MODULE 6

DIETARY TRACKING AND FLEXIBILITY

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6.   MODULE 6: DIETARY TRACKING AND FLEXIBILITY

6.1.   Module aims

- To outline and explain different methods of tracking food intake, and the context in which you would use them

- To describe technology an individual or coach can use to aid in tracking food/ activity

- To give the value of tracking food, both in the context of day-to-day food intake and in the educational process

- To provide tips and tricks for making diet adherence easier

- To raise awareness of the importance of dietary flexibility, and to cover some common misunderstandings along the way

6.2.   Key principles from module 5

In module 5 we spoke about how to roughly translate the knowledge you have about food and human metabolism, as well as the information you can find on a food label, into decisions around what and how much to eat. As a brief summary, you learned:

- Why mindful eating and making intentional choices around food is critical to healthy weight maintenance in the modern world

- How to read a food label, front and back

- What some of the key phrases and claims you will see on a label mean

- How to use this information to build meals in the most basic sense

6.3.   Introduction to dietary tracking and flexibility

At this point in the course, you should have an understanding of calorie balance, macronutrition, micronutrition, the roles of fibre and hydration and the means by which you are able to find the necessary information in the supermarket so that you are able to make food choices in line with your goals. In this module, we will pull all of this together and show you the various means by which you can plan and track your food intake along with other variables, so that you can always be sure your decisions are going to have the desired result and that you can alter your approach should the need arise.

Within this module, we will be covering the various forms of food tracking because there are many, with differing pros and cons. Some are more accurate but more difficult or time consuming, and others require far less mental energy but deliver less reliable results. There is no right and wrong answer, and so what we must do first is help you decide just how accurate you need to be to get to where you want to go. This is important because using a method which is overkill can hamper your ability to stick to it long-term, though as we will discuss later on there is a very good argument for using a method which is more detailed than

you need. This allows you to educate yourself around different foods and how different food choices impact your hunger and energy levels relative to other food choices.

Then we will outline a few different methods of tracking your food and other variables (including some technology which will help to make it easier), and explain the way in which you can use all of this self-collected information to guide your choices further down the line. Finally, we will cover some ground which has only tentatively been stepped over so far – the crucial nature of flexibility within a diet, including flexibility over your tracking method, food choices and even your approach to your goal.

Note that here we will speak to 'you', but of course these approaches are just as useful when applying them to a family member, friend or coaching client.

Let's get started – how accurate do you need to be?

6.4.   Nutrition tracking levels

Perhaps the best way to determine the way you might want to track your food intake is by self-assessing your current nutritional habits. The path someone should take to a destination is determined by where they currently stand, after all, and without knowing your A it can be very hard to get to your B.

Here we will loosely describe 3 'levels'. Note that these are stated as levels A, B and C rather than 1,2 and 3 and that is for a reason – they are not hierarchical and there is no value judgement placed on them. It's not a case that you need to progress from one to the other, it's just a case that different goals and different starting points require different applications of the same information.

On a population scale most people will start at A, though it is probably safe to say that a large majority of those reading this manual will find themselves at B or C. If A or B suit someone and they represent an approach to nutritional management which they can adhere to over the very long-term (if not for life) and be happy with the outcome, then there is no need to go to anything else. By outlining them all here, however, we can help you appreciate the options available and then make a critical decision as to what you or your client would do.

In the final section of this module we will also note that each method is not mutually exclusive and a given individual may use more than one throughout a given year depending on the situation at hand, but for now let's lay out the levels.

6.4.1.   Level A

Level A is the simplest form of nutritional management, ideal for those who are just starting out with nutrition or for those who have far bigger things to worry about in their life; such as those who are extremely busy with a career or running a family home. This is also generally a nice place to end up after using the other methods long enough to have a keen intuition around food, as it's by far the most sustainable over the longer term.

Level A nutritional management focuses on a few very basic things which we outlined in a very brief way in the last module.

To use level A planning you would need a general idea of your calorie requirement as a means of framing nutrition properly, but you wouldn't really make it a key day-to-day focus. Rather, this non-numerical nutritional approach is led primarily by food choice, portion size, consistency and adjustment at a very low level of analysis, all while using food labels to ensure you are consuming foods which will meet your macronutrient requirements without over-consuming saturated fats or added sugars.

This means that you would, for example, eat 3 square meals per day using the portion control methods mentioned in module 5, along with a (preferably whole food) snack of choice when genuine hunger strikes. You would track what you have eaten to keep a record then after a given amount of time – say a week or a month, it is easy to assess the impact this has had upon other data points such as weight or waist measurements (covered later in this module) and decide whether an adjustment needs to be made. If it does, this is done in a very simple, straightforward manner. We'll give you an example:

Let's say that over a 2 week period you have consistently eaten 3 rounded meals and 1 whole food snack throughout the day, but on 3 days you have eaten 'off plan' in some way by adding an extra snack or eating a far more calorically dense meal than planned. If, during this time, your weight loss has stalled or weight has increased more than was desired, then over the next 2 week period you could simply make sure you only go 'off plan' once and see what happens as a result. If there is still no progress, you could tighten things up further by sticking to the plan 100%, or if you would rather not do this you could also use 'unusual meal tracking' method or create a 'calorie sink', both of which we will explain at the end of this module.

If you have stuck to a plan 100% but snacked 15 times over the week rather than 7, it would be prudent to look to stop snacking between meals and not change anything else. This habit change alone might cause significant weight loss.

Finally, if adherence has been high, it might simply be a case that removing a carbohydrate or fat source from one of your daily meals (or halving both) is needed to reduce your calorie intake.

By using this process (tighten up adherence, then reduce portions) it is easy to restrict your calorie intake or that of someone else, and therefore help move towards the calorie balanced needed to reach a goal, but it removes the need to look in depth at the numbers involved. All that has been done is to make wise and informed dietary choices. Protein may be a little lower than the hypothetical ideal for optimising body composition and of course calorie and macronutrient intake will go up and down day-to-day so results are not as predictable as they could be, but so long as your portion sizes remain relatively consistent then for the vast majority of the population this method will allow for improved health and lifespan while also maintaining a healthy weight.

There are a number of different ways to apply this approach but perhaps the easiest introductory method would be to plan out some core meals for a week using a simple table which has the days along one axis and the meals along another, similar to the below.

Fig. 61

	Breakfast	Lunch	Dinner	Snack
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

To use a table like this with yourself or a client, all you would need to do would be to decide on a preferred meal frequency and then fill in the gaps ensuring each main meal contains:

- A portion of lean protein, which along with the other portions of protein for that day makes up close to your total daily protein target

- 2-3 portions of fruits or vegetables, ensuring as much variety as possible throughout the day. Limiting fruits to two of those portions throughout the day isn't mandatory but if weight loss is slow this could be a good adjustment to make – fruits are more calorie dense than non-starchy vegetables are

- A portion of starchy carbohydrates, using packet serving suggestions to guide you

- A portion of fats from minimally processed sources such as avocado, olive oil or cheese

- Foods which are chosen specifically because they aren't especially hyper-palatable and are great at causing satiety (meaning generally whole foods as mentioned in the last module and carbohydrate sources rich in fibre). This will make internal appetite regulation a far more reliable metric of how things are going, and will also reduce any need to snack or desire to overeat

Ensure that any planned snacks are relatively low calorie and targeted towards a specific purpose. Would a pre-workout banana or handful of raisins be a good idea before a workout if it's been a while since lunch? Would a protein shake after the gym be useful because it's going to be quite a while before your next whole food meal? Is a mid-afternoon latte a habit that's just too enjoyable to forego? Planning these in to your daily nutrition means that they are accounted for and recorded, and when adjustments need to be made it allows you to decide if removing these is a good idea or not.

Note: If you or a client are opting for 4 or more main meals per day, it would be wise to consider using level B tracking, because frequent ad libitum eating tends to result in a positive calorie balance simply due to having more opportunities to overeat. Level A tracking works best with a 3 meal approach, perhaps incorporating snacks if needed.

Once this is planned out, all that remains is to create a shopping list and buy everything needed; ideally **only** that for reasons we will discuss later in this course. From here a notes app or pen and paper can be used to record what choices you make throughout the week. Accuracy is critical here, especially for unplanned snacks and 'off plan' eating. Inaccurate recording gives misleading data, and any adjustments made from misleading data are less likely to be as useful as they could be.

