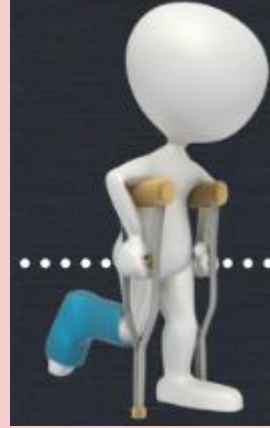
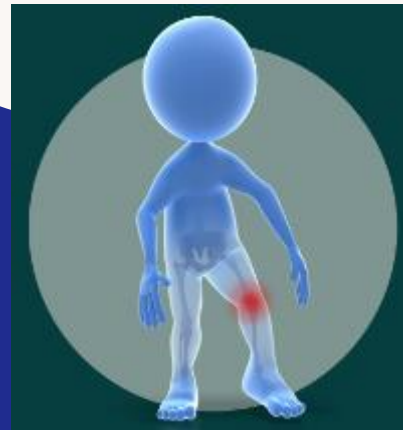




NUTRITION STRATEGIES FOR INJURY RECOVERY AND RETURN TO PLAY



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HPSNZ
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TOPICS

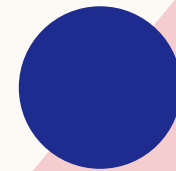
Impact of the type of injury and phase of injury
on nutrition plans

Role of nutrition strategies

What NOT to do

Nutrition strategies that work

Nutrition for injury prevention





INJURIES ARE INEVITABLE

**NUTRITION CAN NOT KEEP ATHLETE'S
INJURY FREE**

**NUTRITION PRACTICES SUPPORT AND
MAXIMISE RECOVERY AND REDUCE
LOST TRAINING DAYS**

**POOR NUTRITION PRACTICES IMPAIR
AND DELAY RECOVERY - HEALING AND
RETURN TO PLAY TAKE LONGER**





KNOW THE RECOVERY TIMEFRAME

GET SUPPORT AND HELP

**CHECK FOR NUTRITIONAL
DEFICIENCIES, ENERGY BALANCE,
OPTIMAL HYDRATION AND SLEEP**

**INDIVIDUALISE FOR PHASE OF INJURY,
STAGE OF GROWTH, REHAB ACTIVITY
LEVELS AND CHANGES IN ACTIVITY
LESS AND MODIFIED TRAINING**



GOALS OF NUTRITION SUPPORT

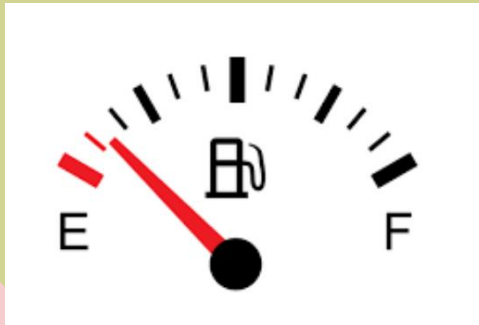
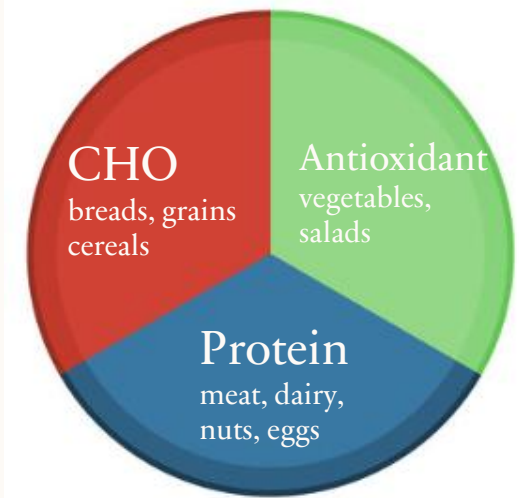
- Nutrition to support injury and rehab is often overlooked
- Support muscle protein synthesis and reduce the loss of lean mass
- Manage energy balance
- Support growth
- Contain boredom eating
- Adjust energy intake to the progression in rehab energy needs
- Aim to return to training or competition in the best possible condition
- Take care with supplement use



