GOOD NUTRITION FOR YOUTH ATHLETES

LEEVALE AC
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Some useful resources for learning more about how to improve your performance with diet:

https://www.safefood.eu/Healthy-Eating/Food-Diet/Life-Stages/Teens/Fuelling-your-sport.aspx

https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-sports-nutrition-for-youth.pdf

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3805623/

Safe Food EU: 1850 40 4567

GOOD NUTRITION FOR YOUTH ATHLETES

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GOOD NUTRITION

WHAT DOES GOOD NUTRITION MEAN?

Eating a well-balanced, varied diet including lots of fruit & vegetables, complex carbohydrates, healthy fats and protein to provide you with all of the energy, building blocks, vitamins and minerals that you need to have a happy, healthy body.

TOP TIPS FOR GOOD NUTRITION:

- Never skip meals – especially breakfast.
- Drink plenty of fluids
- Eat good sources of protein every day.
- Eat lots of carbohydrate foods throughout the day.
- Don't forget fats are important – choose healthier food sources.
- Eat at least five portions of fruit and vegetables each day.
- Include good sources of iron and calcium – teens need more of these nutrients than other ages.
- Make sure you enjoy your meals and snacks.
- After intense sport you will be hungrier; don't ignore these hunger signals.
- Get enough rest and sleep – give your body time to grow and recover.

BASIC NUTRITION INVOLVES

- Carbohydrates – 50-60% of calories. Essential for energy.
- Proteins – 25-30% of calories. Provide the building blocks for all body tissues including muscle. Essential for growth and repair.
- Fats – 15-25% of calories. Provide energy, insulation and organ protection. Help absorb vitamin A, E, D and K.
- Vitamins & Minerals – needed for all the reactions to take place in the body, including energy production, muscle building and recovery.
- Water – needed for all body functions and to keep the body cool.

CARBOHYDRATES

The most important, and the most useful fuel for your performance, is carbohydrates.

Why? all carbohydrates are eventually broken down to glucose within the body. For our bodies to create energy, they need glucose.
When we eat carbohydrates, our bodies will do two things with them. The first thing it will do is use as much as it needs to create energy for us to walk, study, talk, breathe and generally exist.
The rest of the carbohydrates are stored in your muscles for when it needs extra energy such as when you are exercising.

Your body only stores a small amount of carbohydrate so you need to keep your stores topped up. The more sport you do, particularly high intensity sport, the more carbs you will need to eat.

There are lots of different types of carbohydrates which can be classed into:

- Simple carbohydrates (sugary carbohydrates)
- Complex carbohydrates (fibre, and starchy food).

While simple carbohydrates can go straight to your muscles to be stored for a rainy day, complex carbohydrates need a little more time to be broken down into simpler sugars in the body before they can be stored

ON A DAILY BASIS:

Focus on complex carbohydrates because they:

- Are loaded with micronutrients
- Keep you full for longer
- Slowly release energy
- Help to keep your digestion moving

Choose one of these with every meal:

- Wholemeal bread, wraps and pasta
- Wholegrains like oats, brown rice, quinoa, barley, wholemeal couscous
- Fruit and veggies
- Potatoes and sweet potatoes
- Wholegrain fortified breakfast cereals like Weetabix, Shreddies, Fruit & Fibre, All Bran.

Keep to a minimum:

- Sugary cereals
- Sugary cereal and granola bars
- Sugary drinks
- Biscuits, cakes and cookies
- Chocolate
- White pasta and rice
- Sweets and desserts
- Jams and honeys

FOR TRAINING AND EVENTS

When we are training, we actually need to consume fewer complex carbohydrates and more sugary, refined carbohydrates.

Why? Simple carbohydrates get broken down into glucose more quickly than complex carbohydrates and so the body can suck them up and make energy far quicker. Because they take longer to digest, complex carbohydrates can sit in your stomach for much longer which can make exercise very uncomfortable.

Examples of simple carbohydrates are:
- Fruit
- Sugar, syrups and honey
- Jelly sweets

Just before, during, and straight after training – simple carbohydrates such as fruit juices, dried fruit, granola bars.
The 4 hours before and 4 hours after training – complex carbohydrates such as porridge, wholemeal toast, wholemeal pasta.