After a while when this is as a solid habit by which you can live, tracking and recording every day becomes less important as you will intuitively know approximately how much you should eat per sitting and what to do if you want to alter your calorie balance.

As a summary of level A:

- It is the easiest level to implement, but this comes with less accuracy and therefore a reduced ability to control results with precision relative to the other tracking methods

- Great for lifestyle dieting and long-term nutritional management, especially for those without extensive athletic or aesthetic goals. Great for those running households or those with busy careers

- Use portion control to build meals, ensuring you choose foods based upon your macronutrient needs and information on food labels

- Plan meals for the week wherever possible, and make sure that your kitchen contains everything you need

- Record food intake accurately and honestly, sticking to recommended portion sizes initially, then making adjustments as needed

6.4.2.   Level B

Level B is largely similar to level A but with one very key difference – here you actively track the number of calories eaten. This approach is therefore perfect either for those with more advanced goals, for those who struggle to control their appetite and therefore habitually under or over eat when using the above approach, or those for whom the above approach is leading to stalled weight loss.

Largely an inactive or very small individual may find that the above approach gives them too many calories per day because they have a low calorie requirement and so have little 'wiggle room'. Depending on food choices, a portion as defined by the packet may give these individuals more food than they need, per meal, and of course certain protein sources, have more calories per portion than others. Though adherence may be where it needs to be, simply controlling portions may not be enough and that's where level B comes in.

To highlight another point, level B is fantastic as a day-to-day tracking method for those who would like to have some amount of accuracy but who don't really need (or have the time or mental space) to use level C tracking.

Tracking calories rather than just food choice and portions is a small but critical difference as it allows you to ensure that you are getting close to the calorie balance which you need to reach the goal you want. The application of this method is generally the same as Level A, but simply with the additional step of taking calories into account while planning meals.

Much like with Level A, here you would use the protein content of a given protein source to determine the portion you are going to eat then you would add foods in the same order as you would have done above; only here it is possible to adjust the amount of each addition according to the amount of calories contained within the foods. This may mean that you stray away from the packet serving size suggestions on a number of occasions and at times it can prompt you to alter your food choice entirely for something a little less or more calorie dense.

For a few examples, consider the following:

- If you build a meal and it comes to 700kcal when you wanted to have 550, the 150kcal reduction could mean that you end up with only 30g of pasta. Instead you could swap this for potato or parsnip, or you could remove the starchy carbohydrate portion entirely, add some more vegetables and increase your fat portion to make sure you are satiated appropriately

- If you build a meal and want 800 calories but only have 600, you could either include a 200kcal snack later, or increase your portion of fats/carbohydrates to suit, depending on your preference

- If you are using a relatively higher calorie protein source such as eggs, salmon, mackerel or lamb to reach your protein goal and you find that it totals 400+kcals to get the portion you want, you may consider a smaller portion of this in combination with a lower calorie option (so instead of 6 eggs, 3 eggs and some black beans. Instead of 2 mackerel fillets, 1 mackerel fillet and 1 packet of prawns) or you could swap it out entirely until you have more calories 'to play with' at a different time. As a final option, you could reduce your meal frequency a little, to allow for a larger amount of per-meal calories

As you can see here, the addition of a level of accuracy greatly increases the opportunity we have for creating a much more personalised approach. Alongside the above you could unevenly distribute calories across the day if you prefer a large breakfast and dinner but find you are happy with something light like a soup or a salad for lunch. You could have a protein smoothie for breakfast allowing for something larger at midday, and again for dinner if this is your preference, too. Meal distribution and volume is a very personal thing, and will often change day-to-day depending on what you are doing, whether you are eating in a social setting, what time you wake up and how busy you are. If you have a deadline to meet and would rather graze throughout the day and make up for it later, or if you're going out for a large meal and wish to create a 'calorie sink' as mentioned later, this allows you to do that.

Finally, calorie counting allows you to be more flexible with your diet, but we will come to that in time. For now, a summary of Level B:

- Level B is largely like level A. You manage most of your nutritional approach through food choice, but rather than using packet portion recommendations for portions you would calculate the calorie content of a meal and then use this to determine how much to eat

- Protein goes on the plate first, then vegetables, then starches and or fats

- If the calorie amount of the meal is too high, reduce either starches or fats, or both. You may also consider swapping fruits for non-starchy vegetables or opt for a leaner meat, as this reduces calories without reducing food volume

- Keep a record of your adherence to your calorie goal. If you have not been adherent and didn't get to your goal, you know what to do. If you have been adherent and progress is slow or non-existent, it's a simple step to simply alter your chosen intake by reducing a further 5-10%

6.4.3.   Level C

Finally, we have level C which is itself broken up into two different sub-categories, that we would choose from depending on our personal preferences and personality traits (do you enjoy detail?) but also on the required level of accuracy needed at a given time. If you are looking to improve your appearance and health then C-1 is more than enough, but if you have athletic goals or extreme physique goals then C-2 might help or lead to better results. Other factors can come into play, too, and we will state some of them below. However, this section of this module is hugely influenced by the conversation we will close the module on.

Level C as a whole generally involves tracking macronutrients as well as just calories. This means that we can be sure we are getting exactly what we need, and it ensures we are able to adjust things depending on what happens as a result. A and B have some focus on ensuring protein is adequate because it helps to improve satiety and we have a minimum daily need we must meet, but they don't pay much heed to making sure we have what we need to build or maintain muscle mass. Due to the rough nature of the tracking method we may end up with less protein than we should ideally have, and likewise the other methods allow us to potentially under-consume the carbohydrates we need for performance or the fats we need for optimal health. Level C is therefore the most accurate and most effective method but also the hardest to stick to, and you need to bear this in mind because there is nothing less effective than a perfect approach you can't do.

Let's look at the sub-levels:

6.4.4.   Level C-1

With level C-1 you will track both calories and protein. This means that you can be absolutely sure you get the amount of protein you need and would be ideal for a serious athlete, vegetarian or vegan, or for someone who just habitually doesn't eat enough protein. While

planning your day, protein can be met first followed by the remaining calories from other foods to make sure you never fall short.

While protein intake is critical for those who engage in athletic pursuits, those who just need to increase their habitual protein intake to the minimum 1.2g per kilogram recommended for health, can use this method until it becomes natural, and then revert to level B to increase dietary simplicity once they know what 1.2g per kilogram of protein looks like in a daily diet, and have adjusted their eating habits.

6.4.5.   Level C-2

The final level is level C-2, which tracks all macronutrients. Choosing this approach gives you the most control over a diet, as not only can we make sure our intake of each macronutrient is where it should be, we can have greater control over where we place each macronutrient. For example, we can pack carbohydrates around a workout when intake is limited due to consuming a hypocaloric diet, or we are able to place them mostly in the evening or morning according to preference, without over or under eating.

This approach also affords us the most flexibility around food choice as we will come to, but it comes at a price. Tracking all three macronutrients requires a level of precision that only really lends itself towards specific physique goals or those who really like detail. If someone is looking to be healthy or be in anything up to 'in the best shape on the beach this summer' then levels A, B and C-1 are all one would likely need to do, and if we are looking to improve athletic performance then levels C-1 will get you most if not all of the way there, too. Rather, level C-2 is ideal for those looking to get into prime condition for photoshoots or aesthetic competitions, or for more serious athletes with huge energy requirements.

A final note on this, sometimes level C-2 with its precision and required attention to detail can create a **more** adherent person. If you are the kind of person who loves being organised, being in control and being precise with everything, then although it might not be required for your goal, you might get a sense of satisfaction from spending the time needed to get your numbers to line up exactly by the end of the day. The same, of course, goes for the other levels too.

6.5.   A note on misreporting

An unfortunate fact is that no conversation around food tracking, which is really a form of self-reporting one's food intake, can be held without addressing the elephant in the room – people are often very poor at reporting their food intake, even when they think they aren't. There are two categories of people who misreport their food intake which can each be broken down into subcategories, and we will do our best to cover all of them here after first defining exactly what we are talking about.

Food misreporting is the simple act of putting false information on a food recall or on-going food diary, with the difference being that the former is completed at the end of a given period (so someone might track their food at the end of the day, week or longer by remembering what they had) and the latter is done by 'tracking as you go' throughout your day-to-day life.

Most people, if asked, do not believe they do this, but the fact is that almost everyone does.

