



Speaker	Ms Natalya Beer
Talk title	Exercising to make healthier food choices
Venue	Tiny's Bar
Time	Tuesday 29 October 2019, 7.00pm

Tim Colmer

Good Evening.

Welcome, everybody!

I am sorry to interrupt your excited conversations but welcome to Raising the Bar.

Tonight there are twenty-two academics speaking at ten bars and this is Part 2 at the healthiest bar in Perth.

I would like to again acknowledge the Whadjuk Noongar land and that the Whadjuk Noongar people as the traditional owners of the lands and waters where we are meeting today and pay my respects to the elders, present, past, and emerging.

My name is Tim and am pleased to be as the MC for tonight.

At UWA, we are excited to be part of the cities popular culture, bringing research into the city and we hope you have got yourself a drink and you are ready for an interesting discussion for our second topic.

If you are using social media, please tag us at @UWAresearch or #rtbperth19. Tonight's talks are being recorded and will be published online, so if you have registered you will get the links to all the talks tonight.

Our second speaker, I am pleased to introduce Natalya Beer who is PhD candidate in the School of Human Sciences in Exercise and Sport Science and is involved in teaching two undergraduate sports science units as well as her research. Her research focuses on the relationships between exercise, appetite and food choices together with the implications for weight management.

So thank you and over to you Natalya.

Ms Natalya Beer

Thanks, Tim.

I would like to pose a few questions to you all before we get started.

How many of you have something healthy to eat or drink in front of you?



Very good!

How many of you have exercised today?

Amazing!

Does anyone think that one of these things might be related to the other?

Yes? We are in the right spot! Good!

We all know the amazing benefits of exercise for both our mental and our physical health. But, did you know that the way you exercise can actually help to shape, what and how much food you eat?

I am really excited to be talking to you tonight about some of the research that I have been doing through my PhD and over the last year, is around exercise and appetite, but I will add a disclaimer now, that the purpose of the talk isn't to tell you about the perfect way to exercise or the perfect foods to eat if you want to lose weight, because there isn't such a thing.

Instead, I hope to give you an appreciation of how these behaviours are related and maybe then give you some tips and tricks along the way of things that you can incorporate into your own lifestyle.

The reason I am particularly interested in this topic is because I have always had an interest in health and wellbeing, so that is why I did my undergraduate degree at UWA and I studied Sport, Science, Exercise and Health, although in saying that, I didn't play any sport, I was very un-coordinated and so I went down the exercise and health pathway and that's where my research is focused, together with my general interest in nutrition and healthy eating.

So, I am particularly interested in this healthy eating and exercise realm and the reason for that is because I think that's a very important part of maintaining our general health and a very important part of maintaining our general health is maintaining a healthy body weight and that's a particularly relevant issue here in Australia, given that over two thirds of adults are overweight or obese.

This is clearly an issue that affects many of us.

For those of you that have tried to lose you might know that it can be really challenging and if you have lost weight, that's great, but sometimes it can come back on and even more so than what you have lost and that can be really disheartening.

For those of you who have tried to lose weight, you might have understood or been told the premise of energy balance concept or that you need to exercise and move more and eat less, and that really is the fundamental premise of what it takes to maintain a healthy weight or lose weight, if that's what we need to do.

For those of you who have heard it before, it is quite a simple concept, to maintain a healthy weight, we need to balance out how much energy that we consume through food and drink and how much energy we expend. And although that expenditure is made up of a few different things, we will focus mainly on physical activity and exercise.



We can think of these things, like a set of scales in the air, and they are perfectly balanced and that's going to help us maintain weight but if we want to lose weight, again we need to move more and eat less. So, that sounds really simple, right? It's not all that simple, particularly for those of you who have tried to do it, you might have been overcome with some difficulties.

So let's talk about why that is.

Some of you may have tried to embark on weight loss through altering your diet or eating less, restricting the amount of the food that you eat and that can be really challenging and the reason for that can be understood by looking at how our bodies have developed over time and what mechanisms are in place that are stopping us losing weight.

