

Video Lecture 6 *(with slides)*

What is health and what is fitness?

The difference between health testing and fitness testing, why we assess, the effect of exercise on medical conditions.

Hello, and welcome to Video 6 of Knowledge and Application of Personal Training - how to personal train.

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We're going to look at definitions and have a little bit of a recap and a blend from our previous session before going into our next session, which is quite important. It does flow from one to the other. Hopefully you've had a look at some of the terminology. What is important when it comes to

definitions and terminology is, always simplify it - always go to the most simple definition and use that language when talking to clients. Clients will never be impressed by big words that they perhaps don't understand. Or if you talk unnaturally as well; just have a conversation as you would with anybody else. For example, if you want to talk about velocity and velocity training - well, velocity just means speed and direction.

Definition of Terms

ACSM (American College of Sports Medicine)

Organisation whose mission is to increase public awareness in the health benefits of regular physical activity.

Agility

The ability of the athlete to change direction many times quickly and accurately during the sporting performance

Balance

The ability to maintain a level of stability or equilibrium while performing.

Baseline score

Current fitness status prior to starting a training programme.

British Association of Sport and Exercise Sciences (BASES)

A professional body whose work is centred in sport and exercise science.

Body composition

The amount (normally expressed as a percentage) of body fat and lean body tissue the individual possesses.

Cholesterol

A waxy substance found in the cells and bloodstream, derived from the food you eat and produced in the liver.

Definition of Terms

Co-ordination

The ability to use several joints and muscles in a specific order or sequence.

Dynamic balance

Balance while moving.

Frequency

In relation to exercise, either the number of sessions per week or the number of exercises within the session.

Weight management

The process of influencing weight through exercise and diet.

Validity

The suitability or worth of a fitness.

Total fitness

An optimal quality of life including social, spiritual, and physical well-being.

Stress management

The process of reducing stress, which can be achieved through forms of exercise.

Definition of Terms

Motor fitness

A level of fitness which allows the individual to perform an activity, task, or sport.

Health screening

Screening done before exercise to identify any medical condition.

Strength

The ability of a specific muscle or muscle group to exert a force in a single maximal contraction to overcome some form of resistance.

Static balance

Balance while stationary.

Speed

The ability to move a short distance in the quickest time possible.

Skill-related fitness

Fitness components mainly relating to the sporting performance, namely speed, power, balance, agility, co-ordination, and reaction time.

Reversibility

The principle of training relating to the reduction in fitness that results from a decrease in exercise.

Definition of Terms

Reliability

The consistency of the scores obtained while testing on different occasions, for example a week later, without any changes due to training.

Reaction time

The time between the start of the movement and the stimulus.

Protocol

A system of rules for using a test.

Power

The ability to generate and use muscular strength quickly.

Physical fitness

A level of fitness which should improve ability to take part in sports and physical activities and lower the chances of developing health problems.

Muscular endurance

The ability of a specific muscle or muscle group, such as the biceps, to make repeated contractions over a significant period (possibly over a

It's not all about trying to impress people with your terms if you don't actually know the definitions as well – so it's really important to know the definitions, know the terms and try and relay those into simple everyday language.

What we're going to do now is talk about health and fitness which are often categorized together but I think it's really important to look at these two terms separately. We've gone over this before, but I really want to drive the point home. And again, it's something that you can consider - how does your business answer these elements as well? We define health as

Freedom from disease or conditions.

The World Health Organization in 1984, defined it as “the state of the body, which includes the mind free from diseases that is compatible with an active and enjoyable life.”

“ complete physical, mental, and social wellbeing free from disease”.

What is Health?

Definition of HEALTH

- "Complete, physical, mental and social well-being free from disease"

(WHO-World Health Organisation, 1984)

- "The state of the body which includes the mind free from diseases that is compatible with an active and enjoyable life".

What is mental health?

- "The state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life".

(American Heritage Dictionary, 2000)



What is Fitness?



"The ability of the body to carry out everyday activities without excessive fatigue and with enough energy left over for emergencies".

"The state or condition of being fit.....good health or physical condition".

(American Heritage Dictionary, 2000)

So - what is mental health?

“The state of emotional and psychological wellbeing in which an individual is able to use their cognitive and emotional capabilities, function in society and meet the ordinary demands of everyday life”.

