



Changes in objectively measured physical activity after 2-year lifestyle intervention in pediatric patients with abdominal obesity

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Aim: to evaluate physical activity changes objectively measured by accelerometry in children and adolescents with abdominal obesity after a multidisciplinary intervention.

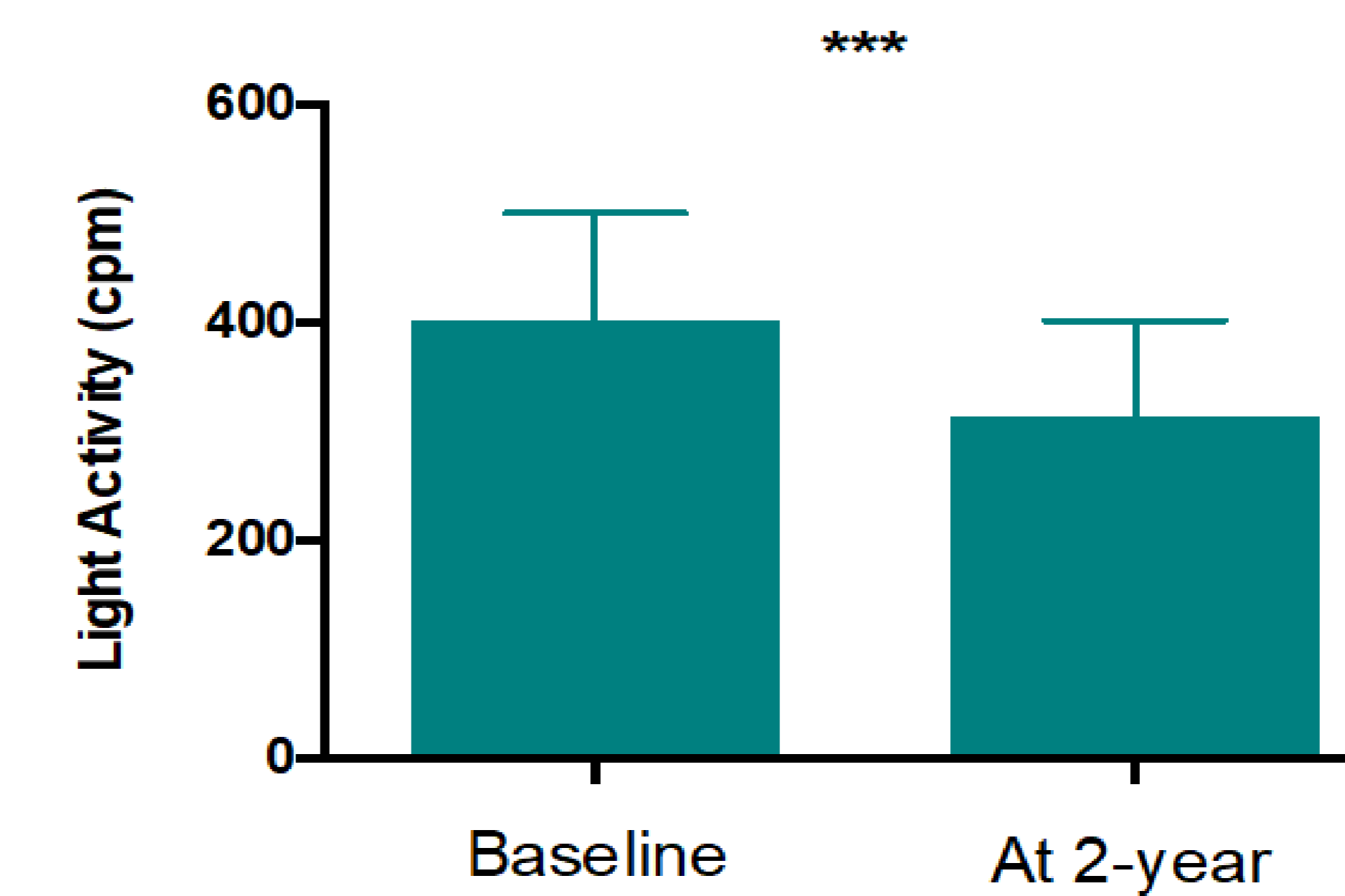
Patients, Material y Methods

- Patients:** 102 children and adolescents, 7-16 years with abdominal obesity (waist circumference >p90). Mean age: 11 years; 61% female).
- Multidisciplinary interventional study:** to lose weight, during 8 weeks (intensive phase) and yearly follow-up up to 2 years.
- Participant were divided in two groups: **intervention group** (hypocaloric Mediterranean diet), and **control group** (food pyramid recommendations, SENC, 2007).
- Both groups were encourage to increase moderate to vigorous physical activity in 200 minutes weekly.
- Physical Activity:** evaluated by accelerometry (Actigraph GT3x, Actilife6 software) at onset at 8 weeks, at year 1 and 2 follow-up. Available data was obtained from 38 participants at the end of intervention.
- Physical Activity (PA) parameters:** light PA, Moderate to vigorous PA (MVPA), sedentary time, METS.
- Anthropometric parameters:** weight, height, BMI, hip, waist and neck circumference, fat mas and fat free mass.
- Biochemical parameters:** insulin, leptin, cholesterol y triglycerids.
- Statistical analysis :** STATA 12.0.

