



My@Campus

Learner Guide

PAP1 – Part B – Programming



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Unit introduction

Welcome to the **PAP1 Programming, anatomy, and physiology – Part B** cluster. This is made up of the following Unit of Competency:

- **SISFFIT003 Instruct fitness programs**

Before you begin please read through the following frequently asked questions.

What is the full name of the course award I am working for?

Successful completion of this course can count towards several qualifications. Check your registration details for the qualification you are working towards.

How much work is involved?

Whichever qualification you are working towards will have a number of units of competency you are required to complete.

We recommend that, to successfully meet the requirements of each cluster of units for this course, you plan to complete one cluster of units of study per month. You will receive your personalised study plan two weeks after your enrolment date. This study plan is a structured plan which allocates a manageable study timeframe, with the allocation of additional months at the end of your study period.

This will enable you to read through the materials, undertaking a range of activities which focus on this units. Then you will be ready for the final assessments at the end of this unit.

If I get stuck or need help, what is available?

The Technical Panel is available to support you during business hours, from Monday to Friday (excluding public holidays). You may book a phone coaching session with a Technical Advisor by emailing your questions to fitness.support@aipr.edu.au. One of the Technical Advisors will respond to you within two business days. In the meantime, whilst you are waiting for a response, we recommend that you continue working through your cluster of units learning and activities.

Aim: What is this unit about, and what will be expected of me?

SISFFIT003

This unit describes the performance outcomes, knowledge and skills required to plan, instruct and evaluate a variety of fitness programs and circuit sessions aimed at the health-related components of fitness. It involves programming and instruction of cardiovascular, resistance and flexibility programs for low or moderate risk clients who have completed industry endorsed pre-exercise screening and risk stratification procedures.

This unit applies to fitness instructors who work in a variety of fitness locations such as fitness, leisure and community centres. These individuals typically work independently with some level of autonomy in a controlled environment. Work is performed according to relevant legislation and organisational policies and procedures.

No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.

Learning objectives: What should I be able to do, when I have successfully achieved this unit of competency?

We are working with you to support you in developing your competence in the following areas:

SISFFIT003

- i. Identify client fitness requirements.
- ii. Develop program plans.
- iii. Conduct exercise sessions.
- iv. Evaluate programs.

What kind of work will I have to undertake and complete?

This is an online learning course, which is different from learning in the traditional classroom. You can work at your own pace, refer to your own past experiences and seek support, when needed. Each time you read and complete a set of information, save that work and return to it, if you wish to revise or review, at any time. Work through one module at a time. It will take time to adapt to online learning, so be fair to yourself, and allow yourself time to get used to this new and exciting way of developing your skills and knowledge!

How many modules are in this course?

There are **seven** modules to be completed within this course. They are:

1. Goal setting
2. Barriers to exercise
3. Designing a program
4. Programming templates
5. Split programs
6. Flexibility
7. New client program timeline / individual training session vs group training session

How are the modules presented?

Each module will provide you with an introduction and overview of information.

When do I get assessed?

You will submit your assessments at the end of this unit of competency. You can of course ask for help before or during your studies if you wish. Please feel free to read through the assessments at any time.

How will I be scored/assessed?

The Assessor is looking for a demonstration of your competence for this unit of competency. There are four assessment items for this unit of competency. Each of the four assessment items must be assessed as 'Satisfactory'. If any assessment item is assessed as 'Not Yet Satisfactory', this means that the item does not meet the cluster of units standards/requirements. You will then be required to review and resubmit the assessment item/s. The Assessor will provide comments for you for the purpose of assisting in revising and reviewing your submission to meet unit of competency's standards and criteria. Professional AIPPT assistance is also available for you, on request.

The final assessment outcome of the cluster of units will recognise you to be 'Competent' in each of the individual unit. This can only be confirmed when all four assessment items are assessed as "Satisfactory". You will not be deemed "Competent", until all four assessment items are separately assessed as "Satisfactory". This is the basis on which all vocational (work-based) training is assessed. Please note that neither scores nor grades are issued to candidates within the competency-based assessment process.

How will I know the difference between learning activities and final assessments?

Within this unit, you will be provided with the following presentations, in this order:

- **General information** – to read through, interpret and understand
- **Activities** – are formative learning activities, modelled on a self-assessment approach; answers will be provided automatically, on completion
- **Final assessment tasks** – are to be found in a separate resource; the Assessment area of My eCampus.

