

Beauties and the Beasts

Introduction

In the past, some woman have decided to not engage in weight/resistance training due to myths around unwanted changes to body composition. Additionally, a gym can feel quite intimidating to some and explains why some females decide to stay safe in the cardio area. This is backed up in research from the Centres for Disease Control that state women are less likely than men to get enough exercise. Even worse, the stats widen when muscle-strengthening exercise is introduced. Overall, they are restricting themselves, as that is the same as me getting a phone deal with unlimited data. Then never turning on Spotify, YouTube or the internet. This is totally not cool. Therefore, the aim of this article is to discuss key points in strength and conditioning in order to provide a practical application of how to effectively workout and to encourage woman to train more frequently when lockdown ends.

What I Have Noticed

As a Personal Trainer, I have coached females and a majority have stated it is hard finding the courage to go the free weights area because first glances in the gym are usually filled with men, not having experience in using weights, feeling harassed with people staring at them being or being told directly they are doing an exercise wrong.

All these points provide good feedback that everyone faces different challenges the setting foot in a gym. I believe the design of some gyms (mirrors in every corner) can make people feel more uncomfortable, especially for someone new. Although, not every gym is set up like this, some have massive open spaces, which makes it harder to feel 'trapped'. Another way that gyms are trying to help the confidence of members is by adding bumper plates. These plates are all the same height and width but increase in depth. The 5kg bumper plates are similar to the heavier ones, which gives people the satisfaction and confidence of lifting larger weights.

Another interesting fact I feel the importance to state is that one client of mine has noticed a lot of trainers don't understand how to train women efficiently. They expanded by saying men apply the same training methods on females they would do as a man and don't recognise that woman cycles play a huge part in their training and everyday tasks.

Therefore, as a male trainer, I feel the responsibility to dive into this in more detail to achieve a better fitness standard. Anyone can chuck out workouts on Instagram that include 1000 reps (This will make anyone sore). However, I believe it takes skill to understand a client in more detail to really help someone achieve their goals.

Female and Male (Strength Development and Adaptations to Strength Training)

Peak muscle mass generally occurs earlier in females (16-20) than males (18-25), and woman are noticed to have plateau in strength during adolescence. Reasons of this are because boys experience rapid increases in testosterone and growth hormones, which result to greater muscle mass. Whereas, the girls have heightened estrogen concentrations and they experience increases in skeletal growth and fat mass with less increases in skeletal tissue, muscle mass and strength. These changes result in increased centre of mass can makes dynamic stability more challenging. Hence highlighting the importance of engaging in a technique driven strength program.

Even though in absolute strength, where woman display two thirds of strength compared to men. They do have generally closer values to males in the absolute lower body strength compared to the upper body. This is majorly because women tend to have less muscle mass above the waist, showing the importance to start incorporating upper body designated strength sessions.

One thing that is forgotten in the gym world and overlooked is relative muscular strength. This is the amount of strength to body size, or how strong you are for your size. The sex-related differences are greatly reduced and lower body strength expressed by women is similar to that of men. A example of this is a man weighing 100kg lifting 100kg of external weight compared to a 60kg woman squatting 72kg of weight. The man is lifting his bodyweight, whereas the woman is lifting 20% extra of her bodyweight. Now tell me who is stronger?

Hormones and Training

It is a myth that women will lose flexibility or develop unwanted muscle bulk if they use weights. Resistance training and weight-bearing exercise actually have a positive impact on bone health, enhance bone mineral density, improve fat loss and gain strength without putting on bulk. The science the myth may stem from is that with exercise and physical training, cortisol concentration levels do increase.

Cortisol is known as the catabolic or stress hormone that can decrease protein synthesis, reduce anabolic hormones and affect tissue remodelling. However, it has a lot of other positive effects too, such as increased amino acid availability anti-inflammatory effects and stimulation of erythropoiesis (red blood cell production). A lot of professionals state that when exercising the level of cortisol increases and it has an adverse effect on testosterone levels. The low testosterone:cortisol ratio has a huge effect (badly) effect on training performance.

So if we think about it, women have lower levels of testosterone in comparison to males, they already have a serious challenge to overcome. They have to work extra hard because of science. That being said, it is not all doom and gloom. Research has proved with chronic adherence to a resistance training program (two years or more), it is possible to reverse the action. Therefore, the longer the training program goes on, the better results happen. Thats right, no more hating life after January sign up and forgetting the gym in February, it is time to kick some serious ass in a periodised plan.

Timing of Said Hormones

One key point to remember is testosterone and cortisol fluctuate throughout the day, there are certain times the ratio is most optimal for training. Upon waking up, cortisol and testosterone are at their peaks, providing and effective balance for prolonged endurance activity. Then in the evening around 5-6pm testosterone can reach another peak and cortisol decreased, providing a larger ration and optimal time to do some strength training or high intensity workouts. However, right now during a pandemic and other personal variables such as family, work or other commitments do not allow for this schedule, which doesn't mean that morning hard training is ineffective.