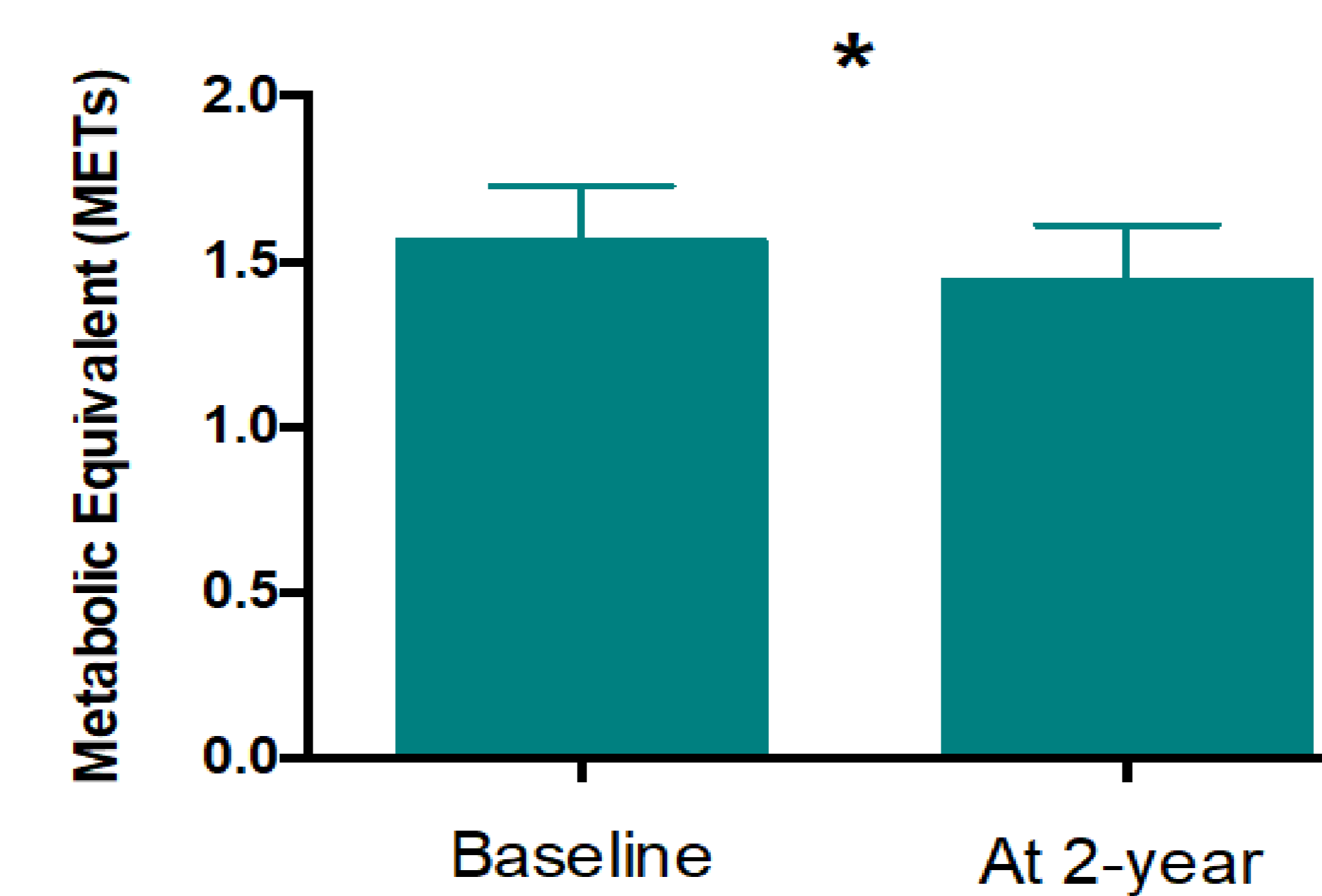
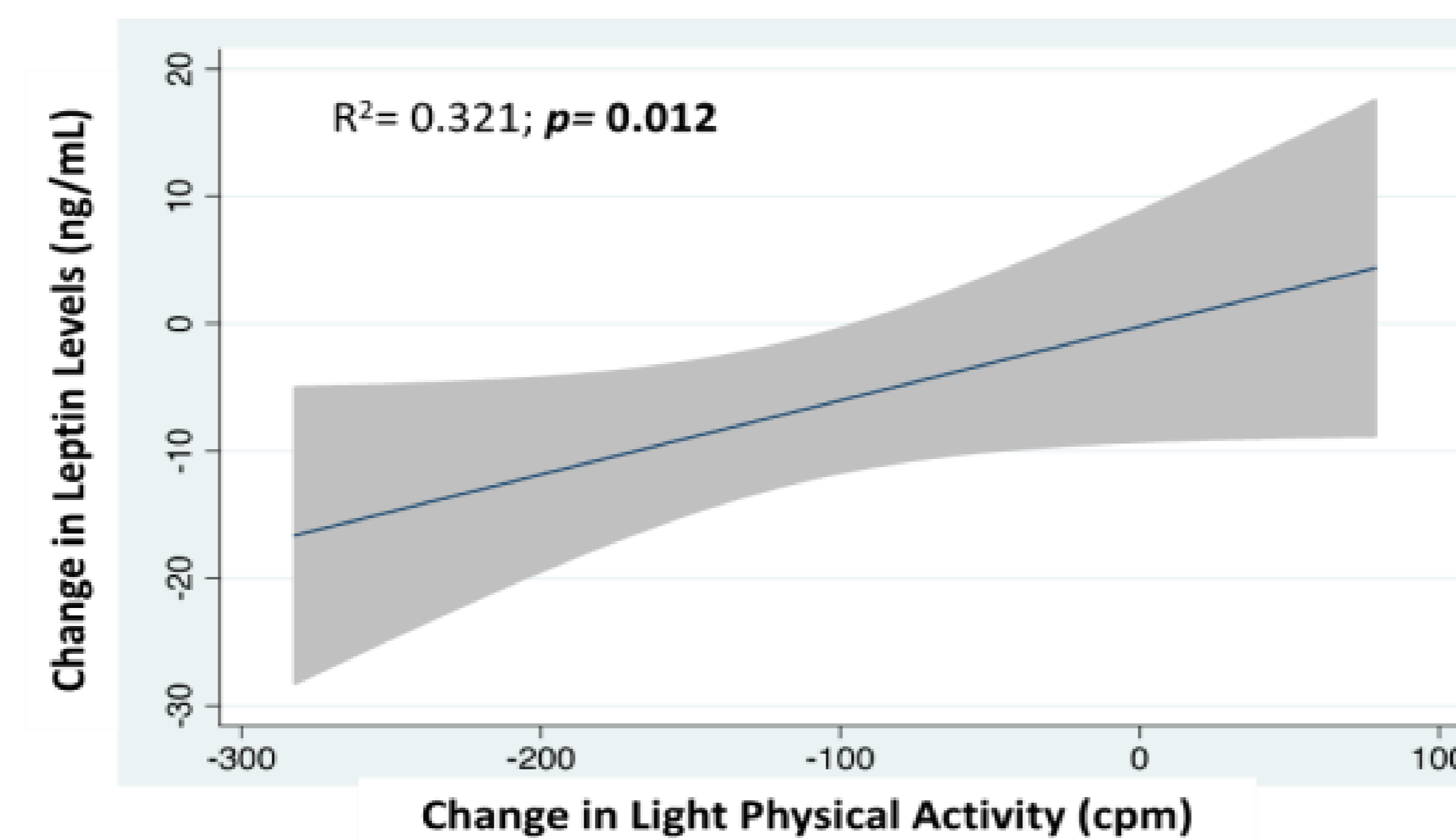
Results

