

Understanding Physical Health

Key topics

1. Core stability
2. Trunk stability
3. Posture and joint alignment
4. Stretching
5. Strength and power
6. Balance and agility
7. Cardiovascular
8. Functional engagement
9. Pain management
10. Biomechanics in sport

Date				
Record your score from final page	/100	/100	/100	/100

This advice is intended to be applied in conjunction with one-to-one Physiotherapy, Personal training or Sports Coaching

1 **Core stability**

Core stability is a buzz word of the fitness industry... It interlinks with strength in the abdominals/trunk, but specifically applies to the deepest muscles that make up the core, these are the Pelvic floor, the Diaphragm and Transverse Abdominus - which is also known as the corset muscle. This according to Patrick Hyde – Physiotherapist – is one of the most important and interesting areas of fitness and performance. It is strongly linked with Pilates and Yoga but most importantly, our normal day-to-day activities, such as walking, standing and carrying objects.

2 **Trunk stability**

Trunk stability refers to the abdominals and muscles that support the spine. Strengthening these muscles is very important but should be done in conjunction with the Core muscles.

Muscle imbalance occurs, when people become too focused on training one specific muscle group, it is worth pointing out that for every muscle group there is an opposing muscle group, which should be given the same degree of attention in a well-balanced exercise program.

3 **Posture and joint alignment**

Sitting and standing posture should be dynamic. Learning how to manage your posture when sitting i.e. when working at a computer is a key component of our physical health.

The spine is a column built on a moving foundation – in sitting or standing, this is the Pelvis. As the pelvis tilts from side to side / forwards or backwards or even rotates, the spine must be able to counteract the changing position of the pelvis to maintain a steady head position and provide clear focused vision.

The spine does this by having a central alignment for each joint, which we refer to as Neutral – this is the strongest and safest place for each joint – and so when we are training, we should spend time concentrating on maintaining neutral alignment.

This concept of neutral alignment applies to all joints from our feet up through the knees and hips, into the pelvis, spine, neck, shoulder girdle, arms and wrists.

4 **Stretching**

To hold or not to hold? That is the question

- The hold is in fact a process of slow, controlled deceleration to a point of elastic loading.
- The release should be slow – giving the illusion of a hold.

A stretch program for one muscle group should not focus on just one muscle point but should be repeated many times to apply the stretch to multiple areas – an example of this is when people stretch their hamstrings, they often feel a painful pulling sensation behind their knee. The solution is to move the stretch from behind the knee into the hamstring muscle fibres.

5 **Strength and power**

Technique is more important than effort – this is often referred to as “Form”.

Increasing the load is often associated with an increase in strength, but instead of increasing the load, it is often safer to increase the repetitions and duration of an exercise.

Power comes from a combination of technique and strength, but technique is always King.

6 **Balance and agility**

This is when a fitness program really starts to deliver a “Total Body Experience”.

Balance and agility are where we see Core stability, Trunk stability, Posture, Flexibility, Strength and Power, all coming together to give us dynamic control.

7 **Cardiovascular fitness**

Making our hearts and lungs work – a variable training program should teach our body how to cope with lactic acid build up and how to access our bodies natural energy stores when training for longer duration.

It is generally advisable to avoid repetitive high impact activities or sustained static postures – but every activity has its pros and cons, so it is important to find the activity that suits you.

8 **Functional engagement**

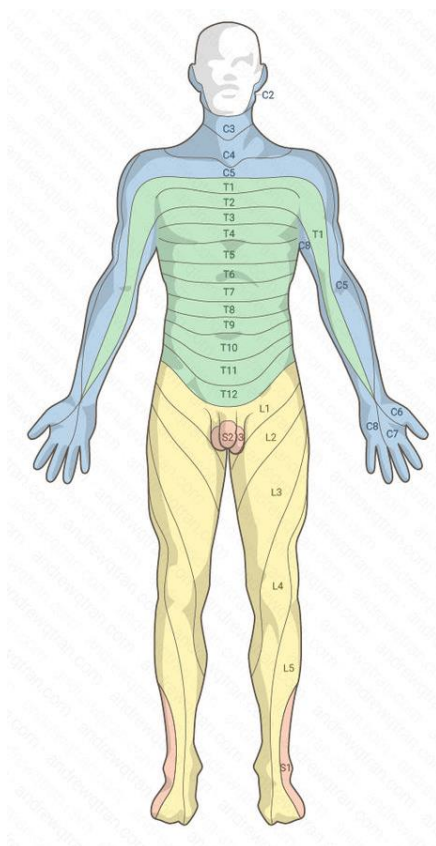
Stamina is the management of fatigue and can be affected by the stress of losing in competition. Training has more purpose and better engagement if it is goal directed towards achieving something that you want to do. This may mean setting personal ambitions or continuing to play your favourite sport into old age – either way - visualising yourself becoming better at something is a fabulous way of maintaining motivation. When participating in any sport remember to apply good posture, core stability and good technique...

