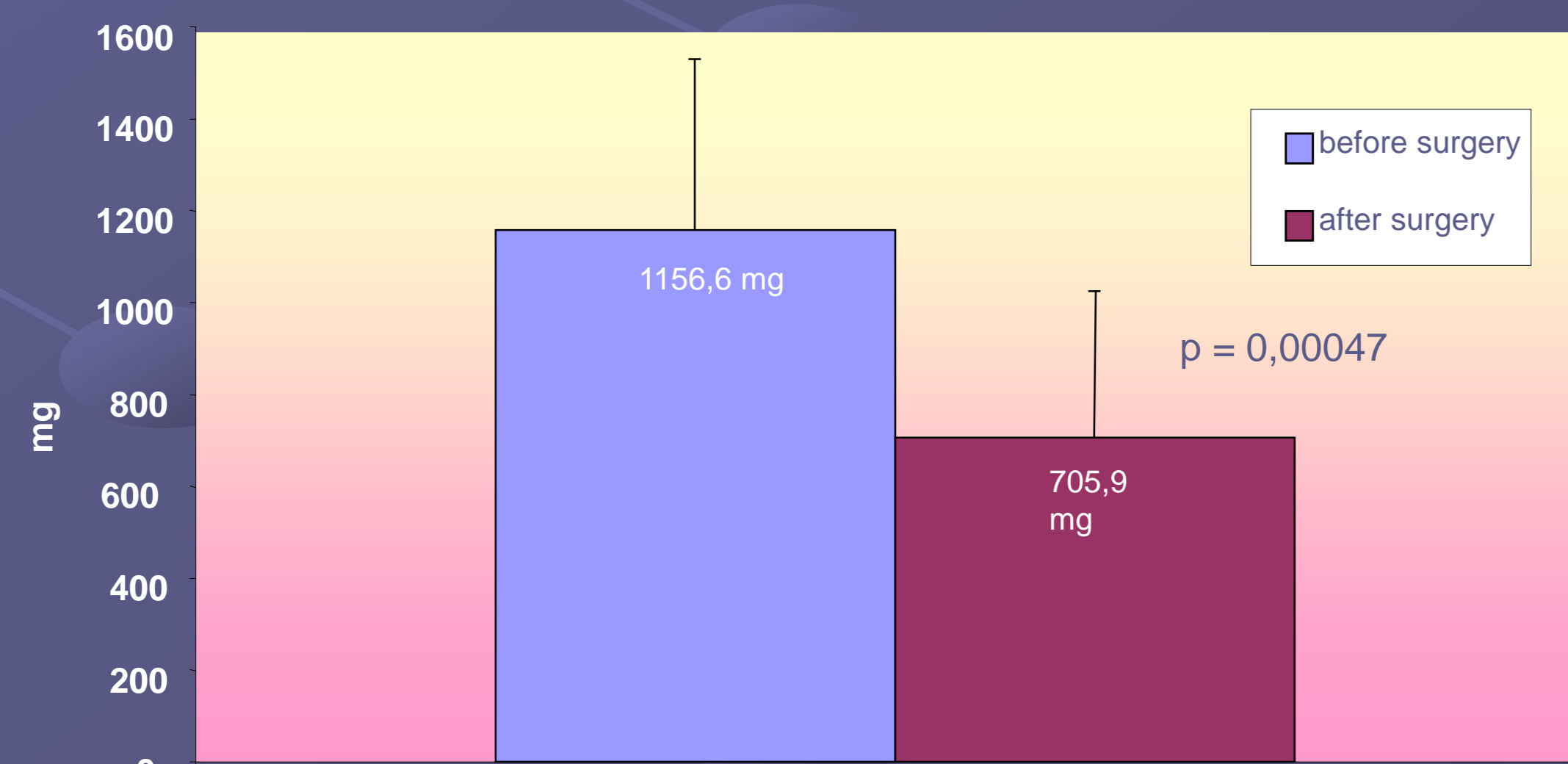
ENERGY EXPENDITURE DURING 24 HOURS IN A CALORIMETRIC ROOM IN DIFFERENT SITUATIONS