Anthropometrics and biochemical characteristics of patients

| | Baseline | 2-year | p-value |
|------------------------|----------------|----------------|---------|
| Tanner (1/2/3/4/5) (%) | 32/21/24/5/18 | | |
| Weight (kg) | 62.29 ± 15.73 | 68.43 ± 16.33 | <0.001 |
| Height (cm) | 150.31 ± 12.04 | 159.91 ± 11.18 | <0.001 |
| BMI-SDS | 2.29 ± 1.02 | 1.59 ± 1.23 | 0.057 |
| Fat mass (%) | 35.56 ± 5.89 | 31.57 ± 6.95 | <0.001 |
| Total cholesterol | 171.90 ± 27.30 | 156.79 ± 23.17 | <0.001 |
| LDL-cholesterol | 106 ± 25.00 | 93.7 ± 21.11 | <0.001 |
| HDL-cholesterol | 49.41 ± 9.49 | 49.76 ± 9.62 | 0.815 |
| triglycerides | 92.59 ± 48.28 | 65.78 ± 25.23 | <0.001 |
| Glucose (mg/dL) | 89.88 ± 7.17 | 89.24 ± 6.50 | 0.650 |
| Insulin (μU/mL) | 17.14 ± 11.69 | 13.97 ± 7.12 | 0.186 |
| Leptin (ng/mL) | 32.08 ± 16.95 | 25.12 ± 20.89 | 0.023 |



Associations between changes in light PA and leptin levels



CONCLUSIONS

Participants significantly improved anthropometric and biochemical parameters. In addition, favourable changes in PA levels could affect leptin levels after 2-year lifestyle intervention in pediatric patients with abdominal obesity.