If you think about to our "hunter-gatherer" ancestors as some of you might know, they were very physically active, day to day in order to create shelters, hunt and gather for food and relocate as required. And, not only were they very physically active, but they also didn't have a ready supply of food so they didn't have food around them all the time and as a result, the brain and the body had to develop mechanisms to ensure its greatest chance of survival.

This, however, can work against our long-term weight loss goals and particularly for those of you who have tried to restrict how much food you eat, you might notice that you feel hungry, tired, fixated on certain types of food and very motivationally driven to consume those high energy, high fat, high sugar foods and that's why they are so tasty to us, that's why pleasurable because when we eat them, the brain activates reward circuits that make it very, very pleasing to consume them again and this comes back to that hunter-gatherer lifestyle where they needed to eat energy in order to survive.

Of course the environment today is very different around us, we are not particularly physically active, in fact, we try and find opportunities to be more sedentary, most of us don't meet current exercise guidelines and not only are we very sedentary and less physically active, but we have an abundance of food around us. We can literally order food from our smartphone to our door at any time of day. That's crazy! We think about how that affects our energy balance. We have so much food around us and we are not moving a lot, so no wonder that so many people are overweight or obese and that's why we struggle to maintain a healthy body weight and it feels really difficult to do all the right things when the body is simply working against us.

It's not all bad news though.

This is why I am interested in exercise because we know that exercise can actually help shape what we eat and help us to make healthy food choices.

But how does it do that?

I would like you all to imagine a scenario. You have just gone to the gym, done a big long workout and perhaps you have gone for a run outside. You come home and on the kitchen counter, you see a big slice of chocolate cake. Now think about whether you would be more likely to have some of



the chocolate cake because you deserve it and you want to reward yourself for the hard work you have just done, is there anyone here?

That's me!

Alternatively, you might be less likely to have some of the chocolate cake because you don't want to undo the hard work you have just done in the gym, anyone here?

Hopefully, the ones that didn't put their hand up before?

So, what is it about the exercise that you imagined or what is it about you that makes you more or less likely to consume those high energy, tasty and pleasurable foods after a workout and how can we use exercise as a tool to make healthy food choices. That's a research question I am very interested in.

What can we do about exercise to get the most benefit for our health and wellbeing in the long-term?

Does anyone here, that is not an exercise professional or an exercise researcher, know what our current exercise guidelines suggest we should be doing?

Thirty minutes a day. Yes, beautiful! So, that's essentially what it is, thirty minutes of moderate-intensity physical activity per day, on at least five days of the week but preferably all. And that's the minimum that we should be getting.

Like I said before though, most of us aren't getting that and not only that but for someone that has never exercised before, thirty minutes a day, what does that even mean? How do we start? Is that going to give us the most benefits? Do we need to do more? Do we need to do less? There's a lot of questions that are around these guidelines so I would like to give a bit more clarity on around how we can do exercise and how these will then have an impact on what we eat and whether or not it's going to be likely, helpful in the long-term in terms of maintaining a healthy weight.

Exercise professionals will often use what we call the "FITT" principle to prescribe exercise. Some of you might have heard this before, particularly if you work in an exercise setting. FITT stands for Frequency, Intensity, Time and Type. These give you some clues about some of the things that we can actually shape in exercise if we want to then get the most benefit from it.

In terms of frequency, what we know is that when people exercise more regularly, they are more likely to be able to better regulate that appetite and what that means is they are in tune with their bodies energy needs relative to what they have either consumed previously or expended previously through exercise. And we know that through research studies in which participants have come into a laboratory and they have consumed on two occasions either a high energy meal or a low energy meal and quite often we can do that by giving them a milkshake or a liquid meal and we can actually change the energy content in that meal without people knowing how much they have consumed in terms of the energy.



What we have seen time and time again, is that when people exercise regularly, they actually are better in tune with their bodies energy needs. So when people who exercise regularly consume the high energy meal, they consume less food at the next meal. So, it's a really simple message.

Regular exercise is better than none. There is nothing new here, no tricks unfortunately in terms of the frequency.

With respect to "I" for Intensity in the FITT principle, there has actually been some research to suggest that when we do high-intensity exercise relative to low or moderate-intensity exercise this can suppress our appetite and how much we eat and the hours that follow. Some of you might be able to relate to this.