Think about how exercise in itself can help with that. We're not expecting people to be psychologists or apply a psychological approach. However, having an understanding of the impact of fitness training and exercise on our overall health is really important.

For example, what sort of music do people like to listen to when exercising? Does anybody not listen to music when exercising?

Meditation - to meditate is to focus the mind on a simple mundane activity to let the rest of the mind be free. The reason why I bring that up is: think about when you go for a run - do you listen to music? Don't you listen to music? If you're running and then you've got yourself in that breathing, that rhythm that you can sustain, you're putting one foot in front of the other, a very simple and mundane activity in the sense that it doesn't require a lot of the brain to know how to run. If we get our mind right, then we can actually release the stress of the day.

Now, running will not work for everybody. Some people will enjoy having gloves on and punching a bag. Some people will just like to pick up a big, heavy object and put it back down again several times over. So, that is a form of meditation. Take it away from the traditional understanding of what meditation is. So, if your lifestyle has got really busy - all of a sudden, you've got a busy schedule and you haven't been able to do your workouts, you haven't been able to train - is it the sense that you haven't been able to meditate and free up your mind of all the issues that are now accumulating? Quality of sleep goes down. We don't eat properly. And so, it's actually really important to have an understanding of the psychological impact of our physiological training - psychological being “mental” and physiological being “the body”.

And then thinking about if you are going to be a personal trainer in a commercial setting, how are your choices, your interaction with your clients, going to help with offering the best service? How can you relay the information to your clients to get them to understand that taking an hour out for themselves is a worthwhile activity that's going to have some further impact down the line in their week? So, it's really important to have a good understanding, - maybe look at your own training and maybe look at when you feel stressed.

I know for myself, I enjoy running. I like to go for a run **with** music but I often like to train my mind to go for a run **without** music. If you are a keen avid runner, there are lots

of discussions about running without music, because you become more intuitive to your own body's rhythm - your breathing, your pulse rate. You become really aligned and balanced with your body. And so, doing these type of things is really important. And when I've been so busy and my schedules have got filled up, all of a sudden, I've thought,

“I haven't been for a run for a while. I'm going to make some time and go for a run to clear my mind, to have that mental balance”.

Fitness - the ability of the body to carry out everyday activities without excessive fatigue and with enough energy left over for emergencies. Now, when I think about that, I don't necessarily think about emergencies. I actually think it's the ability to get up. Let's think about a typical, stereotypical lifestyle of someone who might have to get up, sort their children out, get them ready for school, get them off - they get off to work. The work day finishes, they sort the kids out: food, family, housework, elements like that - perhaps only 10 minutes to themselves before they go to bed, - hygiene routine and everything else - and you're not out of breath or excessively fatigued. Now, if you try to then put in something else in that mix: an additional physical activity, you might find yourself struggling. So therefore you've got to reevaluate your lifestyle systems to support you being physically fit. So, as soon as that element is changed at all, as soon as your environment has changed, we've got the state or condition of being fit, in good health or in good physical condition.

Some people can go through their lives, not understanding that their physical fitness isn't really where it should be. And where is the baseline when we talk about physical fitness if someone's lifestyle needs adapting? It's a really in-depth conversation. It's important to split these two elements up. That will then look into how we monitor this as well the further impacts.

What we will discuss in today's session is the impact of fitness on medical conditions as well. It's quite important to monitor health and understand the difference between health and fitness - we talked a little bit about this at the beginning and we'll talk a little bit more about it now.

We need to assess health - things such as Chronic Heart Disease (that's what CHD stands for). It's a massive underlying issue for a lot of people who perhaps don't realize that they have chronic heart disease and you can train clients well into their 40s and above who didn't know they have a heart condition. What we're looking for and the things we need to look at is:

- hypertension
- lung disease
- diabetes.

It's really important to assess health because of course, we want to be ethically and legally sound in our systems and what we do - and provide the opportunity to sell the services that we have as well. So think about how you might want to construct your health assessment procedures. And then monitoring fitness. That can cover things such as

- heart rate
- blood pressure
- lung function
- hip-to-waist ratio
- weight

Obviously, other areas such as

- cholesterol screening
- posture analysis
- stress management
- lifestyle
- work
- relaxation relationship as well

So, these elements need additional training to be proficient at those.

Q: Why do we measure, why do we assess fitness?

A: Being objective when we evaluate fitness levels, monitor our participants, monitor their progress.

