



# torq<sup>®</sup>

TRAINING THEORY



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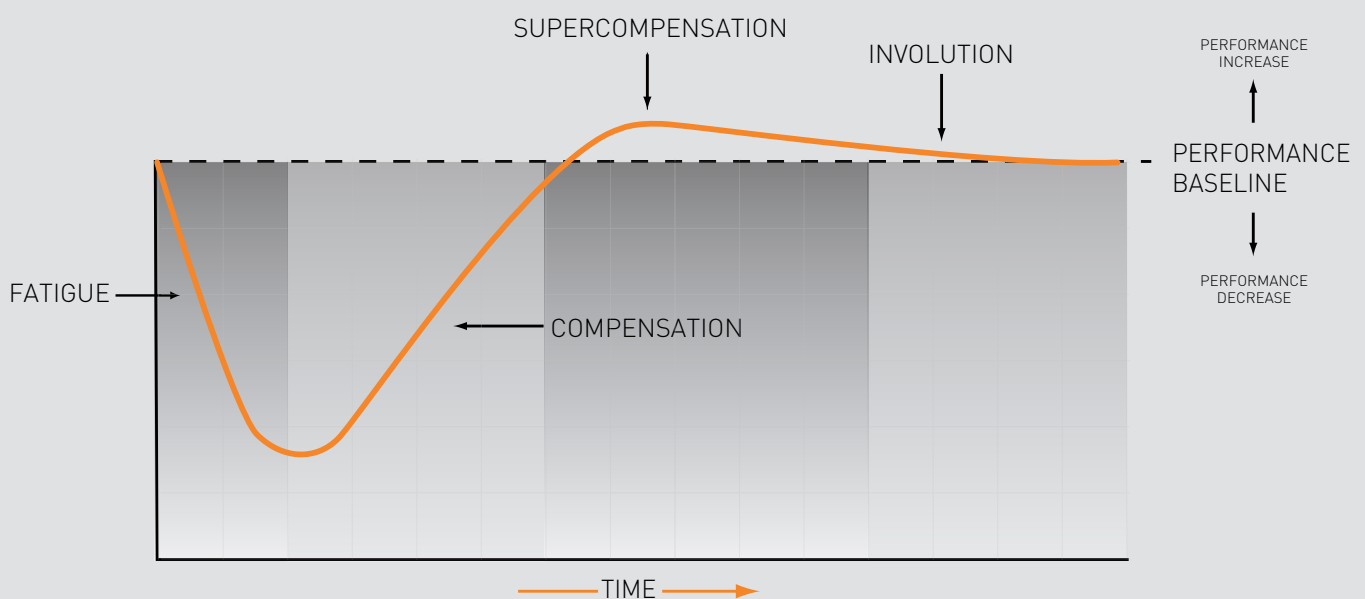


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# TRAINING THEORY MODEL



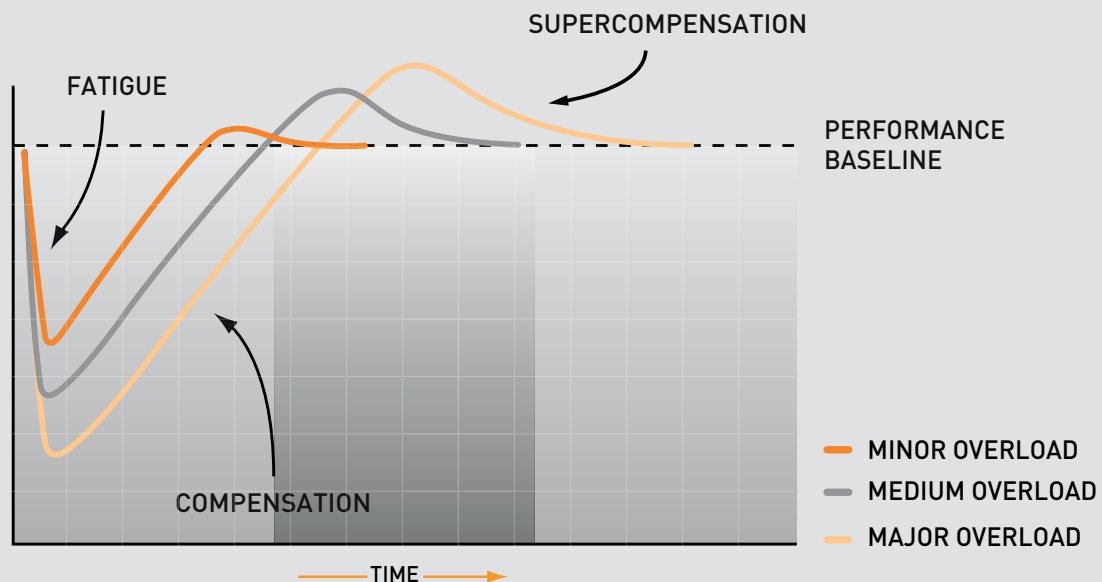
The training theory model highlights the importance of generating fatigue with exercise, pushing the body away from its comfort zone in order to become fitter and stronger.

