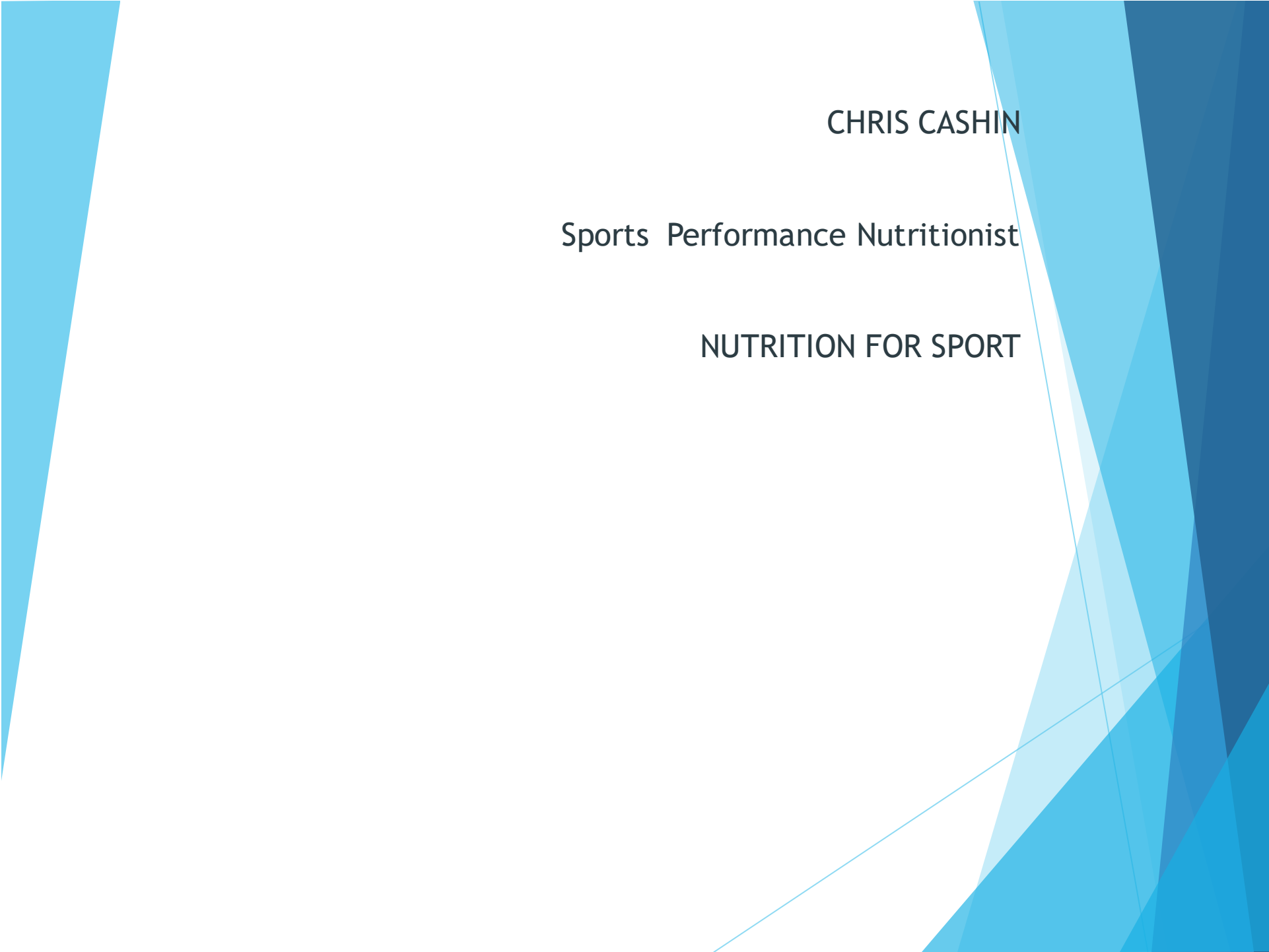


The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the left and right sides of the frame, creating a modern, dynamic feel. The central area is a plain, light grayish-white.