In nutritional research there was a widely-held belief until recent years that obese people generally did not eat more calories than their lean counterparts, which represented an obvious problem – if people are eating the same amount, how can one of them weigh 50% less than the other? This has led to numerous explanations including uniquely fattening foods, food groups or macronutrients, hormonal problems, an oversimplified idea surrounding genetic factors and much more, but more recent research has unearthed the truth.

In research where overweight or obese people report that they eat a 'normal' diet and provide a food diary to prove it, they aren't reporting the truth regarding what they eat. This can be demonstrated using various techniques including Doubly Labelled Water (DLW) and Indirect Calorimetry (IC). In DLW trials, subjects are given water in which the hydrogen and oxygen have been replaced by different isotopes, and then scientists can measure the clearance rate of these. The rate of clearance allows a researcher to ascertain an individual's metabolic rate. In IC trials subjects breathe in a special hood which measures their oxygen consumption and ultimately performs more or less the same function.

Thanks to these two techniques it has been possible to ascertain that overweight and obese individuals use roughly as many calories per day as you would expect given their weight, height and activity level – this tells us that they must be eating more than they say they are. But it happens more than you would think even in individuals who are lean.

Looking across all the data, it seems that up to 70% of people misreport up to around 50% of the calories that they really consume, meaning someone eating 3600 calories could report a consumption of 1800. The foods which are typically missed off are those that you would expect, junk food, sweets, baked goods and snack foods, though it's interesting to note that dietary fat and carbohydrate are both often underreported whereas protein is over reported (or rather foods these macronutrients are contained within are misreported).

This cannot be put down to lack of understanding of the reporting process as subjects in many studies are counselled on how to use the reporting method they are asked to use, and far more crucially it cannot always be put down to lying because subjects misreport even when they know that the researchers will be able to test and find out what the true value is.

Adding weight to the idea that a lot of misreporting is unintentional, is the fact that snack foods are misreported the most, and that those who eat irregular meals as opposed to routine meals at given times are more likely to provide false data. It's not hard to see why – these are the foods and this is the dietary schedule which is most likely to lead to someone 'forgetting' what they have eaten, or simply not tracking their food immediately and unconsciously neglecting to be honest about them later when remembering what they have eaten that day.

So why **do** people misreport, and what can be done about it?

6.5.1.   Those who are intentionally misreporting

Those who are intentionally lying. This is the smallest category, representing far fewer individuals than the next.

Those who are expecting judgement from a coach/authority figure. This may not necessarily apply to you personally, rather someone you may help at some point – though of course it can have its applications to ourselves if we use a method of food tracking which is public (many slimming clubs which encourage sharing of food diaries find their members fall victim to this, as do online communities or apps which make your food intake public).

Here the problem is that someone will eat something and won't want to show someone what they have eaten, in case that person thinks less of them for being weak or in fact punishes them in some capacity.

To get past this, there are two options which aren't mutually exclusive. First a relationship between the tracker and the authority figure(s) needs to be one which is open, honest and non-judgemental so that slip ups can be reported for the purpose of gathering data and not for the purpose of 'owning up to your sins'. Secondly there could be a period of time where food reporting is kept private. If you have a coach then this may not be an option but if you track using an app which makes your profile public, consider making it private.

Those embarrassed about what they eat. This point is similar to the first but with one difference. The person who misreports isn't lying to someone else – they are lying to themselves. Maybe they miss some foods off of their diary because they don't want to look at it, or simply don't track days which aren't on plan.

This is self-evidently counterproductive as if you do this you are providing yourself with false data to work from and leave two potential outcomes: either you forget that the data is incorrect and make bad decisions, or you remember that it's incorrect and simply won't trust it, therefore undermining the entire process of food reporting at the most basic level.

Whether the subject is yourself or a client, someone making a food diary needs to try to view data as objectively as possible and dissociate themselves from any emotionally or morally driven beliefs surrounding it. The food diary someone has collected and amount of calories they have eaten shouldn't be any more of a point of embarrassment than someone's resting heart rate. It's just numbers from which decisions and changes can be made.

Those who don't value accuracy and don't believe it matters. This is of vital importance – if you are tracking food with any kind of method, make sure you track everything that you eat and drink. That spoon of peanut butter you ate while making a sandwich counts just as much as the meal does, and the biscuit you ate from the tin at work counts too.

Similarly, if someone has eaten well 6 days in a week but poorly one day, that one day matters a lot – tracking only the highlights can't direct you properly, and someone can consume **a lot** of calories in one day.

If you don't track accurately, you are falsifying data which will impact your decisions later down the line. If your boss estimated your working hours and didn't think the extra 45 minutes you stayed behind three times this week mattered you would be annoyed – the same principle holds true with counting calories.

Those who track accurately, until they go off plan. Are you noticing a pattern yet? Many people will track their food accurately while things are going well, but then will either skip a day or fill things out with what they 'wish' they had eaten, after they go for a meal with friends and get the pizza, or cave in and order a takeaway without making more sensible choices.

Those who are prone to eating extremely well and then binging often do the same thing. While this can make someone's food diary look better, they are providing themselves with data which can later enforce poor decisions. If 2 weeks down the line no weight has been lost and they know that their diary doesn't actually reflect the facts, then what should we actually change?

If this is you or a client, and you'd really rather not fully list everything you have eaten then it can still be prudent to add **something** to your diary so you remember that you didn't have a great day, because if progress hasn't been what you'd rather it was, then this is where your attention should be directed; and if you forget the frequency with which this happens, how do you know when you're doing better?

6.5.2.   Those who are unintentionally misreporting

Those who don't know what's in food. This is probably the single biggest factor (especially for healthy foods) and is one reason why you should always be sure to check the labels and understand what it is you are eating. If you are looking to add vegetables to a meal be sure to know the difference between starchy and non-starchy vegetables. If you choose a lower fat or 'Healthy' version of something, don't assume that it's low calorie, always check. Reading labels or checking online for foods which have no listed nutritional information on the packet (i.e. buying steak from a butcher) will help you to make more informed choices and know what is in your food. Ruling this out is one of the biggest benefits to an initial macronutrient and/or calorie controlled approach.

Those who don't report there and then but use recalls. By recording your food as you go (for example using the ideas we will list below) you can be sure to remember everything you have eaten, but that's not the case if you try to remember every mouthful you've gone through in the last 12 hours or so.

Think carefully – what snacks did you have 3 days ago? Did you have a mouthful of anything while looking in the fridge, or take a chocolate when offered at work last week?

These questions are hard to answer and the research seems to suggest that they are commonly answered incorrectly. Don't leave things up to chance, track before or immediately after you eat something. The absolute best means of applying this is to stick to a plan, set out for the week ahead of time, but this isn't realistic 100% of the time when life and its intricate problems get in the way, so tracking as you go is a good idea.

Those who eat mindlessly. This topic will be fully explained in a later module, but for now we will introduce it – the idea that most of people's decisions around food are made consciously is palpably false. We have already gone over the information around hedonic tendencies, hyper-palatable food reward and the drivers to overeat which are associated with being served larger portions, but it goes much further than that.

If you eat while distracted, while watching TV, working, surfing social media and even driving, you will not notice how much you eat, how fast you eat or how full you are after the meal. In short, eating while distracted or eating mindlessly can lead someone to eat more than they think, and forget just how much they've gone through.

On top of this your environment can also have a large impact. Do you have a biscuit jar or a bowl of sweets somewhere? While cooking are you prone to tasting food? We often eat food that is close to us without realising, so pay attention.

Always be mindful and think about the food you are eating while you are eating it. Food is there to be enjoyed – don't miss out on the experience.

Those who don't know how to track food properly. Finally, the most obvious category, how are people supposed to accurately record what they have eaten in the first place?

Let's look at some basic ideas.

6.6.   Technology and methods we can use for food tracking

There are a plethora of different ways to track food intake and everyone who does it will find a method which suits them, but the main three methods which we suggest are:

6.6.1.   Pen and paper

This is the easiest and fastest way to track if you are using the level A or B method and you plan your meals ahead of time. Simply plan out your week ahead and then as you go write down the foods you consume. Of course, if you stick to what you had planned out and don't deviate then there's nothing to write, but many people will plan out their main meals then add snacks which can be jotted down day-to-day (along with the calorie value if appropriate). By the end of the week you'll have a full picture of the things you have eaten both on and off plan.

If you are using level A tracking and don't plan your week ahead, or do and are in a position where you have to change what you are doing at some point then it's relatively easy to keep a notepad (or note on your smartphone) and write down what you eat for every meal. Here it's important to be specific so don't just write down 'roast dinner', list the parts of the meal and if possible the portion sizes that are included. The more data you can collect the better because if the result isn't what you'd hoped you can see where things have gone wrong.