Once fatigued, allowing for planned recovery will provide the tools and materials required for exercise improvement, otherwise known as exercise adaptation. This spike above the initial performance baseline will only last for a short period of time. It is at this point, the training

theory cycle must start again. The spike above performance baseline can also represent "freshness". If you are aiming to peak for an event, the event must be scheduled so that you arrive at this point within a training cycle. The point of which the body is at its fittest and most fresh.

# TRAINING THEORY //

## LEVELS OF OVERLOAD



The magnitude of exercise adaptation can be manipulated by the depth of fatigue generated through training.

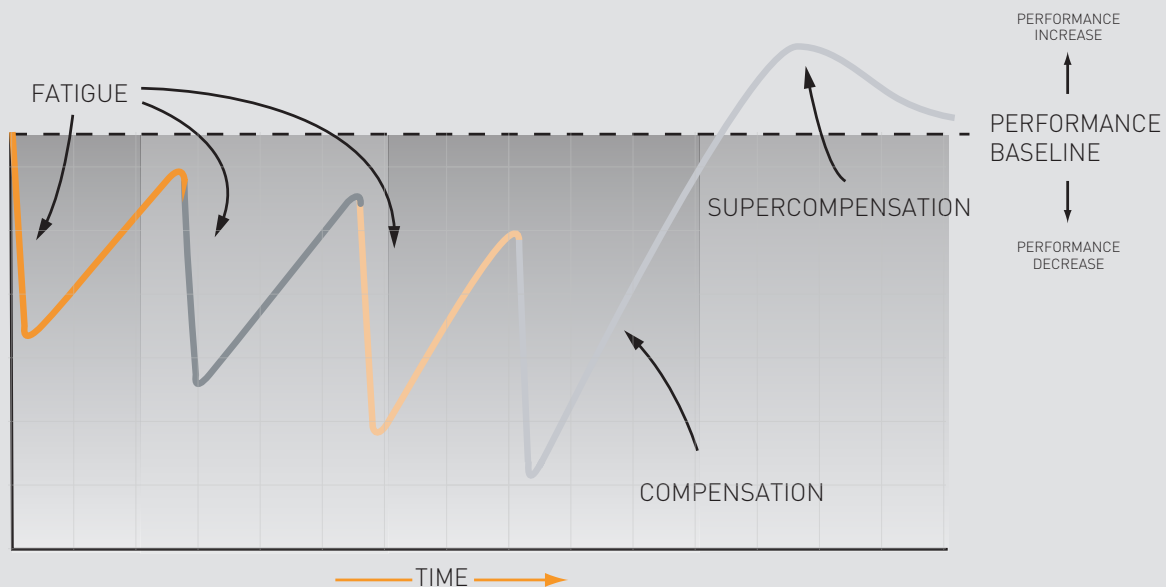
If a significant training load is imposed upon the body, recovery time may take longer, but the exercise adaptation outcome is much greater. This occurs as the body strives to become fitter, ensuring the high training load no longer fatigues the body to the extent it once did. Smaller exercise loads will not stimulate the higher rates of change or “adaptation”.

# TRAINING THEORY //

## MULTIPLE SESSIONS



As fitness increases, a single session followed by a recovery phase, may not be enough to generate adequate training stress responsible for the progression of fitness through training.



In this instance, an individual may wish to complete a “multi-block” training approach where back to back sessions are completed, temporarily neglecting recovery in order to generate fatigue over a number of days.

