Today’s Presentation

- Role of nutrition
- The basics of nutrients
- Carbohydrates
- Protein
- Hydration
- **Break – Group activity**
- Daily timeline
- Caffeine
- Sleep
My Role

- To work individually with each athlete to create nutrition strategies that work best for each athlete.

- “Nutrition won’t make an average athlete great but it can make a great athlete average”
“Life as an elite athlete revolves around recovery and performance from one session to the next.

- Need to focus on day to day nutrition (during and recovery from exercise) rather than just competition!
The four R’s of Recovery

- **Refuel**: Carbohydrates
- **Repair**: Protein
- **Rehydrate**: Fluid
- **Rest**
Carbohydrate, Protein or fat??

- **Carbohydrate (Carb)**: Weet-Bix, Almond milk, potatoes, olive oil, corn oil
- **Protein**: Chicken, tuna, beef, cheese, 21 Oz Win
- **Fat**: Butter, olive oil, corn oil, Primo

Examples:
- Carb + Protein: Tuna, Chicken
- Protein + Carb: Weet-Bix, Almond milk
- Carb: Potatoes, corn oil
- Fat: Butter, olive oil, corn oil
- Carb + Protein: Tuna, Chicken

Note: The image categorizes food items into these three macronutrients.
Carbohydrates are the main fuel for your muscles during exercise.

You can only store a limited amount of carbohydrate (glycogen) in the body.

The harder you train; the more carbohydrate your muscles burn up.

Need to eat regularly to ensure your muscles have enough fuel.
Glycogen

Full Tank
(Fully rested & Eaten well)

45mins exercise?
(High intensity)
Glycogen

45mins exercise
(High intensity)

30% loss of fuel tank

1.5 hours exercise?
(High intensity)
Glycogen

2 hours + exercise?
(High intensity)

85% loss of fuel tank
Fuel Utilization

Glycogen use increases with intensity

Glycogen and golfers

- 30-40% VO2 max (average)
- Lower end of glycogen usage
- Over 4-5 hours this can add up
Glycogen and golfers

- Carbohydrate needed on course to maintain fuel and concentration

- Ensure to start round in a well fed state (avoid missing meals)

- If have previously exercised, need refuelling before practise or competition begins

Ratings of perceived mental fatigue and tiredness significantly increase during a round of golf

Running on Empty

Fatigue & Tiredness

Reduced Skills & decision making

Loss of muscle

Hard to Concentrate

Reduced Concentration
- Application in learning / practising new skills

Impaired Immunity
- more chance of getting sick
When do we need carbohydrate?

1. Pre Exercise
   - Use familiar foods you know you will tolerate well

2. During Exercise
   - Create regular routine you know works well for you

3. Recovery
   - Include a balance of carbohydrate with protein
Fuel during golf – why?

Fatigue during simulated tennis matches – reduced ground stroke and serving accuracy without carbohydrate.

Carbohydrate during soccer skill test improved shooting accuracy

Carbohydrate during simulated golf round improved putting performance in last 6 holes and reduced feelings of mental fatigue and tiredness.

Current recommendations are for 30g - 60g of carbohydrate per hour for intense exercise lasting longer than one hour

1/2 bottle Sports Drink
1 bottle Sports water
1 banana
Muesli bar
½ sandwich
1 large citrus fruit or 2 x medium size
Small handful of dried fruit

Develop routine that is regular and consistent and that works well for you!
Sports Drink - Fuel

Provide Fluid & Carbohydrate

Easily digested, similar to water

**Suitable:**
- *Before exercise* (if nervous pre competition)
- *During exercise*
- *After exercise* (if appetite limited)

Also provides sodium (electrolytes) that water does not (is sodium in food though)

Actual foods; flavoured milk, yoghurt, fruit can be more complete in recovery + have more nutrients!
Protein

Protein?

Re-build & Repair Muscles

danekernutrition.com
Why we need protein

• Your body is made up of proteins
  — *Muscle*
  — *Skin*
  — *Organs (kidneys, heart, lungs etc)*

• These are broken down each day and need to be rebuilt

• Protein needs to be rebuilt after exercise.
Protein timing

“Optimal muscle regeneration window”

- Protein into muscle
- Protein Balance in muscle
- Protein out of muscle

Rate of muscle rebuilding

Time post – exercise (hours)

Phillips & Tarnopolsky; 2010
Recovery needs

- What 2 nutrients then do we need in recovery?

Mainly Carbohydrate

*To refuel!*

Some Protein

*To rebuild*
Carbohydrate & Protein snacks

Good recovery options

- Lean meat sandwiches / filled rolls
- 500ml flavoured milk
- 250ml flavoured milk + Banana
- Fruit Smoothie

- Breakfast Cereal + milk
- Up & Go + Muesli bar
- Small tin baked beans + 2 x toast
- Fruit salad + low fat yoghurt
Protein during golf – why?

May help with mental concentration

Can also provide some muscle rebuilding during 4-5 hour round

Only need some, carbohydrate still the priority!