The first time I ever walked into a gym, I remember very, very vividly. It was over ten years ago and I did a Spin class. Has anyone here done a Spin class in a gym before? Yep, very, very intense and very vigorous and for those of you that have done a Spin class, you will know that when the exercise instructor shouts at you to keep turning the dial up, you never actually do that, NEVER! They do many, many classes, we don't, this was my first ever class. So the fool I was, I kept turning the dial up and it was harder and harder and harder and 45 minutes on the bike at a very high intensity. What I remember vividly is barely crawling out of the gym. Having to lie on my bathroom floor for about an hour because I felt so sick afterwards and let me tell you the last thing I wanted to do was eat.

So, yes it will help to suppress your appetite if you feel so sick after doing high-intensity exercise but probably not the best thing to be recommending, so everyone, and particularly someone who has never done exercise before, it can be quite daunting and particularly if consider people psychological experiences to that exercise, you are probably not going to do it again.

We are going to put that aside for now and we will move on through the FITT principle but I just wanted to flag that for now.

If we consider time, this actually refers to the duration of the exercise. So, some of you are aware already that we should be doing thirty minutes a day but is that the optimal amount, is that going to help for weight loss and how much should we be doing?

When we look at, first of all, duration of exercise, there isn't really a "one size fits all". We know that when people exercise, say for twenty minutes or forty minutes, the relative amount of food they are going to eat afterwards is probably quite similar. The message here is, the longer the exercise the better, however, a lot of people don't have time to exercise. That's a number one barrier. We are not going to go out and tell you all to do an hour to two hours of exercise a day just because you might get additional health benefits or you might eat less potentially afterwards because people just aren't going to do it.

We can actually split up exercise throughout the day and we have seen health benefits, even if you do your exercise in small blocks, even if its ten minutes a time to accumulate up to thirty or sixty minutes a day, you will still get additional benefits or you will still the benefits as if you were doing it in one sitting. The thing to note is that because we are likely to consume food after that session,



we don't want to be eating the same meal three times a day, whereas we would just be eating that one if we did the one session.

Just keep in mind, if you do break up your exercise in a day, you are probably still going to get benefits but just make sure you don't eat a full meal afterwards to try to compensate for the exercise you have done.

For those of you interested in whether you should be exercising in the morning or in the evening, the time of day effect, some of you might have heard that if you exercise in the morning you might be more likely to burn more fat and therefore you can lose more weight.

Others might have heard that you should exercise in the afternoon because you will have more energy. I can't keep up anymore with what people are coming up with, but the really the recommendation here is always, anytime you can find to do physical activity and exercise is always going to be the best for you because you are more likely to be able to sustain it in the long term

If we move on to our last "T" in the FITT principle, this stands for "Type". We can think about this in a number of ways. We have already talked about our exercise guidelines which tell us we should be doing moderate, intensity exercise and for those of you who do that exercise, you might be doing things like running or jogging, swimming, cycling, anything really that gets the heart rate up is considered aerobic exercise.

An alternative form of exercise to this is resistance exercise and quite often this involves going to the gym, lifting weights or just putting any sort of resistance on the major muscles in the body and we have actually been really interested in seeing whether or not peoples eating behaviours will change as a result of these types of exercise and what we have done is got people into the lab and monitored how much food they eat, following a resistance type session and an aerobic type session. We have actually seen that the amount of food that people eat afterwards is pretty similar.

The key though, is that if you are trying to lose weight and again thinking about those scales and trying to tip them away from the balance position and expending more energy than we consume, then aerobic exercise can be really useful for expending more energy, but both have their benefits.

I have been really interested in the last few years in exploring how if we did aerobic exercise, we can further split that up and look into how a popular form of training over the last few years, which is "HIIT" training or High-Intensity Interval Training and how that actually compares with our current guidelines or our standard care of exercise prescription.

Some of you might have heard of HIIT training and briefly, this involves short bursts of high-intensity efforts interspersed with some sort of an active or passive recovery.

So really, it is just alternating the format or the session.



I have been particularly interested in the last few years because I have seen a lot of pop-up gyms, a lot of articles come out and people are really talking about the benefits of HIIT because you can supposedly get the same benefits in a short period of time.