I acknowledge where they are above average or average, or perhaps below the expected base level.

We can monitor injury rehabilitation.

If we think about flexibility: if you have a client that's very flexible and you start doing strength work with them and they lose their flexibility, or you are regularly doing flexibility checks with them and as you progress on through their season or through a training regime, they're losing flexibility, that could be an indication that an injury is lurking if not already present.

And also, check that all your gym members or clients are ready to participate in your facility safely.

What is the difference between health monitoring and fitness testing?

Everyone can have health monitor checks regardless of age and ability.

Fitness testing is specific to individuals who have fitness goals in mind.

It may be unsafe or inappropriate to carry out fitness tests on individuals with medical conditions or physical disabilities/limitations.

Why do we assess health?

1. To identify risk factors for CHD.
2. To identify medical conditions
such hypertension,
hyperlipidaemia, lung disease,
diabetes.
3. Reduces the risk of legal action against you should a medical event/accident take place.
4. Provides the opportunity to 'sell' health club activities/fitness classes/personal training.

Why do we assess fitness?

1. Objectively evaluates fitness levels.
2. Motivates participants.
3. Monitors progress.
4. Acknowledges deficiencies in fitness levels.
5. Used to monitor injury rehabilitation.
6. Identifies overtraining and potential illnesses.
7. Checks if the gym member is ready to participate in the gym safely.

What areas of health do we monitor/ assess?

- Heart rate
- Blood pressure
- Lung function
- Waist/hip ratio
- Weight

Other areas of health assessment

- Cholesterol screening
- Posture analysis
- Stress management
- Lifestyle (work & relaxation time)



Now, again, with that, you may not do all of the testing that we recommend. There are so many tests that you can look to combine. You might put particular tests together for individuals. And if we're thinking about the services that you offer - you are not rolling out a cookie-cutter type of service. Again, we're personal trainers. We are matching a service where we have a structure and an infrastructure to what we do, but we're actually making sure it's individually fitted to the needs of the client.

And clients talk - clients will talk to each other. They'll say things like,

*"What do you do? What does my trainer do with you?
We both have the same trainer. What do they do?"*

If you're just rolling out the same thing for everybody, that could look to be a bit of a negative. And actually if clients start talking and they all doing different things with different people, it might get them thinking about why.

They might start asking like,

*"Oh, I understand you do this with this client.
Is it right to do with me?"*

This gives you an opportunity to talk to them, gives you an opportunity maybe to upsell your services as well. So, a really important thing to think about is the journey your client will make with you as they progress through the training with you, and then where the opportunities are to diversify.

Now we're going to look at the effects of exercise on medical conditions. So how does exercise help if you want to promote yourself and your services?

Well, let's have a look:

- release of stress
- improve flexibility
- reduce the risks of premature deaths
- reduce the risk of developing and or dying from heart disease
- reduce high blood pressure and the risk of developing high blood pressure
- reduce high cholesterol and the risk of developing high cholesterol
- reduce the risk of developing colon cancer and breast cancer.
- reduce the risk of developing diabetes
- reduce or maintain body weight or body fat
- build and maintain healthy muscles, bones, and joints
- reduce depression and anxiety
- improve psychological wellbeing
- enhance work, recreation, and sports performance

Effects of Exercise On Medical Conditions



HOW DOES EXERCISE HELP?


- Release of stress
- Improved flexibility
- Reduce the risk of premature death.
- Reduce the risk of developing and/or dying from heart disease.
- Reduce high blood pressure or the risk of developing high blood pressure.
- Reduce high cholesterol or the risk of developing high cholesterol.
- Reduce the risk of developing colon cancer and breast cancer.
- Reduce the risk of developing diabetes.
- Reduce or maintain body weight or body fat.
- Build and maintain healthy muscles, bones, and joints.
- Reduce depression and anxiety.
- Improve psychological well-being.
- Enhanced work, recreation, and sport performance.



Why would you not want to do it?

So, how can you sell that? How can you get people to recognize that it's really important? If we're looking at chronic heart disease - it can creep up on people over time. If you have an unhealthy lifestyle, if you start to build up fatty deposits in your body, exercise can really help prevent this. And if somebody has a history of this in their family as well.

We'll just take a pause for a moment to really understand our professional boundaries of who we are and what we do. It is quite important and you've got no problem saying these elements here - you can claim all of these and they are accurate and correct.