FAT

Fat is the other source of energy for sports. However, while fat can be used to create energy, we would prefer to use fat as a last resort.

Why? It takes much longer for the body to break fat down into the building blocks it needs to create energy. The body will use all of its carbohydrate before it will move on to fat so by the time you start burning fat for energy, you will feel really, really tired. Nevertheless, fat is really important in the diet – it's just important to make sure we eat the right *type* of fat in the right *amounts*.

We need fat for several reasons including:
- Energy Support.
- Absorbing Vitamin E, D and A.
- Insulation.

Which fats should I focus on?
- Use rapeseed oil in cooking
- Use olive oil for salad dressing (heating olive oil during cooking makes it lose its healthy benefits)
- Egg yolks
- Avocado
- Nuts and seeds
- Low fat dairy eg. Cheese, milk and yoghurt

Which fats should I eat less of?
The fats to avoid are the ones that are saturated and have no extra vitamins, minerals or omegas.
- Butter
- Coconut oil (very high in saturated fats)
- Fried foods like chips and nuggets
- Meat fats – trim the fat from your bacon, pork chops, steak etc. Choose 5% fat beef mince or turkey mince
- Mayonnaise and other high fat spreads
- Salad dressings like Caesar salad.

How much fat should I eat?
About 15-20% of your overall calories should come from fat.

How can I reduce the amount of fat from my diet?
1. Get a good non-stick pan and stir fry using spray oil or even a sprinkle of water.
2. Grill or bake meat and fish instead of frying or deep frying.
3. Use avocado in your sandwiches instead of butter or mayo.
4. Cut all of the fat from your meats like pork chops, bacon, steak etc
5. Choose 5% lean beef mince or turkey mince when making Bolognese or burgers
6. Use low fat dairy products like low fat milk and yoghurt (make sure your low fat yoghurt isn't loaded with extra sugar to make it taste nice)
7. Keep cheese to one matchbox sized portion a day
8. Don't go too overboard on the nuts and seeds. A portion is one level (not heaped!) teaspoon of peanut butter or a tablespoon of whole nuts.
9. Keep to two eggs per day no more than 5 days per week.

PROTEIN

While protein may not be our main or best source of energy when we are playing sport, it has its own crucial role in getting you in peak physical condition. Protein provides the building blocks for every tissue in our body – skin, hair, muscle, organs, nails, eyes everything are made from protein.

When we exercise, we are constantly tearing our muscles. Every time we tear our muscles our bodies must repair them, often building them up and making them stronger than they were before. For our bodies to repair and build these muscles up we need to provide them with their building blocks - proteins.

How much protein do I need?
Weigh yourself in kilograms and whatever you weigh, multiply that by 1.2 for your rest days and 1.4 for your training days. The result will be approx what you need in grams.

For example, I weigh 58kgs.
On days where I am not training,
I need about 70 grams of protein (58 x 1.2g)

On days where I am training,
I need about 80 grams of protein (58 x 1.4g)

That sounds like a lot, how am I going to eat all that protein?! Ok, it does sound like a lot but it's actually not. Here's some examples of foods with lots of protein:
- One chicken breast – 38g protein
- 0% Fat Irish Strained Protein Yogurt – 12g protein
- 1 large egg – 8g protein
- Cup of pasta – 10g protein
- Small 70g tin of tuna – 17g protein

Can/should I take protein products like protein powders, protein bars, protein cookies and all the other protein products in the shops?

Absolutely not, for three main reasons:

1. It's easy to go above and beyond your daily protein requirements with your daily diet without the need for expensive supplements.
2. These supplements are often not monitored and could contain chemicals that are unsafe or illegal for athletes to use. Many serious athletes will never use protein supplements and those that do, must get the product tested in a lab to make sure there are no hidden chemicals that could get them disqualified from an event.
3. We don't yet know the long-term effects of protein powders and other products on health. Our kidneys break down protein and as such there is a fear that people who rely on protein powders and high protein diets may be putting their kidneys under unnecessary stress.

MICRONUTRIENTS – VITAMINS AND MINERALS

What are micronutrients? Micronutrients are the little tiny molecules in food that we need to live.