Additional learning aids (subject to availability)

- eLibrary of templates and resources available for you to use
- Video clips to enhance your e-learning (subject to availability)
- Webinars can be organised (subject to availability and numbers)
- Online chat forums are encouraged (subject to availability).

What icons are used throughout the course?

We have included the following icons to identify the different work you are going to undertake:

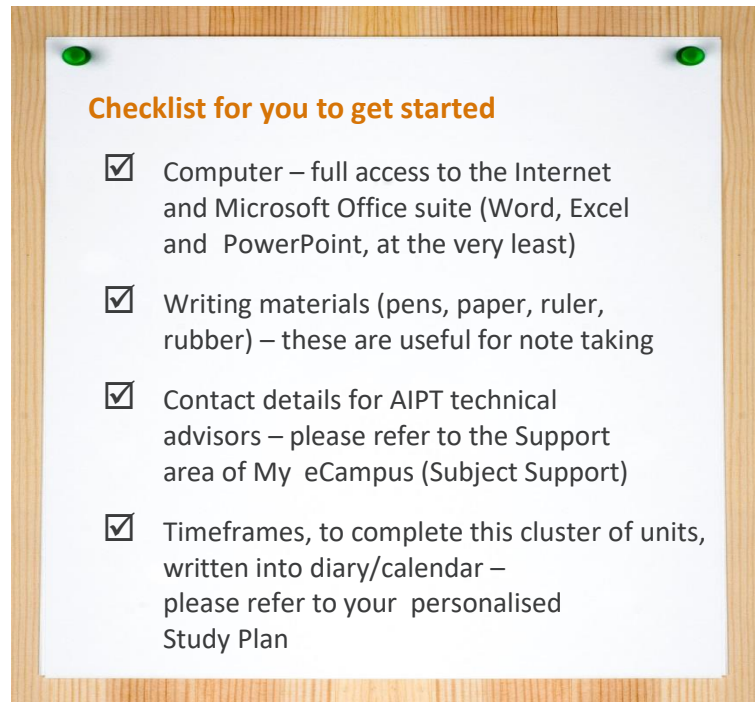
Icons	Icon type	Description
	Prescribed Reading	Courses with prescribed readings require you to have access to a particular text for the duration of the course. This icon represents readings from this text.
	Suggested Reading	These are readings which will add depth and understanding to your course participation.
	Definition	These represent definitions of important terms relevant to this course.
	Reflection	Reflections prompt you to think about certain subject matters. You are being encouraged to draw on your own personal experiences.
	Tip	Hints and tips to assist you in this subject area.
	Video	Videos to support the course content. Watch these short videos to learn more about the topics covered.
	Web	Internet web link to support course content and provide further reading or research opportunities
	Attachment	Attachments are separate documents that are referred to within the Modules. You can download the attachments from the Learning Resources section of this cluster of units in My eCampus.

AIPT is committed to, and continuously reviews, the design and development of their contemporary eLearning tools and resources to support you, in your studies. However, availability of resources will be subject to availability.

Recommendation to make the best use of your time

We recommend that you attempt to complete at least one cluster of units per month. A minimum of 12 hours per month should be set aside in a quiet area where there are minimum interruptions for you. This time is YOUR investment in YOUR learning and, in YOUR success.

Great! I think we are ready to get started. Please work through and complete the following checklist, to ensure you have the tools needed to get started.



To be successful within this cluster of units, we need you to demonstrate your competence. What does that mean for you?

To be competent is to: Demonstrate your skills, knowledge and attributes for completing a task/job to national standards.



Tip

Read through and identify any area/s in which you may wish to undertake personal research prior to commencing your studies.

Remember that AIPT has Technical Advisers who are available to work with you after you have commenced your studies. When contacting them (preferably by email), list the key questions or queries you have. By doing so, you will enable them to assist you in the best possible way.

Telephone appointments are also available! Their email address is fitness.support@aipt.edu.au.

So, let's look at the 'competencies' that are to be demonstrated, within this cluster of units.