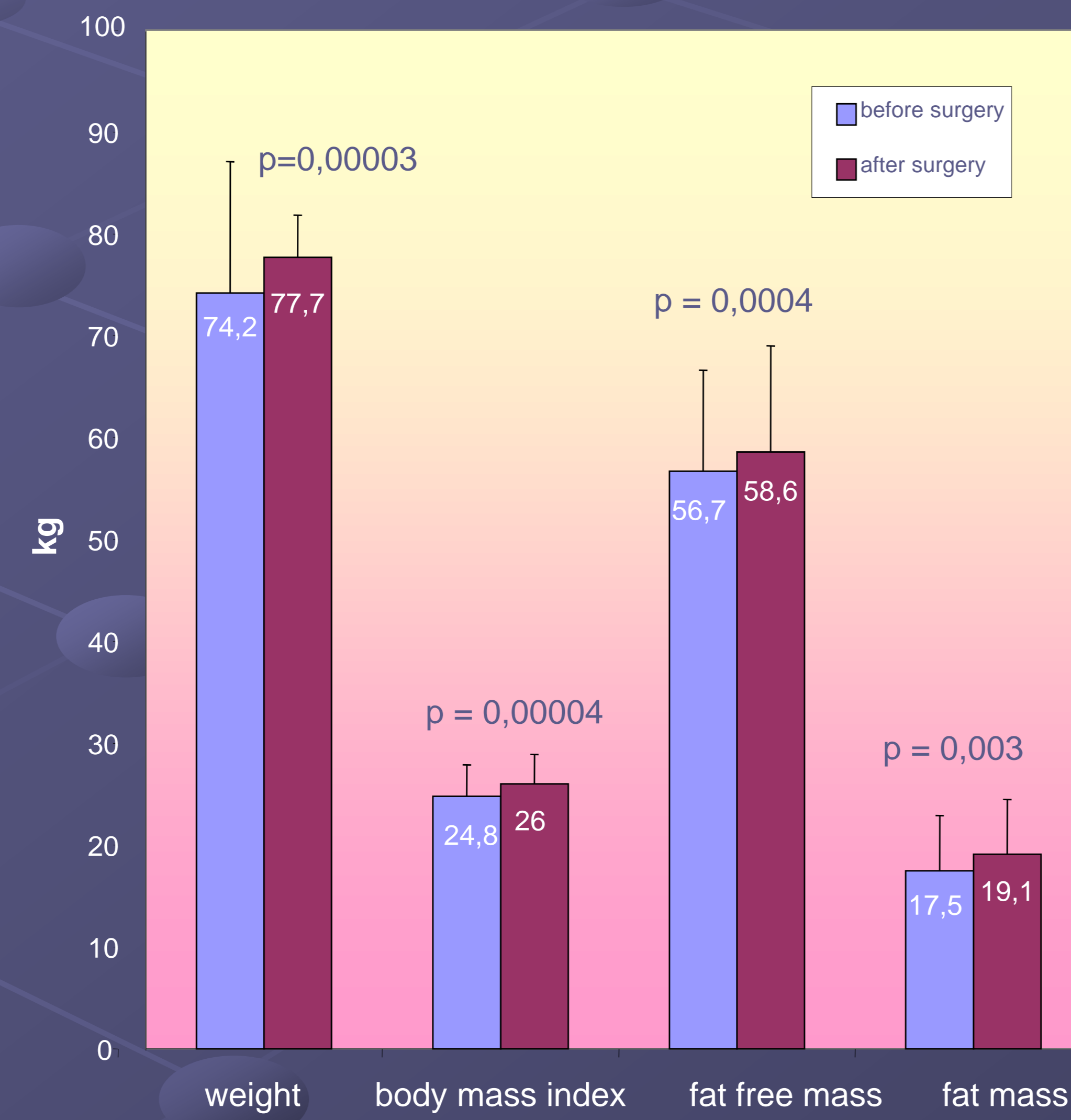
RESULTS



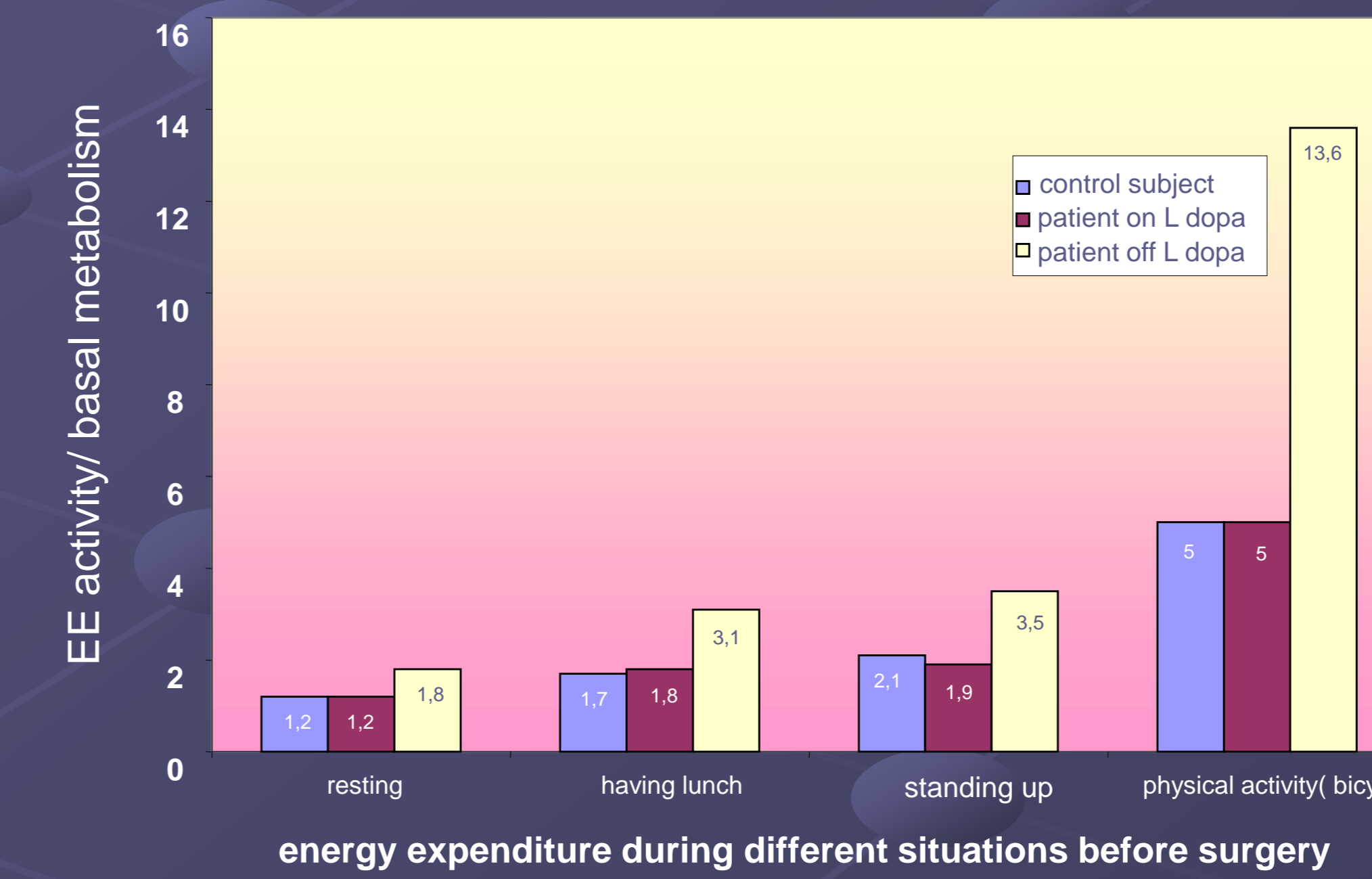
Significant improvement of the motor fluctuations after DBS-STN