Health and Well-Being

When exercising in intensive training regimes it is important to try and keep on top of dietary intake. This is because it is likely to cause a number of serious health issues including overuse injury and burnout. Insufficient energy intake causes a negative energy balance disturbs metabolic and hormone regulation of menstrual function, compromises maintenance and development of bone, weak immunity and mental health issues. The level of risk is further magnified in disinclines that demand high levels of endurance, like dance and doing distance running.

This could highlight some problems in the pandemic as there is not enough equipment available as gyms are shut. Therefore, more emphasis on long distance running is being introduced.

The Menstrual Cycle

The average menstrual cycle for adult females last for around 28days. Wait what? Even I assumed it was just a week every fourth week. The cycle is divided into three phases menstrual phase (day 1-5), follicular phase (day 6-14) and luteal phase (15-28). As stated earlier with cortisol and testosterone, hormones go through cycles. We need to use science to better guide our training choices and work with bodies instead of against them in the gym. This is because physical exercise is beneficial for female reproductive function and can improve ovulation and fertility. Therefore, it's hugely important to do best we can to support them.

The main hormones included in the cycle are estrogen and proesterone, which are rumoured to influence other physiological systems and exercise performance by altering thermoregulation, cognition, mood and cardiovascular and respiratory function. Equally, menstrual function is highly sensitive to physiological stress and intensive physical training programmes are susceptible to developing cycle dysfunctions. Women with menstrual cycle abnormalities are more likely to sustain musculoskeletal injury. This could be down to low energy state which alters the profile of thyroid and stress hormones, which directly affects bone metabolism and the health of connective tissue. This is why Personal Trainers and the exercising

public should be educated of in the diagnosis and management of menstrual cycle irregularities, particularly heavy menstrual bleeding. Health professionals recommend that women who experience this are tested by appropriately qualified doctors for iron deficiency anaemia. Low iron status leads to anaemia and the result will be a reduction in aerobic power. As a coach it is out of our depth to start interfering with oral supplements, which can cause gastrointestinal side effects and potentially reduce the ability to absorb iron from the diet. This should be left to registered dietitians.

Training Recommendations and the Menstrual Cycle

Menstrual phase (1-5)

Hormones are at the lowest levels. Low-impact exercise, avoid strenuous exercises. Longer warm-up exercises should be included and do not overstretch. Women are three to six times more likely than men to suffer musculoskeletal injuries. This is believed to be due to lower rates of tendon collagen synthesis following exercise.

Follicular phase (6-14)

Estrogen and serotonin (feel-good hormone) steadily increase. Ability to start building muscle increases. Add strength training, circuits, sprints, boxing. Endurance will be low, include more rest days, yoga, mobility during rest periods. Days 10-15 of the cycle are best times to go for Personal best achievements.

Luteal phase (15-28)

Combination of estrogen and testosterone can increase confidence and energy levels. Be aware that body temperature can rise by at least 0.3 degrees and progesterone increases, so stay hydrated. Stay hydrated. Look for the start of reload weeks, bodyweight training, water aerobics, active stretching, yoga, Trx, elliptical machine, pilates.

Lower and Upper Body Conundrum

The last point I want to write about is the misconception that upper-body exercise will make you look manly and add unnecessary bulk. Fear not, Ladies!. To build a better-looking, healthier, all rounded body, you must work ALL muscle groups. You've all heard of the guy that skips leg day, don't be the woman that misses upper body day.

As explained earlier with hormones and physiology, these are what determine the strength and muscular development and women don't possess the same size muscle fibres or lean tissue as men. Don't get me wrong some women with higher testosterone levels relative to other women may tend to develop more muscle in faster rates, but all women can train their upper body without turning into a bodybuilder. This is because women only have on average one-tenth the testosterone men do.

The benefits of including upper body training are numerous, which include the following:

- Bone modelling helps prevent fractures and reduces chances of getting osteoporosis.
- Strengthen connective tissue in elbows, shoulders, neck, spine, wrists, hands.
- Improves joint integrity, stability and prevents injuries.
- More areas worked out increases lean body mass and decreases fat stores. Therefore, the more areas of proportion of lean mass to fat mass, the more metabolical active the body becomes. Means burn more calories and fat.
- Daily tasks get easier including sorting out furniture, carrying all the grocery or Micheal kors bags in one trip and move heavy objects without getting backache.

Lastly, if you are hammering just lower body is going to cause imbalances and cause more injuries. This is backed up with women shown to have quad dominance, knee ligament dominance and core dysfunctions. That are associated with inability to effectively dissipate ground reaction forces and control the location of centre of mass.