

Delayed onset muscle soreness

After a week of doing no exercise at all over the New Year, I took myself off to a conditioning class at the gym last week, only to spend the remainder of the week easing myself in and out of chairs because my thighs hurt so much. I'm sure I will not be alone in suffering delayed onset muscle soreness this January as we get back to our exercise regimes, so I thought I would highlight how best to avoid DOMS and what you can do to alleviate it.

DOMS occurs 12-48 hours after unaccustomed exercise (especially involving eccentric muscle contractions – the down part of squats and lunges and push-ups, running downhill etc) and is thought to be due to damage to muscle cells, with resultant inflammation and swelling. Another popular theory is that of lactic acid build up in the muscle. However, lactic acid levels in muscle return to normal about 60 minutes after exercise; DOMS doesn't start until 12 hours after exercise. Also, concentric exercise requires more energy expenditure than eccentric exercise, and so would be expected to produce more lactic acid. Since DOMS is worse after eccentric exercise lactic acid is an unlikely cause.

In the light of this, what can be done to avoid DOMS?

- Warm-up adequately – research tends to show that a general warm-up – jogging or cycling for 10 minutes – rather than stretching is most effective for avoiding DOMS. This could be because warm muscle tissue is more elastic, and therefore less prone to tear.
- When starting or returning to exercise, build up slowly exercises that require strenuous eccentric muscle action. Keep weights low, and take a break in the middle of a long sequence of repetitions if in a class.
- There is no evidence to suggest that a warm-down or post-exercise stretching reduces DOMS
- There is some evidence to show – and it is my experience – that repeating the same exercises that caused the DOMS within a week or two (but after the soreness has passed) helps to avoid future DOMS.
- If you do suffer DOMS then light aerobic exercise – cycling, swimming, jogging – can ease the pain, by increasing blood flow to and drainage from muscles. The existing research seems to support this, and it is again my experience. If nothing else, bicycle legs in the air should ease the pain somewhat.
- Gentle stretching and/or massage also seem to be relieving.