A combination of the two above methods would be to track only when you eat something that wasn't planned, and then amend the table you have made accordingly. This then lets you look back at what has happened nutritionally to cause the difference that you experienced in your weight, waist circumference or exercise performance.

6.6.2.   Smartphone calculator

This method is almost solely designed for level B tracking and is by far the easiest method of all once you can 'eyeball' the calorie content of foods (which you'll be able to do after a pretty short time and a small amount of practice). Open the calculator on your smartphone at the

start of the day and enter the calorie total you are aiming for, then as you go simply minus the calorie content of the foods you choose from your total.

If you have an idea of how many meals you will be going for then you can see roughly how many calories each should contain and therefore you're able to make decisions as you go to increase or decrease portions, or indeed swap foods in and out. Thanks to this you are also able to see what you have 'left' if you decide to add a snack/dessert/other thing which you hadn't initially planned to eat. At first, you'll need to pay close attention to labels but over time when you know how many calories a certain food has it's just a few taps of a button, a few times per day.

Because of the ease of use, this is perhaps one of the most effective tracking methods there is for those who make good food choices and understand both the importance of vegetables and adequate protein portion control.

Once your calculator hits zero you are done. It may also pay you to keep track of any discrepancies over 5% or so in either direction (so you have calories left or end up in negative numbers) because this can, as above, show you where things might have gone wrong – don't just stop tracking if you eat more than you wanted to.

6.6.3.   Nutrition tracking apps

There are a few dedicated food tracking apps available which have subtle differences but are all largely the same. The two main apps are Chronometer and MyFitnessPal which can both be found online. The premise with either of these is that you can search for foods in their databases and add them to your food diary along with the portion size you have eaten, and it will tell you exactly what is in it. You're able to set goals and the app will show you how far you are in moving towards those goals and what you have 'left' in terms of macro and micronutrients.

These are both ideal (perhaps MyFitnessPal more so due to its ease of use and large database) for those using either of the level C tracking methods, representing the only practically useful way to keep an eye on the amount of protein, carbohydrate and fat you are eating on a varied diet. This is not to say that there are no drawbacks, however.

The databases are largely user-made and that means you need to use critical thinking when selecting options. If you search for roast chicken you will get hundreds of vastly different options and therefore it helps to couple this with a good understanding of label information before you proceed. It's also quite time consuming if you are choosing whole food meals which will likely have 7 or more ingredients to track (as opposed to a ready meal with one label) and the temptation does exist to do the latter, at the expense of choosing whole foods first and foremost.

Then there is the fact that a publicly available food diary may lead you to under-report or report highlights, so be wary of this and consider keeping your diary private.

Of course, this more in-depth method provides an incredibly valuable educational opportunity for those wanting to learn more about what is in what they eat, and after a few

months on MyFitnessPal many users will find that they can look at a plate and produce a relatively close estimate of the macronutrient content of the meal in front of them.

Whichever method you choose, ensure you learn exactly how it works and know exactly what the limitations are, and then make sure you are consistent enough to provide yourself with trustworthy data.

This is not all the data you can collect on yourself, let's explore other tracking data.

6.7. Tracking beyond your food

Tracking simply means keeping a record of what you are doing and this means it can be applied to a host of different aspects of health, fitness and bodyweight management. Here are a few additional options which may be worthwhile alongside tracking the foods you eat:

6.7.1. Weight tracking

The most obvious one here is weight tracking. Your weight is not the be-all-end-all and it is full of issues as a marker of progress, but the fact remains that those who are looking to lose fat will almost without exception need to lose weight. Many will promote the idea that muscle weighs more than fat and this is true, but as you saw in module 1 there is a finite amount of muscle you can gain at any one time, and that means that it's hugely unlikely you will lose significant amounts of fat but stay the same weight.

That's not to say we shouldn't take precautions to ensure the information we are getting is accurate, though. Some tips for weight tracking are:

- Get digital scales. Regular scales are too open to interpretation. Don't bother with bioelectric impedance scales (which say they will measure bodyfat, for example) because they are so wildly inaccurate that they are little better than an educated guess

- Place those scales on a hard floor, and make sure you stand in the middle

- Weigh yourself first thing in the morning, after you visit the toilet, in minimal clothing and ideally naked

- Weigh yourself at **least** twice per week. Because of random shifts in water weight and because the loss of fat tissue is not linear you might see odd spikes which could give a false reading. There is even some evidence that weighing yourself daily and tracking the general trend can improve adherence to the plan, so long as you are able to be objective about it and it doesn't become an obsessive behaviour

- Don't worry too much about it. The scales don't define you or your worth, they just tell you whether or not you're in a calorie deficit/surplus and if you're making progress in terms of altering your weight. If you're not in a calorie deficit/surplus but want to be, you aren't a bad person, you just aren't eating the correct amount of food for your goals and need to change something

Write your weight down, and keep track of it because over time it will show you the overall trend, and if you have a month where nothing happens but you can look back and see that

over the last 6 months you have lost 20lbs, you're still winning overall. If you're really geeky you could even make a spreadsheet and a graph to track the trend line.

6.7.2.   Waist circumference tracking

Alongside bodyweight it's a great idea to track your waist circumference as this can be a surrogate measure of your bodyfat. While your bodyweight can go up and down for all sorts of reasons it's unlikely that your waist will go up during a dieting phase, and so this can be a nice clarification of where things are going right.

To measure use a dressmaker's measuring tape, ensuring it's horizontal, and take the measurement at the navel because unlike taking the narrowest or widest points, doing this makes sure you are consistent with your measuring place. If you're happy to do so, having someone else measure you can make it a lot easier to get the tape right. As above, record this so you can see trends.

6.7.3.   Habit tracking

In order to live a healthy lifestyle, you don't just need to improve the foods you eat, you need to alter the habits by which you live your everyday life. Breaking habits is hard, but building them is actually easy, you only need to start to consciously do something for long enough for it to become unconscious, and tracking your habits is a nice way to help yourself do this.

A habit is a routine which is done to get a certain reward. You might chew gum because it makes your mouth feel nicer than coffee breath does. You might always drink a coffee in the morning, automatically, because it makes you feel more awake. These rewards aren't just the tangible thought "that was nice", but the neurochemically driven, dopaminergically mediated response which is created in your brain. These responses reinforce behaviour and make them easy – how often do you talk yourself in to putting toothpaste on your toothbrush?

The ideal way to live your life is by forming as many automatic good habits (by your estimation and evaluation) as possible while eschewing bad ones, and habit tracking is a great way to do this. Sometimes your habits don't give you an intrinsic reward once you've done them. For example, if you want to get into the habit of reading for half an hour every evening and you manage it, you don't get the same 'that was great!' feeling as you do for spending the same time killing zombies on a games console. This means you need to add in a reward system.

Though it may sound immaterial, keeping a habit diary in which you add a tick, happy face, green spot or sticker on each day, for each habit you want to build and have successfully acted out can make a profound difference to your ultimate result. This simple self-reward system is the same one utilised by some fitness trackers that we will mention momentarily – once you reach a goal it flashes and tells you 'well done!' and that's enough to create a burst of dopamine and reinforce the behaviour.

There are almost certainly a multitude of different habits and behaviours you could add into your lifestyle to make it a better one – from reading, meditating, planning and buying food for the week, drinking water, making your bed when you get up, tidying the kitchen once you're finished dinner, to just about anything else. Many of these will seem irrelevant but the

importance of small wins and easy goals will be fully explained in the module on goal setting, and you may be surprised.

In short, task yourself to develop 1-3 new habits and reward yourself for every day you manage it. Very quickly, you'll start to notice you don't even need to try anymore.

6.7.4.   Menstrual cycle tracking

To clarify, this is just for the ladies.

Tracking your menstrual cycle has a host of benefits, and it shouldn't be thought of as something you do only while planning to start (or grow) a family. During your menstrual cycle, you will store more and less total fluid at various times in accordance with hormonal fluctuations and it's not unusual to weigh dramatically differently from one week to the next. If you are using bodyweight as a metric and therefore weighing in a few times per week, consider tracking and comparing your cycle week 1 to week 1, cycle week 2 to week 2 and so on, from cycle to cycle, rather than simply going week to week. This should highlight general trends far more effectively.