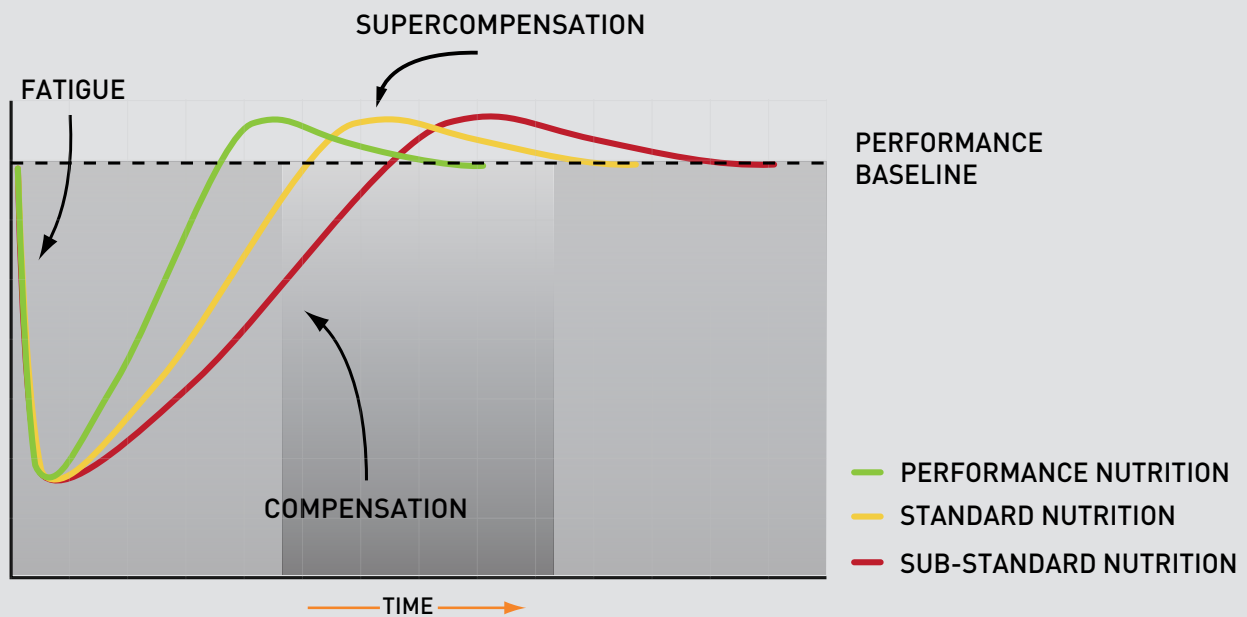
Once the desired level of fatigue has been reached, then a more extensive recovery procedure can be initiated, lasting 3+ days, rather than the standard, 24 – 36 hours.



# TRAINING THEORY //

## RECOVERY TIME & NUTRITION

Recovery is a fundamental process within the training theory model. Once it is understood that an athlete must recover in order to get fitter and stronger, the next phase is to determine how an athlete can decrease recovery time between sessions.



Decreasing recovery between sessions can allow for more frequent training, generating greater fatigue leading to superior training outcomes. Providing good nutrients in the form of carbohydrate, protein, vitamins and minerals can support the recovery and adaptation process. The quicker these nutrients are available, the more likely it is that they will be stored and utilised for muscular growth, athletic development and glycogen replenishment.

# PRINCIPLES OF FITNESS



There are 4 key training principles that can be manipulated within training sessions to ensure physiological boundaries can be continuously stressed, leading to training progression and physical adaptation. These are often referred to as the F.I.T.T acronym.

1. Frequency – How often you exercise within a week
2. Intensity – How physically demanding the session is
3. Time – How long you partake in a session
4. Type – The style of session you complete. i.e. endurance or strength



