



Advanced Nutrition Protocols – Metabolic Repair

By Ru Anderson

The term 'metabolism' is being used a lot recently by the health and fitness conscious. People are becoming increasingly aware that all their training and nutrition efforts which affect what is happening on the outside, may be having an effect on the inside too.

There also appear to be two 'campuses' when it comes to considering the metabolism in respect to body composition and health. One side strongly believes that the metabolism is the key focal point to a great body and health. The other believes this to be nonsense, and that good body and health is down to calorie control and macronutrient consideration.

Personally, I am in the middle of these two campuses, as anyone that claims calories do not matter is missing the bigger picture, and the same goes for those who claim calories are all that matter.

The purpose of this article is to show you an alternative 'diet' to getting people in shape and healthy, and to provide you with the tools to successfully apply it.

Traditional dieting protocols follow the very basic template of: reduce calories > lose weight > balance the metabolism.

In this article, we will look at reversing this process, to create a new dieting formula: balance the metabolism > reduce calories > lose weight.

What Is Metabolism?

Our metabolisms are a sum of the physical and chemical processes that occur in our cells to produce energy.

Essentially, everything in our bodies make up the metabolism. So when we talk about metabolic repair, what we really mean is fixing our body as a whole unit.

However, when it comes to metabolism with regard to body composition and health, we can focus on a certain number of specific functions or processes that control this. These specific functions and processes are usually hormones related to the thyroid (T3, T4), or leptin, insulin and cortisol.

This is where the two previously mentioned 'camps' divide on opinion.

This is because when we look at the law of thermodynamics, and thus the bodyweight changes as a result, losing or gaining weight is a matter of calories in vs. calories out.

Therefore, for some, hormones need not come into the equation when body composition is of priority.

The counter argument is, if someone is in a 'negative energy' balance and not losing weight, something internally is not quite working properly. This leads us to the key hormones at play.

For the purpose of this article, I will not go into the key hormones at work and how they can be affected via training and nutrition.

The take home point here is that what we do in terms of exercise and food intake is having a hormonal impact on the inside. This is what dictates the state of our metabolism and thus our health.

What Is Metabolic Repair?

Metabolic repair is the 'cool' name given to the mechanical term 'neuroendocrine-immune dysfunction'. You will hear it being referred to as metabolic damage, starvation mode, weight loss resistance and even adrenal fatigue.

If diagnosed in the medical world, it can be given the name of 'hypothyroid', 'hashimoto's thyroiditis' or 'adrenal insufficiency'.

Despite all the various terms and names, they can all be considered to be about the same thing – a dysfunction of the metabolism.

In the health and fitness world, this metabolic imbalance is typically seen from the 'eat less, exercise more' people.

If you eat less and exercise more, you'll easily create a caloric deficit, which can also create an unbalanced metabolism - it essentially slows down.

This is known as 'adaptive thermogenesis', and it's highly variable from one person to the next. For the average dieter, this metabolic downturn is about 300 calories per day, and anywhere up to 800 in some cases.

This means after a period of dieting, the average person will burn 300 calories less per day, without the inclusion of exercise, then they previously did.

This is a result of the body down regulating its 'Basal Metabolic Rate (BMR)' in response to a decrease in available energy on a calorie restricted eating plan.

The lack of available energy going in has forced the body to become less efficient with time.

It's also important to note here that exercise will also require energy to support it, thus creating a higher calorie demand along with it.

So let's look at how this work via numbers.

Your BMR is the amount of energy used when the body is at rest. There are a number of different methods to calculating BMR, such as the Harris Benedict Formula, but a much quicker approach is by multiplying someone's weight (in pounds) by the multiplier 10.

So if we take a female weighing 155 lbs in bodyweight, her BMR would be:-

$$\begin{array}{rcccl} 155 & \times & 10 & = & 1550 \text{ kcals} \\ \text{(bodyweight)} & & \text{(multiplier)} & & \end{array}$$

It must be noted that this is just a starting point and assumes that perfectly functioning hormones and thus metabolic health is present.

We should also include the thermic effect of food (TEF) and all activity levels (NEAT & TEA) to represent this example most efficiently.

Again, there are a number of various methods to calculate these energy demands, but we will use a simple multiplier of 1.3 to reflect this.

So the numbers now look like so:-

$$1550 \text{ kcals (BMR)} \times 1.3 \text{ (Activity Level)} = 2015 \text{ kcals}$$

So in this example a female weighing 155 lbs will burn approx. 2015 kcals based on her BMR and activity levels.