This is the primary but not only reason to track your cycle. At various times, you will experience more hunger and cravings and being prepared for this can help. Some women find great success increasing their calorie goal slightly on these weeks and decreasing it to compensate on other weeks, for example. As a final consideration, women are approximately 3.5 times more likely to injure an anterior cruciate ligament (in your knee) possibly due to an increase in the hormone relaxin during the days before ovulation. This hormone causes an increased laxity of the connective tissue, possibly resulting in greater injury risk. The practical use for this information is to consider using the premenstrual days as a de-load or lighter training time, as a means of avoiding these issues.

6.7.5.   Sleep tracking

How you sleep, as you will see, can hugely impact your health, happiness and waistline. We won't go into detail here because there is an entire module devoted to it, but tracking your sleep (when you go to bed, roughly when you go to sleep, what you did for the couple of hours before sleep, when you woke up in the night, when you woke up in the morning, how well you felt you slept and how you felt when you woke up) can be a really useful practice.

6.7.6.   Step tracking

As we discussed in module 1, NEAT is a huge component of your TDEE and walking comprises a vast amount of most peoples' NEAT. Because of this it can be advantageous to keep an eye on it, especially if you are either moving into a calorie deficit or changing job/lifestyle significantly.

In module 1 we discussed the example of a postman and an office worker, who ended up with dramatically different TDEE's due to their jobs. If that postman is used to eating one way and having a given result but then moves to an office job, his calorie expenditure will therefore drop dramatically, and being cognisant of this fact can help him alter the food choices he makes.

Similarly, those in a calorie deficit (or those starting a new training regime which is more difficult than anything they have previously done) may feel fatigued and may as a result walk less. By setting a step goal you can keep your day-to-day activity levels relatively high, intentionally, perhaps leading to a far better result. Moreover, if you are brand new to exercise it can be completely life changing to go from 2000 to 15000 steps per day, without even thinking of joining a gym just yet.

Many inexpensive and readily available lifestyle trackers can help you with sleep and step tracking, and are a valuable addition, should you have the spare money to purchase one. If not, step counting apps can be downloaded for your smartphone.

6.7.7.   Water tracking

We do not really recommend you track the glasses of water you drink per day, given what we've said about drinking to thirst in module 4. Rather, it would be prudent to add 'drink water when thirsty' as a habit and to track that way instead alongside your total rough daily fluid intake.

6.7.8.   Gym progress tracking

A final area which should be considered as a must-track activity is your gym progress. This is not an exercise course and so we will only briefly mention this, but tracking what you have done, what you plan to do and what your ultimate goal is can help you make sure your training is effective and as productive as possible. Always plan your exercise properly, and if you're not able to do so consider consulting an exercise professional who can assist you.

It's a great idea to use as many methods as you or your client are happy to use. Taking as much data as possible allows you to cross-reference and validate the quality of what you are seeing. If a client is reporting an intake of 1000kcal but gaining weight, when they are already obese, you know that something is amiss and are in a better position to deal with it. As a final note here, when collecting data on others client confidentiality rights should be adhered to at all times and therefore any information regarding them should be stored securely and never shared with anyone without the client's prior consent.

6.8.   How to use all of this data to guide your choices

Now you have all of the data you could ever need, what do you do with it?

Within any experiment, you have variables which could be described as either dependent or independent. Independent variables are the things which you can do or change and the dependent variables are the things that occur as a result of the independent variables. If the independent variables are the number on a toaster dial and the temperature of the heating element, the dependent variable is the 'doneness' of the toast.

Here you have recorded your independent variables, as many as you saw fit (food in, activity, gym adherence, sleep) and you also have two key dependent variables (weight and waist circumference). You will notice that this is an imperfect system because the independent variable of NEAT can be directly impacted by the calorie deficit which you create and

therefore **could** become a dependent variable, but by working on the assumption that you are controlling it and setting goals to hit, it becomes independent.

If your independent variables are properly controlled (you are adherent to everything, and record accurately) then the dependent variable becomes predictable and almost under your control. If you want to make your waist and weight reduce, you only need to increase activity and/or decrease calorie intake. If you record both sides then you can adjust the independents to make the dependents do what you want!

Let's assume you have been adherent to your diet and activity level goal but your weight has not decreased, what do you do?

- The first step is to make sure you have **actually** stalled, which is different to an initial slow or non-apparent change. When you first start a fat loss phase you will almost certainly see a drop in the first 2 weeks, so if this has not happened a recalculation might be prudent. After that, as you lose weight you will start to require fewer calories (both due to adaptation and due to being a smaller person) and so weight loss can slow to a stop. A stall for one week is normal (especially considering what we noted about the menstrual cycle) so it's unwise to adjust your approach immediately, but after 2-3 weeks of stagnation you can confidently do so

- Depending on the severity of your current deficit and the length of time you have been dieting, you now need to assess the following options:

  a. Are you ready to have a diet break for a week, which will increase your day-to-day energy, help you drop water weight which is stored thanks to the nervous system responding to stress as mentioned in module 4, and give you a psychological break which could increase adherence. Generally, a diet break every 4-8 weeks is wise, scaled upwards for those with more weight to lose as fat loss is physically easier (although perhaps not psychologically so)

  b. Do you need to start looking at your adherence overall? If you have been going off plan a few times per week, or even once per week, this could be your problem

  c. Do you need to adjust your intake or output?

- After you have answered this question, implement the answer. If it's A, increase your calories to your new maintenance level (calculated from current bodyweight) and enjoy the break. If the answer is B then look to the previous section about misreporting or consider a later module about goal setting and change. If the answer is C, then make a further reduction of 100-200kcals from your overall daily intake and monitor your progress, rinsing and repeating until the scales start to move. Alternatively, you could increase your step count by 2-3000 if time will allow and do the same, though the former approach would likely be more effective for those with reasonable activity levels already (averaging 10,000 steps per day or more, for example)

And of course, at the same time, you would simply repeat step one for the reverse problem with halted weight gain, increasing calories gradually until you start to gain weight again. It might seem intuitive to reduce activity here, but this is rarely a good idea unless your training volume is exceedingly high. As a rule of thumb just eat more rather than moving less.

If you are using level A tracking and therefore not tracking your calories so closely, this is where more low-resolution adjustments must be made. To speed up or start fat loss moving again here, look at these areas in order:

- Have you been adherent? Start here first and make sure the answer is yes

- Have you been snacking regularly? If so, count your weekly snacks and aim to half this, then see how your progress is

- If no, then look at your portion sizes. If they are within the guidelines we have laid out and you are eating 3 main meals (perhaps with a smaller meal or snack)

- Start to alter your portions, or move to level B tracking

- If you're sticking with level A tracking, either reduce your carbohydrate or fat portions, or consider removing a carbohydrate source from one meal entirely (add some more low calorie vegetables to fill up the plate) as this is a very easy way to reduce your calorie intake

- If you complete step 5 and weight loss is still stalled and you are still being adherent, we recommend looking at level B tracking as the additional information can help you progress past this sticking point

6.9.   Eating out

Before we move on from the tracking element of this module it's a good idea to cover one aspect of nutrition tracking that can really throw people off – tracking foods when eating out, either at a restaurant, or the home of a friend. This can have obvious implications for your nutritional approach because it can be somewhere on the spectrum between difficult to impossible to either make a decision on food, on portion size, quantify the calorie and macronutrient content of the meal, or all of the above.

The answer to this question, as always, is not straightforward because the context you are in will determine how much this should bother you. We'll take each setting in turn to make it easier to present the approaches in a different way, but before we do we need to make one thing clear: before you go out for food, you need to make the decision of whether you want to stay on track at all or not. You won't find this advice in many diet books, but truthfully as an adult you are able to decide to go to the local restaurant and have a go at the eating challenge along with your friends, or you are able to go for afternoon cream tea if you so choose and not worry about the calorie content of the meal one bit.

You **do** have to accept that the calories count and that they will impact your progress, but you are able to decide whenever you like to accept these consequences and live your life the way that you want it. Provided you are able to take responsibility and accept that one meal **can**

overthrow an entire week (or more) of dieting if you eat enough, and accept that you just might not lose any weight this week despite being otherwise adherent, then it doesn't make you a bad person for sitting with your family and enjoying a 16" pizza.

But let's assume you want to stay on track – how do you do it?