SISFFIT003

Performance Evidence

- Plan, document, implement and evaluate at least five fitness programs using the principles of program design to suit the needs of clients with goals related to health-related components of fitness
- Plan, document, implement and evaluate at least three circuit training sessions with interrelated components
- Conduct sessions that individually or cumulatively incorporate:
 - Demonstration, explanation, and instruction in the following:
 - Cardiovascular exercises
 - Dynamic warm-up and cool-down components
 - Resistance exercises:
 - Squat
 - Static lunge
 - Push-up
 - Triceps dips
 - Prone back extension
 - Shoulder press
 - Abdominal crunches
 - Bent over row
 - Lateral raise
 - Modified dead lift
 - Prone hover
 - Flexibility exercises – static and dynamic stretches
 - Injury prevention strategies specific to client needs and program
- Modify programs for clients, addressing at least three of the following:
 - Technical requirements
 - Changing needs due to fitness adaptations
 - Changing goals
 - Client needs, objectives, likes and dislikes
 - Technical difficulty adjustments of exercises
- Legislative and regulatory requirements regarding fitness programs, sessions and circuit sessions:
 - Work health and safety/occupational health and safety
 - Duty of care

Knowledge Evidence

- Organisational policies and procedures in regards to:
 - Pre-session screening
 - Overcrowding
 - Ventilation and/or climate control
 - Hygiene
 - Participant to instructor ratio
 - Emergency
 - Risk management
 - Standards of personal presentation
 - Participant's clothing and footwear
 - Use, care and maintenance of equipment
- Principles of program design:
 - FITT
 - Overload
 - Progression
 - Specificity
- Fitness program planning for improvement of health-related components of fitness:
 - Body composition
 - Muscle endurance
 - Muscle strength
 - Cardiorespiratory endurance
 - Flexibility
- Program design and variables relevant to health-related components of fitness and factors affecting program design
- Components of a circuit training session plan:
 - Phases:
 - Preparation
 - Conditioning
 - Recovery
 - Adaptation
 - Rest intervals
 - Required equipment
 - Floor plan for equipment arrangement
- Circuit training session planning considerations and inclusions:
 - Equipment
 - Layout
 - Number of participants
 - Phases of session
- Training methods and consideration of intensity, program types, sets and reps, circuits, matrices, super-sets, pre-fatigue and interval training
- Benefits of fitness sessions and circuit sessions
- Contraindications and precautions to participation in session, and suitable modification options for participants where the safety of the participant is not compromised

Knowledge Evidence

- Exercises and programming requirements for:
 - Flexibility:
 - Dynamic or active range of motion
 - Static
 - Muscular endurance and strength:
 - Balance and coordination
 - Body weight
 - Equipment
 - Cardiorespiratory endurance
- Effects of different exercises on the major body systems:
 - Cardiovascular
 - Muscular
 - Nervous
 - Skeletal
- Methods of monitoring exercise intensity, techniques and progression:
 - Heart rate
 - Rate of perceived exertion
 - Observation of technique
 - Completed sets and repetitions
 - Loads lifted
- Manufacturer and exercise equipment specifications for safe use and techniques
- Signs and symptoms of exercise intolerance
- Motivational techniques and exercise adherence strategies

Standards established to assess you

As you will learn over the course of this unit of competency, to assess any performance requires that a minimal standard or standards (or benchmark) be achieved. This is written into a Performance Criterion.

A Performance Criterion will clearly state WHAT is to be demonstrated for assessment to be successful. The performance criteria for this cluster of units are set by the Australian Qualifications Framework (AQF).

Performance criteria

SISFFIT003

1. Identify client fitness requirements.	1.1 Consider and confirm client needs, expectations and preferences using suitable questioning techniques. 1.2 Review and advise client of outcomes of pre-exercise health screening procedures. 1.3 Refer client to medical or allied health professionals as required. 1.4 Identify potential barriers to participation. 1.5 Develop and document client profile for re-evaluation purposes.
2. Develop program plans.	2.1 Determine type of training, training methods and equipment required to achieve client goals. 2.2 Calculate total training volume required to achieve client goals. 2.3 Develop and document program plans that incorporate key instructional information to target components of fitness. 2.4 Develop customised training sessions that include a variety of exercises and equipment to meet client needs.
3. Conduct exercise sessions.	3.1 Allocate sufficient space, assemble resources and check equipment for safety and maintenance requirements. 3.2 Provide clear exercise instructions and confirm client understanding. 3.3 Demonstrate exercises, techniques and equipment to client. 3.4 Monitor participation and performance to identify signs of exercise intolerance and modify as required. 3.5 Select and use communication techniques that encourage and support clients. 3.6 Modify session as required considering basic mechanics, safety and fitness outcomes. 3.7 Respond to clients experiencing difficulties and answer questions as required. 3.8 Complete session documentation and progress notes.
4. Evaluate program.	4.1 Monitor and evaluate exercise program at appropriate intervals. 4.2 Request and respond to feedback from clients. 4.3 Review own performance and identify areas needing improvement. 4.4 Identify aspects needing further emphasis or attention in future sessions. 4.5 Evaluate program or activities and discuss modifications to program. 4.6 Document and update records of evaluation and modification of programs.

