



ENERGY - A calorie is a unit of energy. You need a minimum amount of calories per day to have enough energy to be able to function normally; then more on top to be able to function and to *perform* during sport.

To calculate how many calories *YOU* need for daily function (your BMR or basal metabolic rate) use the formula below (go on, a little bit of maths never hurt anyone!).

Calculating minimal calorie requirements (Basal Metabolic Rate or BMR)

Men's BMR = $66 + (13.7 \times \text{weight in kg}) + (5 \times \text{height in cm}) + (6.8 \times \text{age in years})$

Example:

24 years old male

5'10" tall (177.8cm)

150lbs weight (68kg)

BMR = $66 + 931.6 + 889 + 163.2 = 2049.8$ calories

This result means you need to take in 2049.8 calories a day through food/drink just to sustain normal functions.

Now, as an athlete you need to figure out how many extra calories a day you need to function and perform to the best of your abilities.

Use your answer from above and put it into the formula below to work this out:

Calculating Total Daily Energy Expenditure (TDEE)

Multiply your BMR above, by activity level below:

Sedentary = BMR X 1.2 (little or no exercise, desk job)

Lightly active = BMR X 1.375 (light exercise/sports 1-3 days/wk)

Mod. active = BMR X 1.55 (moderate exercise/sports 3-5 days/wk)

Very active = BMR X 1.725 (hard exercise/sports 6-7 days/wk)

Extremely active = BMR X 1.9 (hard daily exercise/sports & physical job or 2X day training, i.e. marathon, contest etc.)

Example:

BMR is 2049.8 calories/day

Activity level is moderately active as he works out 3-4 times/week

Activity factor is therefore 1.55

Your TDEE is $2049.8 \times 1.55 = 3177.19$ calories/day

Therefore, the example man should aim to consume 3177.19 calories per day to have enough energy to train.

If your TDEE (how many calories you *burn* a day) is LESS than what you take in, you will gain weight and vice versa, if you *burn* more calories than you consume then you will lose weight.

If your training aim is to put on weight you should add 500 calories on top of your TDEE and if you want to lose weight you should subtract 200-300 calories from your TDEE.

FOODS - Your energy to train and repair your muscles in your recovery comes mostly from carbohydrates. You require slow releasing energy carbohydrates most of the time. These are known as **low GI** (Glycemix Index). The only times you want to make a special effort to eat **high GI** (fast energy releasing) foods is after training, when you need to replace your used energy asap! (Examples of each are on the list below).

The building blocks that your body uses to repair the muscles come from proteins. Below is a list of some of the better, leaner (less fat) proteins.

You should aim to eat some protein with every meal to ensure that you always have sufficient amounts to repair the body. If you have insufficient protein, your body will actually take protein from your muscle instead of adding to it! This will have an effect on your training!

Finally there are some good fats listed. Fats cannot be ignored. These are very important as another energy source in addition to carbohydrates when you train for longer durations.

They are also imperative for transmission of nerve impulses, lubricating the joints within the body, making hormones etc...

It is only saturated fats (most fats that are SOLID at room temperature) that are bad.

Try and limit your intake of saturated fats and increase your intake of mono and polyunsaturated fats.

It is very important in what ratio you consume carbs, protein and fats.

For an athletic high activity group, a good ratio would be 50% carbs, 30% protein and 20% fats.

You can break your TDEE into these quantities:

From our previous example person who needs 3177.19 calories per day, he would require:

Carbs at 50% of 3177 = 1589 per day

Protein at 30% of 3177 = 953 per day

Fats at 20% of 3177 = 635 per day

This next section is very long winded to explain scientifically, so I have broken it down to make it easier to digest (excuse the pun).

The most efficient way of consuming the necessary calories is to break them down into 6 evenly sized meals. This way your body will get used to knowing when it is going to be fed and how regularly, so it will take what it needs for right there and then and get rid of the rest. Perfect!

If however you eat larger meals more irregularly, your body never knows when it is going to next be fed. Going back to its primal instincts, as a result it will attempt to store fats for use as an emergency energy source in case you don't eat for a long time and suddenly need vast amounts of energy for anything (like fighting to survive).

So, ideally, eat **6 meals a day**, all equally sized and all with the correct ratios of carbs/protein/fat.

Using our same example guy, we now know he needs, 1589 calories of carbs, 953 calories of protein and 635 calories of fats; so divided into six meals, he needs:

Carbs per day 1589 = $1589/6 =$ 265 per meal.

Protein per day 953 = $953/6 =$ 159 per meal.

Fat per day is 635 = $635/6 =$ 106 per meal.

Now you need to know that carbs have 4 calories per gram, proteins also 4 calories per gram, and fats 9 calories per gram. Therefore:

Grams of carbs per meal = $265/4 =$ **66.25g per meal**

Grams of protein per meal = $159/4 =$ **39.75g per meal**

Grams of fats per meal = $106/9 =$ **11.8g per meal**

And you can find all that on the back of your food labels! Now you have figured out how much you need, read on to see where you can get it from?

PROTEIN

Chicken Breast
Turkey Breast
Sirloin Beef Steak
Lean Mince Beef
Tuna – tinned or steak
Salmon
Pork Loin Steaks
Egg Whites – omelette or scrambled
Milk
Cottage Cheese
Yogurt – low fat
Soy Beans
Split Peas
Peanut Butter
Almonds
Peanuts
Cashews

CARBOHYDRATES

Low GI (slow energy releasing)
Oats
Granary Bread
Sweet Potato
Brown Rice
Whole Wheat Pasta
Whole Wheat Spaghetti
Cous Cous
Lentils

High GI (faster energy releasing)

White Bread
White Rice
Jacket Potato
Fizzy Drinks

GOOD FATS

Avocado
Oils/Seeds
Pumpkin Seeds
Flax Seeds
Flax Seed Oil
Any oily fish e.g. Salmon/Trout etc
Walnuts
Soybeans

VEG HIGH IN OMEGA 3 (GOOD FATS)

Cauliflower
Cabbage
Broccoli
Brussel Sprouts
Kale
Green Beans

Of course there are other foods, but have a look at the labels and **KNOW** what you're eating. When trying to fulfil your protein requirements, try to only count whole sources of protein. i.e. ignore the few grams of protein in veg/carbs and take the weight from the actual meat/protein source you are eating.

Any questions drop us an email at either Kristina or Ed@swainandpowell.com

**LOOK AFTER YOUR BODY AND GET
THE MOST OUT OF YOUR RUGBY!**