Pain management

Pain is one way that our body communicates with our brain. Like hunger or feeling hot or cold, we need to listen to the sensation and learn how to respond. Generally, people follow their natural instinct when it comes to pain management – they try to rub the pain, stretch the pain or compress the pain, they try heat and cold or taking basic analgesia.

Muscle and skeletal pain, including nerve related symptoms such as sciatica, tend to present as predictable patterns; Physiotherapists use the feedback from the pain to assess whether it will respond to compression or stretching – but also to assess the body as a whole - to help find the source of the pain.

The diagram below is a dermatome map and is useful when used to identify the possible source of referred pain.



Look at the letter and number in each area i.e., L4 for the front of the knee or C5 for the front of the shoulder.

- C5 – is the nerve that transports pain from the front of your shoulder to your brain, via the neck.
- C6, 7 & 8 are the nerves that transport pain from the fingers to your brain via your neck.
- L3, 4 & 5 are the nerves that transport pain from your feet and lower legs to your brain via your low back.

This means that nerve irritation in your neck can cause pain in your arms and irritation of nerves in your low back can cause pain in your legs.

It is the analysis of the pain presentation and how it responds to specific tests, that makes Physiotherapy so interesting. This combined with understanding how the body should move and identifying movement dysfunction makes the process of treating pain very rewarding.

Biomechanics in sport

We frequently hear of hand-eye co-ordination, but most coaching manuals will focus on our base of support, since this is the foundation upon which energy is transmitted through the body to deliver the intended outcome. Biomechanics is a description of how this energy is generated and transmitted through the body to achieve a reproducible outcome.

Athletes use good biomechanics to facilitate power whilst the rest of us often demonstrate poor coordination of forces acting upon our joints, which can result in a loss of performance.

Additional information:

Skill and performance in a given sport

Skill is defined as the ability to do something consistently well, under physically and psychologically demanding conditions. This is achieved through training, coaching and working on every aspect of fitness.

We tend to practice when we feel refreshed and when the weather conditions and stress factors are favourable; and yet in competition we need the skills as much at the final phase as we do at the start.

According to Peter Baker, who competed in the Golf Ryder Cup 1993 - "Practicing skills under stressful situations, i.e., after a tough session in the gym or when the weather is unfavourable offers greater reward in the long term."

This view is supported by Danny Sapsford – Wimbledon 1999 – who goes on to describe the need to train after a poor nights' sleep or a stressful day at work, emphasising the need for a good 20-minute warm up.

Warm up and cool down

What are we warming up or cooling down?

- Our heart and lungs
- Our blood vessels and bodies capacity to adjust blood pressure
- Our joints and the neurological stimulation of our vestibular system, brain and spinal cord
- Our muscles and surrounding soft tissue
- Our co-ordination and ability to adjust our relationship with gravity and ground reaction forces.
- Our senses including our sense of humour, thinking process and motor programs.
- All the above and more...

The best warm up and cool down programs are an exaggerated, low intensity, version of the activity you intend to do; until you experience a light physiological reaction becoming physically warmer or cooler.

To evaluate your own exercise program, simply allocate a subjective score out of ten according to how confident you are that you apply good awareness of the following.

	Score yourself	Rank score 1 -10 (high to low)
1. Core stability	/10	_____
2. Trunk stability	/10	_____
3. Posture and joint alignment	/10	_____
4. Stretching	/10	_____
5. Strength and power	/10	_____
6. Balance and agility	/10	_____
7. Cardiovascular	/10	_____
8. Functional engagement	/10	_____
9. Pain management	/10	_____
10. Biomechanics in sport	/10	_____
<u>Score</u>	/100	It may help you to prioritise the lowest ranked scores

Action plan

- Physiotherapy
- Podiatry
- Personal Training
- Coaching
- Pilates / Yoga / Tai Chi
- Dietary management
- Sports psychology
- Medical management
- MRI scan and investigations

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Write a brief outline of your question; include your mobile number if you want us to call you back.