6.9.1.   Eating at a friend's house

- Are you ordering a take away or are they cooking? If it's the former, simply make better choices. Chicken kebabs, tandoori meats, tomato based curries, black bean stir fries and many more imperfect but not bad options are available from most takeaways, so simply pick something that will roughly fit your usual approach and go for it

- If your friends are cooking, speak to them about your goals and see if they can be accommodating – can you have a smaller portion, can you have slightly more vegetables than everyone else, can your meal have the dressing/sauce on the side? If you'd rather not do this, you can at least get a gauge of what they will be making and use this information to create a 'calorie sink' as we'll explain next. Most people are afraid to ask as they don't want to put a friend out or awkward, but a good friend should understand your goals and be happy to help. That's what friends are for right?

- Whatever you end up eating, through any of the above channels, decide whether you want to track it. It's usually a good idea to do so, but if you don't want to you could chalk this day up as non-adherent and leave it at that – at least it's data, and this can be used alongside the 'calorie sink' method below

   To track, you could either make a reasonable estimate of the foods you have eaten, ingredient by ingredient, make a reasonable estimate of the calorie content of the food simply by looking at the meal and 'taking a stab' or if ordering in look for a generic option to track on a food database (so if you have fish and chips, it could be possible to track a Wetherspoons fish and chips on MyFitnessPal for example)

6.9.2.   Eating at a restaurant

- In many ways, this is easier. First look to see if you can locate a menu online and give yourself time to decide on what to eat without the pressure of everyone looking at you as the waiter stands and clicks his pen

- Next, just like you would in any other situation, make better choices. Lean meats, vegetables and minimally refined carbohydrates are the way to go. You may have to accept a little more oil, fewer vegetables and a few other more 'flexible' options than usual but do your best with what you have because this probably isn't an everyday occurrence

- Don't be afraid to swap things, or ask the waiter to leave certain things off the plate that you'd rather not be tempted with, or get added vegetables

- Opt for two of the following, as the maximum to consume – a starter, a dessert or some alcohol. This limits excessive calories

- Most chain restaurants have their nutritional information available, so check that out where possible and use the skills you developed around reading labels to help guide you. This can usually be found either online or in the restaurant

6.10. Flexibility

Flexibility in your diet is crucially important. Research into nutrition shows us time and again that dieting approaches which are flexible are more successful in the long-term, even if more rigid and drastic approaches can help you to make a very important initial positive step. The reason that fast initial weight loss can help is most likely due to the fact that early progress creates a greater belief in your ability to change, but also provides some motivation for continuing the trend – but it's still the case that over the longer term, flexibility is key.

A good way to think of this is that dietary flexibility and dietary duration have an inverse relationship, with long-term dietary approaches allowing more 'wiggle room' for the dieter and shorter term approaches having the requirement to be stricter.

Dietary flexibility takes on two guises which we can delve in to separately, namely flexibility on food choice and a broader dietary flexibility in the more general sense. Let's look at the applications of both starting with food choice flexibility.

6.10.1.   Flexibility and food choices

So far in this course we have mentioned and then reinforced the idea that food choices and food 'quality' matter. 'High quality food' here describes foods which are minimally processed and nutrient dense, though of course it's an imperfect system because some processed foods (olive oil, whey protein and supplemental fish oil being key examples) are extremely useful when building a diet, whereas some minimally processed foods like canned tuna (high in mercury), unpasteurised milk (greatly increased risk of transferrable disease compared to pasteurised) and raw almonds (rich in cyanide) aren't a good idea to eat in varying degrees – 1-2 cans of tuna per week in non-pregnant women is fine but we certainly don't recommend any raw nuts or legumes.

As a general rule, though, minimally processed foods are the way to go. We say minimally processed rather than unprocessed because this allows for sauces, pastes, oils, cheese, wholemeal breads/pastas and a huge amount of other foods. It's hard to pin down a clear description because there are too many variables at play, but this should give you a very good appreciation of what to include in your diet most of the time, and what you should not. If in doubt, check the label.

This leaves two big questions unanswered, namely:

- Why are minimally processed foods better?

- If this is the case, why include any other stuff at all?

As a closing section to this module, let's discuss both of these.

6.10.2.   Why are minimally processed foods better?

There are a few reasons to consider minimally processed foods to be better choices day-to-day than more processed foods:

- Minimally processed foods tend to be less palatable than more processed foods. This sounds like we are saying that minimally processed foods don't taste good but of course that isn't the case, we don't really need to tell you that whole foods don't taste bad. What is important to appreciate, is that to some people water will never taste as good as Coca Cola, an apple will never taste as good as apple crumble and that a grilled chicken breast will never top something southern-fried and covered with BBQ sauce and cheese. Processed foods are made specifically to be hyper-palatable and while that can create a short-term explosion of delicious enjoyment, it can help you form poorer habits around your eating

  As above there are notable exceptions here, for example peanut butter is barely processed at all but tastes fantastic and is very easy to overeat. Each food should be taken as an individual case, but the processed/not dichotomy is a usable generalisation

- Minimally processed foods are very often more micronutrient dense than equivalents – exceptions being some fortified foods such as iodised salt or fortified milk substitutes

- Minimally processed foods are generally more satiating per mouthful – though with dairy products you often should make a judgement call. For example, a fat free unsweetened yoghurt loses its satiating effects to some degree but loses a lot of calories per spoonful, so is the trade-off worth it at the time?

This is all great, but we must also consider the fact that in the real world it's never going to be possible to stick to a rigid approach for very long. Temptation is always going to arise and if your diet is making you neurotic about going for meals out with friends or actively making it impossible to enjoy your life as much as you ideally should be, then there is a problem. It may be the case that eating a 100% unprocessed diet would be best at least on the surface, but if you can only adhere to your 100% approach 70% of the time then would it not be better to be 90% on point, 100% of the time? This is why including some junk or bad food is part of any reasonable dietary approach.

6.11.   Specific food and nutrient demonisation

One of, if not the main reasons that flexibility isn't mentioned in most mainstream diets and why it can seem so counterintuitive is that human beings have a natural tendency to create dichotomies when we think about things. Everything is black or white, good or bad, dangerous or safe and this includes foods which we seem to think of as diet friendly or fattening – which doesn't really make a lot of sense because context is always key.

There is no single foodstuff which, when consumed, will cause immediate negative health effects in most realistic portions. Barring trans fats there are very few foods which can cause chronic negatives, either. Some notable exceptions to the chronic negative effects rule are:

6.11.1.   Fish which is high in mercury

Swordfish and certain breeds of tuna can contain a lot of mercury which can lead to mercury poisoning and should therefore be kept to once to twice per week depending on the specific case. This is because larger fish are at the top of the food chain, meaning they eat smaller fish and accumulate the mercury which the small fish have eaten across the rest of that chain.

A database of fish by mercury content can be found below, acquired via the NDRC at the time of writing in 2017.

Fig. 62

Least mercury	Moderate mercury	High mercury	Highest mercury
Enjoy these fish	Eat <6 servings per month	Eat <3 servings per month	Avoid or eat rarely
Anchovies	Bass (Saltwater, striped, black)	Croaker (white Pacific)	Bluefish
Butterfish	Buffalofish	Halibut (Atlantic, Pacific)	Grouper
Catfish	Carp	Mackerel (Spanish, Gulf)	Mackerel (King)
Clam	Cod (Alaskan)	Perch (Ocean)	Marlin
Crab	Lobster	Sablefish	Orange Roughy
Crayfish	Mahi Mahi	Sea Bass (Chilean)	Shark
Croaker (Atlantic)	Monkfish	Tuna (Albacore, Yellowfin)	Swordfish
Hake	Perch		Tuna (Bigeye, Ahi)
Herring	Sheepshead		
Jacksmelt (Silverside)	Skate		
Mackerel (Chub)	Snapper		
Mullet	Tilefish		
Oyster	Tuna (canned, light, Skipjack)		
Plaice			
Pollock			
Salmon (Canned)			
Salmon (Fresh)			
Sardine			
Scallop			
Shrimp			
Sole (Pacific)			
Squid			
Tilapia			
Trout (Freshwater)			
Whitefish			
Whiting			

6.11.2.   Saturated fats

As discussed in module 2, saturated fats may not be the demons which they were once hypothesised to be, but this does not exonerate them entirely and it does not mean that we should actively seek to eat more of them. At least part of the controversy here stems from the fact that, as you have learned, saturated fats are just fatty acids with no double bonds in the chain, which means that there is a wide range of potential molecules to which this general name could be assigned. Stearic acid appears to lower LDL whereas palmitic acid and myristic acid appear to increase it. To confuse things further an adequate intake (in one research paper 4.5% of calories) of the Omega 6 polyunsaturated fatty acid, linoleic acid counteracted the negative effect of palmitic acid.