We can eat all the protein, fats and carbohydrates in the world, but if we aren't consuming any vitamins or minerals we will die.

Why? In order to start a car, you need to insert and turn a key in the ignition. Vitamins and minerals play the role of the key turning the ignition in the human body. The building blocks might be there, but without vitamins and minerals you can't actually activate the reactions in your body that make energy, repair your cells, and synthesise DNA.

Therefore, If we don't get enough fruit, veg and wholegrains in, we miss out on essential nutrients and our body's will be slower, have less endurance, and will take longer to recover.

Where do I get my micronutrients from?

Wholefoods – and lots of them. Different foods contain different types and levels of vitamins so its important that we eat a varied diet.

Are breakfast cereals bad for me?

Breakfast cereals are great for kids and teenagers. Some of the vitamins and minerals we need to grow are difficult to get from the diet. To fix this, many of the breakfast cereals we eat are fortified with vitamins and minerals to support our growth. This includes most of the boxed cereals – not oats unfortunately!

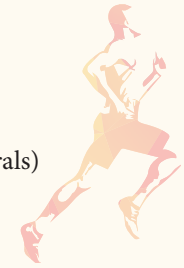
However watch out – many of these brekkie cereals are loaded with the sweet stuff. Stick to these cereals to get the best out of your breakfast:

- Weetabix
- Ready Brek
- Shreddies
- Fruit and fibre
- All bran
- Low sugar cheerios

IRON

When you are going through a period of growth or intense exercise your requirements for iron are increased. Teenage girls also need to replace the iron their body loses during their periods.
Iron is responsible for transporting oxygen around the body via the blood. For this reason, iron is super important for athletes. If you have a deficiency in iron, you may feel tired, dizzy, slower, and less powerful.

Best Sources of Iron:



- Red meat
- Chicken and turkey
- Fish like tuna, mackeral, sardines.
- Fortified breakfast cereals (those with added vitamins and minerals)
- Eggs
- Pulses (peas, beans, lentils, chickpeas)
- Dried fruit (apricots, raisins, figs)
- Dark green vegetables (spinach, broccoli).

Certain vegetables such as spinach are also great sources of iron, but the plant form of iron isn't quite so readily absorbed. You can improve your uptake of iron by having some vitamin C at the same time, for example drinking a glass of orange juice with your meal.
Safe Food EU Fuel Your Body

CALCIUM

As a growing teenager you need more calcium than an adult. It's important to get enough calcium from your food to make sure you have strong, healthy bones as an adult. You also need calcium to keep your heart and nerves working properly. Make sure you eat five portions of calcium-rich foods every day.

Good sources of calcium:

- Low fat dairy – eg. Low fat milk, cheese, yoghurt
- Sardines
- Leafy greens eg. Spinach
- Nuts
- Calcium fortified orange juice

Do I need to supplement?

If you have a very good balanced diet with plenty of food you shouldn't need to supplement. However, in the winter months from October to March everyone in Ireland should supplement with a vitamin D supplement. Usually we make our own vitamin D through our skin using UVB sun rays (a bit like human photosynthesis!). However, in the winter time we are too far from the equator and these rays get filtered out. We also wear too many clothes in the winter so our skin isn't exposed to the sun! You can pick up a vitamin D supplement in your local health store or pharmacy.

FLUIDS

Did you know?

- 60% of the body is made of water
- 70% of muscle is made of water

What Should I Drink During Exercise and When?

provide nutrients too.

WHAT SHOULD I DRINK DURING EXERCISE AND WHEN?