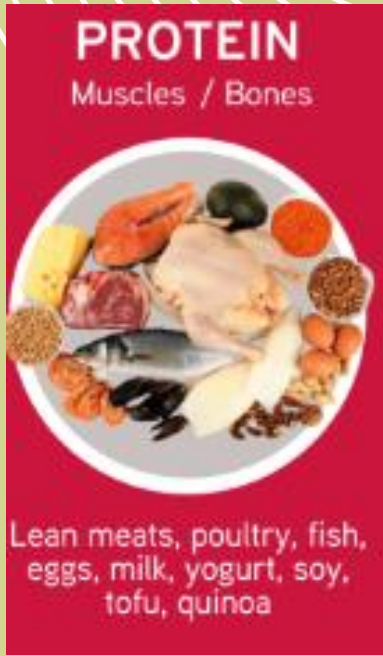


ENERGY: NEEDS CHANGE OVER TIME

- Often athletes unnecessarily restrict energy intake believing lost training results in undesirable weight gain. Do not under fuel in recovery
- Pre surgery – eat a good intake of fruit and vegetables to have antioxidant and protein
- Post surgery – monitor for loss appetite, pain reducing appetite, effects medication (constipation)
- Advise surgeon of any supplement using
- As training is halted or modified CHO and added fat intake may need to be reduced, and protein increased
- In bone injuries some nutrients increase in importance (Ca, P, Vit D, Vit K, Vit C)
- Wound healing and muscle injuries may require more protein, Vit C, Zinc, B vitamins and antioxidants
- Loss of lean mass = reduction in metabolism



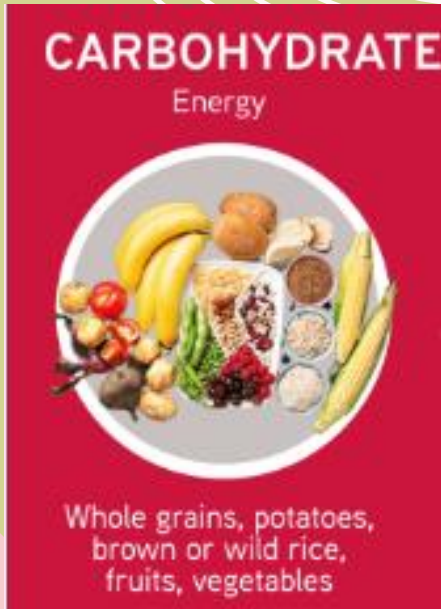
PROTEIN



- Role is to build, heal and repair muscle and tissues e.g. wound healing and bone
- Also provides satiety – fullness and reduce hunger
- Aim for those with high leucine content
e.g. milk, milk powder, egg, lean meats, turkey, pork, tuna, salmon, pine nuts, soy protein
- Protein intakes of 1.5-2.5g/kg
- Spread protein over the day 15-25g per meal/snack
- Keep it simple –eggs, cottage cheese, lower fat cheese (edam, mozzarella), lean meat in sandwiches, hummus on crackers, milk drinks, smoothies with milk, yoghurt
- Consider protein before sleep – hot milk drink, Greek yoghurt, cottage cheese on crackers, milk based smoothie
- Chooses foods with nutrient impact by adding fresh and frozen fruit, vegetables, salad ingredients, herbs and spices

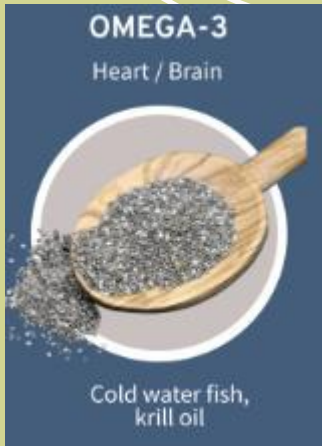
CHO NEEDS ARE UNIQUE TO THE ATHLETE AND INJURY

- Body needs fuel for brain function, tissue repair and regeneration
- Athlete will still be growing – this requires fuel
- Walking on crutches requires energy, walking in moon boot used more energy
- Athlete is less efficient in movement when injured – this requires more energy
- Needs are lower without training (reduce pre training snacking, fuel during training session and recovery shakes)
- Use nutrient dense foods such as whole grains, fruit, vegetables,
- Adequate fibre – as bowels may slow with the reduced activity increase fibre can be recommended – use wholegrains, prunes, kiwifruit, bran based cereals



