

# Knox - Principles of Training

To get the best benefit from training, coaches and athletes should have a good understanding of these principles.

Specificity  
Progressive Overload  
Variety  
Individuality  
Reversibility  
Recovery

If you would like for a formal training plan to be generated to help you achieve your goals contact Steve Cowburn, Mike Donato, David Sommers, or email [HERE!!](#)

## ***Specificity***

The body adjusts specifically to the load and skill being trained. If you do push ups all the time - you will get very good at doing push ups, but obviously not very good at skipping. It is essential to have a look at the skills that players need for each sport and concentrate on these. Athletics requires such a diverse range of physical attributes you can (almost) train anything and achieve an effective result. You always build base capabilities first and then specialise. The body is extremely specific - if you train in holding a brick at a particular arm angle - then you get good at doing that, not at lifting or swinging the same brick in a different manner.

## ***Progressive Overload***

The body adjusts to work by getting better, stronger, faster, etc. in response to a training stimulus. You must train long enough or hard enough to tire the muscles or overload the bodies energy systems to produce a “training” effect. Our bodies being such a wonderful and adaptive biological system will react to this overload by improving our capability in the specific area being worked. If you don’t work hard enough there is little training effect or if you work players too hard they might be sore for too long or incur injuries. Once the body has adapted then you must increase the load, effort or duration to match the increased capability - hence progressive.

## ***Variety***

Results eventually taper off with the same routine or exercise. So you must vary the exercise, load or manner of training - often only slightly to get continued improvement. Training methods such as 3 or 4 week cycle with loads progressively increasing for 2 to 3 weeks and then having a light load week before ramping it up again can have the same effect. This is called periodisation.

### ***Individuality***

No athlete responds exactly the same way to the same stimulus. Everyone is different and for best results athletes need individualised training programs. This is effectively impossible in team environments but the coach can make allowance for groups requiring the same improvement in particular areas. Telling players to do an exercise each to their own limits works well - ie : push ups to failure, or sprinting over a distance, running around an oval at their threshold pace not in a group.

### ***Reversibility***

If you don't maintain it, you lose it. Typically 2 or more sessions a week will improve capabilities, where 1 will maintain them. You lose strength slightly faster than endurance. But after 6 months rest or inactivity you lose everything you gained. A benefit of having trained though is that physiological adaptation will have occurred making it quicker & easier to get back to a trained level again compared to untrained individuals.

### ***Recovery***

Without adequate rest between training sessions or even too much rest the improvement from the training effect will not be optimal. When you don't allow enough rest between sessions the body won't fully recover and muscle soreness will get worse and generally the session will go badly. If this continues for too long, over training will become evident with symptoms like poor motivation, poor performance, increased risk of injury, bad appetite and sleeping patterns. Time for a rest and easing of the program. When the gap between sessions is too long then the body loses fitness before the next session starts making the fitness improvements a bit like a see saw. Aiming for training twice a week will allow performance to improve for junior athletes.

A rest or easy day before competition or a game is a good idea. Similarly a rest day or 2 between exercises of the same type works best. The more intense the session the longer the rest should be to allow for muscles to repair themselves. The first session in the week can be a harder one as there is more time for recovery.

If sick or injured - depending on the specifics then it might be best to slow down or stop because of the possibility of delaying recovery by aggravating your illness or injury further. I have found that it is a good idea to ask athletes if they are sick or injured at the start of training. If someone has an infectious disease like a cold or the flu, perhaps best that they stay away from training rather than give the whole team a dose.