CHRIS CASHIN

Sports Performance Nutritionist

NUTRITION FOR SPORT

Chris Cashin - my background

- ▶ Registered Dietitian - NHS
- ▶ Registered Nutritionist - AfN
- ▶ Sports Nutritionist - SENr
- ▶ Background in the NHS and academia
- ▶ First Sports Dietitian to be appointed by the EIS
- ▶ Worked for Sport Wales , Jockey Club, NGBs, private clients
- ▶ Loves all sport - now mad on hill walking



WHY IS FOOD IMPORTANT

- ▶ Fuel for sport and training
 - ▶ Recovery
 - ▶ Health
 - ▶ Enjoyment
-
- ▶ Food needs to be part of your total training package!

IOC STATEMENT

- ▶ 2010
- ▶ States diet affects performance
- ▶ Helps athletes train harder, recover quickly and recover from injury more quickly
- ▶ Athletes need to develop nutrition strategies

Energy requirements

- ▶ Endurance e.g. marathon running
- ▶ Strength e.g. gymnastics, weight lifting
- ▶ Speed e.g. sprinting
- ▶ Body weight changes

Energy requirements

- ▶ Endurance e.g. marathon running
- ▶ Strength e.g. gymnastics, weight lifting
- ▶ Team sport
- ▶ Body weight changes

Need to;

- ▶ Meet the increased energy expenditure
- ▶ Meet individual nutritional requirements
- ▶ ‘make weight’ - gradual, sensible weight loss programme

Carbohydrate

- ▶ The most important fuel for working muscles
- ▶ Limited storage as glycogen in liver and muscle
- ▶ Stores rapidly depleted during high intensity exercise e.g. sprints
- ▶ Stores gradually depleted in endurance exercise over several hours
- ▶ Good dietary intake necessary for repletion of stores

Carbohydrate recommendations for training

Level of training	Carbohydrate g/kg bw/day
Regular (3-5 hrs/week)	4-5
Moderate duration/low intensity	5-7
Moderate to heavy endurance training	7-12
Extreme exercise (4-6 hrs + per day)	10-12

Calculating carbohydrate requirement

- ▶ Weight (kg) x Level of training = carbohydrate requirement per day

$70\text{kg} \times 4\text{-}5\text{g/day} = 280\text{-}350\text{g/day}$

$70\text{kg} \times 10\text{-}12\text{g/day} = 700\text{-}840\text{g/day}$



Timing of carbs

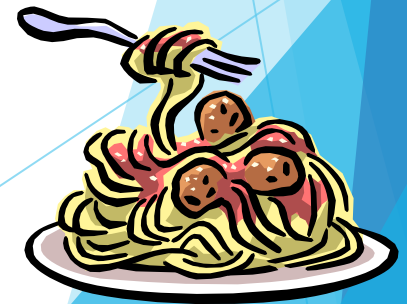
- ▶ Keep a diary of training
- ▶ Work out carb requirements
- ▶ Plan meals around training diary
- ▶ Athletes may need daily planners to suit different times etc.
- ▶ Taper down if not training/injured
- ▶ May need to alter carbs for pre season training

CARBS IN FOOD

- ▶ 1 med slice bread = 17g
- ▶ 2 crispbreads = 15g
- ▶ 1 sachet porridge = 27g
- ▶ A cereal bar = 20-25g
- ▶ 5 jaffa cakes = 50g
- ▶ A pot of muller rice = 43g
- ▶ A bottle of isotonic drink = 30-32g
- ▶ A med banana = 23g
- ▶ 5-6 tblsp rice cooked = 56g
- ▶ A medium jacket potato = 50g

