



Programming Exercise Part 2 (Periodisation)

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Periodisation of training

Now that you understand General Adaptation Syndrome, we need to look at how to plan a training load that is perfect for your client. This process is called training 'periodisation'.

Periodisation can be defined as:

'The systematic implementation of specific training phases, that allow a subject to make the most progress towards their personal physical potential in the shortest possible time'.

A word of caution – there is no single 'right way' to periodise training. Planning training for client's should be done according to individual needs, and should also be fluid over time as your client adapts. Of course, there will be one way that your client responds to best, and with good feedback and regular 'benchmarking' tests, you should be able to find that best way!

The following are generally accepted guidelines and planning methods for periodisation of training.

Terminology

Macrocycle – The linking of various periods of training into a long-term plan. This could be a 6 month plan, annual plan, or in the case of Olympic athletes, a 4 year cycle.

Mesocycle – An intermediate period of time planning that could be a few weeks up to a few months in duration.

Microcycle – A smaller time division that lasts from 1 to a few weeks.

Specific Adaptations to Imposed Demands (SAID principle)

The SAID principle states that a client's body will adapt to exactly what is demanded of it. Therefore training needs to specifically focus on training goals. Mixed messages to the body will result in less than optimal performance gains. Of course, this also means that you must take a holistic approach to fitness programming in order that you do not fall into the 'specificity trap' – whereby training becomes so narrow in focus that it does not incorporate all elements that are required by a client.

Exercise selection

Exercise selection to meet your clients needs should be driven by research-based decision making. Exercise selection should not be based on what you like to do yourself or your latest 'fad'! Records should be kept on exercise programming and the resultant progress or lack of progress made by your client – further informing choice.

General considerations of periodisation

Before commencing planning your client's training, you should analyse all of the data collected during consultation and physical screening, so that you understand where they are on their 'fitness journey'. Below is a model that can be applied to individuals whether they are athletes, or general personal training clients. Their current position on this journey for all components of fitness should be noted. Factors affecting their position could include (but are not limited to):

- Chronological age (years)
- Physical age (body's health)
- Training age (months/years in a structured exercise environment)
- Recent training history
- Sociological fitness



Learning to Train/General Physical Preparation Phase

If your client has lived a sedentary life, or perhaps has just never trained a particular component of fitness, then time should be taken to 'ease' your client in. Training should be:

- Progressive – start easy and don't ask too much of your client too soon!
- Include technical sessions so that clients understand movement patterns/biomechanics and become competent at them
- Educate in order that your clients understand thoroughly why you are asking them to complete this form of training, allowing for greater client 'buy in'
- Include enough volume of training at a low enough intensity in order that clients become accustomed to the rigours (physical and psychological) of training and that their body adapts to the stimulus before progression occurs

F – Frequent training

I – Low

T – As high as fitness allows

T – Foundation movements and techniques

Training to Train/Specific Preparation Phase

Once a client has an understanding and physical capacity to increase their training load, then 'training to train' can take place. During this phase of training, training load is increased to optimal levels in order that best progression can be made towards goals.

F – Frequent

I – Medium to high (likely following an inverse relationship with frequency of training)

T – Medium to high

T – Progressive movements and technical elements from foundation

Training to Compete/or for optimal performance

Competition does not have to mean participating in a race or other competitive sporting event – it could just mean competing against oneself! Having a specific goal can focus thoughts and training and help clients to strive for more.

F – Frequent

I – Medium to high (likely following an inverse relationship with frequency of training)

T – Medium to high

T – Progressive movements and technical elements from foundation

Competing to Train/Pre competitive Phase

There is no training like competition. Using races or other sporting events to motivate can often take training loads to new levels!

F – Less frequent

I – High (with low intensity active recovery sessions)

T – Medium

T – All energy systems used

Competing/Peak Phase

The result of all the hard work!

F – Less frequent

I – High (with low intensity active recovery sessions)

T – Medium

T – All energy systems used

Exercise progression methods

The following slides show some common exercise progression methods for both cardiovascular conditioning and strength training. All have been proven to work in their own right. To understand how they work, it is usually best to experience each method personally. By doing so, you will have a deeper understanding of how each method makes you feel!