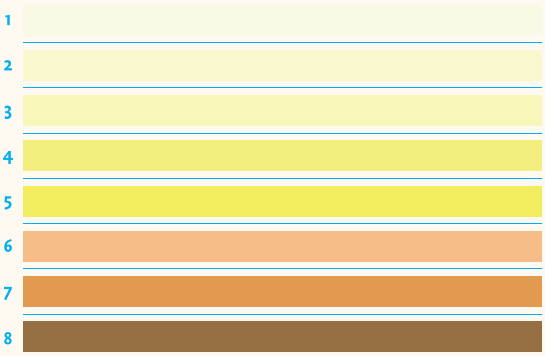
	BEFORE EXERCISE	DURING EXERCISE	AFTER EXERCISE
WHEN	Approx 30 minutes before exercise	Every 15 to 20 minutes	Soon after and for the next couple of hours as needed
DRINK	Aim: 200 to 400ml	Aim: 150 to 200ml	Aim : 400 to 800ml per hour of exercise completed
WHAT	Water, isotonic sports drink*	Water isotonic sports drink*	Water, isotonic sports drink*, low-fat milk

(*depending on sport, age or advice of a dietitian)

9 *Safefood EU*

Even a 2% dehydration can decrease performance significantly – do not wait until you feel thirsty as by this point you are already dehydrated.

A simple way to tell how hydrated your body is, is to compare the colour of your urine to the the below chart:



Your target is to make sure that your pee is the same colour as numbers 1, 2 and 3. Colours 4 and 5 suggest dehydration and 6, 7 and 8 severe dehydration.

Armstrong LE (2000): Performing in Extreme Environments. Champaign: Human Kinetics.

What are the best liquids to drink to rehydrate?

When we exercise we can sweat quite a bit. When we sweat we don't just lose water, we also lose what we call electrolytes. These electrolytes include sodium, chloride, potassium and magnesium and a few others

- Water is great for rehydrating when you are exercising for under an hour or when you haven't sweated too much. It doesn't contain much of these electrolytes and so if training for longer than this it's recommended to use an ORT (oral rehydration therapy).

- ORT - Have you ever had dioralyte when you have a stomach bug? This is an ORT. Dioralyte replaces the electrolytes in your body to help rehydrate you. This is the same reason endurance athletes drink isotonic drinks (eg. Lucozade sport) when they are training for over an hour.

- Milk is also a fantastic natural rehydrator and is a great liquid to consume after a workout. It rehydrates you and gives you a boost of carbohydrates (milk sugars) and protein.

Dioralyte tastes pretty bad, and Lucozade can be packed with hidden, unnecessary sugars. Both are also expensive. Here is a recipe for a homemade ORT that you can sip on throughout and after your workout:

- 200ml fruit squash or cordial
- 800ml water
- 1g salt (pinch)

Or

- 500ml fruit juice
- 500ml water
- 1g salt (pinch)

WHAT TO EAT THE DAY OF YOUR WORKOUT OR SPORTS EVENT

The morning of:

A good, balanced brekkie. Get plenty of complex carbohydrates in, a portion of protein, and some healthy fats to keep you fuller for longer. Make sure you get some of your 5-a-day in too!

Example 1: Two pieces of wholemeal toast spread with half a smashed avocado and one boiled or poached egg. A glass of fresh orange juice (not from conc) and a piece of fruit.

Example 2: Banana pancakes with toppings such as drizzled peanut butter, berries, chopped banana, lean bacon with fat trimmed off. Plenty of water (esp. if having bacon)

2 hours before:

At this point you want to eat something that is going to keep you energised but won't stay sitting in your stomach for hours. We want to keep fat minimal to prevent your food from sitting in your stomach for too long. Have you ever poured some olive oil into a glass of water and watched the oil sit on top? The same thing happens in your stomach. This of course could make exercise very uncomfortable.

Have a granola or energy bar, banana or a simple sandwich with a slice of ham and a little salad. Drink plenty of fluids.

20 minutes before:

Ideally no more food at this point. At this point before training or an event, we are focussing on making sure we are fully hydrated. Sip on water or some diluted isotonic drinks.

During the event:
Drink plenty of fluids. If the training session or event lasts over an hour then you may want to consume some sugars within the workout. The best way to do this is with an isotonic drink which will also help to replace the electrolytes you lost while sweating. Be careful not to drink too much as it could cause you to feel nauseous. Alternatively you could drink water and eat 3 or 4 Haribo jellies while you catch your breath.

Immediately after the event:
2 main focuses for post-workout/competition:

1. Rehydration
2. Re-fuelling
We want to make sure we are fully rehydrated to avoid feeling dizzy or faint.

20-minute post workout window:
This is the window in which it is most important to get your carbohydrates and proteins in.