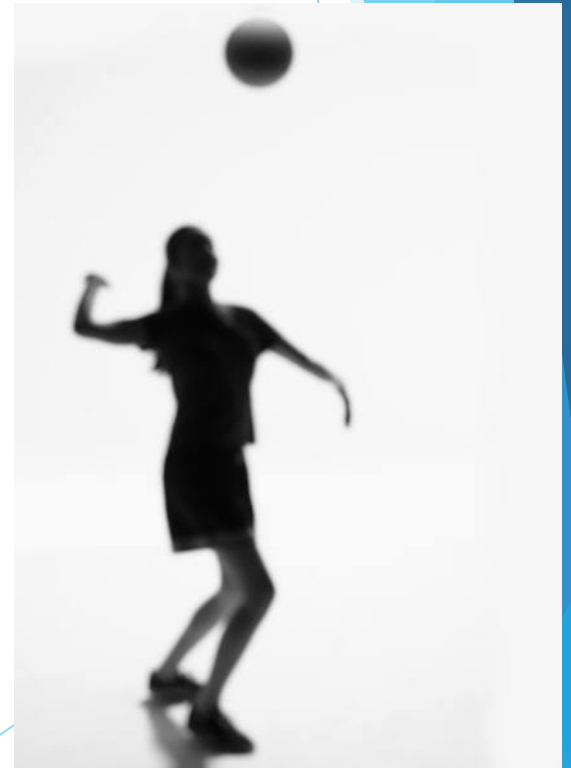
Pre exercise carbohydrate meal

- ▶ Low glycaemic index type 2 - 3 hours before e.g.
 - ▶ pasta
 - ▶ porridge
 - ▶ granary/wholegrain bread
 - ▶ fruit e.g. apple, under ripe banana
 - ▶ milk/yoghurt
 - ▶ basmati rice
 - ▶ Evidence shows when taken with protein optimises uptake of carbs.
 - ▶ Some may need to watch very high fibre foods !



Pre exercise carbohydrate snack

- ▶ High glycaemic index immediately before exercise e.g.
 - ▶ isotonic carbohydrate drink
 - ▶ fruit juice
 - ▶ sweets
 - ▶ scone
 - ▶ plain biscuits/ Jaffa cakes



Carbohydrate during training

- ▶ carbohydrate - electrolyte drinks
- ▶ carbohydrate gel
- ▶ raisins/bananas
- ▶ jaffa cakes
- ▶ energy bars



Carbohydrate post exercise

- ▶ Essential to replenish depleted glycogen stores
- ▶ Rate of glycogen resynthesis is greatest 1-2 hours after exercise
- ▶ Complete refuelling takes about 20 hours
- ▶ Maximised with protein



MEALS

- ▶ Aim to eat 3 meals - with a mix of Carbs and some protein
- ▶ Snacks between - fruit, rice cakes, cereal bars etc.

OTHERS!

- ▶ Eat your 5 a day
- ▶ Aim to have at least half a pint of milk a day - plus some yogurt - THINK BONES!
- ▶ Try to cut down on the junk
- ▶ Only use sport drinks when training!

PROTEIN

- ▶ Required to build muscle but is limiting if the CHO is not adequate
- ▶ Athletes believe they need excessive amounts
- ▶ Requirements:-
 - ▶ 1.2-1.7g/kg - strength and speed
 - ▶ 1.2-1.4g/kg - endurance
- ▶ No evidence that >2g has any benefit at all

PROTEIN IN FOOD

- ▶ THE FOLLOWING CONTAIN 20G PROTEIN
- ▶ 75G MEAT
- ▶ CHICKEN PORTION
- ▶ 3 EGGS
- ▶ 75G CHEESE
- ▶ 100G FISH
- ▶ 1 PINT OF MILK

PROTEIN IN FOODS

- ▶ 2ND CLASS PROTEIN
- ▶ THE FOLLOWING CONTAIN 10G PROTEIN
- ▶ 3 SLICES BREAD
- ▶ 8 TABLSP PASTA
- ▶ 1 PACKET TOFU
- ▶ 4 TABLSP NUTS

PROTEIN

- ▶ 3 PROTEIN PORTIONS = 60
- ▶ 1 PINT MILK = 20
- ▶ 3-4 2ND CLASS PORTIONS = 40

- ▶ TOTAL = 120G PLUS

- ▶ DO YOU REALLY NEED A SUPPLEMENT

Competition Days

- ▶ See hand-out

Hydration



- ▶ Dehydration can affect blood glucose levels and heart function adversely
- ▶ Exercise can be impaired if you are dehydrated by as little as 2%
- ▶ Fluid loss in excess of 5% can decrease ability to train and compete