Though this is very obviously a complex issue and one where there is still a lot for researchers to uncover, the clear answer is that it appears a high intake of saturated fat is associated with an increase in your risk of cardiovascular disease, and the LDL and total triglyceride raising properties of these fatty acids is likely to play a role in this. A good approach here is to focus your general diet around whole foods, including lean meats, whole eggs and whole dairy which does not appear to increase risk to nearly the same degree as other foods despite its saturated fat content (with the exception of butter which does appear problematic when consumption is high) and then, if additional fats are needed, getting these from monounsaturated sources wherever possible. If, however, you are planning to eat out once a week and have the burger, this is unlikely to be an issue.

6.11.3.   Trans fat

Artificial trans fat containing foods are still a good idea to avoid.

Beyond that, though, provided you are adhering to a primarily whole foods diet, small deviations from this aren't really an issue. Some common foods which are banned on diets, and the reason you don't need to necessarily fear them are:

6.11.4.   Sugar

It is associated with weight gain but it's association is tied to an increase in energy intake. When sugars are added to a diet in place of other calories (so provided you are at calorie balance, or the calorie balance you need to be at to reach a goal) this isn't really a problem. Being that, as you learned in module 2, all carbohydrates are broken down into monosaccharides before absorption, this makes a lot of sense – table sugar is not special or different in this regard, so it's impact on health is largely the same. Notably, an increased intake of fructose alongside chronic overeating can be problematic so it's likely a good idea to limit added sugar intake while eating in a calorie surplus, but this is, at least theoretically, largely mediated by being highly active and avoiding becoming overweight.

Similarly, though it is often claimed that diabetes or insulin resistance is caused by sugar intake, this is not the case, with diabetes having a multitude of causes including genetics, lifestyle and total energy intake. Sugar is highly palatable, and high-sugar foods are often calorically dense so consuming them excessively is not likely to be the smartest way to set up a balanced and long-term diet, but it would be more prudent to consider your energy and

vegetable intake before your sugar intake if you are looking to avoid negative effects often claimed to be lead to via consuming too many monosaccharides.

As a practical recommendation, don't be concerned with sugars from whole fruits or unsweetened dairy, but be mindful of foods with added sugars or concentrated sugar sources like honey and maple syrup.

6.11.5.   Artificial sweeteners

These are non-nutritive compounds including aspartame and sucralose which are added to foods and beverages to increase their taste without adding calories – typically seen in sugar free fizzy drinks, but present elsewhere too. These have been blamed for, amongst other things, headaches, nausea, 'brain fog', insulin resistance, obesity, joint pain, Alzheimer's and cancer but as yet there is no link between these compounds and these effects in randomised, controlled trials – despite a lot of looking. In fact, swapping diet drinks in place of regular drinks is an effective calorie reduction tool.

These compounds can be considered to be safe for consumption in any amount which you would realistically manage, but that doesn't get them off 'scot free'. First of all, some people may experience transient symptoms. These are very likely to be a result of a placebo effect but they exist nonetheless and if you are one of these individuals, the simple answer is to abstain from consumption. Beyond this the main issues surrounding artificial sweeteners are:

- Regular consumption of artificial sweeteners may alter your food preferences and make it harder for you to avoid sweeter foods

- Drinks with artificial sweeteners are still acidic and may not be great for dental health

Beyond that they are safe, and while our position will always be that water is the best thing to hydrate yourself with, drinking 1 can of artificially sweetened soda per day is unlikely to cause harm and could be an enjoyable inclusion to a balanced diet.

6.11.6.   Liquid calories

Drinking your calories has always been a contentious point for very good reasons. Firstly, we would like to state that here we are talking specifically about fruit juices, milkshakes and regular soda rather than unflavoured milk which is a highly nutritious foodstuff or protein shakes/homemade smoothies.

The key problem with sweetened beverages and fruit juice is that they pack a lot of calories but little or no nutrition and, crucially, no impact on subsequent calorie intake. One study found that participants who were given jellybeans reduced their calorie intake later in the day to compensate but when the same amount of sugar was delivered via sweetened beverages there was no compensation (some people increased their intake relative to baseline). Sugar-sweetened beverages are likely to be a significant contributor to global obesity.

Fruit juices (home-made or other) are likely to exert similar effects due to being high in free sugars and low in fibre, and while smoothies may be far better in this regard it's crucial to be cognisant of the total amount of energy you add to the blender because half a pint of milk, 3 pieces of fruit and some nut butter is hard to eat but very easy to drink.

With all of that said, the impact these beverages have is purely due to their calorie load and their impact on subsequent calorie load (or lack thereof), so if a small amount is factored in to someone's daily intake, this is not an issue.

6.11.7.   Alcohol

Moderate alcohol consumption would fall in line with the above. Alcohol is a very complex topic and the BTN Practical Academy course covers it in great detail if you are interested in alcohol metabolism and its impact on body composition and health. For now, we recommend you stick with the UK government guidelines of drinking no more than 14 units per week, and no more than 2-3 units per day for women or 3-4 for men.

Alcoholic drinks provide a significant amount of energy (a pint of typical lager, beer or cider will contain around 200kcals, a large glass of wine (250ml) around the same, a shot of hard liquor will provide around 70kcals with many cocktails being considerably higher). Furthermore, alcohol's ability to dampen your capacity to make healthy choices by resisting the temptation of highly caloric foods, it's potential impact on your activity levels and food intake the day following a large intake of alcohol, pose a big problem if this is not moderated.

Beyond this, outside of genuine health problems you experience as an individual, and outside of hyper-palatable foods which you personally find difficult to moderate, no foods should be considered out of bounds. By focusing on the large issues (calorie balance, macronutrient intake, food choice for the vast majority of your diet, hydration, fibre and micronutrient intake), the small issues such as health problems brought about by sugar or the occasional saturated fat laden indulgence become far, far less impactful.

While these are not the best choices and should never be considered the backbone of a diet, it's important that you place them in context rather than judging them as good or bad.

6.11.8.   Tracking and adherence flexibility

It's often the case that people are on or off their diet, but this mentality may not be the most beneficial one you could adopt for your psychological wellbeing or your long-term success. After all, it's not necessarily reasonable to expect yourself to spend the next 365 days tracking every gram of food you eat and making perfect food choices at every opportunity. You are human and sometimes you need to let go.

Here is where a broader sense of flexibility comes in. Firstly, consider that you do not need to use the same tracking method all year long; there are times when accuracy is more important and there are times where sustainability is more important. Your overall approach to food needs to be one which you can stick to for the rest of your life but that is not true of the 12 week diet you decide to use in order to get in shape for your holiday. Pick your battles. Perhaps you use level A tracking for most of the year and then level C2 tracking with every macronutrient accounted for until you jet off – this is loose tracking when appropriate and 'tightening up' when needed.

Moreover, you could think about the 80-90% adherence principle mentioned above not only in terms of food choice but in terms of adherence. Having two days per month where you go

for a meal with friends/a significant other and eat whatever you want is very unlikely to impact on most goals that people have and doing it can be a nice break from the norm. Yes, you will eat more on these days than usual, but as we mentioned a number of times in module 1 – weight loss and gain doesn't happen in 24 hour cycles so it doesn't matter so long as the rest of the time is dealt with appropriately.

We then need to look at tracking accuracy within every method. In the last module we discussed the inaccuracy of food labels and the potential for leeway. This should tell you that looking to hit your calorie or macronutrient intakes every day too perfectly is a waste of time and mental energy that could be spent elsewhere. It's far better to aim for ranges than it is for finite numbers. The loftier your goal is, the closer your ranges may be (so while getting towards the last 2 weeks of your pre-holiday diet you may have a 5g up or down range attached to each macronutrient goal and a 50kcal up or down range on your calories, but then for the rest of the year these may quadruple) but no matter what a range should exist to make hitting your recommended numbers physically possible.

Finally, to close this module, we wish to say the that most people can reach a healthy weight, and even get close to beach-body shape using level A tracking and some common sense around their adjustments. More than this, those who use level B or C can often shift to level A after a short while because they know what their needs are and how to meet them with food. Nutrition is important but focusing on nutrition should not take up a huge amount of your mental energy or daily time because the accuracy with which you manage it is limited in the best of cases, and the impact that each detail has on the final result diminishes with every step you take.