**FREQUENCY**  
(days a week exercising)



**INTENSITY**  
(session work rate)

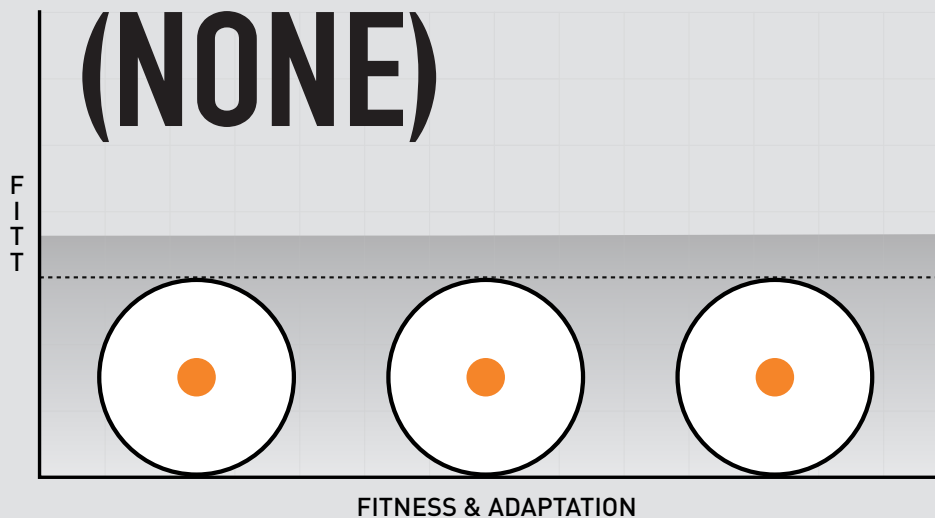


**TIME**  
(exercise session duration)



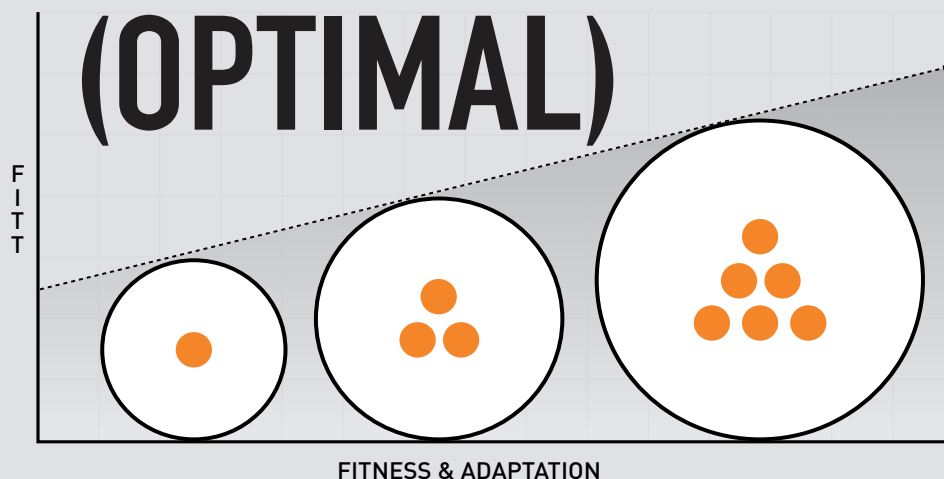
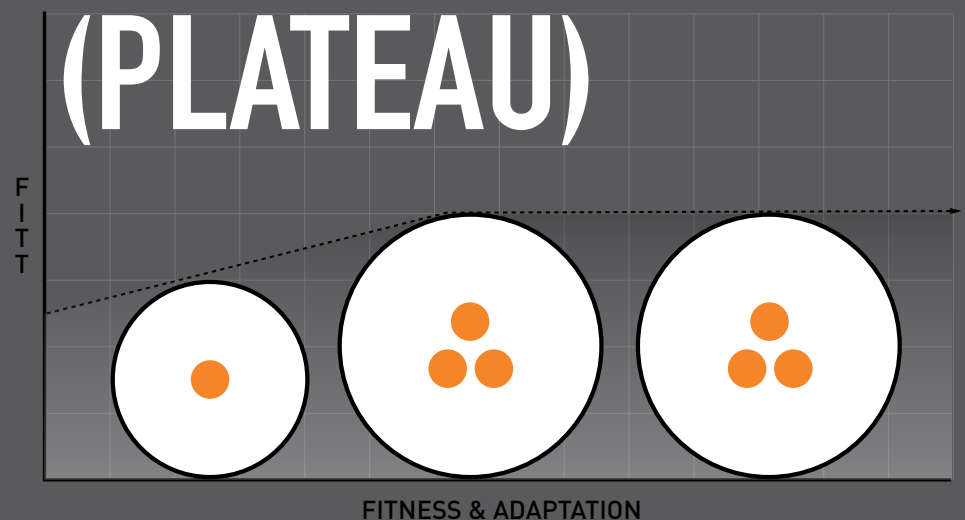
**TYPE**  
(of exercise)

# PROGRESSION OF FITNESS



When manipulation of the F.I.T.T principles become stagnant, a training session no longer generates the level of fatigue it once did, as the body has already adapted to the level of exercise stimulus. "If you always do what you've always done, you'll always get what you always got".

Someone who is new to exercise may see initial improvements after completing a block of training. However, once recovered and the body has adapted to that bout of training, the individual will need to progress their training in order to keep generating fatigue, allowing for continual progressions in fitness.