Coronary Heart Disease

Coronary Heart Disease (CHD) is a condition relating to the coronary arteries: the vessels that transport blood to the cardiac muscle. Over time if you live with an unhealthy lifestyle fatty deposits, called atheroma, can build up with these vessels causing them to become narrowed or even block entirely, a process known as atherosclerosis.

HOW DOES EXERCISE HELP?

How exercise helps to fight CHD?
Removes fatty tissue.
Helps body use fat stores.
Brings down Body Fat Percentage

When we're thinking about what exercise can do, you don't have to be an expert at things such as chronic heart disease or diabetes. You can go further in your investigations and studies and take it to a higher level. What would be important, what would be a good thing, is to purchase a medical dictionary. Within that, it will give you conditions. You can also get information on types of drugs and the impact medications have on your clients. And if your client was to say something to you that you weren't aware of, do not be afraid to ask them for more information. This in fact will show that you work within your boundaries and you're not trying to be a master of all trades. So, it's important to ensure that we're aware. Get your dictionary out and have a little look through it.

I've kept a hard copy with me throughout my career. You can progress up to become a GP Referral Practitioner - that's an additional qualification that some awarding bodies provide. It's a Level 3 qualification and what it does is that certain facilities, certain training providers can make a partnership with a local GP practice and then the local GP will be able to signpost their patients to you to start doing some training. It's a really good idea to diversify your clients and diversify your business and it's a growing market. There are actually some specific centres designed for training people who have diabetes and diabetes support groups that link up with personal trainers. So, if this is something that interests you, you might look at your area and see what provision is already there and how you can then build into that market as well.

HYPERTENSION

Hypertension is caused by the walls of the larger blood vessels losing their natural elasticity and becoming more rigid.

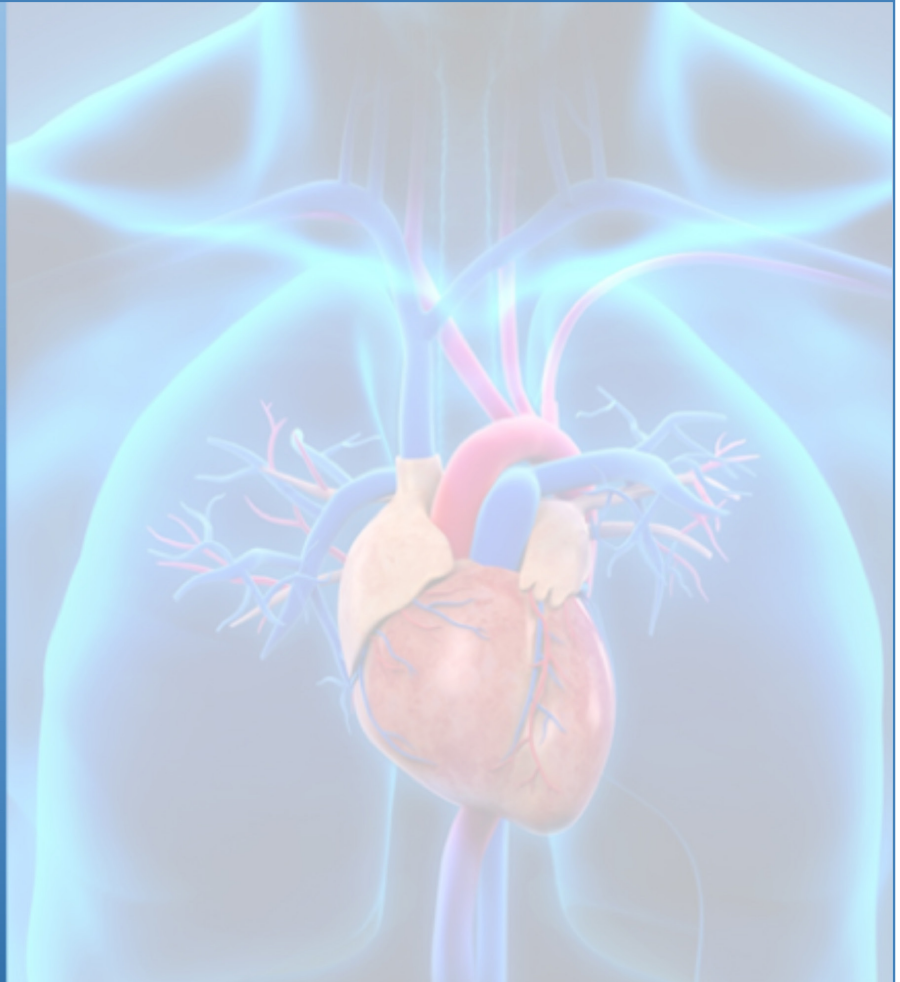
Smaller vessels constrict in size and as a result of becoming less flexible.

Hypertension rarely makes people feel ill. In cases of very high blood pressure, it is known to cause headaches. More common symptoms of hypertension include:

Problems with sight

Breathlessness

Frequent nose bleeds



Hypertension - the walls of large blood vessels lose their natural elasticity and become more rigid. If we put our systems under pressure from exercise-controlled, progressive pressure, it can help the health of the walls of your arteries.

Looking at all the symptoms that come from it, you're looking at

- life expectancy
- strokes
- kidney failure and
- a less efficient larger heart.

So, exercise obviously helps by reducing hypertension, maintaining elasticity and reducing pressure on the heart by lowering blood pressure.

In a sense, if someone's got high blood pressure, when we exercise, it's going to push that pressure up.

HYPERTENSION

The most serious symptoms associated with hypertension is the increased stress it places upon the heart.

Long term health problems that are associated with hypertension include reduced life expectancy, strokes, kidney failure, less efficient larger heart.

HOW DOES EXERCISE HELP?

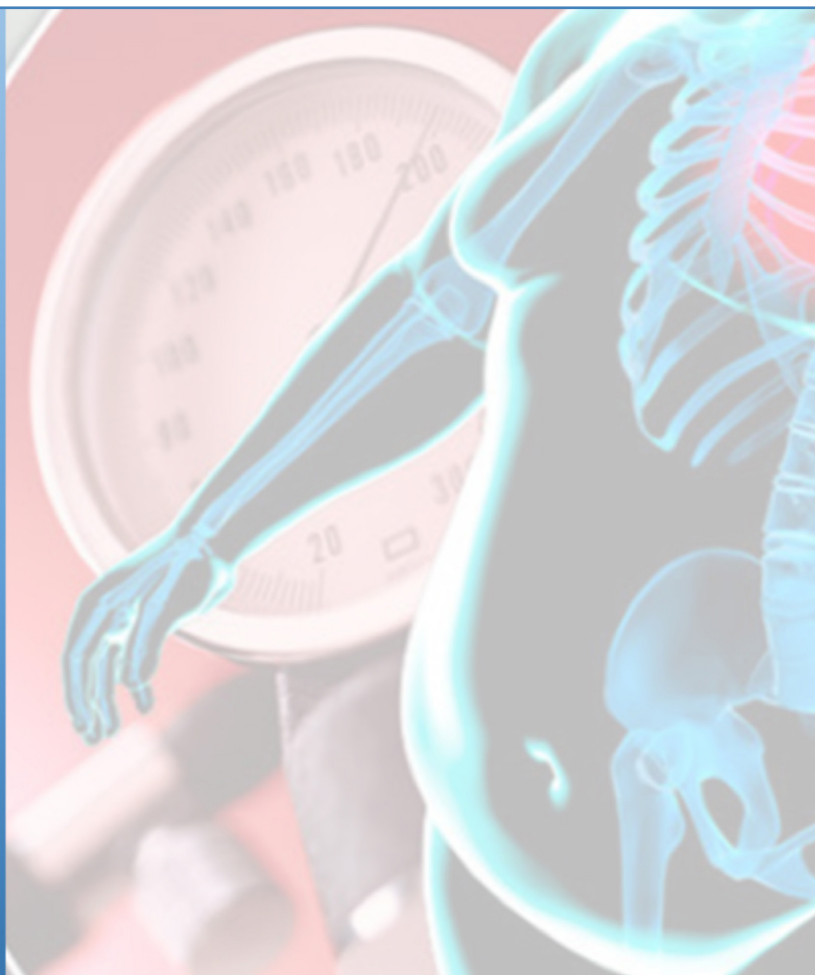
What effect can exercise have on helping reduce:

Hypertension

Maintaining elasticity

Reducing pressure on heart

Lower blood pressure



So, we are already in the danger zone when that person is stationary or at a relaxation point – when they're in a sedentary state. When we start to exercise them, we're pushing them up even more - a dangerous process. So, what can we do with that client? Let's say that a client comes to you and you've taken their blood pressure and they have a high reading? I would take three readings and then I would ask them if they have a history of that, if they've been seeing their doctors and see what they say.

Suppose they haven't. I always say, if there's an element of doubt, then there is no doubt. And what do I mean by that? If you are a little bit unsure, you're probably right and don't push the agenda. It's easy when you've got a client that's already walked through the door and you want to train them but you're a little bit unsure. Especially if you're at the start of your journey as a personal trainer, you may want to get a second opinion and there's nothing wrong with that. They can go to the doctors, have a note provided that they can come and train with you and that will cover you. It can be a long process to get a doctor's note and it can be a little bit of an irritation for the client. You might lose that client, but I'd rather lose a client from a sale than lose a client that has died in my centre, and now I've got a legal issue on that. So, think about your practice. Think about when you're going to press the point and say no.

How are you going to monitor that client when they're training with you? If they go onto beta blockers, it's a very difficult thing because you're going to try and train them to put their heart rate up, and then subsequently the medication is going to be fighting against that. It might just be about making the client more mobile. So, instead of applying pressure where we're making them do long endurance cardio, or high-weighted pressured exercises where we're loading weight in different positions, we might want to look at some other exercises. One key factor is that if you look at things such as anatomy and physiology, when we place any weight above the shoulders, that increases blood pressure really quickly.

So, if I work with someone that I know has got high blood pressure, I would always say that we don't do any weight bearing exercises that go above the chest or the shoulders. So, typically, we've got two very light dumbbells, and you start doing shoulder presses, I wouldn't do that with someone with high blood pressure. Having this type of knowledge, having this type of discussion with people can influence your training. You don't have to be specifically trained in these areas with additional training. It's that common sense approach that is going to help you. Especially as the market is growing, where lots of people are going to have these health conditions, they need to start being active.

Diabetes. Obviously there are two types of diabetes and these can come about in anybody's lifestyle really. Type One diabetes is what occurs usually in children and young adults. Type Two is what you develop after time, not solely from having an inappropriate diet, but it's often related to that as well.

It's a really interesting growing field where there's lots of research going into the type of activities that can help, but anybody that is actually already smoking, has hypertension, is overweight or has high cholesterol has a high chance of becoming Type Two diabetic. You can do things such as - and I will shamelessly say that I've asked my clients if they're scared of needles. If they don't start exercising with me, they're going to have to start injecting medication - and try and put that fear into them.

DIABETES

There are two types of diabetes:

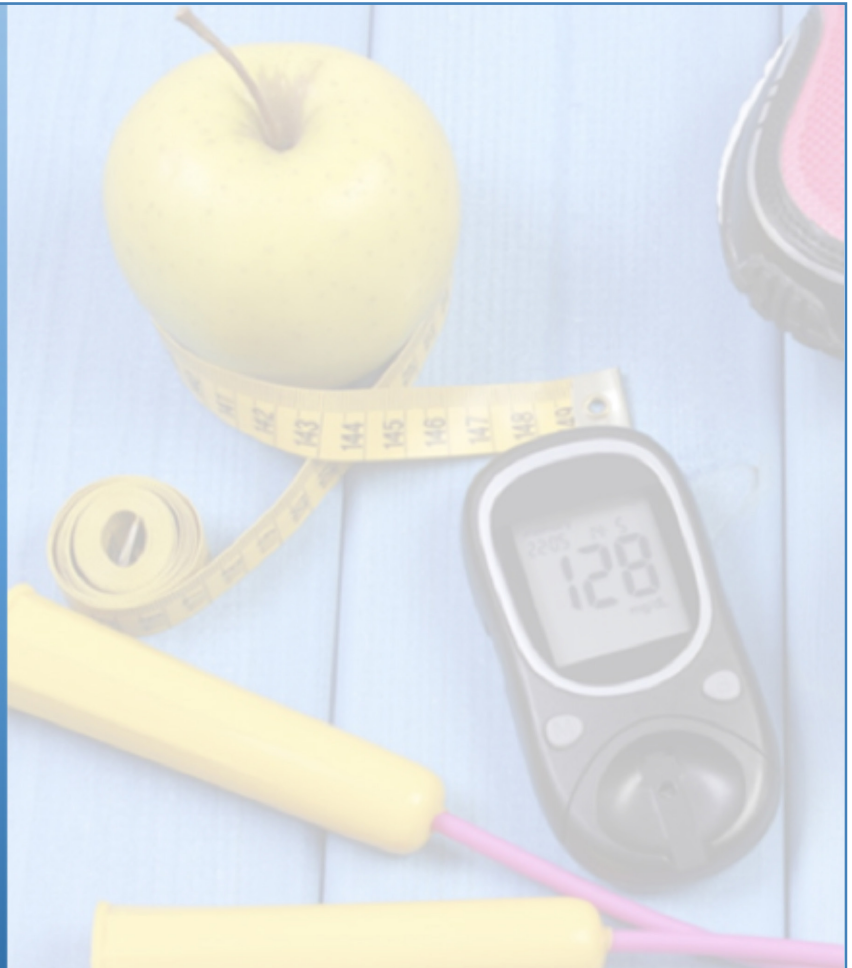
Type 1

Type 2

Diabetes is a condition which causes the blood-glucose level to become too high because the body is unable to produce insulin, the hormone that normally reduces blood sugar levels.

Type 1 diabetes is a condition that usually occurs in children and young adults. The body attacks the gland which produces insulin and stops the body producing it.

This condition is managed by insulin injections.





TYPE 2 DIABETES

Type 2 Diabetes usually occurs slowly and is most common in people over the age of 40 or who are overweight. The body still produces insulin; however, it does not produce enough to influence the body. Type 2 diabetes is intricately linked to obesity, but also physical inactivity and family predisposition.

This condition can normally be controlled using balanced diets and regular exercise. It is only in extreme cases that medication and insulin injections are required.

Diabetes is linked to CHD as high blood glucose level cause the walls of the blood vessels to become furred and therefore increase the chances of atheroma developing. Diabetes also increase the effects of other CHD catalytic factors, such as

- Smoking
- Hypertension
- Obesity
- High Cholesterol

And this will always be the problem - that people cannot see the potential risks that are so far in the future that they don't have a resonance with them today. And you've got to find a way of getting connected with them to exercise, because they can't see the long-term issues until they're really too far down the line where exercise will have an impact. But it'll be a smaller, progressive impact than if they did it earlier. So, you've got to really think about how you're going to make an impact with your client.

So,

- exercise uses energy and therefore controls your blood glucose levels by using it up as fuel
- exercise controls your weight and allows your body to utilize the insulin available effectively
- exercise also reduces the risk of other conditions which can cause an onset of diabetes.

HOW DOES EXERCISE HELP?

Exercise uses energy and therefore controls your blood glucose level by using it up as a fuel source.

Exercise controls your weight and allows your body to utilise the insulin available effectively.

Exercise also reduces the risks of other conditions which can cause the onset of diabetes.



So again, hopefully what you see there is that you haven't got to go really scientific with your explanations in terminology. That's a real safe definition that you can just bank on. Being aware that that could really answer your question.

*"I've got Type Two diabetes, Type One diabetes.
How will exercise help?"*

Now people with Type One diabetes can often have different reactions to exercise and different physiological cues that they know when they're having a hypo -so they can actually monitor that.

So, it'd be really good to have that conversation with someone and understand what their specific responses are to exercise. If they exercise at the end of the day, at the start of the day, in the middle of the day, can you adapt your service to support what's best for them? These are some of the conversations to have. And if you're a little bit unsure, if you call any of the UK diabetes charities, they will give you this information, support you and put it into context.

They're more than happy to support you at no cost to ensure that you're a valid practitioner. If you want to go further into this, there are journals and documentations that are at a higher level than Level Three that make really interesting reading. What you've got to think about is how will it impact on the services that you offer.

Things such as **osteoporosis**. One in three women will develop osteoporosis while only one in five men will. It's often referred to as "brittle bone disease", where your bone density is reduced in old age and is really more susceptible to breaks and shatters as well, which is really hard to obviously heal or rehabilitate. Weight-bearing exercises help prevent the onset of this condition. It's just very basic exercise. And when we're talking to people about this, having that knowledge will help you sell your services and justify what it is that you're doing.

I hope you've enjoyed this video and I look forward to seeing you on Video Number 7. Have a little bit of recap on each one of these and review the journey as it goes through. We're going to look at more about programming and training in the future video.