This female knows she must therefore reduce kcals in order to create a calorie deficit (a negative energy balance) in order to lose weight. So she starts consuming 1500 kcals daily.

Initially progress is great, measurements come down, so far so good.

Usually after some days, once the body realises it must adapt to this, it will naturally start lowering thyroid production, along with some of the other important hormones previously mentioned.

So after a week or so, our example female may have seen a 10% decrease in daily calorie expenditure, due to the fall in BMR and TEF.

In just a few days, this dieter has gone from a daily, energy expenditure of 2015 kcals to 1813 kcals.

Considering she is consuming 1500 kcals a day, this has reduced the deficit she previously had, slowing progress. As a result, she cracks on and reduces calories further to see continued progress. This does work, and the measurements keep dropping, but it doesn't last.

This is because the body has once again adapted to the process and we may typically see another 10% decrease in daily calorie expenditure from the further reduced calories.

In just a few weeks, this dieter has gone from a daily energy expenditure of 2015 kcals to 1632 kcals.

By now, to remain in the 500 calorific deficit she once had, she would be eating only 1100 kcals per day.

By this stage hunger is high, energy is low and cravings are through the roof, the body wants to stop. Further progress can be almost impossible at this stage, and this is due to a lot of metabolic resistance – the body doesn't like what she is doing to it.

If she continues on and decreases calories more and increases training too, she will be well on her way to metabolic damage.

At this stage she is feeling beat, tired, hungry, bloated, poor sleep, unwell, anxious, depressed and progress has stalled.

The average person will give up here and return to a normal eating pattern. Sadly, due to the decreased energy expenditure, even if they resort to what is considered an average food intake, they are instantly in a large calorie surplus, so all the weight goes back on. They may even gain more weight than previously, as the body has become sensitive to nutrients and wants to store everything it can in case the same process is repeated.

The hardcore dieter will battle on, their drive for improved body composition is unquestionable but they fall into a trap of binge eating. Their hunger, and craving levels are now at an all time high and every few days they fall of the wagon and binge eat.

This sudden yet unexpected boost in calories offsets any deficit they had created on their 'good' days and little progress is achieved.

They wouldn't dream of increasing their calories again as they already cannot lose weight on such a low calorie plan, so they permanently fall into this – restricted and binge eating cycle.

A metabolic repair protocol is therefore for those people who fall into this category. It is also for those who struggle with lack of motivation, low libido,



overtraining, illness, or feel they have done everything 'right' but can no longer respond to diet and training in the same way.

Diagnosis Of Metabolic Damage

If you have ever suffered from some level of metabolic damage then you can quickly relate to the examples I have just given.

Depending on how far you push it, and the level of adaptive thermogenesis taken place, will depend on how much 'damage' has occurred.

At this stage it is wise to seek medical treatment from a doctor, so they can conduct a blood test and assess it. There are however two main flaws with just this approach:

- 1) The blood tests do not always tell everything,
- 2) Doctors are too quick at diagnosing and prescribing medication.

As more people have been learning about their metabolisms in response to traditional dieting, this has led to an influx of self diagnosis for thyroid problems.

This has also put pressure on doctors who are then prescribing medication to help tackle the problem.

Unless the blood test show a severe dysfunction, which is pretty rare, the use of medication is not required.

What we are seeing is the majority of people showing some form of slowed function, usually a non-optimally functioning thyroid.

Therefore, the majority of people suffering from symptoms of 'hypothyroidism' are not actually in an overt disease state, but feeling unwell due to some form of dysfunction, usually from restrictive diets, stress and malnutrition etc.

This is what leaves some people stating that metabolic dysfunction/damage doesn't exist, or is simply a myth, as it is not yet associated with particular disease.

However, these dysfunctions can be measured and are seen as functional disturbances that have clinical signs and symptoms that can be picked up on physical exams and blood work.

It must also be understood that there are a number of metabolic disorders that have reached the disease state and will need medical treatment and medication.



These are normally;

Type I Diabetes

With this form of diabetes the body cannot produce insulin as the immune system accidentally attacks the cells in the pancreas, shutting down the insulin. Blood sugar levels therefore rise in the bloodstream and insulin injections are required to solve this. There is no known cure, so medical treatment will always be needed.

Type II Diabetes

This occurs when the body has high insulin resistance and blood sugar levels can also build up in the bloodstream. The body still produces insulin, but the cells can't absorb the glucose. Improve dietary and exercise can reduce the requirement for medication.

