

Key messages on Mind over Matter

Section 1 – Fitness is a combination of:

1. Physical condition – quality training
2. Mental conditions – subject matter here
3. External factors – diet, illness, weather etc – some controllable, others not

Section 2 – Concept of Psychobiology

- Various studies have proven that even when you think you are exhausted your muscles will still fire if stimulate – lessons?
 - It is not possible to operate at 100% of your physical capability
 - Your brain kicks in to lessen your effort – in effect saving you from yourself
- Your mind is important because:
 - You know that the pain lessens when you reduce the effort
 - The brain itself gets tired, and this reduces performance
- **Effort v Perceived Effort:**
 - Effort is how hard your body is working
 - Perceived effort is how hard you ‘feel’ that you are working
 - There is often a mis-match between these eg you often ‘feel’ like your legs are tired, when in fact they are not – your brain is trying to slow you down, and this happens BEFORE your muscles tire or glycogen levels fall
 - Therefore you need to develop mental coping strategies so that you can control the Perceived Effort

Section 3 – Improving mental fitness

- **Technique 1 – ‘Firewalking’**
 - Imagine you are facing a wall, and between you and the wall are hot coals
 - The wall is your physical limit – getting closer to the wall unlocks more performance
 - To get faster you have 2 options
 - 1 – train better to improve your physical fitness. This moves the wall further away as you unlock more physical capacity
 - 2 – become mentally tougher – walk on the coals for longer, get closer!
 - We know option 2 is possible because even at the point that athletes have collapsed in experiments their muscles can still be fired to work with electrodes – the brain has stopped the muscles before they are spent (note – this is an extreme example)
 - A useful experiment is to try and run up the Strava Segment called Cam Pitch Effort. Try and run up it (450 meters) then check your pace graph on Strava. You will notice that even in such a short event you will start to moderate your pace quite quickly – why? Your brain will modify your output well before physical fatigue kicks in
 - This phenomenon has been observed in multiple studies eg subjects were given a treadmill test – half were given crosswords to do first, the other half weren’t. In this test the subjects who had done the crosswords stopped 9% earlier than those who hadn’t – lesson? Tired brain = tired legs.

Lesson – you will go further and faster if you learn to live with the discomfort of intense exercise for longer. You will be surprised at how you can hold Parkrun pace over the 10km distance just by learning to put up with the discomfort.

- **Technique 2 – ‘Attitude and Acceptance’**

- You must be prepared to fail, otherwise you will never explore your limits
- Try and vary your pace in training and races to ascertain your most ‘aggressive pace’
- This will be a trial and error procedure – eventually you will find the pace you cannot sustain – until you try this however you don’t know what this pace is
- To improve you must accept that it’s going to hurt:
 - 2 groups were subjected to the same physical test, and one group were given mental coaching to help them come to terms with the fact that the experiment was going to be physically demanding
 - Essentially there were 2 groups (i) who accepted it was going to be tough (ii) a group who hoped that the test wouldn’t be too awful. Group (i) who had been coached lasted 15% longer in the actual test AND recorded lower levels of Perceived Effort – they exercised harder, but, it didn’t feel as bad when doing so.
- Pacing is key (see earlier point about finding your most aggressive pace) – studies have shown that once exercise goes past 30 seconds humans start to subconsciously slow down and pace themselves – therefore any races longer than 200 metres need a pacing strategy (note: women are generally better at pacing than men. Strava analysed the pace of >10,000 runners at the London Marathon in 2017. Over the second 13.1 miles men lost 17% in time over the second half compared to 11% for women – lesson – men go off too quickly in races).

Lesson – you must accept that improvement will be tough. If you want to improve acknowledge it’s going to hurt. Once you done this you’ll find it’s not as bad as you thought it would be. Any anyway, once it’s over the pain subsides pretty quickly anyway, must faster than the pride you’ll take away from your efforts.

- **Technique 3 – Set realistic goals**

- The best targets are those that are tough to reach, but are possible with good training and reasonable improvement
- Easy targets will soften your training, impossible targets will demotivate you quickly
- Note that targets can be psychological, and therefore hold you back eg The 4 minute mile record stood for 8 years – however – once it was broken by Sir Roger Bannister it was lowered to 3:58 six weeks later. This tells us that sometimes we alter our efforts because of invisible barriers. A good example is the 4 hour marathon. Runners who finish a marathon in 3:55 – 3:59 are MUCH faster over the last 6 miles than those who finish in 4:01 -4:10
- You must be way of over-training. History is littered with stories of athletes who upped their training mileage to build more endurance and speed – listen to your body, it can be fragile. Train smarter not longer.

Lesson – give yourself something to aim for. Always look for improvements, but be sensible. Enter races and look for incremental improvements each time.

- **Technique 4 – Achieving the State of Flow**

- Athletes sometimes refer to this as ‘being in the zone’
- This occurs when you become the thing that you are doing
- Ever got home in the car and not remembered the journey? How did you get through all of those traffic lights and round those roundabouts?
- State of Flow is effective as you are blocking out all externalities and essentially hypnotising yourself – this causes a marked decrease in brain activity, thus as your brain is relaxed and does not get tired neither do your legs
- How do you get State of Flow?
 - Good training – must have base fitness otherwise you will be distracted by the effort you need to move quickly
 - Focus on relaxation – think of nothing but breathing, until you focus on nothing else, after a while you won’t notice your breathing and you will be perfectly relaxed in what you are doing
 - Don’t look at your Garmin – you must ignore externalities*
 - Positive self-talk therapy will help – studies on athlete with mental coaching show higher rates of Flow Running
 - Eradicate negative thoughts (see point above)
 - Be honest with yourself – if you’ve short-cut in training you can’t relax during intense exercise, you won’t be fit enough to relax
 - Don’t fear failure – if you mess up reflect on what went wrong, why, and what you can learn from it. Tour de France Winner Cadel Evans (won at his seventh attempt)

‘You have to be prepared to revisit the basics of everything you do’

* beware if running off-road. Flow running is harder as you need to focus on your footing. It is still possible, but much harder, as the concentration on footing and changes in pace/cadence going uphill easily wakes the brain up

Lesson – become the thing you are doing, stay relaxed, stay positive and read about improving your well-being. The ‘Chimp Paradox’ by Dr Steve Peters is very useful for this.

- **Technique 5 – Group effect**

- There are macro and micro effects from group training
- Macro – once a nation becomes successful at a sport/industry it leads to a clustering effect eg it encourages participation, drives up domestic competition and increases standards eg Kenyan distance runners, Cuban boxers, Chinese table tennis players
- Micro – running in groups/pairs is proven to release more endorphins. These chemicals inhibit the effects of Adenosine, the neuro-transmitter which allows you to sleep. The effect of this is to slow down the rate at which the brain gets tired when running, which, reduces the Perceived Effort and allows you to run faster for longer.
- Similar effects can be induced chemically/naturally eg consuming caffeine or listening to music when running – both of these slow down the release of Adenosine

- Numerous studies have proven that when training in a group athletes have a higher resistance to pain and thus can endure more exercise – why? Greater endorphin release.

Lesson – together we achieve more. Use your friends, Tuesday running groups and the DRC Facebook page to meet up with others to run on weekends etc

- **Technique 6 – Audience effect**

- Humans will try harder and perform better in front of other people
- Studies have shown that athletes lift more and run further in front of a crowd compared to (i) training in a group (ii) training in isolation

Lesson – racing is good – you will improve by getting out in your DRC vest, try the club handicap as a ‘safe’ and supportive way of getting those competitive juices flowing