So, I wanted to see if this a feasible form of exercise and are people going to be likely to do it in the long term.

A few years ago, a study was done in our school in UWA and in the study, the researchers got participants to come into the lab and do a couple of exercise sessions which was either formatted as a HIIT styled session and so, very short, high-intensity bursts of effort and then a low intensive active recovery, or they did the current exercise guidelines of steady stayed continuous exercise.

What the researchers did after the participants did the exercise, was got them to eat from a big bowl of porridge and the reason they did that was to see how much food they consumed and low and behold when people did the High-Intensity Interval Training, they consumed less food and again this probably comes down to the idea of intensity. So, even just short bursts of intensity might just be enough to get the same benefit in terms of appetite suppression.

None of the above that we have talked about though, the frequency intensity for time and the type matters if you don't enjoy the session though. If you don't enjoy the exercise, no matter how many benefits you are probably going to get from it, no matter how much you might even lose weight from it, if you don't enjoy it, we can argue that you are not going to do it in the long term. And we know that from our study of human motivation.

Enjoyment is crucial and particularly in exercise which can be very difficult to do. It can be very challenging and very unpleasant at times and we need to like what we are doing.

We have shown that has also important implications for what and how much we eat and the way we have shown that is through a research study we did a few years ago.

We wanted to look at one aspect of our psychological experiences and exercise which we could manipulate and that was choice. And the reason we wanted to look at choice and exercise and that effect on what people consumed after is because choice is a powerful tool for promoting high-quality motivation. You know if people choose to do something they will probably choose something like and are interested in and as a result, they are going to continue to do that over time because they are more motivated. They have got high-quality motivation to do it.

What we did in this particular study was invited participants to come into the lab and do a couple of exercise sessions for us.

Half of the participants were told they could choose the parameters of their session and especially they were told that they could choose the mode, situation, intensity and even just the music playing in the background.



The other half of the participants were still asked what their preferences were about the session but then they were told that despite their preferences they would have to exercise under conditions chosen by someone else. These poor guys hated the session and admittedly so because they didn't choose what to do in the session. But not only did they not enjoy the session as much as those who did have choice but when we looked at how much food people ate afterwards which was through a buffet-style meal. We gave people healthy food, such as cereals, low-fat milk, whole grain cereals, fruits and then unhealthy things like croissants, biscuits, muffins and all the yummy things. We actually saw that when people didn't have a choice in exercise, they not only consumed more food but they specifically chose the unhealthy options and consumed almost double the amount of energy from unhealthy foods.

So next time you go and do exercise and you drag yourself to a session that you don't particularly enjoy and you don't really want to do, just think about what you eat afterwards.

Since doing that study, I have been interested in looking at what else we can shape in exercise if choice is such a powerful tool, for not only this long-term adherence of exercise but also the short term results that we see.

What other psychological experiences are important then?

We have heard tonight already, that social connections to others are really important and through our study of human motivation, we know that that is the case, all of us have three basic universal psychological needs and one of them is to feel meaningfully connected to others around us.

Another one is to feel like we have choice and control and enjoyment over what we do, so we have spoken about that.

The third one is to feel like we are competent at what we do, to feel like we are good at what we are doing and achieving goals.

I wanted to see how we could further create better psychological conditions for people for to exercise in and create an environment that was very motivationally supportive and not only what that effect would be on what people consume afterwards, but also how that would interact with some of the other factors we have spoken about and like I have mentioned, being particularly interested in HIIT style training and Interval style training and I wanted to see how these factors would interact and we did a similar study in which people came into the lab and they did exercise and we watched what they ate and the same thing again, over and over, we see that when people are enjoying the session more, they are in more motivationally supportive conditions, they are going to be more likely to make healthier food choices.

And, specifically, we saw an interaction so that means that we saw this effect and it was specifically shown when people did a High-Intensity Interval Training Session.

The message here I want to get out to you is that when you are looking at the type of exercise that you are doing, perhaps think of a number of different factors. Sure, think about the physical



demands of that session but then how much are you enjoying it? Are you more likely to do it again? If you hate it, maybe not?