Module one: Goal setting

Clients will often provide trainers with general statements about the goal that they would like to achieve. Common examples include 'tone up', 'lose weight', or 'get fit'.

SECTION 1 – ABOUT GOAL SETTING

Why do we sabotage our progress?

To put it simply, to want the change, clients have to set out to do something different to what they already know and do. This can be an uncomfortable journey for some, so much so that they subconsciously retreat to their previous comfort zone.

With the question of how to reduce the likelihood of goal sabotage, the answer is in establishing specific, measurable, and realistic goal components whilst attaining appropriate resources within an ideal timeline: **SMART Goals**.

S

Specific:

This is the umbrella. For example, instead of "I want to run 5km", a much more specific goal can be set, such as "I'd like to be able to run 5km in three months' time (I can currently only jog 2km)".

M

Measurable:

For any goal to be effective, it must have a start and end point. For example, "I'd like to run 5km, and I can currently jog 2km non-stop".

A

Attainable:

Most goals require an extra level of support, i.e. friends, family, or outside assistance. For example, "To help me achieve my 5km run goal, I'll engage with a personal trainer to write me a tailored long term program."

R

Realistic:

Does this goal suit a realistic ultimate purpose? For example, "I've always wanted to run at least 5km, and once I reach this milestone, I can work towards a longer fun run."

T

Timely:

How much time is set aside to consciously work towards this goal? For example, "I've given myself three months to achieve my 5km run milestone. I'll be attending the gym three days a week, and I'll be periodising my outdoor runs to increase from week to week."

Short-term vs long-term goals



Encourage clients to set big goals. The common issue is that the client does not know how to get there. Therefore, as a trainer, you can help clients break their big – long term – goals into more manageable or short-term goals.

One example in ‘long-term programming’ is how to help a client periodise (breaking a program into training blocks) their 12-week training schedule so that after 12 weeks, they will be able to run a 10km fun run.

In this example, the 10km fun run is the long-term goal, and each week leading up to it will be

short-term goals consisting of progressive milestones. Consider for yourself when the last time you set a long-term goal was and then planned short-term goals in order to achieve it.

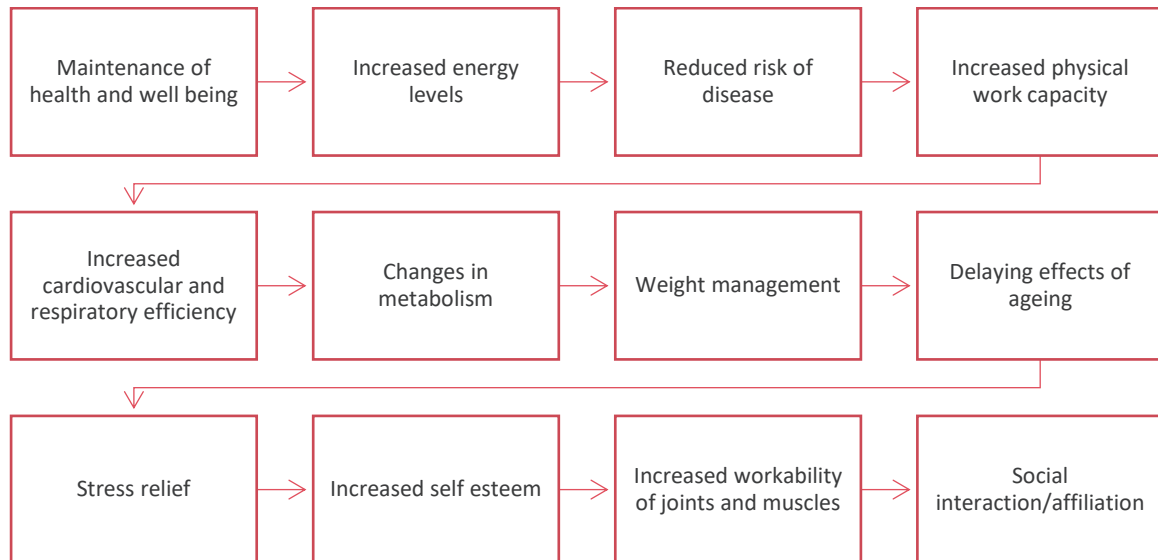
Pairing goals to training method

It is easy to map a client’s goals to the most effective training guideline when you know how. What follows is a number of common general goals and their correlating training guidelines.

