

(259, 315) ($p=0.006$). No changes in catecholamines were observed in the initiation cohort. In the withdrawal cohort, free T3 decreased from 295 (267, 331) pg/mL to 265 (237, 323) ($p=0.008$), free T4 decreased from 1.2 ± 0.2 ng/dL to 1.0 ± 0.2 ($p=0.002$), and norepinephrine decreased from 191 ± 70 pg/mL to 112 ± 47 ($p=0.03$) after metreleptin withdrawal. No changes in EE, epinephrine or dopamine were observed in the withdrawal cohort. Contrary to previous studies in rodents and healthy humans, we found that introduction of metreleptin reduced EE in patients with LD. Consistent with rodent and prior human data, patients with LD had increased thyroid hormone on metreleptin, which would be expected to increase EE. The discrepancy in EE compared to other models may be due to metreleptin-induced correction of severe metabolic derangements in LD, including reduction in energy-requiring processes such as de novo lipogenesis and gluconeogenesis. These changes may offset increases in leptin-induced mediators of increased EE, such as thyroid hormone.

Adipose Tissue, Appetite, and Obesity INTEGRATED PHYSIOLOGY OF OBESITY AND METABOLIC DISEASE

Longitudinal Weight Gain and Lifestyle Factors in Women With and Without Polycystic Ovary Syndrome

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Background: While women with polycystic ovary syndrome (PCOS) have a higher prevalence of overweight/obesity and increased weight gain than women without PCOS, the association of lifestyle behaviours with weight change is not known. **Methods:** We used data from the 1973–78 cohort of the Australian Longitudinal Study on Women's Health for longitudinal analysis over 19 years ($N=14127$ at survey 1). Linear mixed-effects models were used to examine weight change and its association with diet, physical activity and sitting time, adjusted for sociodemographic, psychological factors and health care utilisation. **Results:** Women with PCOS gained more weight annually (0.27 kg/year, 95% CI 0.14, 0.40; $P<0.001$) and over 19 years (15.3 kg 95% CI 10.9, 19.7 Vs. 10.8 kg 95% CI 5.5, 16.2) than women without PCOS. There was a three-way interaction between energy intake (0.31 kg, 95% CI 0.004, 0.61; $P=0.047$), glycaemic index (0.44 kg, 95% CI 0.13, 0.74; $P=0.005$), sitting time (0.55 kg 95% CI 0.002, 1.10; $P=0.049$), physical activity (-0.37 kg, 95% CI -0.69 , -0.05 ; $P=0.022$) and PCOS and time. While women with PCOS had higher weight gain than those without PCOS

overall, this difference was greater for women with PCOS with higher energy intake, glycaemic index and longer sitting time and those not meeting PA guidelines. **Conclusions:** Women with PCOS had a higher rate of weight gain than those without PCOS with those with unhealthy lifestyle behaviours having the greatest weight gain. Women with PCOS may be biologically predisposed to weight gain when experiencing adverse lifestyle factors. This reinforces the contribution of lifestyle factors to weight change and the importance of early lifestyle intervention in PCOS.

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Low Health Literate State Does Not Negatively Affect Final Weight Loss After a Laparoscopic Gastric Bypass Procedure

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Weight loss surgery is an effective treatment in patients with morbid obesity, but its benefit depends on self-care management afterwards. Self-care management is partly influenced by individual's health literacy. The level of individual's health literate state (HLS) could determine the person's health behavior with a subsequent effect on final weight loss. We therefore hypothesized that a low HLS may result in a worse post-bariatric surgery outcome (final weight loss) compared to them with a high HLS. A retrospective study was performed including 78 patients (male vs female: 23% vs 77%, respectively; mean age 43 years (SD 12)) who underwent a laparoscopic gastric bypass (LGB) procedure. All patients were invited to perform in a review in which HLS was estimated using Rapid Estimate of Adult Literacy in Medicine-Dutch (REALM-D) and Newest Vital Sign-Dutch (NVS-D) questionnaires. Anthropometric information, such as weight at 0, 3, 6, 9 and 12 months after surgery, was collected. Mean preoperative weight was 128.0 kg (SD 21.1) and patients had an average weight loss of 42.2 kg (SD 12.0) after 12 months. Almost half of the population (49%) was low educated, 38% had medium education and 13% was high educated. Of all patients, 22% had an inadequate HLS, according to the REALM-D. Following the NVS-D, 14% was characterized with an inadequate HLS. Patients with an inadequate HLS had an average weight loss of 40.2 kg (SD 13.8) or 31.5% (SD 8.1), while patients with an adequate HLS had an average weight loss of 42.8 kg (SD 11.4 or 33.3 % (SD 6.6). Following the NVS-D, preoperative weight was 123.6 (SD 20.5) for patients with an inadequate HLS and 128.7 (SD 21.1) for patients with an adequate HLS. Patients with an inadequate HLS had an average weight loss of 39.8 kg (SD 14.2) or 31.5% (SD 8.5), patients with an adequate HLS had an average weight loss of 42.6 kg (SD 11.6) or 33.1 % (SD 6.7). This reduce after 12 months did not significantly differ between patients with an inadequate and