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With this issue, we start into the 4th year of OBESITY FACTS. We have dedicated this first issue in 2011 to the most common New Year's resolution. Furthermore, the first issue in this year includes nine articles and again presents various facets of obesity.

In their editorial Rössner et al. [1] discuss why weight loss inclination represents to the most common New Year's resolution, particularly among women. A commercial internet based survey provided some insights into the expectations of these women. Most weight loss attempts occur early in the year. However, in reality failure was generally the rule. A common reason for drop out of any program was the perceived long time weight loss requires. These data underscore that timing of weight loss programs is important. Unrealistic expectations often sabotage weight loss attempts.

Determination of visceral adipose tissue (VAT) is important for the prediction of health risks associated with abdominal fat. In an extensive study, Browning et al. (England) [2] determined VAT with magnetic resonance imaging (MRI) in 120 males and females, 40 of whom each were classified as normal weight, overweight and obese (30–34.9 kg/m²). MRI-measured VAT was correlated with measurements achieved via less expensive and simpler methods including dual X-ray absorptiometry (DXA), BMI, waist circumference (WC), and bioelectrical impedance (BIA) devices. Gender-based analyses revealed that none of these simpler measures predicted VAT well; all correlations were below $r \leq 0.82$. In contrast, MRI-derived total abdominal adipose tissue correlated more strongly with the proxy measures ($r \leq 0.96$).

In obese probands, white adipose tissue frequently exhibits an accumulation of inflammatory cells including macrophages in adipose parenchyma and increased fibrosis. Because currently white adipose tissue biopsy is required for the estimation of the macrophage amount, the search is on for circulating markers. In this context, Cancellato et al. (France, Italy) [3] have examined the suitability of the urokinase plasminogen activator receptor (PLAUR) as a circulating inflammation

marker; the group had previously identified overexpression of the respective gene in the stromal vascular fraction and its modulation by weight loss. Within the current study, PLAUR was found to be preferentially expressed on membranes of infiltrating adipose tissue macrophages. Whereas circulating soluble PLAUR levels measured with a commercially available ELISA were significantly elevated in obese patients in comparison to lean controls, PLAUR plasma levels did not decrease during a 1-year weight-loss follow-up of the bariatric surgery patients, possibly due to the secretion of PLAUR in other sites. The authors conclude that PLAUR mRNA expression can be used for the estimation of the local adipose tissue microphage infiltration. PLAUR plasma levels however do not reflect inflammatory infiltration in dynamic phases of weight loss.

In light of the controversial effects of metformin on adiponectin production Zulian et al. (Italy) [4] analyzed the effect of metformin on in vitro and in vivo gene expression, protein content and secretion of adiponectin in human adipose tissue. Both subcutaneous adipose tissue (SAT) and visceral adipose tissue (VAT) samples of five non-diabetic obese patients were included in the in vitro analyses, in which metformin increased the expression and secretion of adiponectin in SAT only. The in vivo investigation was based on 22 obese patients who were randomly assigned to a metformin+lifestyle or placebo+lifestyle intervention. SAT specimens and blood samples were collected before and after the intervention in both groups. A significant increase in adiponectin and a decreased expression of the macrophage activation marker CD68 were observed only in SAT of the metformin+lifestyle group. Metformin in humans is thus able to up-regulate adiponectin gene expression and to stimulate adiponectin secretion. The authors discuss that metformin possibly reduces inflammation in adipose tissue.

Studies designed to prevent excessive weight gain in children have only partially been successful. It is of obvious importance to assess long-term effects of such intervention programs. In theory, even those studies that after a short fol-

low-up period find no evidence for an effect may prove to be successful after a medium- or long-term follow-up (and vice versa). In the Kiel Obesity Prevention Study, first graders of those schools randomized to participate in the intervention received a total of six nutrition units in the second half of the school year promoting healthy food habits, physical activity and reduction of television viewing. Plachta-Danielzik and coworkers (Germany) [5] now report the results of their 8-year follow-up study based on approximately 24% ($n = 1,192$ 14-year-old participants) of the original sample; attrition was higher in the control than in the intervention group. No effects of the intervention on BMI, BMI-SDS and blood pressure were detected. However, a post-hoc analysis based on the subdivision according to parental socioeconomic status (SES) revealed that among high-SES children, the intervention group showed a lower BMI-SDS at the 8-year follow-up ($p < 0.05$), whereas the children of the non-intervention group had increased their BMI-SDS ($p > 0.05$). The highest BMI-SDS increase was observed for low-SES children who participated in the intervention. The authors recommend tailoring interventions to the specific needs of subsamples of children.

Beltaifa et al. (Tunisia) [6] examined the utility of using the individually preferred walk-run transition speed (WRTS) in 37 healthy, sedentary, and obese women aged 20 to 50 years as an adjunct in an obesity management program. 26 completed both the initial 6-month-long individualized dietary restriction phase and the equally long dietary restriction supplemented with a WRTS training program. The prospective intervention study focused on the effects of WRTS in conjunction with dietary restriction on weight loss, body composition, lipid profile, leptin and insulin concentrations and heart rate. The addition of individualized WRTS exercise to the restricted diet led to additional weight/fat loss that also proved successful in improving lipid profile, insulin sensitivity and heart rate responses.

In many Western European countries migrants from North Africa, Turkey and Asian countries constitute a substantial proportion of the respective populations. Income, education level and health status are usually lower in these migrant subgroups of the population. Based on those 1,285 Dutch adults (510 Dutch, 422 Turks, 353 Moroccans) with complete data sets Ujcic-Voortman et al. (the Netherlands) [7] analyzed demographic, physical and socioeconomic factors; body height and weight as well as waist and hip circumference had been measured. Obesity prevalence rates were more than twice as high among Turkish (39.6%) and Moroccan (39.1%) women than among ethnic Dutch women (16.5%). In men, rates varied between 11 and 16.3% (non-significant). Both central and abdominal obesity were also more frequent in females only of the two migrant groups. Adjustment for socioeconomic factors attenuated these relationships.

In a short article Karcz et al. (Germany) [8] summarize the current indication for banded laparoscopic sleeve gastrectomy (LBSG). LBSG is a comparatively easy to perform surgical procedure, which is well tolerated by patients with a BMI

$> 50 \text{ kg/m}^2$. According to the authors, the procedure should be considered for patients with contraindications for laparoscopic Roux-en-Y gastric bypass and biliopancreatic diversion with duodenal switch. LBSG might be superior to conventional laparoscopic sleeve gastrectomy because it may prevent distal sleeve dilatation. Patients who depend on exact and reliable intestinal resorption of specific medications may also profit from LBSG.

Van der Beek et al. (the Netherlands) [9] retrospectively assessed the results of body-contouring surgery (BCS) in 43 weight loss surgery patients (mean age 41.5 years; mean excess weight loss of 70.7% at a mean interval of 42.1 months) to identify predictors of complications in order to optimize patient selection and appropriate timing of surgery. These patients with adequate documentation represented a subgroup of the 61 who underwent BCS out of the total of 465 patients who had weight loss surgery at the respective center between 1995 and 2005. Referral to plastic and reconstructive surgery occurred after a minimum of 2 years after bariatric surgery, if patients complained of redundant skin and their weight had stabilized. In both univariate and multivariate analyses the influence of patient's age, sex, BMI at the time of both bariatric surgery and BCS, weight stability in the 3 months prior to BCS, the percentage of excess weight loss, current BMI, weight of resected tissue, smoking status, co-morbidity and medication at the time of BCS and the type of BCS was assessed. A total of 68 body-contouring procedures were performed in the 43 patients, 6 of whom underwent three operations. Most patients had an abdominoplasty (61%) or breast reduction/mammarectomy (25%). The overall complication rate was 27.9%. In the multivariate analysis, both a stable weight over a period of at least 3 months prior to BCS (odds ratio 0.24; 95% CI 0.07–0.79) and the percentage excess weight loss (odds ratio 0.96; 95% CI 0.92–1.00) independently predicted a lower complication rate.

Meta-analyses of genome wide association studies have recently identified a total of 32 loci with an effect on BMI. Further characterization of such variants in clinical terms is obviously required. Vogel and coworkers (Germany) [10] have exploratively examined potential sex-specific effects on overweight, obesity and 14 related phenotypes in 889 overweight and obese children and adolescents (cases) of two variants downstream (rs17782313, rs17782313) of the melanocortin-4 receptor gene (*MC4R*). Previous work had shown that infrequent functionally relevant *MC4R* mutations exert a stronger effect on BMI in females. For the obesity risk allele of rs17782313 sex-opposite effects were detected: The diastolic blood pressure level was higher in male, but lower in female carriers. This risk allele was also associated with an increased insulin level upon analysis of the whole study group. Finally, the risk allele of 17782313 was also associated with a greater BMI-SDS reduction in the subgroup of females who participated in a weight reduction program. Because these results were based on multiple testing, they require confirmation in independent studies.

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