Hydration

- ▶ Based on an average of 65mls /kg
- ▶ During a bout of exercise require 100-150mls / 20 mins
- ▶ Fluid loss is greater in the heat
- ▶ Pre and post exercise weighing and pee charts

Sports drinks

a non alcoholic beverage using 'science' to make claims about enhancing physical performance during sporting activity and speeding recovery

Hypotonic

- ▶ 2-3g carbohydrate per 100ml
- ▶ Low level electrolytes
- ▶ Fluid replacement
- ▶ can be taken before, during and after exercise
- ▶ E.g. Lucozade hydro, High5





isotonic



- ▶ 5-7g Carbohydrate per 100ml
- ▶ electrolyte concentration similar to body fluids
- ▶ source of fluid and fuel
- ▶ can be taken before, during and after exercise
- ▶ Eg, Lucozade Sport, Isostar, Gatorade

Hypertonic

- ▶ Contain > 10g carbohydrate per 100ml
- ▶ high concentration of dissolved substances
- ▶ Fuel replacement
- ▶ Should only be used after exercise
- ▶ E.g. Lucozade energy, Ultra fuel



supplements

- ▶ Dietitians can offer impartial advice
- ▶ We probably have to live with them
- ▶ Claims are not always backed up by any evidence - a lot is very anecdotal from the athletes themselves
- ▶ Most common - caffeine, bicarb, protein supplements , creatine plus 100s of others.

CREATINE

- ▶ It does work in some sports - sprints, football, rugby
- ▶ But probably only in 50% of athletes
- ▶ Improves performance and recovery by enhancing ATP turnover
- ▶ Need to take it properly - 20g loading dose for 5 days then dec to 2g /day
- ▶ It is not banned

CREATINE

- ▶ It has been shown to inc weight by around 2-5 kg - women and weight category sports rarely use it! May increase extra cellular fluid.
- ▶ May increase dehydration!
- ▶ Side effects - cramps, stomach pains, anecdotal risk of injury - think you are stronger than you are!!

BICARBONATE

- ▶ Not banned and being commonly used in athletics
- ▶ Claims to mop up the effect of lactic acid build up by lowering the ph.
- ▶ The dose is 0.3g / kg - taken in divided doses 1-3 hours before an event
- ▶ Capsules may lessen the side effects but you may have to take a lot 0.5-1g/capsule.

BICARBONATE

- ▶ Side effects - vomiting, cramps, diarrhoea. Need to take plenty of water with it.
- ▶ Not good practice to try it out at a competition!

PROTEIN

- ▶ Some sports have a fixation about protein and believe you have to drastically increase protein to increase muscle.
- ▶ Intakes of over 200g are common!
- ▶ Use of expensive protein, amino acids mixes - take a trawl of the internet and you will find 100s
- ▶ My protein shake is nicer!! And cheaper and not contaminated

VITAMINS AND MINERALS

- ▶ Widely used.
- ▶ Are not banned .
- ▶ Athletes may have a slightly raised requirement
- ▶ Main problem is that a lot of supplements have them added - potential risk of overdose
- ▶ Uk sport report a lot is appearing in urine samples.

CAFFEINE

- ▶ It was removed from the banned list in 2004.
- ▶ Previously would test positive with a urine level of 12ug or more
- ▶ Athletes are taking caffeine - usually by tablet form or caffeine rich drinks such as red bull.

CAFFEINE

- ▶ Studies have shown it is performance enhancing - inc fat mobilisation and stimulate the central nervous system
- ▶ Dose 1-2 mg /kg 60 mins before an event
- ▶ Side effects - inc dehydration, poor sleep, inc heart rate, GI problems etc.
- ▶ Is being commonly used.

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Beta alanine

- ▶ This is trendy at the moment
- ▶ Inc muscle carnosine and appears to reduce fatigue
- ▶ There is some evidence it works
- ▶ Some research has shown it is more effective taken with carbohydrate

QUESTIONS

▶ ? ANY
QUESTIONS