This 20-minute window straight after exercise is when the body is most efficient at absorbing carbohydrates and proteins for refuelling and repair.

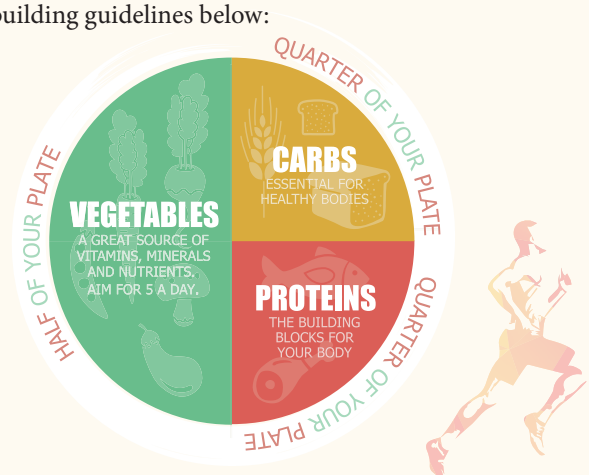
After the 20 minutes, the amount the body can absorb starts to decrease. This is especially important If you have multiple events throughout the day. It is important to have a snack straight after your event so that your body can re-charge for the next one.

A simple snack like a glass of milk and a banana, a smoothie, or a chicken sandwich with a glass of water or milk will do the trick.

In between events or heats on the same day:
The 20-minute window is even more important here. If you don't re-fuel your muscles immediately after your event or heat, you may not be able to perform at the same level for your next heat.

If your events are very close together and you are worried a sandwich may fill you up too much, snack on a banana or a handful of dried fruit or jelly sweets.

Over an hour after an event:
Some people may prefer to go straight home for an evening meal with family. If this is you then you can put together a super recovery meal by following the plate building guidelines below:



GAMEDAY NUTRITION TIPS

1. Focus on carbs for energy. Choose whole-grain bread, crackers, cereal, pasta and potatoes for lasting energy. Save sports drinks for an energy boost during endurance sports or training sessions lasting more than an hour.

2. Spread out protein foods. Active bodies need protein to support growth and build and repair hardworking muscles. Spread your protein foods throughout the day, having some at each meal and with most snacks, such as eggs and whole-grain toast with fruit for breakfast or a sandwich with low-sodium deli meat on whole-grain bread with yogurt and raw veggies for lunch. Plant-based protein foods like tofu and beans also are great choices.

3. Use caution with fatty foods. Fatty foods slow digestion, which is not ideal for an athlete facing a competition. Greasy, fried foods and fatty desserts are filling and may leave you feeling tired and sluggish. Skip the fries or pizza before practice and keep fat content on the light side.

4. Flow with fluids. Good hydration should begin early in the day before you even set foot on the playing field. Stay hydrated by drinking plenty of water during the day leading up to a game, especially in the two to three hours before game time. Continue to drink during the game (about 1/2 cup every 15 minutes) and afterward to rehydrate after sweat loss. Water should still be kids' go-to drink for exercise that's under 60 minutes. Training sessions over an hour may require a sports drink to replace electrolytes lost through heavy sweating.

5. Timing is everything. When you eat is just as important as what you eat. Your body needs two to three hours to digest a regular meal such as breakfast or lunch before an athletic event, while a small snack such as a granola bar can be eaten 30 minutes to an hour in advance. Load up at meals but don't overeat. Keep snacks light as you get closer to game time.

6. Top it off with milk. In addition to water, fat-free and low-fat milk also are smart ways to help youth athletes meet their fluid needs. But that's not all. Just one cup of milk packs 15 to 24 percent of the protein most school-aged kids need in a day and delivers important nutrients such as calcium, which is critical for building strong bones.

7. Pre-game breakfast. Gather together the family for a pre-game breakfast about three hours before the event. Serve sliced and lightly grilled potatoes or wholemeal toast paired with scrambled eggs and fruit such as berries along with calcium-fortified orange juice or fat-free milk for a nutritious pre-game meal.

