

How to not get fat at Xmas by Marek Doyle

If you have attempted any quick visits to the shops lately, then you will know that it's that time of year again. Lots of presents to buy, and lots of Christmas parties to attend. Then it's over for another year and - whilst your wallet is a lot lighter - it's a different story when you step on the scales. But does it have to be this way?

Well, no. Whilst eating mountains of mince pies and chocolate Santas will never be optimum nutrition or even close, but there's no reason you need get fat should you choose to indulge. Experience suggests that, if there is one thing that links all competitive athletes, it's an in-built preference for consuming junk food. However, another thing that links these athletes (and others that regularly train with weights) is that they don't get fat. So are these athletes all lucky to be blessed with a faster metabolism, or are they doing something that the rest of the population aren't?

What separates the general population from athletes is weight training. Whether it's in the form of squats or deadlifts, dumbbell presses or chins, all these athletes will have spent months and years lifting weights to boost strength and performance. However, the beneficial side effect of this training is that their muscle mass increases tremendously. This muscle mass - also referred to as lean mass - is the only major factor in an individual's basal metabolic rate or BMR, the term used to describe the amount of energy an individual requires to sustain life, eg. Before any movement is included in the calculation.

Whilst the BMR can be effected by an individual's unique hormonal balance, by nutritional factors and by their inefficiencies during daily tasks, the only major factor in how many calories a person burns is their lean mass (Johnstone et al, 2005). Essentially, the more lean mass you have, the more energy you burn every day; this applies whether you exercise or not. This is because the muscle fibres are metabolically active - a kilogram of muscle will use 21.6 kcal every day, even if you were to stay in bed all day (Katch and McArdle, 2001).

So what does this mean to us? Let's use the example of a typical untrained woman, who weighs 70kg/11stone with her trained sister, who tips the scales at 65kg/10stone. Not only does the smaller sister look better, the difference in their basal metabolic rate could be as much as 200 kcal every day - or 1400 kcal every week - and the difference could be several times this when energy expenditure from exercise is taken into account. This is why, should they both cut themselves a well-earned slice of Christmas pudding at the end of their meal, the untrained sister will be punished for it. The athletic sister will not be, as she has additional 'margin' for such treats. Unfortunately, most of Britain's population are untrained like the first sister, and pay for their sins!

So how can you acquire this added 'margin' to protect you from such waistline expansion? Simple - lift heavy weights. Of course, the term 'heavy' is rather subjective so let me be specific. You need to find a weight that you physically cannot manage to lift more than, for example, 12 times. Then you need to lift it 12 times, with full range of motion and controlled form. If your muscles are not adjusted to this, they will experience an 'overload'; this describes the point where muscle fibres suffer microtears from the tension placed on them. When damaged in this way, they supercompensate by growing stronger and bigger. For most people unaccustomed to resistance training, a total body workout of around 12-15 sets (40-50 mins), twice a week, serves as an extremely efficient way to increase their lean mass and metabolic rate, and will do so more effectively than any other type of exercise (Bryner et al, 1999). The effects of weight training are not just a long-term increase in metabolic rate; training with weights can elevate fat-burning in the days that follow (Osterberg & Melby, 2000).

If you look at the rationale behind weight training, the results that individuals get from it and the

huge number of women aiming to lose weight, it would seem only logical that this part of society would be keen to get under a pair of dumbbells and start lifting! My observations would suggest otherwise. Why is this? Many women, it seems, suffer a fear of 'getting muscley'. This fear is that, having participated in a full-on session of resistance training, they will go to bed as a small and somewhat fatigued woman and wake up the spitting image of Arnold Schwarzenegger. Let me assure you – this will not happen. Women release around 0.3mg of testosterone per day, whereas men release around 7mg on average – this is more than a 20-fold difference. If these women could see the ongoing struggle many young men have to pack on some flesh, they would realise that twice-a-week weight training will not leave them with ripping thigh muscles or enormous biceps. Instead, restoring their lean mass to a level that nature intended provides a firmer female physique, with an increased fat-burning furnace to boot.

Men who wish to transform overnight into a chiselled slab of muscle may be equally disappointed. However, I am yet to see a single male who had not seen a significant and visible improvement in muscle mass after two months of weight training. Those that see the quickest response are those that start from an untrained base.

In any case, if your aims include improving your physique, increasing your rate of fat-burning or just creating a margin for those Christmas treats, then becoming familiar with weight training should be top of your New Year's resolution list. Don't be fooled that a good, strong pounding of the treadmill will do the job – aerobic training will burn energy (from both muscle and fat) but it has almost no impact on body composition (Utter et al, 1998) and . In sustained bouts of endurance training, aerobics can actually reduce your lean mass and therefore your metabolic rate (Miller et al, 1997). There is no doubt a place for running etc but, if you have no ambitions of endurance glory, there seems very little benefit for most people.

Doing what I do, I speak to a great many people each week who are very keen to lose weight and yet have been struggling to do so. The sad irony is that the majority of these people had not been using resistance training, and thus not making use of one of the best tools we have to control our metabolisms. Regular weight training has a massive effect on the results yielded from a diet and exercise regime, keeping you (relatively) trim during the festive period and in the foreseeable future. Like puppies, weight training isn't just for Christmas!

References:

Bryner et al, 1999. Effects of resistance vs. aerobic training combined with an 800 calorie liquid diet on lean body mass and resting metabolic rate. *Journal of the American College of Nutrition*. 18 (2)

Johnstone AM, Murison SD, Duncan JS, Rance KA, Speakman JR (2005). Factors influencing variation in basal metabolic rate include fat-free mass, fat mass, age, and circulating thyroxine but not sex, circulating leptin, or triiodothyronine. *American Journal of Clinical Nutrition*, 82(5): 941-948.

Katch VL, McArdle WD. *Exercise Physiology: Nutrition, Energy and Human Performance*. Lippincott Williams and Wilkins.

Miller, W.C., Koceja, D.M., & Hamilton, E.J. (1997). A meta analysis of the past 25 years of weight loss research using diet, exercise or diet plus exercise intervention. *International Journal of Obesity*, 21, 941-947

Osterberg, K. L. & Melby, C. L., 2000. Effect of acute resistance exercise on postexercise oxygen consumption and resting metabolic rate in young women. *International Journal of Sport Nutrition and Exercise Metabolism*, 10 (1), 71-81.

Utter, A.C., Nieman, D.C., Shannonhouse, E.M., Butterworth, D.E., & Nieman, C.N. (1998). Influence of diet and/or exercise on body composition and cardiorespiratory fitness in obese women. *International Journal of Sport Nutrition*, 8, 213-222