Goal	Suitable Training Guidelines
Lose Weight. Get Fit. Have More Energy. Tone up.	Endurance Resistance Training (<65% 1RM) and Cardiovascular Training (50- 80% MaxHR)
Build Strength	Strength Resistance Training (75-90% 1RM)
Build Muscle Size	Hypertrophy Resistance Training (65-75% 1RM)
Increase flexibility	Range of Movement Guidelines (ROM%)
Body Composition	Resistance Training Guidelines
Speed and Agility – Athletes	Cardiovascular training (80-90% MaxHR)

SECTION 2 – BENEFITS OF EXERCISE

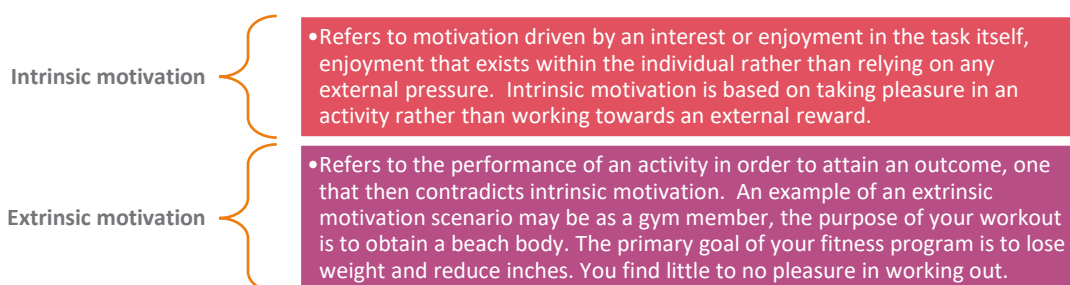
There are many benefits of exercise. Understanding the many benefits of exercise will help you to promote, guide and motivate clients to take up and adhere to an exercise program. Exercise has lifelong benefits such as the following:



Module two: Barriers to exercise

Finding the time and interest to build physical activity into daily life can sometimes be difficult. People can all come up with lots of excuses to avoid exercise.

There are several common barriers to doing physical activity. What follows are some intrinsic and extrinsic motivational ideas to help overcome these barriers.



SECTION 1 – COMMON BARRIERS

I don't have enough time

If your client feels as though they have no time for physical activity in their day-to-day life, try providing ideas such as:



Extrinsic Motivation

- Keep a diary of your daily activities for a week. Use the diary to assess how much spare time you actually have. You may have more time than you thought.
- Try to incorporate physical activity into your daily life. For example, get off the bus or train one stop earlier and walk the rest of the way. Take the stairs instead of the lift. This way, you won't need to go to the gym because you've been active throughout the day.

Intrinsic Motivation

- Try to break up your exercise sessions into two 15-minute blocks, or even into three 10-minute blocks if finding a spare 30-minute block each day to exercise is difficult. You'll enjoy it more knowing they're only short periods of activity.
- Do you love your family? Of course you do, so involve them! For example, instead of playing board games or watching television together, go outside. You could play backyard cricket, go to your local swimming pool, or take a walk through the park.

Exercise is boring

Sometimes, lack of interest is the problem rather than lack of time. If your clients think that exercise is boring, try to offer ideas like:

Extrinsic Motivation

- Exercise with a friend, join a local walking group, or take up a team sport. Physical activity doesn't have to be a solitary pursuit. Look at exercise as a way of being able to have time out with a friend whilst walking along the beach.

Intrinsic Motivation

- Change the way that you think about physical activity. Don't think that exercise must be painful or dull in order to be good for you. Physical activity is all about getting more movement into your day, and the activities should also be fun. Think about pursuits such as dancing, gardening, or yoga
- Mix it up. Plan to participate in a range of physical activities so that they don't get boring. Keep it varied, and keep it fun.