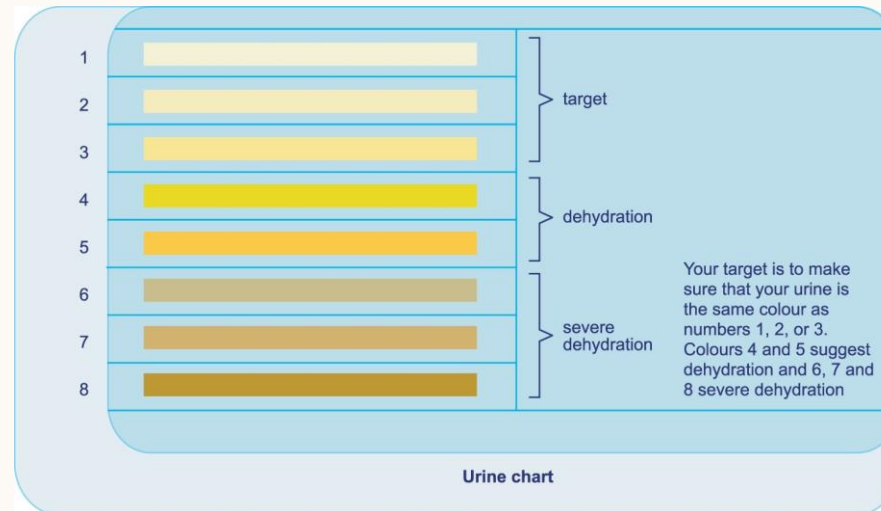
FOCUS ON CHOOSING HEALTHY FATS

- Essential for healing, recovery, decreasing inflammation and hormone production
- Need some essential fatty acids and provides fat soluble vitamins ADEK
- Reduce other fats
- Good choices include olives and olive oil, nuts, nut butters, seeds, avocado, oily fish (salmon, tuna in olive oil), omega 3 rich eggs
- Options high in omega 3 fats are encouraged
- Limit omega 6 oils such as peanuts, peanut oil, pine nuts, sunflower and soyabean oils, and mayonnaise as these are pro inflammatory
- If vegetarian or vegan supplements may need to be considered



HYDRATION IS STILL IMPORTANT

- Monitor urine colour
- Use mostly water – Stop sports drinks, gels and electrolyte mixes
- Flavour water to keep interesting – lemon, lime, cucumber, mint
- Milk is a nutrient rich beverage during injury and healing (use higher protein, higher calcium lower fat options)
- Good hydration is important to remove metabolic waste and medication bi-products



CHALLENGING TIMES

- Affects recreation to elite athletes
- Athletes may use injury to relax responsible food choices – treat foods, binge sessions due to boredom, or frustration of not being round teammates
- Athletes may use eating to fill time usually spent training or competition
- Each athlete is individual. Support depends on the type injury, length of injury, rehab protocols, demands and return to play
- Key is to avoid a malnourished state – food first and energy and nutrient needs may be increased (wound healing, bone health)
- Can be a time to reset nutrition patterns, learn to cook, learn new skills



ANTIOXIDANTS

Oxidative stress



Whole fruits
and vegetables



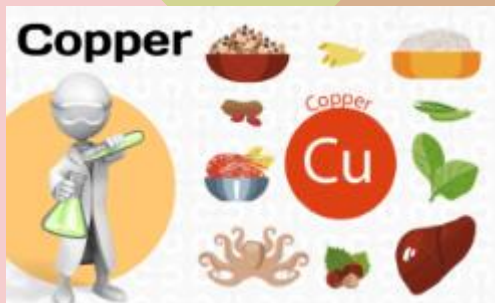
FOOD AND NUTRIENTS TO FOCUS ON



- Vitamin C – critical for wound healing , immune function, antioxidant, collagen. Spread over the day – citrus fruit, kiwifruit, peppers, fresh and frozen berries, fresh vegetables, tomatoes
- Vitamin A – cell growth, wound healing and tissue repair, carrots, dark green leaf vegetables, tomatoes, carrots, pumpkin
- Vitamin D – assist calcium absorption, bone health, immune function. Eggs, sunlight, mushrooms, fortified foods, oily fish, dairy products
- Carotenoids, polyphenols and flavonoids - anti inflammatory, reduce muscle soreness and damage. Cherries, berries, red purple and orange foods

FOODS AND NUTRIENT TO FOCUS ON

- Calcium – bone healing, repair, regeneration and growth. Milk, yoghurt, fortified plant milks, cheese, nuts, broccoli, canned salmon with bones
- Magnesium – important for protein metabolism, assist absorption of calcium and Vitamin D, bone health
- Zinc – wound healing, protein synthesis, immune function. Lean meat, chicken, cashews, dark chocolate and dark green leaf vegetables
- Copper – assist with RBC formation, immunity, bone health and tissues – only small amounts are needed and found in sesame seeds, pumpkin and sunflower seeds, mushrooms
- If struggling to eat a multivitamin mineral one a day may be recommended.