Hashimoto's Disease

The inflammation of the thyroid and is an autoimmune disorder. This can lead to hypothyroidism.

Goiter

The enlargement of the thyroid.

Gravies Disease

An autoimmune disease that attacks the thyroid gland and causes it to over produce the hormone thyroxin (hyperthyroidism).

Everyone who falls under this diagnosis section will benefit from applying a metabolic repair protocol.

Setting Up A Metabolic Repair Diet

There are a number of stages people can go through to help get their metabolism back on track, and this usually depends on the level of damage created.

Stage 1: Metabolic Compensation

This is the least damaged phase and the person can simply move on to an 'eat less, exercise more' approach. The person can be feeling themselves again within a week or two.

Stage 2: Metabolic Resistance

This stage is when some further dysfunctions are present and will require a more structured approach to resolve. By using the previous model of 'eat less, exercise less' and 'eat more, exercise more', each phase should be cycled for 2-3 weeks each.

It may be beneficial to apply recovery and rest techniques here too and it should be fixed in 1-3 months.

Stage 3: Metabolic Damage

When dysfunction reaches this stage, a very structured approach should be taken, as the person is in a sensitive state.

Just approaching it with a 'eat more, exercise more' approach will not resolve it, as a ridged plan should be applied to maximize calories and reduce exercise.

This can be difficult to co ordinate as you can run into two difficulties;

- 1) The person is likely to be doing the complete opposite of what you want ie: they are eating less and exercising more.
- 2) A sudden reversal of this can bring large increases in weight gain and hormone fluctuations.

The structured approach will fall into 5 Phases, and is based upon the protocol presented by Leigh Peele in the Metabolic Repair Manual.

The 5 Phases look like this:-

Phase 1: Track & Rest

Phase 2: Increase Food

Phase 3: Prepare & Increase

Phase 4: Activity

Phase 5: Final Increases



This is an 8 week repair protocol that is designed to transition someone to a 'eat more, exercise less' template. Without excess weight gain or water retention. It allows the metabolism to play catch up and fully function once again.

Let's break each phase down:

Phase 1: Track & Rest

Duration: 2 weeks
Caloric intake: keep as existing
Protein intake: 40% min
Fat intake: 20-25% min
Carb intake: 25-30%
Water intake: 2-3 l
Salt intake: < 3g
Training: none

It's important to note that accurate food tracking software will be required during this process in order to keep detailed records of nutrients.

Phase 2: Increase Food Intake

Duration: 1 week
Caloric intake: increase by 10%
Protein intake: 40%
Fat intake: 30%
Carb intake: 30%
Water intake: 2-3 l
Salt intake: < 3g
Training: none

Phase 3: Prepare For Activity and Increase Calories

At this stage some light and short mobility/recovery work should be applied for no more than 15 mins daily. Some stretching and foam rolling is advisable.

Duration: 1 week
Caloric intake: increase by 5%
Protein intake: 40%
Fat intake: 30%
Carb intake: 30%
Water intake: 2-3 l
Salt intake: < 3g



Training: Stretch, foam rolling and mobility work for < 15 mins daily.

Phase 4: Increase Activity and Calories

Duration: 1 week

Caloric intake: increase by 15%

Protein intake: 30%

Fat intake: 30%

Carb intake: 40%

Water intake: 2-3 l

Salt intake: 3-5g

Training: 3 x full body workouts per week. Mobility and foam rolling on off days.

Phase 5: Increase Food Intake

The last phase of this protocol is to boost calories as high as they can go using some small increments over the coming weeks. Initially, calories should be increased a further 10% in week 1 of the phase and then 20% in week 2.

Duration: 2 weeks

Caloric intake: 10% then 20% increase

Protein intake: 25%

Fat intake: 20%

Carb intake: 55%

Water intake: 2-3 l

Salt intake: 3-5g

Training: 3-4 training sessions per week. Mobility and foam rolling on off days.

Upon completion of the protocol the person may need to go through the process again, this time starting with the new calorific intake as the base.

Some people may now be ready to just maintain their new found lifestyle and body, while others may be ready to reduce calories again and burn more body fat using a healthier approach.

Summary

You now understand that the metabolism can work for and against us when we are seeking body composition and health changes. You also have a detailed protocol that you can apply in order to help boost the metabolism and reduce the effects of heavy dieting and over training.



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