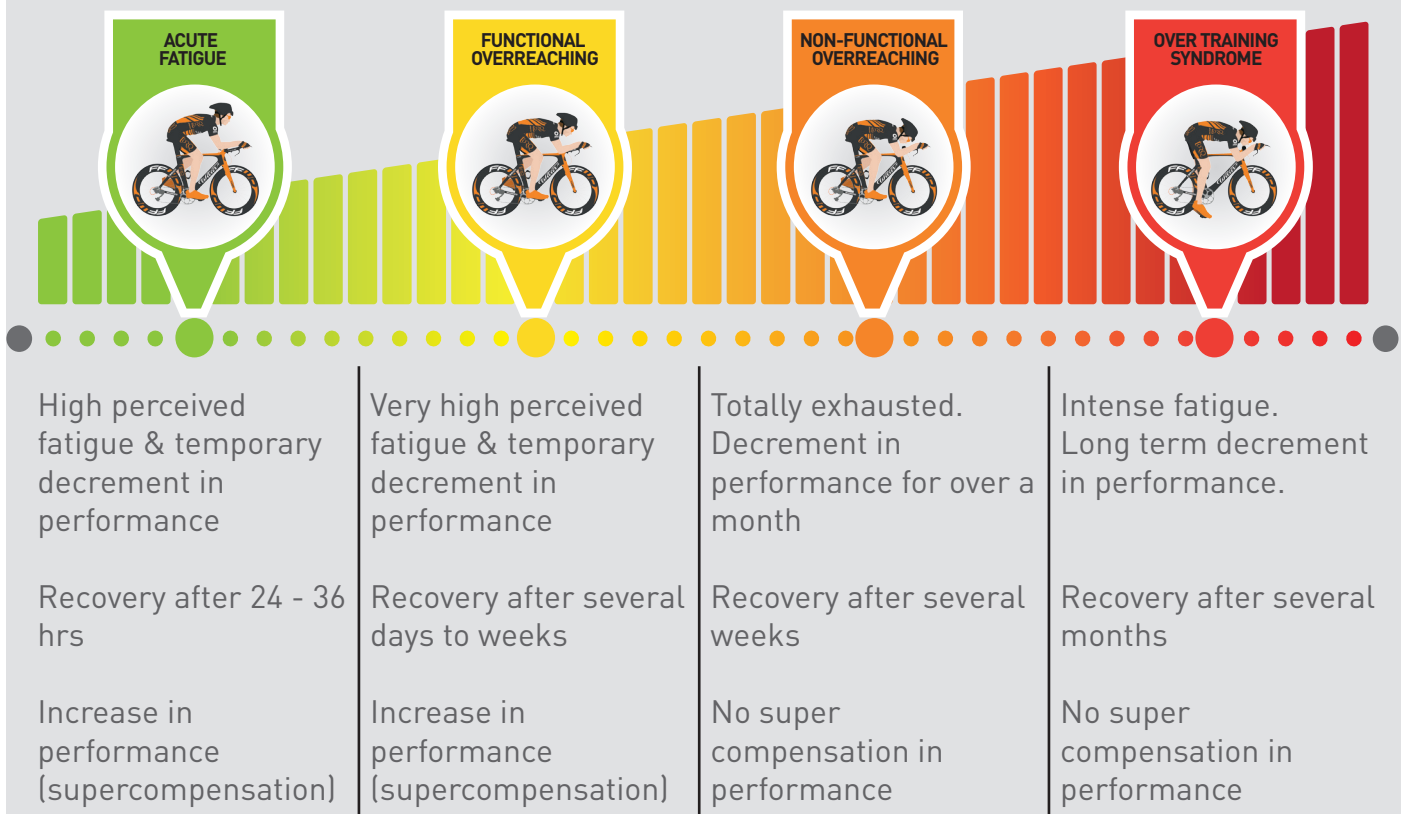


Continuously manipulating the principles of fitness allow for continual adaptations. Ensuring the type of training doesn't become stagnant is key to driving fitness forward. Pushing the physiological boundaries will require the body to adapt making it more able to deal with similar sessions in the future.



# UNDERSTANDING FATIGUE

To monitor fatigue and recovery affectively, there a number of signals that you must pay key attention to.

