

How to ensure your fighter turns up on the day

BY NATHAN PARNHAM

Throughout a fighter's preparation, various strategies are implemented by trainers to ensure they perform at their best during a bout. Whether technical, tactical or fitness based the manipulation of these combined variables is what will enable your fighter to 'turn up on the day' with the correct arsenal to win.

The purpose of this article is to provide a brief overview of how to manipulate variables relative to conditioning that will assist in your fighter's preparation. Assuming the fighter has a good base level of fitness, this article will focus on experienced competitors regularly competing in five-round bouts.

In an ideal world a fighter would have months to prepare for a bout, however, in order to compete regularly this is rarely an option. Several weeks to prepare is a privilege with many bouts often accepted only a few weeks out. For this reason a six-week preparation phase will be used as an example.

Periodisation may be defined as a training plan, designed to achieve optimal performance at a specific time (often referred to as a peak). This occurs by targeting specific physiological parameters in a desired sequence. By doing so it provides an overload stimulus encouraging the body to adapt and accommodate, and if done correctly through

manipulation of load (intensity) and volume (duration/number of sessions) will result in an increase in ones performance ability (figure 1).

Figure 1. Example Six-Week Periodised Plan

Before I go into specifics, let's look at the basics. An overall periodised plan is referred to as a macro-cycle (usually based around the fighter's desired competition calendar) and will involve a general preparation phase, followed by a specific preparation phase which is further broken down into pre-competition and competition. Within the macro-cycle, various training blocks are implemented referred to as meso-cycles (lasting approximately



3-6 weeks duration). Further to this, each meso-cycle is broken down into micro-cycles (often the weekly training schedule).

Now before I lose you, if I haven't already, let's get specific. In many

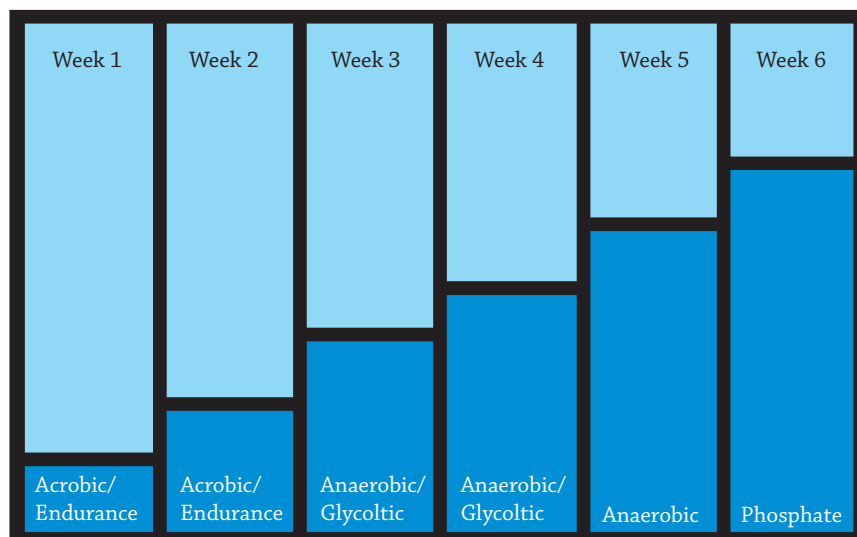
sports (i.e., field based sports) they have the luxury of having several meso-cycles to peak for their competition, which lasts for an extended period of time and again uses many meso-cycles within it.

These meso-cycles may target one fitness parameter only during this time (i.e., aerobic for 3-6 weeks). The unique position of Muay Thai is that fighters train for a bout, compete, and recover before commencing training for their next bout, which may be only weeks away. The skill in periodising a fighter's training is to selectively change the micro-cycles targeting fitness parameters within the 6-week (example) meso-cycle. Combined with training session variability this will ensure each fitness parameter is optimised and positively transferred into the next.

Weeks 1-2 (aerobic/endurance); should be high in volume involving extended duration of training sessions and in most cases more than one training session on the same day. The objective in these first two weeks is to target the aerobic system and muscular endurance. Other cross training modalities can often be used during this time to supplement regular skill/technical sessions such as running, swimming, rowing, arm cranks/grinders, elliptical trainers and many others.