SUPPLEMENTS THAT MAY IMPACT

Skim milk powder or whey protein for protein and leucine

Multivitamin mineral

Tart cherry juice or shots – anti inflammatory and antioxidant, may reduce pain

Gelatin - may support collagen synthesis (bone, tendons and skin)

Creatine - may prevent muscle wasting and support rehab

Fish oils – provide omega 3

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GELATIN /
COLLAGEN
+ VITAMIN C
Tendons



Gelatin, oranges,
raspberries, grapefruits

**TART
CHERRIES**



CREATINE



NUTRITION STRATEGIES FOR INJURY PREVENTION

- Arrive at training well fuelled and hydrated
- For long training session (over 1 hr) have snacks and use sports drinks depending on intensity of activity
- Take regular drinks (gulp not sip)
- Under fuelling in training or events leads to early fatigue and poor concentration which increases errors, poor coordination, and increases the risk of injury. Skills and technique also deteriorate.



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REMEMBER NUTRITION NEEDS CHANGE AS REHAB AND RECOVERY PROGRESSES

Athletes can not eat the same every day through an injury as rehab and recovery progress changes nutrition needs

Adjust eating and energy intake based on the activity level of rehab and return to play





THANK YOU

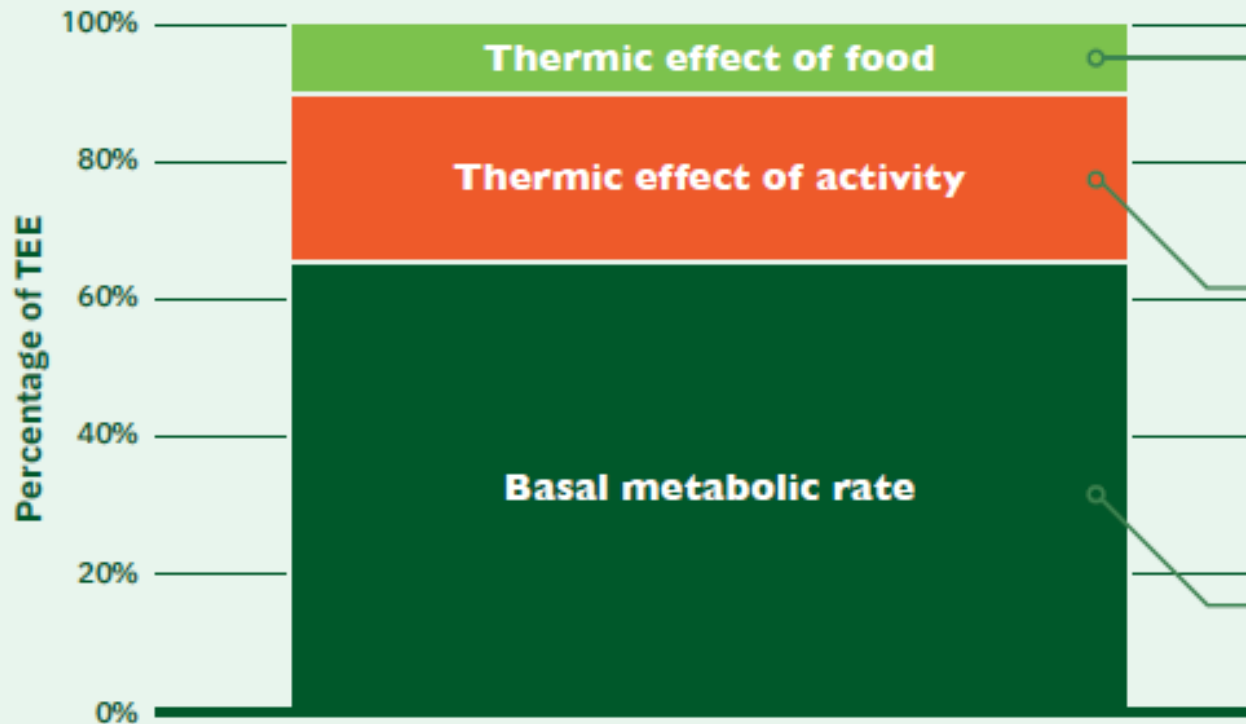
QUESTIONS

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The energy required to digest, absorb and metabolize food. Accounts for ~10% of TEE.

The energy required for exercise, and all other types of movement. This is the most variable component of TEE.

The energy required for basic essential functions within the body. Accounts for ~60-70% of TEE.