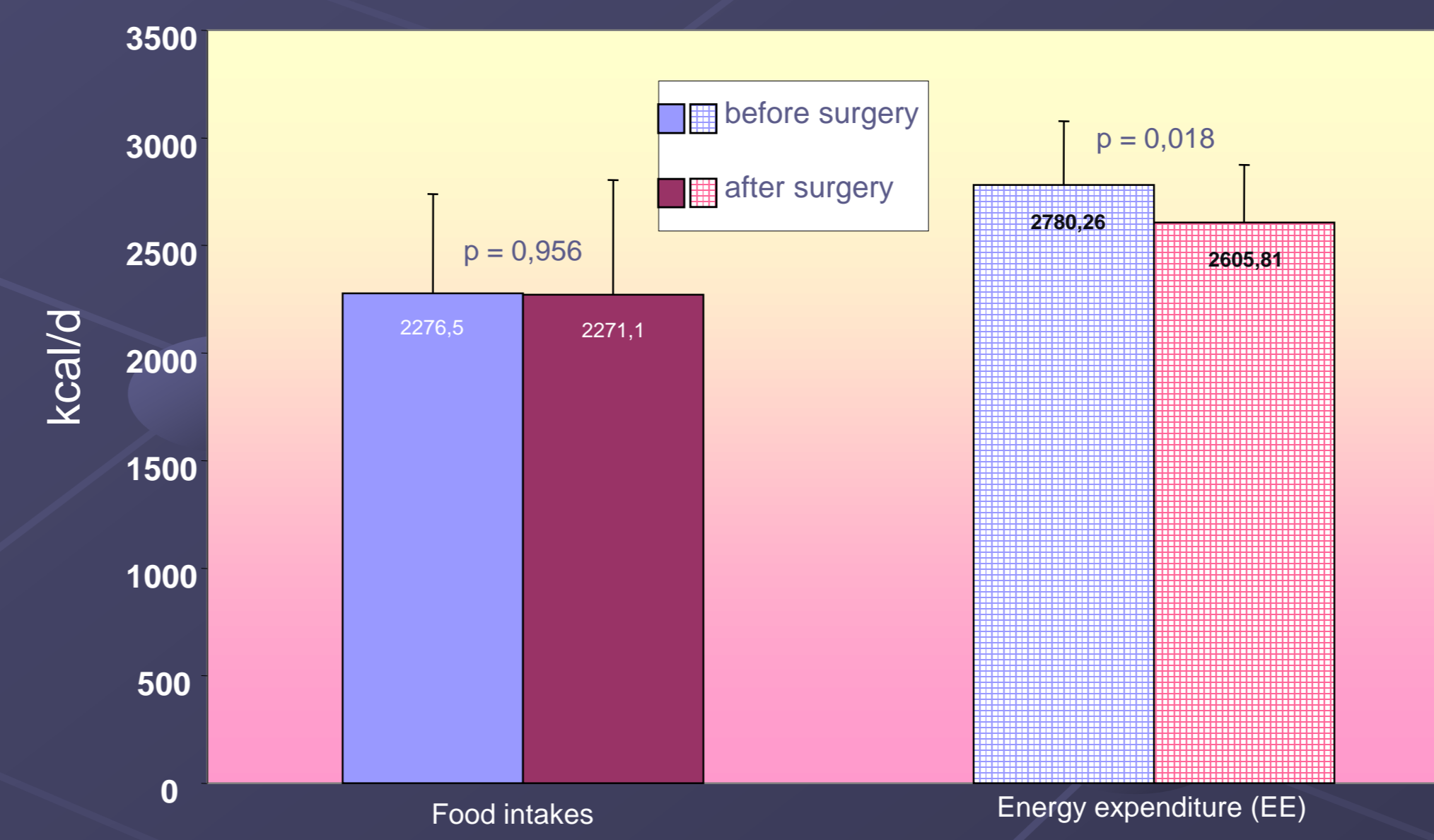
Significant decrease in LEDD 3 months after surgery



Mean Body weight gain : 3,5 kg Especially a fat mass increasing (+12%) .