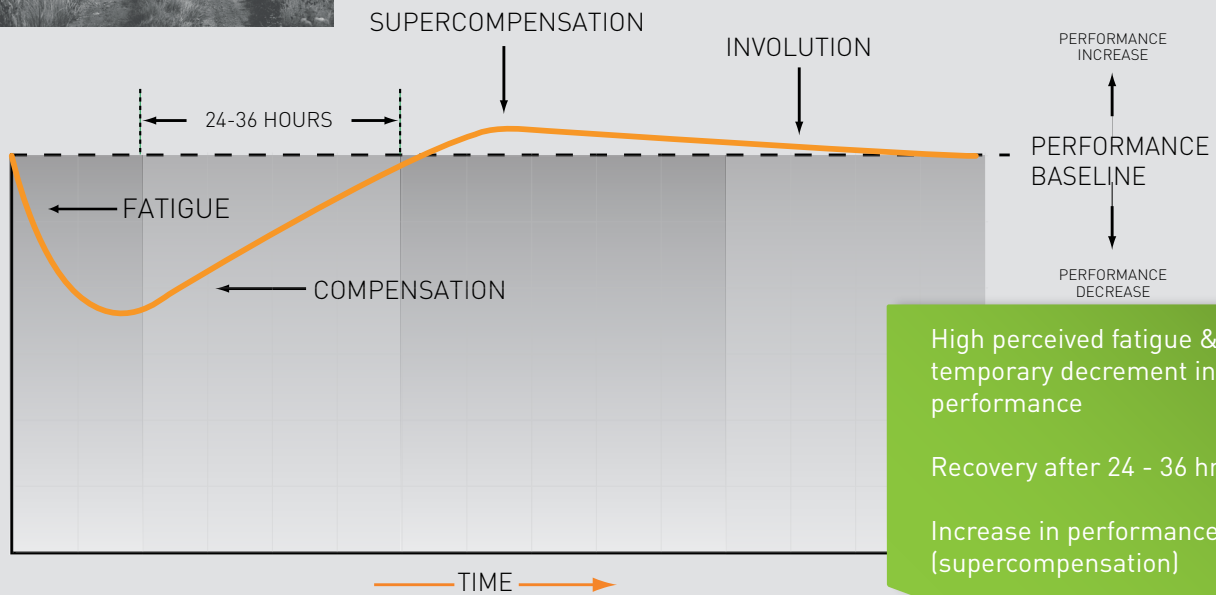


Fatigue can be monitored with a 4 phase approach. Ranging from acute fatigue to over-training syndrome. Acute fatigue, as shown on the diagram, is often considered as a short reduction in performance

experienced after a single training session. However, over-training syndrome is a chronic fatigue experienced after a series of intense exercise sessions with a poor planning and inadequate recovery.



# ACUTE FATIGUE



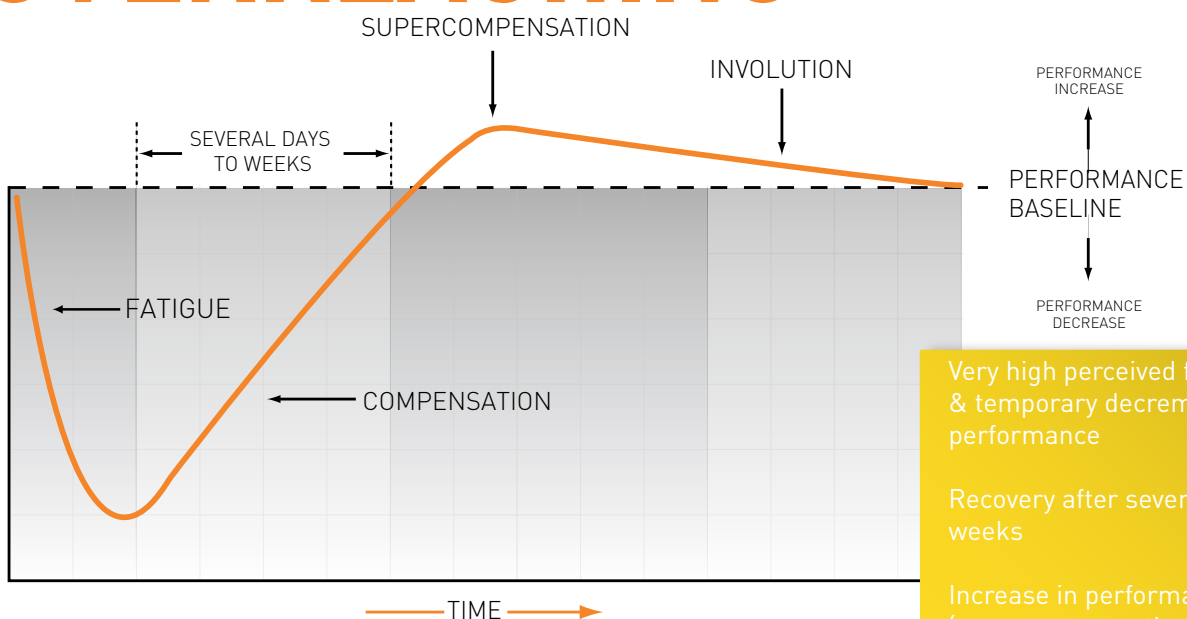
High perceived fatigue & temporary decrement in performance

Recovery after 24 - 36 hrs

Increase in performance (supercompensation)

Acute fatigue could be experienced after a single session. Full recovery is expected after 24-36 hours. Supercompensation will occur.