So, we have talked about some of the things in exercise that we can shape through both the physical demand and psychological experiences but I would like to leave you all with some tips if you do want to go and try these things, where to start.

Tip number 1 – Regular exercise is better than nothing. I am sorry, I don't have a magic pill for you here. More exercise obviously is better but really doing it frequently is the key.

Tip number 2 – If you want something different, if you want to try something new, maybe try adding some short sprints or bursts of effort to your work out. Even if you are going for a walk, adding in small jogs, is more Higher Intensity effort. You might still get additional benefits from that without having to endure what I did on the Spin bike and go for long intensity for a long period of time.

Third and most importantly, enjoy what you are doing. Choose exercise that you enjoy, you find fun, you find interesting because you are not only going to get more benefit from it in terms of participating in that exercise in the long term but you might be less likely to seek rewards in the form of unhealthy but pleasurable foods.

Now, we are all human and we do deserve a treat sometimes but if the paring between unhealthy food consumption and exercise occurs regularly this could have a significant impact on our health and wellbeing in the long term.

I hope that you can get an appreciation of how these behaviours are related and that you have got some tips and tricks that you can take along into your own lifestyles and I really hope that as researchers, if we have got any other researchers in the room, we can do more multi-disciplinary work and we can work together to find how we can best shape exercise or what the optimal exercise conditions are so that if people do go to the effort of exercising they are likely to get the most reward and the most benefit for their efforts.

Thank you.

[clapping]

Tim Colmer

Thank you, Natalya.

Are there any questions or comments?

Audience

Thanks. So what does it mean to enjoy exercise, because, I enjoy eating a Snickers and I exercise but they don't feel the same? [laughing]

Ms Natalya Beer



I think you are very right there.

Again, I think that if we look at the Snickers thing and that's probably because of those reward pathways in the brain that we have had to develop overtime to ensure that we don't starve, whereas we don't really see the same rewards in the circuit in the brain in terms of exercise.

Look, I think we were actually talking about this the other day. Some people really just don't like the feeling that exercise gives them and working hard, they just don't enjoy it. Other people, just love that feeling and that's what they thrive on and that's what they continue to do.

My advice to someone who absolutely hates exercise and doesn't necessarily enjoy that feeling is to find things within the session that you enjoy, whether that be catching up with friends and doing it together or doing it while you are listening to music you enjoy, doing it somewhere that you enjoy. So, you may not necessarily enjoy the feeling of exercise while you are doing it but the more you can enjoy around that session, I think the better.

Audience

Mine was more of point of the really [inaudible 25:12] but I go to classes every morning at six and I was never a motivated person before, but as I got older I think I actually go more the mental side of it. The social, the class. So for me, it's not so much about the body, I feel it's that mental and perhaps I ... perhaps other people don't have those endorphins but certainly, if I don't go I realise more mentally than I do physically.

Ms Natalya Beer

Absolutely, and we know through countless research studies but also through anecdotal evidence that we get amazing mental benefits from exercise and it's interesting that you say that your reason is for health reasons, we heard tonight that it's important to find your reason for why, and we know that when people are likely ... when people say that they want to exercise for their health, that is generally a stronger predictor as well as long term adherence and that's a fantastic point to consider as well.

Audience

If you have happy, healthy exercise participants and that person has become injured, what do you see in their eating behaviours at that point?

Ms Natalya Beer

That's a very interesting question.

I haven't actually thought about that too much but I think it depends on why the person is exercising. It depends on how they take their injury. I know for athletes, injuries can be absolutely devastating because that's their sense of identity and then they might seek other ways to form their identity. I think for the average person who is exercising and if they do sustain an injury again, if we think back



to some of the things we have spoken about in theory if someone stops exercising regularly, then they might lose that ability to better regulate their appetite, but I am not too sure, to be honest. I haven't actually done too much work in that area myself but I would be really interested to see what happens and whether or not people are more likely to be motivated to eat better because they know that they can't exercise any more or whether they would be likely to go all or nothing and absolutely drop it. So I don't have an answer for you, sorry. It was a very interesting question.

Audience

Can I ask a question?