Weeks 3-4 (anaerobic/glycolytic endurance); here the volume should still remain reasonably high

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Energy System Training Examples

1-2	Aerobic	<ul style="list-style-type: none"> Repeated bouts of 5min cross-training intervals Circuit-based training of extended duration (i.e., 20-30min non-stop) Extended duration of rounds >5min on bags/pads Unlimited duration sparring rounds (i.e., several partners introduced on a rotational basis to maintain intensity)
3-4	Anaerobic/Glycolytic	<ul style="list-style-type: none"> Maximal intensity 60–180s cross training intervals (Work: Rest ratio of 1:2-3) Maximal intensity repeated circuit options 30s duration (1:2) High intensity pads 2–3min duration (1:2) Repeated maximal intensity 30s bursts on bag/pads. For example max no. of power kicks in 30s (1:2)
5-6	Anaerobic/Phosphate	<ul style="list-style-type: none"> Repeat 20m shuttles in 30s (1:2) Repeated max intensity grapple for 30s (1:2) Repeat 7s sprints (1:3) Repeat 7–10s max efforts on the bag/pads. For example max no. of kicks, punches, or knees with light shadow as active recovery between efforts (1:3)

completing a couple of training sessions a day, however, now manipulating the intensity of training. High/max intensity intervals of moderate duration should be targeted, and cross training modalities slowly phased out with more specific technical sessions. The objective in this phase of training should be to target the anaerobic energy system, often referred to as 'anaerobic power', encouraging a fighter's ability to perform at a high intensity for repeated bouts of time. In regards to competing, this is an extremely important phase within the plan and should not be overlooked.

Week 5–6 (anaerobic/phosphate endurance); this is the final stage of preparation whereby the intensity is performed maximally over much shorter periods of time, leaning towards the body's phosphate energy system. The anaerobic power training is slowly phased out towards the mid week of week five, and maximal intensity shorter duration bursts introduced. It is also an important part of the periodised training schedule to implement a taper toward week six whereby training volume is significantly reduced (training only once p/day on selected training days) and eventually ceased a day or two out from the bout (obviously weight dependant). One important point is while the volume is reduced, intensity

must be maintained during this time. The objective in this phase of training is to target the body's short maximal intensity energy system (phosphate), fast twitch muscle fibres, and neural output (nervous system). Recovery of the body's fuel stores (i.e., glycogen), hormones, nervous system, tissue regeneration, and many others will all be facilitated by this taper phase.

It should be remembered that each fighter is different, all possessing their own strengths and weaknesses relative to their level of fitness. This should be used as a general guide and individual variations should be implemented with regards to planning a periodised model for your fighter. Remember, while I am aware from a technical/tactical perspective some of the training examples may appear backwards (i.e., sparring so far out from a bout), this article focuses on the conditioning aspect only. There are several other components of a fighter's preparation such as strength, technical or tactical that may require their own periodised model. While some elements of the energy systems trained may appear very easy for some fighters (particular those who like to train hard all the time), in regards to conditioning by targeting energy systems in a specific format this will ensure your fighter arrives on the day with a full tank of fuel ready to compete and is not running on empty.

References

- Pette, D., and Staron, R. (2001). Transitions of muscle fiber phenotypic profiles. *Histochemistry Cell Biology*, 115, 359-372.
- Schoenfeld, B., and Dawes, J. (2009). High intensity interval training: applications for general fitness training. *Strength and Conditioning Journal*, 31(6), 44-46.
- Tanisho, K., and Hirakawa, K. (2009). Training effects on endurance capacity in maximal intermittent exercise: comparison between continuous and interval training. *Journal of Strength and Conditioning Research*, 23(8), 2405-2410.
- Turner, A. (2011). The science and practice of periodization: a brief review. *Strength and Conditioning Journal*, 3(1), 34-46.
- Turner, A. (2009). Strength and conditioning for muay thai athletes. *Strength and Conditioning Journal*, 31(6), 78-92.



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