# FUNCTIONAL OVERREACHING



Very high perceived fatigue & temporary decrement in performance

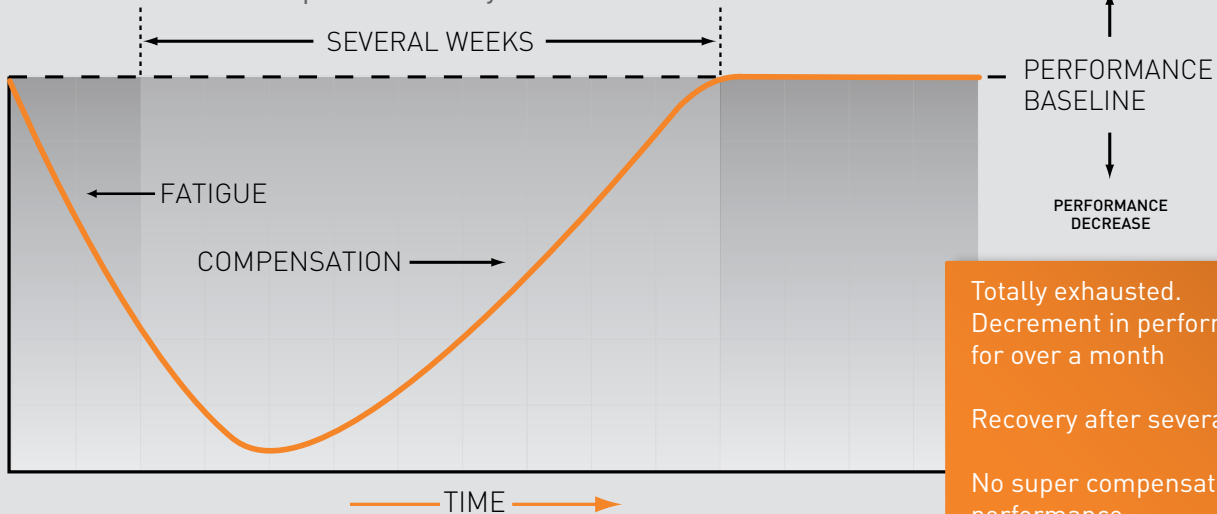
Recovery after several days to weeks

Increase in performance (supercompensation)

Commonly explained as a training block. Fatigue will be specifically targeted over a period of time (days), along with periodized downtime where a "low load" or "recovery week" will be planned to ensure overtraining does not occur.

# NON-FUNCTIONAL OVERREACHING

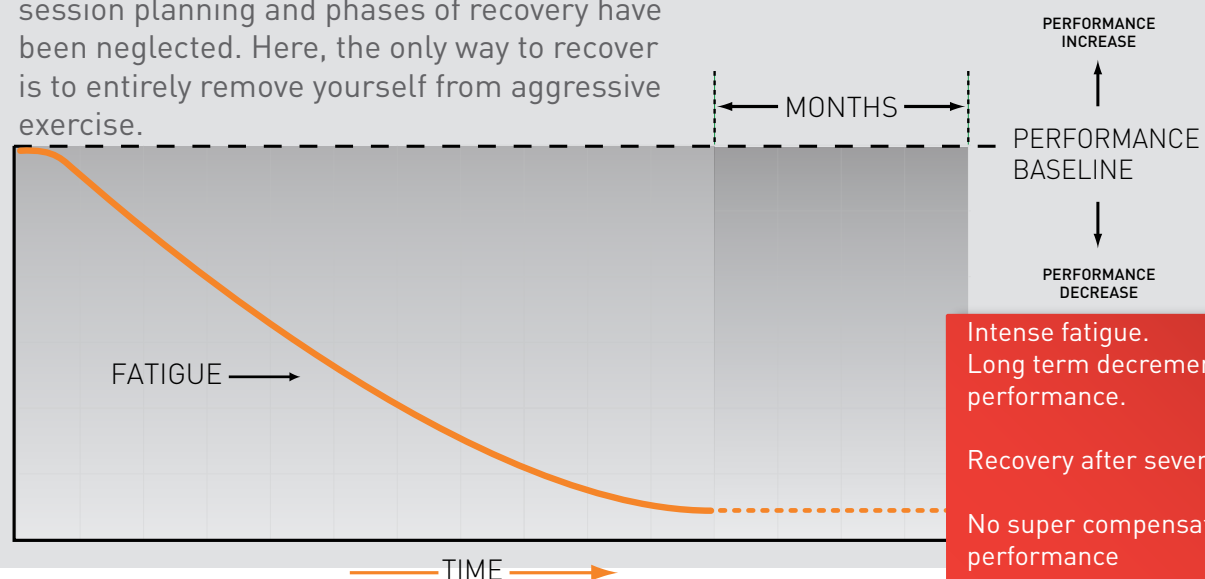
Non-functional overreaching is often categorised by large training volumes with inadequate recovery.



