



DOES WHAT YOU EAT PUT YOU AT RISK OF A MSD?

In this article, Craig explains the importance of eating for energy and how this can be directly linked to reducing the likelihood of suffering from a musculoskeletal disorder (MSD). He covers calorie consumption specific to exercise goals and job role, energy levels and the importance of protein and other nutrients and how they are related to MSDs.

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ENERGY BALANCE EXPLAINED

Energy balance represents the relationship between energy intake (calories in) and energy expenditure (calories burned), and there are three different types of energy balance:



SURPLUS

When you consume more calories than you burn daily, this will lead to weight gain over time.



DEFICIT

When you burn more calories than you consume daily, this will lead to weight loss.



MAINTENANCE

If you finish the day with equal calorie intake and expenditure then this will result in weight maintenance.





THE 4 PRIMARY FACTORS THAT INFLUENCE YOUR ENERGY BALANCE

- 1 BASAL METABOLIC RATE (BMR)**
Your BMR is the number of calories you burn at rest which is usually around **70%** of your daily calorie expenditure, this can be calculated using a BMR calculator using your height, weight, gender, and age.
- 2 EXERCISE ACTIVITY THERMOGENESIS (EAT)**
EAT represents your calories burned through exercise and will differ according to type of exercise, duration and intensity but typically, will account for around **10%** of your daily energy expenditure.
- 3 NON-EXERCISE ACTIVITY THERMOGENESIS (NEAT)**
NEAT is your non-planned exercise like standing, walking, climbing the stairs. If you move enough throughout the day NEAT can account for **20%** of your daily calories burned.
- 4 THE THERMIC EFFECT OF FEEDING (TEF)**
TEF is the number of calories burned by the body to digest food for use and storage. TEF can be high or low depending on the nutrients you consume. For example, dietary fat is easy to process and has a low TEF whereas, protein takes longer to process and has a high TEF.





TOTAL DAILY ENERGY EXPENDITURE EXERCISE AND JOB ROLE

Your job role and taking part in exercise are both very important when determining how many calories you should consume daily to ensure you are not accidentally eating too little (or too much!).

Some physical activities require a higher energy output than others, and this is no different to job roles. Working at a desk all day needs significantly less energy than working in a physical job role involving regular manual handling.

Consistently ending the day in a calorie deficit will lead to weight loss which may be your goal; however, if not controlled correctly this can have some adverse effects. The consequences of uncontrolled calorie deficit can be feeling low in energy, lack of motivation and focus, fatigue, nutrient deficiencies, weak bones, and decreased immunity.

To avoid this, calculate your total daily energy expenditure (TDEE) to base your calorie intake around your TDEE and your goals.

If you work in a physically demanding job and participate regularly in exercise, then it is particularly important that you are aware of your TDEE and mindful of how much you eat for energy.



ENERGY LEVELS AND MUSCULOSKELETAL DISORDERS

There are many steps you can take to drastically reduce the risk of a work-related MSD (WRMSD). For information on how exercise can assist in lowering the risk of a WRMSD be sure to read the [Exercises to reduce the risk of MSDs](#)

As mentioned above, low energy levels can result in fatigue, lack of focus and motivation and this can affect your attitude towards manual handling tasks. You may be more likely to rush a job, take a shortcut or demonstrate poor technique and therefore increase your risk of injury because of low energy levels.





ENERGY LEVELS AND MUSCULOSKELETAL DISORDERS

If you have low energy due to poor nutrition your muscles and bones could be deficient in crucial vitamins and minerals leading to an increased risk of bone, joint and muscle disease and therefore, and increased risk of injury when carrying out manual handling.

Low energy levels can also interfere with your working day behind a computer, you may be less able to concentrate, and less likely to stand up and move around. This can blunt your awareness of ergonomic working conditions leading to poor posture, resulting in muscular imbalances and back pain.

THE ROLE OF NUTRITION IN MUSCULOSKELETAL HEALTH

It is estimated that 1 in 4 people in the UK suffer from some form of MSD and however major or minor these conditions are, they can often be made worse by poor nutrition and unhealthy lifestyles.

You should aim to eat a healthy balanced diet however certain nutrients vitamins and minerals can improve musculoskeletal health and minimise the risk of MSD. You may want to talk to your GP if you have any concerns about this.

Protein is necessary to gain bone mass during childhood and adolescence, and then it helps us to preserve bone mass as we age. Protein is also referred to as the building block of the body and is essential for muscle growth repair and maintenance. A stronger muscular system helps to support the bones and joints, relieving some of the stress placed on the skeletal system when carrying out tasks such as manual handling.





THE 4 PRIMARY FACTORS THAT INFLUENCE YOUR ENERGY BALANCE



Magnesium, which can be found in fish, green veg, nuts and seeds, is essential to the structural development of bone. The older you get the more mindful of magnesium consumption you should be as absorption decreases and can result in an increased risk of fractures.

Food sources high in protein include fish, chicken, red meat, beans and pulses, dairy, and eggs. How much protein you should be consuming on a daily basis can be calculated to ensure you eat enough of it.

Calcium and vitamin D are both recommended in a healthy balanced diet and according to the International Life Sciences Institute, adequate consumption of both can reduce the risk of suffering from osteoarthritis. Calcium helps to build bone tissue, and vitamin D promotes the absorption of calcium. Food sources high in calcium include green vegetables and dairy products whereas, vitamin D can be found in salmon and tuna and some dairy products fortified in vitamin D.

Conclusion

The risk MSD and WRMSD can be reduced by ensuring you are consuming enough energy for the demands of your lifestyle and by being mindful of your food choices, ensuring you eat a healthy balanced diet. Remember your nutrition should be specific to you and if you need some assistance with a calorie or protein target or general advice on your diet, please get in contact with one of our our Wellness Coaches who are here to support you, simply email: pt@healthoutfit.co.uk

Sources

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