Getting your calorie intake and food choices in place will get you 80% of the way there, adding some protein portion knowledge may add another 10%, and then after that you're talking small details. Get the big rocks in place and it all falls in line.

In the next module we will be discussing sleep, a seemingly unrelated but actually hugely important factor in your nutritional approach. If you don't sleep as much as you should you will be hungrier, you'll have stronger cravings and thus a diminished ability for resisting temptation, meaning that everything gets far harder than it needs to be.

6.13. References

- Poslusna, K., Ruprich, J., de Vries, J., Jakubikova, M. and van't Veer, P. (2009). Misreporting of energy and micronutrient intake estimated by food records and 24 hour recalls, control and adjustment methods in practice. *British Journal of Nutrition*, 101(S2), p.S73.

- Mahabir, S., Baer, D., Giffen, C., Subar, A., Campbell, W., Hartman, T., Clevidence, B., Albanes, D. and Taylor, P. (2005). Calorie intake misreporting by diet record and food frequency questionnaire compared to doubly labelled water among postmenopausal women. *European Journal of Clinical Nutrition*, 60(4), pp.561-565.

- Lopes, T., Luiz, R., Hoffman, D., Ferriolli, E., Pfrimer, K., Moura, A., Sichieri, R. and Pereira, R. (2016). Misreport of energy intake assessed with food records and 24-h recalls compared with total energy expenditure estimated with DLW. *European Journal of Clinical Nutrition*, 70(11), pp.1259-1264.

- Macdiarmid, J. and Blundell, J. (1998). Assessing dietary intake: Who, what and why of under-reporting. *Nutrition Research Reviews*, 11(02), p.231.

- Lichtman, S., Pisarska, K., Berman, E., Pestone, M., Dowling, H., Offenbacher, E., Weisel, H., Heshka, S., Matthews, D. and Heymsfield, S. (1992). Discrepancy between Self-Reported and Actual Caloric Intake and Exercise in Obese Subjects. *New England Journal of Medicine*, 327(27), pp.1893-1898.

- Scagliusi, F., Polacow, V., Artioli, G., Benatti, F. and Lancha, A. (2003). Selective underreporting of energy intake in women: Magnitude, determinants, and effect of training. *Journal of the American Dietetic Association*, 103(10), pp.1306-1313.

- Heitmann, B. and Lissner, L. (1995). Dietary underreporting by obese individuals--is it specific or non-specific?. *BMJ*, 311(7011), pp.986-989.

- Goris, A., Westerterp-Plantenga, M. and Westerterp, K. (2000). Undereating and underrecording of habitual food intake in obese men: selective underreporting of fat intake. *American Journal of Clinical Nutrition*, 71(1), pp.130-134.

- White, C., Hitchcock, C., Vigna, Y. and Prior, J. (2011). Fluid Retention over the Menstrual Cycle: 1-Year Data from the Prospective Ovulation Cohort. *Obstetrics and Gynecology International*, 2011, pp.1-7.

- Voskanian, N. (2013). ACL Injury prevention in female athletes: review of the literature and practical considerations in implementing an ACL prevention program. *Current Reviews in Musculoskeletal Medicine*, 6(2), pp.158-163.

- Wreje, U., Kristiansson, P., Åberg, H., Byström, B. and von Schoultz, B. (1995). Serum Levels of Relaxin during the Menstrual Cycle and Oral Contraceptive Use. *Gynecologic and Obstetric Investigation*, 39(3), pp.197-200.

- Steinberg, D., Bennett, G., Askew, S. and Tate, D. (2015). Weighing Every Day Matters: Daily Weighing Improves Weight Loss and Adoption of Weight Control Behaviours. *Journal of the Academy of Nutrition and Dietetics*, 115(4), pp.511-518.

- Yang, Q., Zhang, Z., Gregg, E., Flanders, W., Merritt, R. and Hu, F. (2014). Added Sugar Intake and Cardiovascular Diseases Mortality Among US Adults. *JAMA Internal Medicine*, 174(4), p.516.

- Bernstein, A., Song, M., Zhang, X., Pan, A., Wang, M., Fuchs, C., Le, N., Chan, A., Willett, W., Ogino, S., Giovannucci, E. and Wu, K. (2015). Processed and Unprocessed Red Meat and Risk of Colorectal Cancer: Analysis by Tumour Location and Modification by Time. *PLOS ONE*, 10(8), p.e0135959.

- Stewart, T., Williamson, D. and White, M. (2002). Rigid vs. flexible dieting: association with eating disorder symptoms in non-obese women. *Appetite*, 38(1), pp.39-44.

- Smith, C., Williamson, D., Bray, G. and Ryan, D. (1999). Flexible vs. Rigid Dieting Strategies: Relationship with Adverse Behavioural Outcomes. *Appetite*, 32(3), pp.295-305.

- Nackers, L., Ross, K. and Perri, M. (2010). The Association Between Rate of Initial Weight Loss and Long-Term Success in Obesity Treatment: Does Slow and Steady Win the Race?. *International Journal of Behavioural Medicine*, 17(3), pp.161-167.

- NRDC. (2017). *The Smart Seafood Buying Guide*. [online] Available at: https://www.nrdc.org/stories/smart-seafood-buying-guide?gclid=Cj0KEQjwo qvIBRD6ls6og8qB77YBEiQAcqqHe14rTdMzNEBB3BAcHEEIe17OM9FhcsxG0rKQWpyn z7gaAr6w8P8HAQ [Accessed 7 May 2017].

- Aro, A., Jauhiainen, M., Partanen, R., Salminen, I. and Mutanen, M. (1997). Stearic acid, trans fatty acids, and dairy fat: effects on serum and lipoprotein lipids, apolipoproteins, lipoprotein(a), and lipid transfer proteins in healthy subjects. *American Journal of Clinical Nutrition*, 65(5), pp.1419-1426.

- Zock, P., de Vries, J. and Katan, M. (1994). Impact of myristic acid versus palmitic acid on serum lipid and lipoprotein levels in healthy women and men. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 14(4), pp.567-575.

- French, M., Sundram, K. and Clandinin, M. (2002). Cholesterolaemic effect of palmitic acid in relation to other dietary fatty acids. *Asian Pacific Journal of Clinical Nutrition*, 11, pp.S401-S407.

- Micha, R., Peñalvo, J., Cudhea, F., Imamura, F., Rehm, C. and Mozaffarian, D. (2017). Association Between Dietary Factors and Mortality From Heart Disease, Stroke, and Type 2 Diabetes in the United States. *JAMA*, 317(9), p.912.

- Nestel, P., Chronopulos, A. and Cehun, M. (2005). Dairy fat in cheese raises LDL cholesterol less than that in butter in mildly hypercholesterolaemic subjects. *European Journal of Clinical Nutrition*, 59(9), pp.1059-1063.

- Te Morenga, L., Mallard, S. and Mann, J. (2012). Dietary sugars and body weight: systematic review and meta-analyses of randomised controlled trials and cohort studies. *BMJ*, 346(jan15 3), pp.e7492-e7492.

- Vos, M. and Lavine, J. (2013). Dietary fructose in non-alcoholic fatty liver disease. *Hepatology*, 57(6), pp.2525-2531.

- Takahashi, K., Kamada, C., Yoshimura, H., Okumura, R., Iimuro, S., Ohashi, Y., Araki, A., Umegaki, H., Sakurai, T., Yoshimura, Y. and Ito, H. (2012). Effects of total and green vegetable intakes on glycated haemoglobin A1c and triglycerides in elderly patients with type   2 diabetes mellitus: The Japanese Elderly Intervention Trial. *Geriatrics & Gerontology International*, 12, pp.50-58.

- Tandel, K. (2011). Sugar substitutes: Health controversy over perceived benefits. *Journal of Pharmacology and Pharmacotherapeutics*, 2(4), p.236.

- Bartolotto, C. (2015). Does Consuming Sugar and Artificial Sweeteners Change Taste Preferences?. *The Permanente Journal*.

- Malik, V., Schulze, M. and Hu, F. (2006). Intake of sugar-sweetened beverages and weight gain: a systematic review. *American Journal of Clinical Nutrition*, 82(2), pp.274-288.

- Hu, F. (2013). Resolved: there is sufficient scientific evidence that decreasing sugar-sweetened beverage consumption will reduce the prevalence of obesity and obesity-related diseases. *Obesity Reviews*, 14(8), pp.606-619.