With Non-functional overreaching, a full recovery phase is possible, however the phase of super-compensation will be lost as the body strives to return back to baseline fitness due to such an aggressive fatigue phase. Non-functional overreaching should be avoided.

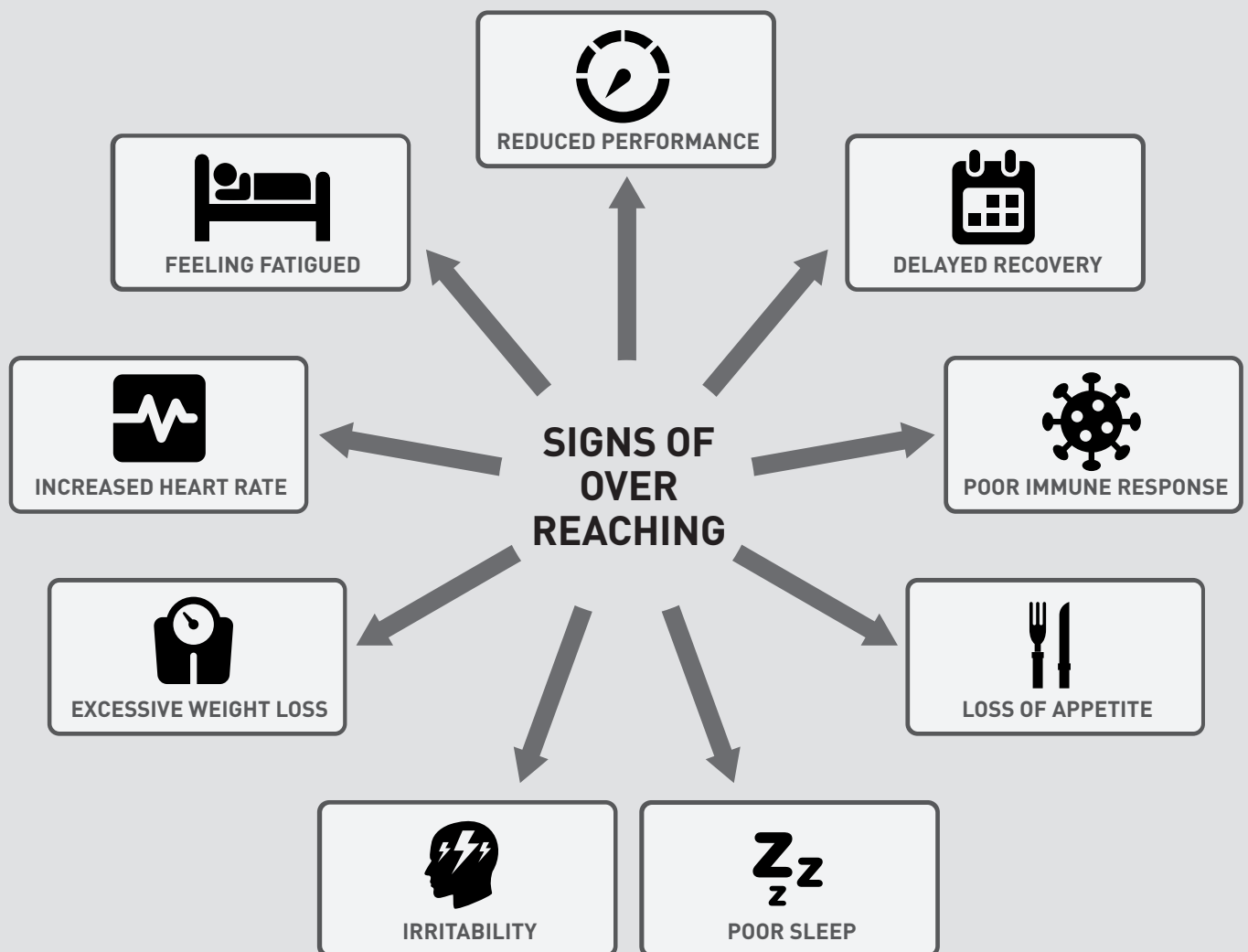
# OVER TRAINING

Over training is the point of which both proper session planning and phases of recovery have been neglected. Here, the only way to recover is to entirely remove yourself from aggressive exercise.



Recovery will take a significant amount of time (weeks to months) and due to this, it is with certainty, that super-compensation will not occur.

# FACTORS AFFECTING RECOVERY



Above is a number of identifying training factors that you can monitor during your training cycles to ensure you do not over-train. If you start to experience a number of these at any one time, you should aim to plan a specific recovery phase to your training.