Cardiovascular training method progressions



LISS – Low Intensity Steady State training characterised by use of the aerobic mechanism to supply energy demand

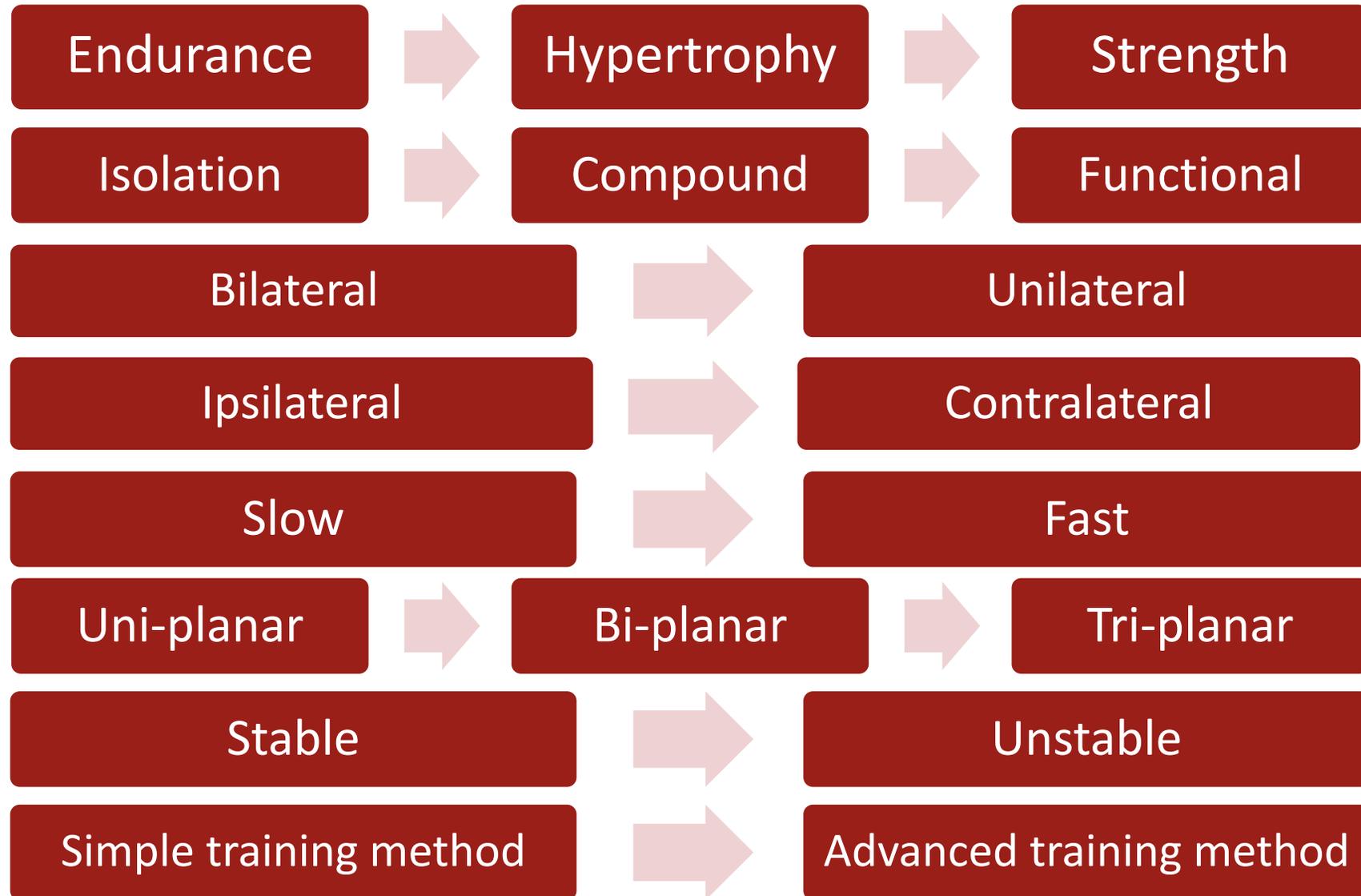
Fartlek – Randomised speed play utilising both aerobic and anaerobic energy systems

Interval – Timed and measured periods of work and recovery often utilising largely the anaerobic energy system

HIIT – Shorter interval periods designed to elicit a high Excess Post-exercise Oxygen Consumption by use of the upper limits of the anaerobic energy system

Metabolic – Training that incorporates intense resistance training with intermittent bouts of anaerobic activity in order to necessitate the adaptation of the body from a body composition perspective – offering increased ‘metabolic resilience’ by means of an improved lean mass:fat ratio

Strength training variable/method progressions

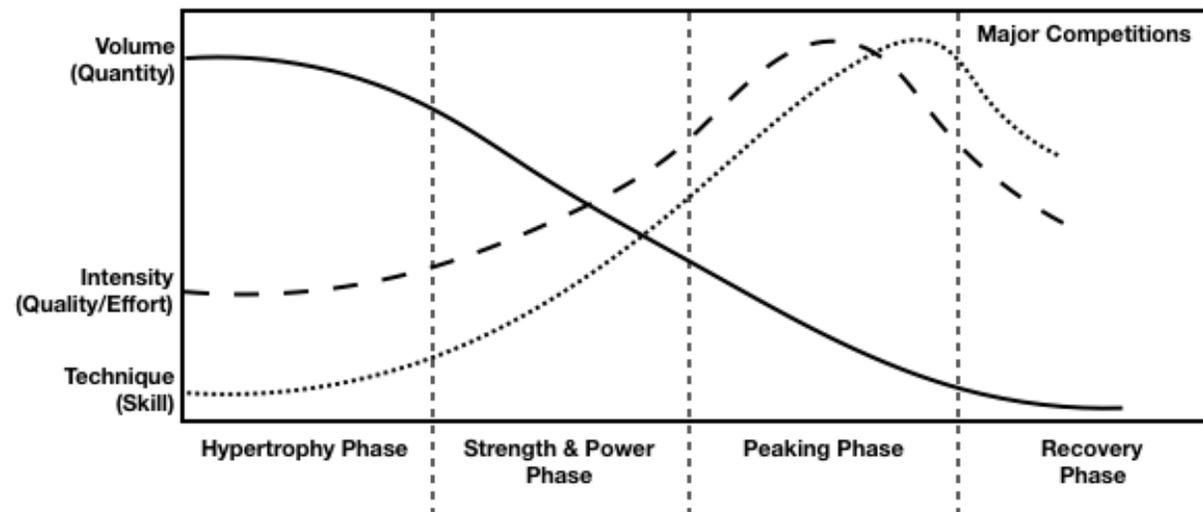


Periodisation models

The following slides show some common training periodisation models. Please remember, each model has been shown to work, but that each person responds to training stimuli differently. Therefore, what works for one client, may not work for another!

Linear periodisation model

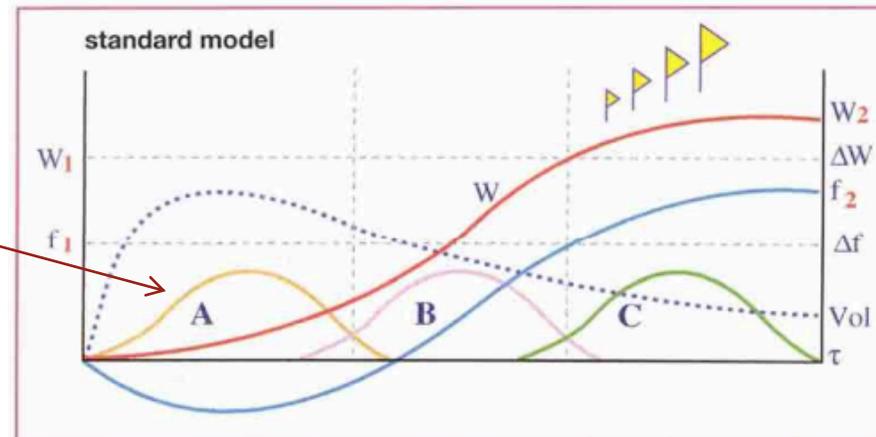
This involves a progressive change in volume and intensity over multiple mesocycles. The relationship between volume and intensity is inverse. Linear periodisation is good for beginner clients, but limited at an advanced level as the body does not adapt in a linear manner.



Block periodisation model

Block periodisation splits training up into discrete periods of time (mesocycles). Each mesocycle has a distinct purpose and fitness goal. Each mesocycle should build on the previous mesocycle's success's, whilst also expanding into new areas of physiological adaptation.