Lean meat in sandwich

Small handful of nuts

1/2 bottle Sports Drink

1 bottle Sports water

1 banana

Muesli bar

½ sandwich

1 large citrus fruit or 2 x medium size

Small handful of dried fruit

Develop routine that is regular and that you do for consistently and that works well for you!
• Provide convenient, high quality source of protein
• Studies show protein (from milk), improves muscles growth after resistance training
• Is not magic bullet that can undo poor nutrition habits.
• **250-500mls** of milk drink is a good alternative and will supply enough protein to stimulate muscle growth.
• Protein shake not complete recovery still need carbohydrates!
Supplement Safety

- **Sports Drink** and **Basic Whey protein / meal replacement** powder are only supplements needed unless otherwise educated by Sports Dietitian / Physician.

- Use reputable brands to reduce the risk

- Use Drug Free Sport if you are unsure of anything.

[Websites and Logos]

www.drugfreesport.co.nz
0800DRUGFREE

[Logos]
Hydration
Consequences of Dehydration

- Reduced work capacity
  *Increased heart rate*
- Increase perception of effort
  *Everything seems harder*
- Increased body temperature
  *Fatigue will occur faster*
- Reduced ability to concentrate
  *Decision making, technique*

All factors lead to reduced performance!
Dehydration Symptoms

- Headache
- Light headed
- Fatigue
- Cranky
- Muscle cramps*
- Reduced concentration
- Poor co ordination
- Reduced mental skills
Dehydration and skill

- Soccer skill Performance maintained at 1.5% dehydration, compared to 2.4%

- Basketball shooting drills declined progressively from 0-4% dehydration, significant impairment at 2%

- Cricket bowling accuracy impaired at 2.8% dehydration compared to 0.5%

2% dehydration in golfers (75kg golfers lost 1.5kg)

↓ Target accuracy (4.1m v 7.9m)

↓ Distance Control (4.8m v 8.4m)

↓ Total distance (114.4 v 128.6m)

Weight before round: 75.0kgs
Weight after round: 73.5kgs

= 1.5kgs of weight loss during round
= 2% dehydration

*Only drank 500mls during round

If drank 1.5L during round – would have been 74.5kg after round and therefore only had been 0.6% dehydrated
How much to drink?

- Drink Regularly from the beginning of the round
- Intakes will vary significantly depending on climate (Hot and humid will result in more sweat loss)
- 150-250ml every 15-20mins
- Always have drinks available
- If drinks are cold you will drink more
- Have an idea of fluid loss and an appropriate plan
- Sports drinks will also provide carbohydrate & sodium
- Keep dehydration to less than 2%
Practice day

Hydration / snack

Breakfast / Recovery snack

Snack / Breakfast

Recovery snack or into dinner

Gym

Practice

Play / Practice

Lunch

During round nutrition plan

danebakernutrition.com
Tournament day

Round

- Snack / Hydrate
- Practice
- Breakfast
- During round nutrition plan
- Lunch / Recovery
- Recover / Repair Rehydrate

danebakernutrition.com
Doctors with less than 6 hours of sleep between procedures have twice the surgery complications.

Reducing your night time sleep by 1.5 hours impairs alertness by 32%.

Sleeping for just six hours a night increases the risk of being overweight by 17%.

Calorie consumption increases by 22% when sleeping only for 4 hours.
Sleep!!!!

Sleep!!!

8-10 hours

Breakfast

Recover

Regenerate

Rebuild
danebakernutrition.com
Caffeine
Performance effects of Caffeine

Increase endurance by up to 10%
(Time to exhaustion increases)

Decreases feelings of exertion
(Exercise seems easier)

Increased performance in high intensity exercise
(Improved 1500m running time)

Improves measures of mental skills during exercise
(Attention, motor skills, memory, decision making)

Improved putting later in round & reduced feelings of fatigue
* 15 handicaps golfers * No difference in heart rates
How does it work?

- Increases muscle output in endurance exercise
  - *Can increase work during a game*

- Stimulant effect on the brain
  - *Exercise seems easier*
How much caffeine is needed?
100 – 200mg of Caffeine

- Smaller amounts of caffeine have recently shown to improve performance rather than very large doses

<table>
<thead>
<tr>
<th>100mg</th>
<th>200mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x 100mg Tablet</td>
<td>2 x 100mg Tablet</td>
</tr>
<tr>
<td>1 x Powerade Fuel +</td>
<td>Powerade fuel + 1 x 100mg tablet</td>
</tr>
</tbody>
</table>

½ - 1 cup of coffee
*Caffeine can vary

1 cup of coffee
*Caffeine can vary
When to take it?

- Caffeine takes 60-90mins to peak in blood
- Half life lasts in body for up to 8 hours
- It will not rise and crash quickly, making you feel flat – as often described in the media
- Dehydration is not significant with caffeine, now proven
Take home points!

• Caffeine is very individual on its effect on the body

• If going to use, make it part of your training program when playing and practising

• Never try for the first time in a competition

• Remember caffeine can vary significantly between brews so some may be a lot stronger than others

• Don’t feel like you need to use caffeine, it’s individual!
Energy Drinks Pre Exercise?

High sugar concentration – delays emptying from stomach
- Can impair hydration
- Can cause stomach pains
- Use with caution and always try first
Summary

Refuel
Carbohydrates

Repair
Protein

Rehydrate
Fluid

Rest
Sleep
Thank you

Good websites:

