NUTRITION FOR STRENGTH TRAINING

1. How to fuel your body before a workout
2. Refuelling after a workout
3. Protein requirements

with Meghan Foulsham,
MSc ANutr – Nutritionist at Fresh Fitness Food

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PART 01:

HOW TO FUEL YOUR BODY BEFORE A WORKOUT

WHY IS FUELLING YOUR BODY IMPORTANT?

Must consume enough:

Protein to aid in muscle repair

Polyunsaturated fats to limit muscle damage

Carbohydrates to supply glycogen levels

The recommended vitamin + mineral amounts

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PREPARING YOUR BODY

Consider your training

More preparation around your nutrition during longer and more intense sessions

Carbohydrates are your body's preferred & most-efficient energy source during intense exercise

Eating prior will give you additional energy to carry you through, and help avoid a dip in energy

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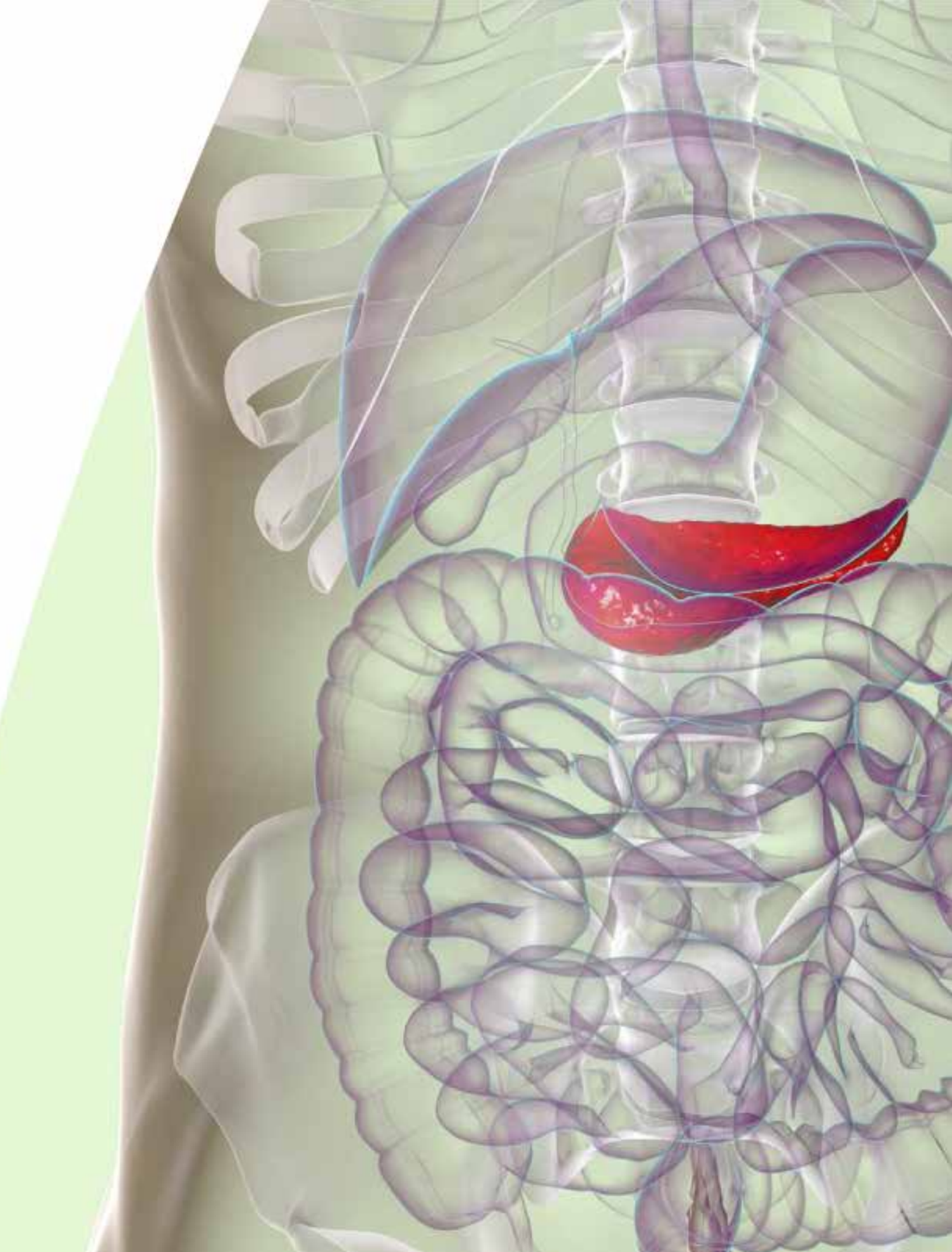
WHAT IS GLYCOGEN?

- Glycogen is the storage form of glucose (a type of carbohydrate)
- It's found mostly in muscle tissue, but also the liver
- Glycogen stores are broken down when your cells do not have sufficient adenosine triphosphate (ATP)



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HOW MANY CARBS DO I NEED TO REPLENISH MY GLYCOGEN STORES?

The amount of glycogen you store depends on your size, weight and muscle mass.
Carbohydrate requirements to replete your stores also depends on how frequently you train:

≤1 HOUR	2-3 HOURS	≥4 HOURS
5-7g carbohydrate/kg body weight	6-10g carbohydrate/kg body weight	8-12g carbohydrate/kg body weight

*per session not total for week

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WHAT'S BEST TO EAT AND WHEN?

Ideally...

If you prefer eating a meal pre-workout, it's best to allow two hours for your food to digest

If you prefer having a snack, try to allow an hour

If you train early in the morning, it may be more difficult to get that extra energy boost

TRAINING BEFORE WORK OR EARLY IN THE MORNING

If eating a meal prior to your session, good go-to options for such meals are overnight oats, or whole wheat pancakes

If you roll out of bed into a session, your body will not have sufficient time to digest a larger meal, so an easy-to-digest snack is more recommended

Breakfast smoothies are a great way of topping up your carbohydrate stores before a session

If you really can't stomach anything before an early class, make sure you're packing your evening meal with carbs

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TRAINING BEFORE WORK OR EARLY IN THE MORNING

Bananas are great pre-workout snack: They're as effective as sports drinks in restoring carbs, potassium, and other nutrients expended during exercise, such as electrolytes

They are also easy for your body to digest, meaning you have a quick and sustained energy release to help fuel you

Avoiding carbohydrates, particularly when training intensely, can lead to dizziness and fainting spells, fatigue, and confusion - not ideal if you're training around work!

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COFFEE AND FUELLING THE BODY

Due to its perceived effect in increasing alertness, caffeine is believed to be a great option pre-training. However, it is not a viable alternative to your morning meal or snack:

Polyunsaturated fats to limit muscle damage

Carbohydrates to supply glycogen levels

PART 02:

REFUELLING AFTER A WORKOUT

HYDRATION

Rehydrating, and staying hydrated in the first place (or as hydrated as possible), are vital for your recovery. Losing too much body weight through water (i.e. through sweat and urination) can have detrimental impacts on your performance:

If Losing just 2% of body weight (1.5kg in a 75kg person) will noticeably impair your performance.

Losing 4% (3kg in a 75kg person) will reduce your capacity of muscle function, meaning muscle contraction may seem more difficult.

Losing 5% (3.75kg in a 75kg person) can result in heat exhaustion (even if the temperature is not that high), and your capacity for work will be reduced by up to 30%, meaning your top performance is limited to around 70% of your capability.

If you lose as much as 7% (5.25kg in a 75kg person), you will start experiencing hallucinations.

Finally, a loss of 10% (7.5kg in a 75kg person) results in circulatory collapse, heat stroke and, if not responded to quick enough, sometimes even death.

REHYDRATION

Timings:

500ml of fluid should suffice (but try to avoid diuretics, like caffeine or alcohol!)

Longer sessions - try to replace between 100 and 150% of the lost fluid within 1-4 hours of finishing your session.

Quantity:

If you are unsure of how much fluid to drink post-session, you can use your 'weight loss' over the session to help calculate the amount you should drink.

Each 0.5kg lost should be replenished with roughly 500ml fluid.

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HOW TO REHYDRATE

It’s also vital to replace the electrolytes lost through sweat

These are essentially salts within your body, which include sodium, potassium, calcium and magnesium

This can be done by consuming a sports drink, as most available have the correct balance of electrolytes to replenish your body

Alternatively, you can use effervescent electrolyte tablets or sachets

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REFUELLING WITH FOOD

3:1 or 4:1 ratio of carbohydrates to protein in your post-session snack or meal

This will help you replenish the glycogen stores you have used in your session

A useful guide to follow is 0.8g carbohydrates, and 0.2g protein per kg bodyweight

Try and consume within 30 minutes of finishing, whether that be a snack or a full meal

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WHAT TO CONSIDER POST-SESSION

1. **Do what's right for you.** What works for your workout buddy, may not work so well for you. Learn how to tune-in to what your body is feeling and needing at that moment.
    - For example, if you're feeling light-headed and thirsty, something like an electrolyte drink would likely be good for you when you immediately finish your session, followed by a meal or snack afterwards.

2. **What options are there?** Think ahead - if you know you won't be heading home straight away, it can be helpful to pack a snack or small meal, such as protein shake or bar and a banana to tide you over until you are able to whip up something more substantial.

3. **Rehydrate** - if you know you're going for a long cycle, make sure you have plenty of fluid to rehydrate you during and after your session.

PART 03:

PROTEIN REQUIREMENTS

PROTEIN

There's a lot of conflicting evidence around protein intake, and your requirements can be affected by individual differences, such as age, sex, exercise, height and so on.

Because of this, people often end up consuming far more protein than is necessary for their activity levels, and biometric data.

As it stands, the Recommended Nutrient Intake is approximately 0.75g per kilogram of bodyweight. This translates to around 56g of protein a day in a 75kg person.

However, as mentioned above, your requirements can change with various factors.

EXEMPTIONS

Partaking in regular strength and endurance training, such as cycling, negates the above recommendations, as your body requires more protein to promote muscle tissue growth and repair.

In this situation, protein requirements increase to 1.2-2.0g of protein per kilogram of bodyweight, per day. This works out as 90-150g protein a day in a 75kg person - a substantially higher amount than those who are sedentary.

As suspected, the more you use your muscles, and the more stress they have to endure, the more protein will be required to ensure the muscle does not break down, and is maintained.

COMPARISON OF PROTEIN (G) FROM DIFFERENT SOURCES

PROTEIN SOURCE	PROTEIN (G) PER 100G	RAW WEIGHT (G) NEEDED TO REACH 90G PROTEIN	RAW WEIGHT (G) NEEDED TO REACH 150G PROTEIN
Chicken Breast	31	290	484
Beef (Ground 85% lean meat)	26	346	577
Salmon	20	450	750
Tempah	19	474	789
Eggs	13	692	1154

COMPLETE PROTEIN

Protein is a macronutrient, made up of amino acids, which act as ‘building blocks’

There are 20-22 different amino acids commonly found in plant and animal proteins

Nine of these amino acids are considered ‘essential’, meaning the human body cannot synthesise them from scratch, and must be obtained from the diet

Can be sourced from animal products, such as meat, fish, eggs and dairy

These protein sources all contain different amounts and combinations of amino acids

Animal sources of proteins contain all the essential amino acids required by the body

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COMPLETE PROTEINS IN VEGETARIANS AND VEGANS

That's not to say that vegetarians and vegans cannot obtain the full range of amino acids - they just need to ensure they are combining different sources of plant protein. This can be done by combining a protein source with a carbohydrate source. For example;

Vegetarian

Peanut butter & whole wheat bread

Hummus and pitta bread

Essentially any pulses and cereals

Vegan

Quinoa

Buckwheat

Soybeans

However, it is great to vary your food sources where possible, so that you are consuming other essential nutrients, too.

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REFUELLING VS. GENERAL EATING

- This has been identified to be a 3:1 or 4:1 ratio of protein to carbohydrates, as this helps replenish your glycogen stores, while also providing you with some protein for muscle recovery.

- Outside of your refuel snack or meal, it's important to be consuming 'balanced' meals, meaning an adequate amount of protein, carbohydrates and fat for your individual requirements (including your exercise habits, height, weight, and other biometric information), as well as what's necessary for your body to function properly.

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EXAMPLE MEALS

At Fresh Fitness Food, we have a huge variety of these meals, which are made exactly to your requirements - some of our team favourites include:

1

Banana Chocolate Chip Pancakes with Nut Butter Sauce for a plant-based refuel after an early morning session

2

Thai Red Salmon, Rainbow Chard, Kale, Butternut & Carrot Noodles, Charred Broccoli, Brown Rice, Fragrant Dipping Sauce, Torn Basil and Chilli Rings - energy, taste & time

3

Ancho Chilli Chicken, Spiced Aubergine and Courgette, Lime Dressed Spring Greens, White Rice with Peas and Mint, Chipotle Mayonnaise, Sweetcorn and Sliced Chilli - some healthy heat in your evening meal

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CONCLUSIONS

Overall, the most efficient way of preparing for a big session is to ‘carb-load’ the night before, particularly if your session is early in the morning. Topping up your glycogen stores in the morning is also recommended - if possible, a larger breakfast meal is ideal to keep you going, but if not possible, a simple snack of a banana or a smoothie is a close second.

FLUIDS

Each 0.5kg lost should be replenished with roughly 500ml fluid.

PROTEIN

For those that regularly partake in strength endurance training, protein requirements are 1.2-2.0g of protein per kilogram of bodyweight, per day.

CARBS

A ratio of 3:1 or 4:1 of carbohydrates to protein in your post-session snack or meal is optimal for muscle recovery and glycogen repletion.

AMINO ACIDS

Nine amino acids are considered ‘essential’, meaning the human body cannot synthesise them from scratch, and they therefore must be obtained from the diet - these are commonly sourced from animal products, such as meat, fish, eggs and dairy.

THANKS

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