A, B & C are distinct mesocycles



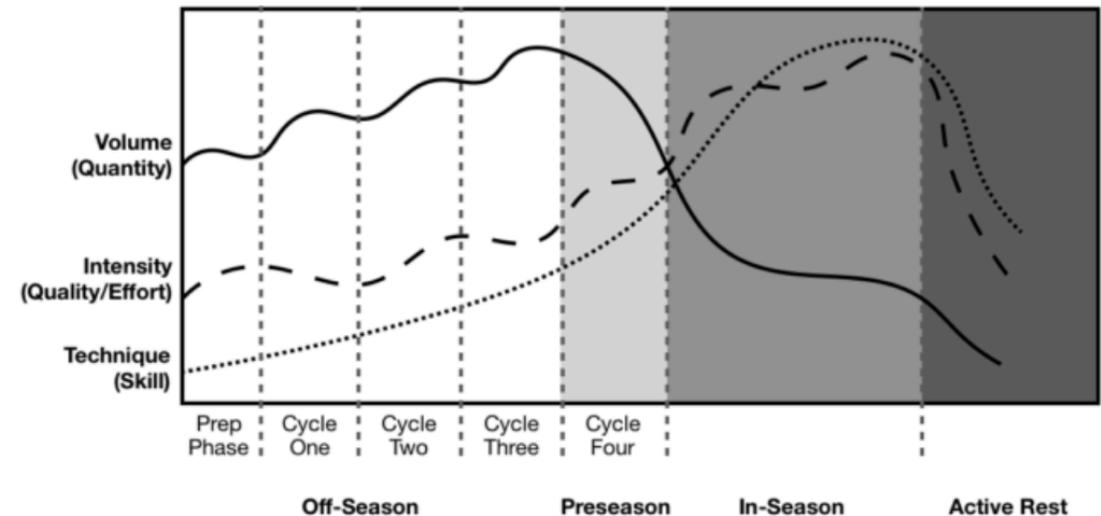
Verkhoshansky's Standard Model for the Main Adaptation Cycle^[iii] Model

W = Work Power Vol = Volume f = Maximal level of functional parameters

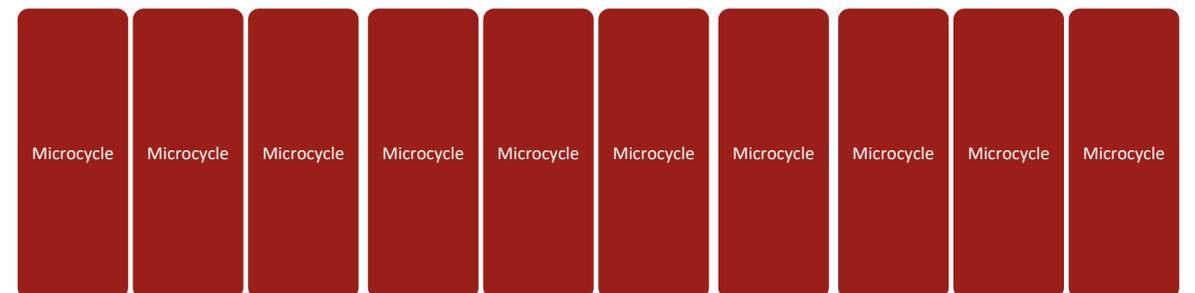
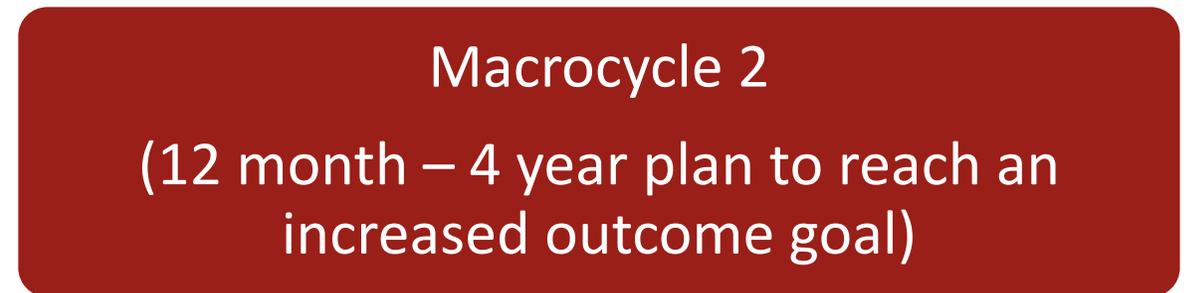
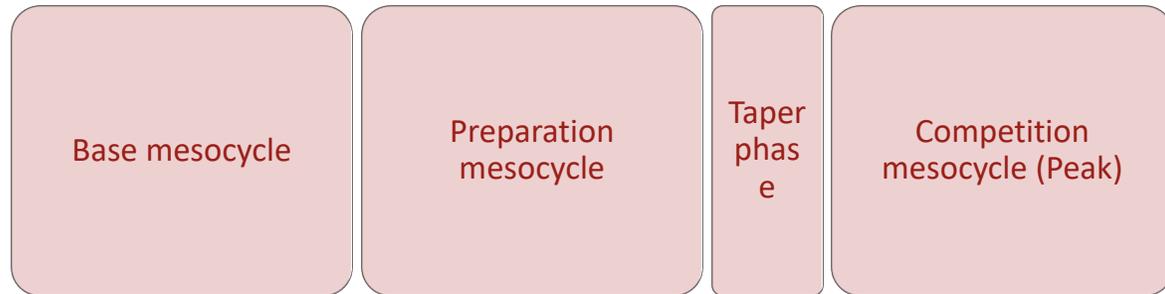
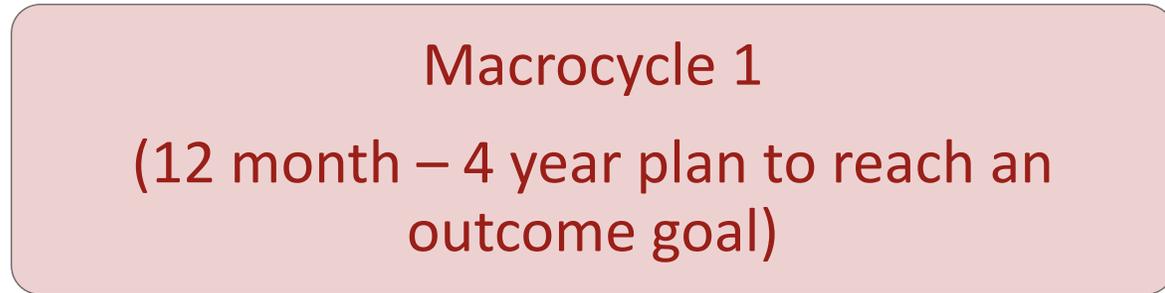
Undulating periodisation model

Not all sports can have specific mesocycles of training. Team sports especially may be played over a long season. In these instances it would not be possible to focus on one aspect of fitness in preference to another – players must be fit in all areas throughout the season and must not be over-reached and suffering DOMS on game-day!

Undulating periodisation uses an ad hoc (but not random!) approach to training and incorporates all fitness components at convenient points in and around the game calendar. It does not use FITT principles in a prescribing manner, though attention is paid to them in order that pre-game taper/recovery is accounted for. Loads and volumes etc are recorded in order to establish baseline values that are useful in explaining peaks and troughs in performance.



Typical cardiovascular periodised plan example (block)



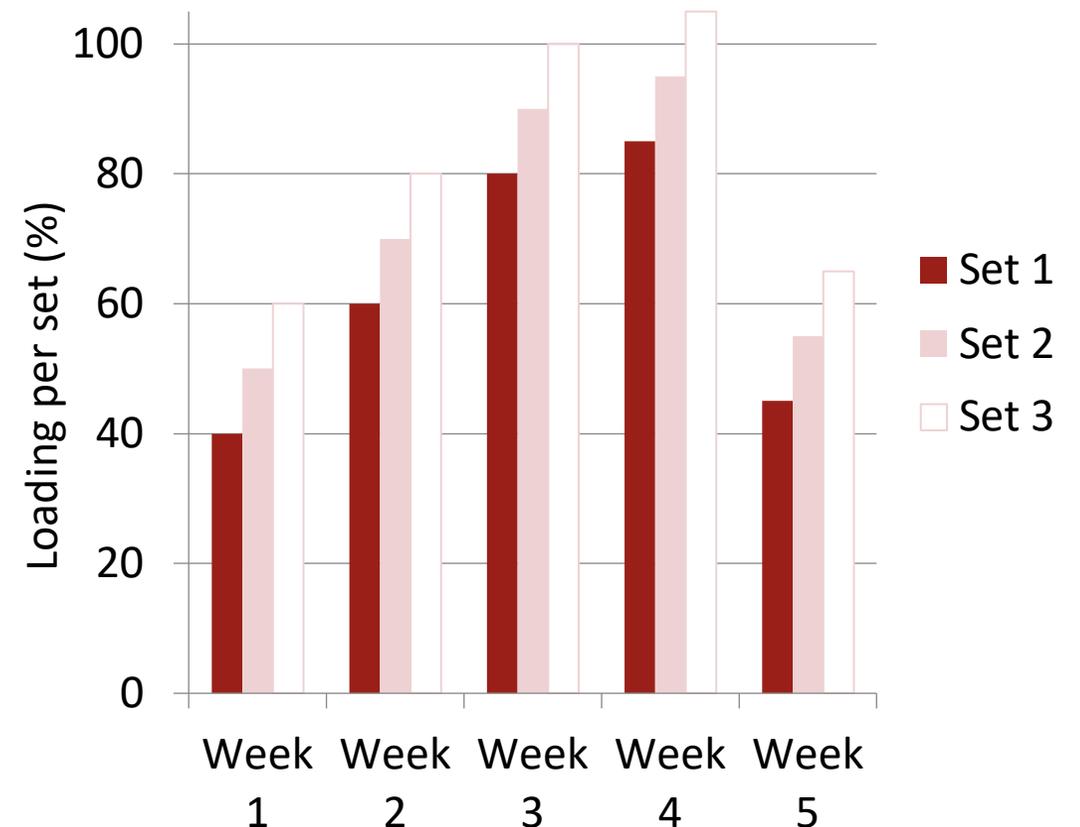
'Wave Cycling'

Wave Cycling has been employed by powerlifters for many years and is a method of periodisation that can be used with all forms of resistance training. The general principle is as follows:

1. 1 week at a comfortable load
2. 1 week at a moderately challenging load
3. 1 week at your old PR level
4. 1 week aiming for a new PR

Within this programme, each set of an exercise also has set-to-set rises in loading up to the prescribed loads above (a little like a pyramid set).

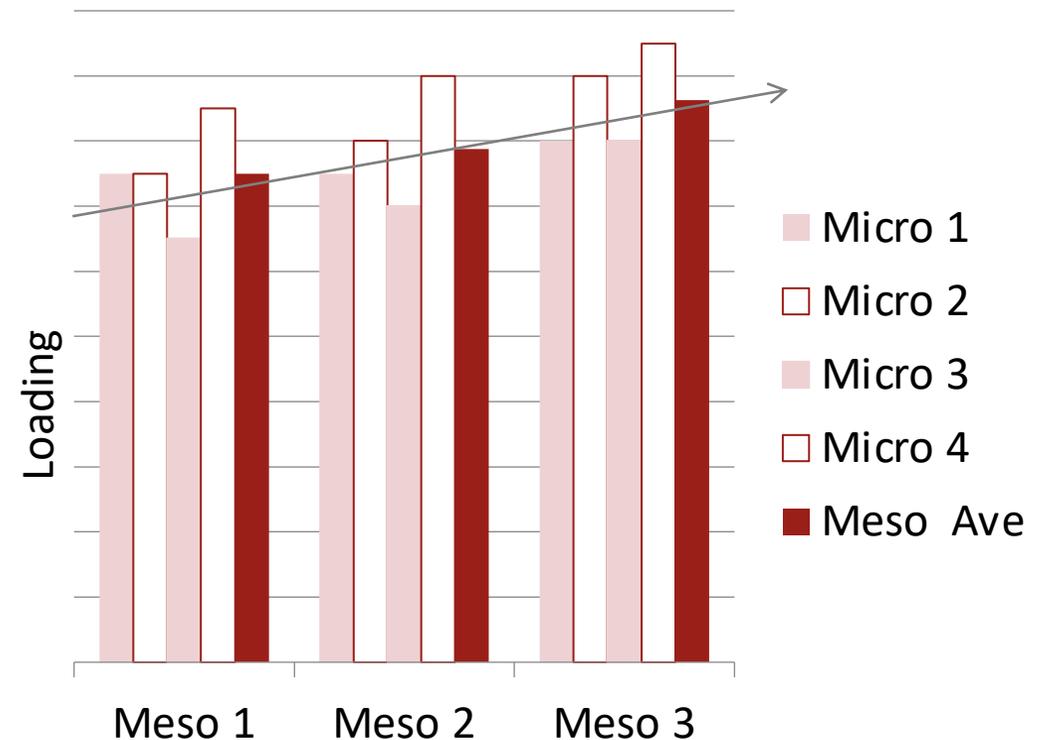
In the graph opposite you can see how the loading in each set increases and how the weeks progress, before a new mesocycle is started in week 5.



