THE NUTRITION-SAVVY INJURED ATHLETE

ENERGY INTAKE

Exercise/sporting injuries commonly result in temporary losses in mobility such as being complete specific parts of training to being unable to walk.

It is easy to assume that the reduced ability to exercise following an injury may also call for less food as fuel, but what isn't commonly known is that processes related to injury recovery can elevate energy needs by up to 20% depending on severity[1].

Eating too far below your new daily energy target will inhibit the muscle building process (AKA muscle protein synthesis) and lead to greater loss of muscle, impairing recovery[2].

Although, the reduction in physical activity caused by injuries can drastically reduce the energy needs of an athlete. If usual eating patterns continue while inactive, weight gain may occur negatively influencing performance when returning to play.

It is therefore a predicament of decreasing your intake to avoid excess weight gain but not so much as to inhibit muscle building/recovery processes. Thus energy balance where intake matches what is expended, may be the preferable option.

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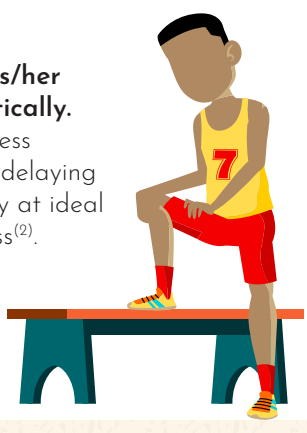
Aims for energy balance (matches activity to intake).
For example an average football player expending 2500 calories on training days may drop to 2000 calories (equivalent of 5 bananas less) when not injured and out of training.

Adds 10-15% on top of this.
E.g. Increases his energy slightly from 2000 calories to 2250 calories(equivalent of 2-3 bananas more) to assist with recovery of injury.

THE NOT SO NUTRITION-SAVVY INJURED ATHLETE

Reduces his/her intake drastically.
Decreases capacity for injury recovery and increases the amount of muscle wastage that occurs.

Increases his/her intake drastically.
Leads to excess weight gain, delaying return to play at ideal level of fitness[2].



PROTEIN INTAKE

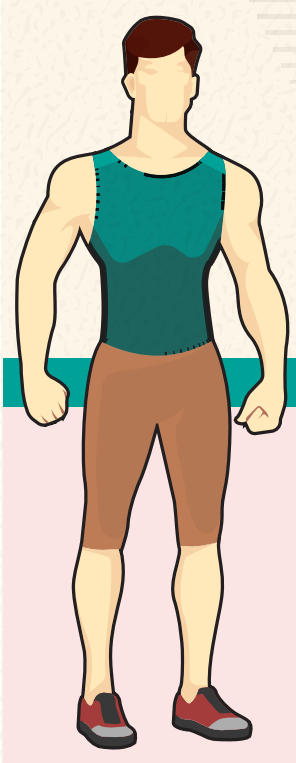
As a key player in muscle protein synthesis(MPS) and formation of collagen and other structures, protein requirements are elevated in injured athletes[3].

Meeting this requirement is especially tricky as athletes may have to achieve these levels with a smaller energy budget.

MPS becomes impaired within 10 days of disuse[3].

Not only this but MPS also becomes less responsive to amino acids within protein consumed, such as leucine which plays a major role in switching on MPS[2].

This makes protein intake a primary concern.



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Methods for maximal injury support

- Increasing protein intake to reduce the drop in MPS seen with injuries[4].
- Increasing the availability of leucine to counter the reduced sensitivity in initiating MPS[4].

Attempts to spread his protein out into 4-6 meals with 20-30g of protein with each[3]
Maximises anabolic response of meals across the day.

Gets majority of his protein from high quality (high leucine and essential amino acid) sources[3].
Counters the reduced sensitivity of MPS to protein sources.

Aims for an increased protein intake of 1.6-2.5g/kg/day[3]
Assists in counteracting reduced MPS during injury.
For an 80kg athlete following the normal recommended protein intake this may mean increasing from 60g/d to 128g/d.

THE NOT SO NUTRITION-SAVVY INJURED ATHLETE

Doesn't any changes to protein intake.
Impairs wound healing[2]. (Worse if protein intake is lowered as a result of reduced overall intake)

Consumes most of his protein at dinner.
Reduced MPS during the day, increased negative protein balance(muscle loss) and impaired healing[3].

Gets majority of his protein from low quality (low leucine and essential amino acid) sources.
The already resistant MPS response(due to injury) is not fully stimulated leading to greater incidence of negative protein balance (muscle loss)[4].

INFLAMMATION

Inflammation sounds nasty but it should be noted that some degree of inflammation is required for migration of recovery-related factors to the injury[3]. It is therefore again a matter of balance. It has been proposed that a diet high in omega-3 fatty acids compared to omega-6 fatty acids offers anti-inflammatory benefits which may aid recovery[3]

This has led to individuals supplementing with this nutrient to exaggerate any potential benefits. However, as mentioned previously some inflammation is necessary for recovery to occur and blunting this response too greatly could actually inhibit injury recovery.

THE NUTRITION-SAVVY INJURED ATHLETE

Focuses on including omega-3 fatty acids through wholefoods in their diet.
Food-derived omega-3 fats assist with managing inflammation and make it difficult to overconsume and blunt the inflammation response[3].

Avoids alcohol while injured.
Reduce incidence of reduced MPS and recovery.

Consumes a wide variety of foods, especially fruits and veg, to obtain the recommended vitamins and minerals.
Results in intake of anti-inflammatory compounds that assist with controlling inflammation and improving recovery.

THE NOT SO NUTRITION-SAVVY INJURED ATHLETE

Supplements with omega-3 fatty acids to levels well in excess of the recommended intake.
Results in dampening of inflammation response and slows the recovery process.

Consumes alcohol in excess even while injured.
Results in increased inflammation and slower healing.
Also increases chance of reinjury in activities following bouts of drinking[5].

Restricts multiple food groups, scarcely consumes fruit and veg.
Misses out on consumption of multiple compounds implicated with healing and assistance with inflammation, delays healing.

Click here to find out more about nutrition and recovery
https://nutrirejournal.biomedcentral.com/articles/10.1186/s41110-018-0084-z