Where do you recruit your disciplines from? Because it sounded pretty good. Some exercise and free croissant! [laughing]

Ms Natalya Beer

Please, please, tell my sister that! But do you really want to know? You don't want to know?

Posters on the back of toilets are really helpful because people are forced to look at it. But I thought I would be quite challenged in that I had to recruit disciplines who don't exercise, who are overweight and at the moment I am doing a twelve-week intervention study, so I am asking people to come in three times a week for twelve weeks and not get sick of me and I thought it was going to be really challenging to find anyone interested who would fit the bill. But actually, I have had such an abundance of interest of people that want to do it because, this is like their sign from above, this is it, this is my time to be accountable to someone and to come and do and it has been really fantastic actually. A lot of people do say they want to change their health and they just don't know where to start and again that is why I think it so important to translate our research findings and tell people that it's not necessarily ... there are no secrets ... one way to exercise, no secret pill and anything is better than nothing and in the answer to your question, posters are very, very helpful and the food that they get afterwards, they don't actually know that we are measuring, so we try not to advertise that too much.

Audience

From research I have done there is a lot of information around how different nutrients can assist us with exercise and also heal us in terms of injury, are there any particular really important takeaways that you could share around one of best things that we can be eating to facilitate exercise and also to guard us against injury and ageing and all of those generative things?

Ms Natalya Beer

That's a great question.

Although I am very interested in how exercise and appetite interact, I am probably more so interested in the opposite direction rather than what we should eat and how it affects exercise, so I don't have a specific answer for you but I think in terms of the general public, what we need to be



telling them in terms of dietary guidelines is to eat a balanced diet. We used to have the food pyramid but we have moved away from that now. I think if people are following the healthy eating guidelines they are probably going to be eating a wide variety of foods and food sources. They are probably going to be getting the adequate nutrients that they need to be doing the exercise and avoiding injuries.

I know there has been a lot of talk lately around different types of diets and I don't necessarily want to get into that but I think it is a very controversial topic at the moment and my stance is absolutely ... and I should say that I am not a nutritionist my background is an Exercise Scientist but my stance is that is as long as we are eating a whole food diet then that's going to have the most benefit for us in terms of injury prevention in the long term.

Audience

I was just going to ask about low-intensity workouts. I have been doing yoga for a couple of months because I much prefer it because I don't like the ... I have tried the other things and I prefer this so how does that sit with...?

Ms Natalya Beer

Great question.

There are a couple of aspects that we are touching on here. Low-intensity exercise certainly has its place and again, if we are coming back to what is going to have the most benefit for our health I think that anything that we can sustain in the long-term is going to have the most benefit for our health and it depends what your goals are. If you want to lose weight, yoga perhaps isn't the best tool because you are not going to be burning the most energy. But yoga is fantastic for the body for the mind, for flexibility, for destressing and if that is something you enjoy, absolutely I couldn't think of anything better to recommend. It's fantastic.

Tim Colmer

I think we have one final question.

Audience

Can you, just in relation to the yoga question, how important is muscle building in terms of staving off weight gain as well.

Ms Natalya Beer

Great question.



I think we focused a lot on weight loss in terms of using exercise too. You know, promoting again that negative energy balance and expend energy but having a good balance of muscle and lean mass as well, it's really important and some of our exercise guidelines do actually suggest that we should be doing resistant based exercise to help prevent a number of different issues down the track as we do get older, but for someone who wants to maintain a healthy weight resistance training can be really helpful because it does help to promote extra muscle and we didn't really touch on it tonight but the more muscle mass we have, the higher our day to day energy expenditure is. So we didn't really talk about that too much because that's probably a little bit harder to modify but certainly having a well-based muscle mass is important for helping us burn more energy on a day to day basis without actually doing any exercise.

Tim Colmer

Thank you, everybody, for coming along this evening and thanks Natalya for that fantastic summary of exercise and food and health.

Thanks also for our earlier presentation as well, today.

If you are interested to get the podcasts, make sure that you check our UWA social media channels in the next month or make sure you have registered with the UWA team so that they can send you links.

Please enjoy the rest of your evening and we hope to see you again for future events. We do Raising the Bar once a year and so we hope to see you again next year.

Thank you very much.

[clapping]