‘Variable Loading’

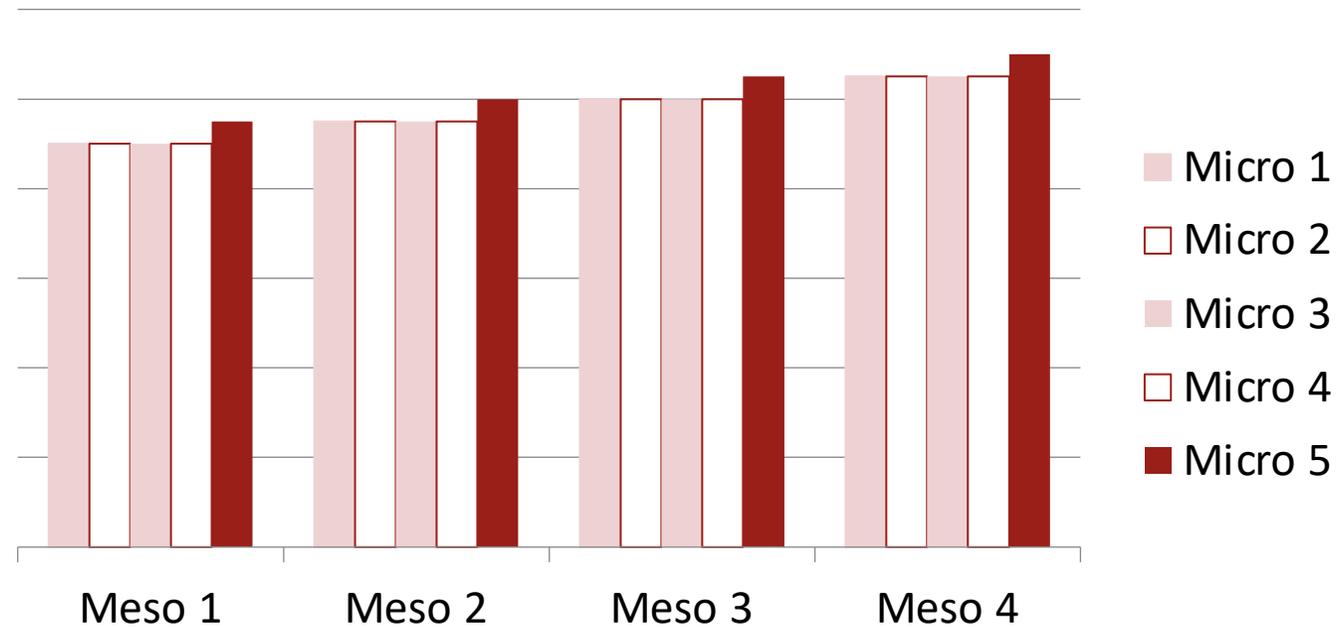
Variable loading allows great flexibility in day-to-day training that can be used to coincide with the usual peaks and troughs of physical readiness to train. It works like this:

- Aim for an average loading of 75% of 1RM for sets of 8-10
- Most work is done at the actual load
- 20% jumps in loading (up and down) can be used sporadically with resultant changes in rep range



'Step/Constant Loading'

A Soviet method for progressing strength training. With step/constant loading, loading is increased in the last week of a mesocycle, at which point the new mesocycle starts.



Concurrent Training

Concurrent training is when both a cardiovascular and resistance training approach is used at concurrently. Combining Cardiovascular and Resistance Training can often result in compromise and sub-optimal programming. Please check the 'Concurrent Training' presentation for information on how to combine CV and RT methods most effectively.