8. Don't light-load or skip lunch. Many student athletes compete after school making lunch an essential fuel source. Lunch should be hearty and represent as

many food groups as possible, including whole grains, lean protein, fruit, vegetables and low-fat dairy.

9. During the game/practice. Make sure your keeps hydrated before, during and after practices and competitions. Dehydration that exceeds 2 percent body weight loss harms exercise performance, make sure you are well hydrated by sipping water throughout training/competition. Replace fluid losses after exercise with lots of water. Also look to foods such as bananas, potatoes and fat-free or low-fat yogurt or milk - they contain potassium and carbohydrates which are important to replenish after exercise.

10. Post-practice or afternoon game snack. The hours after practice or a weekday competition may necessitate snacking before your family dinner. Make sure to have pre-prepared snacks on-hand such as fresh fruit, granola bars, low-fat yogurt and smoothies.

11. Post-game family dinner. For a tasty and filling post-game family dinner, include all five food groups — protein, grains, vegetables, fruit and dairy. Serve baked or grilled lean cuts of Meat, fish or tofu and include whole grains, for example, whole-wheat pasta with a low-fat tomato or cheese sauce. Toss in vegetables or include a side green salad.

(Jill Castle, 2017)

USEFUL RECIPES

Milkshakes are a great option for a post-workout or competition snack. They are fantastic for rehydration due to milk's natural levels of electrolytes and the fruit and oats replenish the body's carbohydrate stores while the protein in milk aids faster recovery.

BANANA MILKSHAKE

Bananas are a great source of potassium, which we lose a lot of when we sweat. Did you know that milk is the best rehydration drink you can have after exercise? Even better than water – provided you don't have a lactose intolerance! Oats will replenish your fuel stores and fill you up until your next big meal.

250ml Low fat milk
1 ripe banana
Small handful of oats
Mixed Berries
Honey to taste

PINK SMOOTHIE

Beetroot has been shown to improve the body's ability to take in oxygen during exercise and it is filled with antioxidants, vitamins and minerals. You won't be able to taste it in the smoothie, but it gives the coolest pink colour with a boost of nutrition to help you recover.

250ml low fat milk
1 large cooked beetroot (not in vinegar)
Handful oats
Handful of berries
Honey to taste

ENERGY BARS

These bars taste like the real deal and they are very quick and easy to make. They have lots of protein, healthy fats and fruit sugars to give you that quick boost of energy before and after training. The secret ingredient is the pinch of salt! These bars will keep for a week when properly covered in the fridge.

Cookie Dough Bars

80g Cashews + 80g Pecans + 60g oats blitzed into a powder. Add 160g soft pitted dates + pinch salt + vanilla and blitz until a consistent crumb.

Add handful of dark choc chip and blitz on low speed adding water a teaspoon at a time until they form a soft but not sticky dough. Press into baking tray and refrigerate before cutting into bars.

Nutella Bars

80g cashews + 80g hazelnuts + 60g oats + 2 Tbsp cocoa powder. Add 180g soft pitted dates + pinch salt + vanilla and blitz until a consistent crumb.

Add handful of dark choc chip and blitz on low speed adding water a teaspoon at a time until they form a soft but not sticky dough. Press into baking tray and refrigerate before cutting into bars.

CHUNKY MONKEY BANANA PANCAKES

These banana pancakes are a great breakfast option the morning of a competition. They are loaded with complex carbohydrates, protein, healthy fats and vitamins so that they will release their energy slowly throughout the day. They are also super-tasty and easy to make. Try out different topping combinations using your favourite fruits, nut butters, seeds and honey.

Serves 2

2 bananas
2 eggs
1/2 cup rolled oats
1/2 teaspoon baking powder
Pinch of salt
Maple syrup to serve (optional)
Fresh fruit of your choice to serve

Instructions

1. In a blender, combine the peeled banana, eggs, oats, baking powder and salt.

2. Allow to blend until the mixture is as smooth as you want it and blended well. Allow the batter to stand for 10-20 minutes until thickened slightly.

3. Heat a non-stick frying pan over medium heat.

4. Fry spoonfuls of the batter until golden brown on both sides.

5. Serve with a drizzle of maple syrup and fresh fruit of your choice.