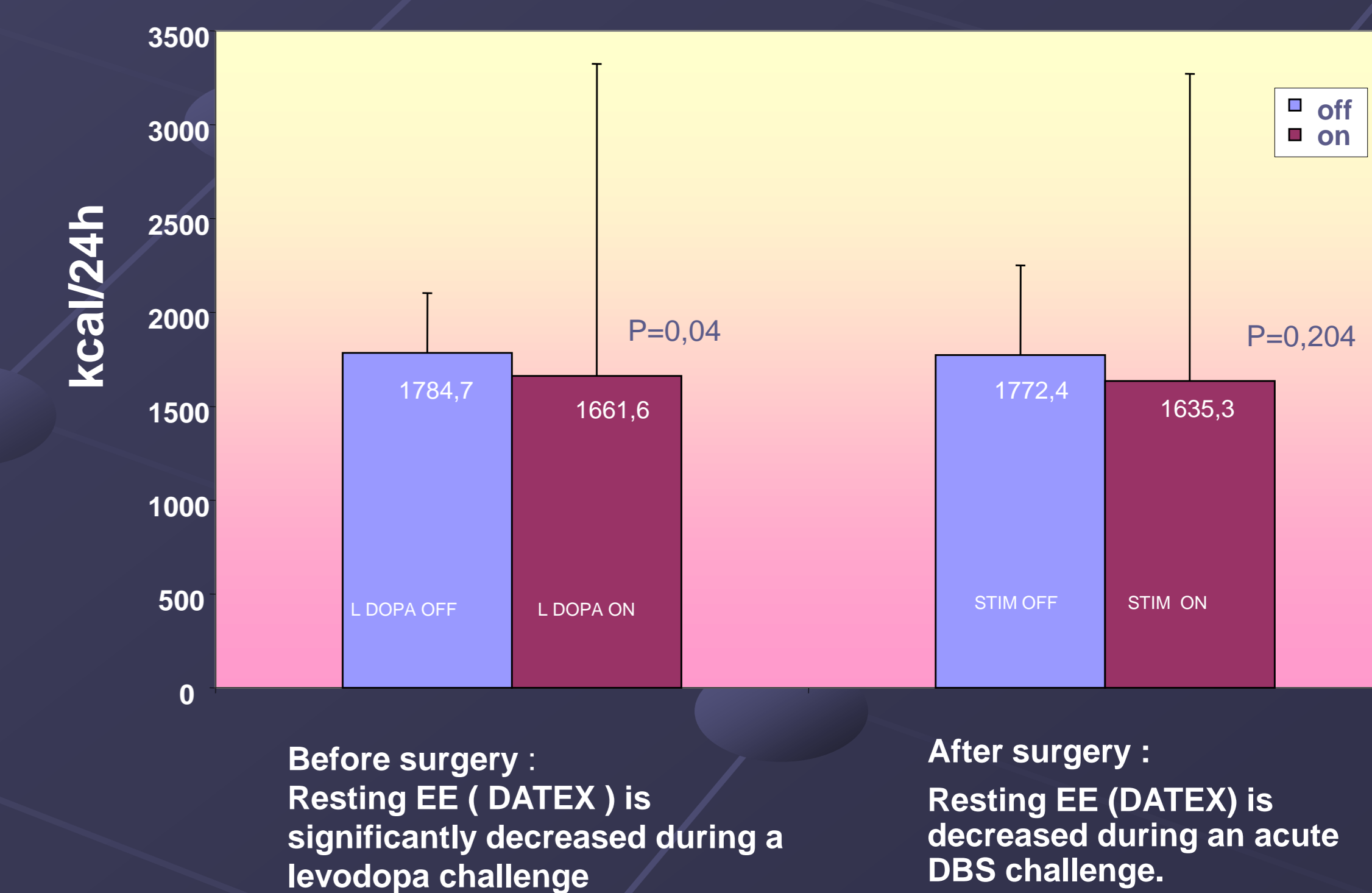
energy expenditure during different situations before surgery



Comparison of food intakes and EE (24h) before and after surgery



energy expenditure during 24h before surgery in different conditions (off or on medication): Importance of the motor status on the EE.



Before surgery : Resting EE (DATEX) is significantly decreased during a levodopa challenge

After surgery : Resting EE (DATEX) is decreased during an acute DBS challenge.

Discussion : Before surgery, EE is increased during the off condition, especially during a physical activity. After chronic DBS- STN, there is a significant reduction of the motor fluctuations and a decrease of EE whereas the food intakes are not changed.

Conclusion : The gain weight after chronic DBS-STN in PD patients EE after surgery is explained by a normalization of EE without changes of the food intakes.