I don't know how to be active

There are lots of people ready to help your client when they're ready to get moving. Suggestions that you could make include:



Extrinsic Motivation

- Visit your local gym or sports centre. Most gyms, sporting clubs, and dance clubs offer an introductory free first lesson. Take advantage of these free lessons to help find an activity that appeals to you. By the end of this trial period, you would be fitter already and have an idea of the classes that are best suited to you.
- See your doctor for suggestions and support when embarking on a physical activity program. Get a routine check-up with your GP and find some direction on what steps to take next.

Intrinsic Motivation

- Pick something that really interests you. What sport do you enjoy watching on television? For example, if you never miss the Australian Open, perhaps taking up tennis would interest you.

I'm too tired

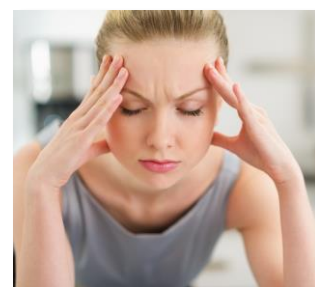
Life can be exhausting but, amazingly, the more active we are, the more energy we will have for everything else. Suggest ideas to your client, like:

Extrinsic Motivation

- Try to be active on most days of the week, and you'll soon feel more energetic. The fitter you are, the more energy you have.
- Rearrange your schedule if you can so that you can be active in the morning rather than at night.
- Exercise during your lunch break, or build activity into your commute to work by cycling or walking part or all of the way.
- Improve your diet. Healthy foods can boost your energy levels.

Intrinsic Motivation

- Reflect on what makes you feel great, such as holidays or dinners. If those scenarios could be bottled into a workout, how would it look?



I don't feel well, I'm too unfit

There is something for everyone to do, even if they are not feeling the best. Sometimes, activity can actually help them feel better, too. Recommendations for your client include:

Extrinsic Motivation

- See your doctor for a full medical check-up before starting any physical activity program, particularly if you are obese, over 40, haven't exercised in a long time, or have a chronic medical condition. Your doctor can assist and support you to make changes to your lifestyle.
- Investigate your medical condition. Talk to your doctor or local support group, or browse through articles to find physical activities that may be appropriate for you.
- Start slowly. Begin by exercising for about 10 minutes every day. Gradually increase the time and intensity as your fitness improves.

Intrinsic Motivation

- Choose an activity that feels comfortable. For example, swimming may be suitable because the buoyancy of the water supports your body.
- Don't push yourself too hard. If an activity hurts, decrease the intensity or stop altogether.

It's too hot, it's too cold, it's raining

There is always something that we can do regardless of the weather. Try offering ideas like:

Extrinsic Motivation

- Take a brisk walk through your local air-conditioned shopping centre. You might even be able to get the shopping done at the same time.

Intrinsic Motivation

- Have a variety of indoor and outdoor activities to choose from so that weather can't interfere with your exercise plans.
- Choose indoor activities, such as working out to an exercise video or stationary cycling, on days when you don't want to exercise outdoors.

I don't feel like it

Changing habits are seldom easy, but once we start to feel better, we see the benefits of the changes made. If your clients do not feel like being active, try providing the following ideas:

Extrinsic Motivation

- Find yourself an exercise buddy. You are more likely to commit to regular physical activity if you have someone else relying on you.
- Regular exercise has been known to ease depression and anxiety, aids in weight loss, improves sleep, and helps manage back pain. Find personal reasons to motivate you to become more active.
- Plan ahead for periods of physical activity. Make appointments with yourself in your diary.

Intrinsic Motivation

- Choose solitary pursuits, such as working out to an exercise video, if you feel uncomfortable exercising in front of other people.
- Make sure that your goals are reasonable. Avoid the 'all-or-nothing' trap of thinking that physical activity is a waste of time if it can't make you super fit or super slim.

Module three: Designing a program

SECTION 1 – PRINCIPLES OF EXERCISE PRESCRIPTION

There are four general principles that govern exercise prescription, which have been discussed earlier. Each of these will be considered in the specific context of resistance training.

Progressive overload

Application of a stimulus greater than that to which the organism is accustomed, each stimulus being greater than the previous one.

In resistance training, the simplest way to increase the overload is to increase the amount of weight lifted. However due to the different effects that can be gained from training, overload can also be produced by increasing the number of repetitions performed, increasing the volume of training, decreasing the rest interval or a combination of all of the above.

Specificity

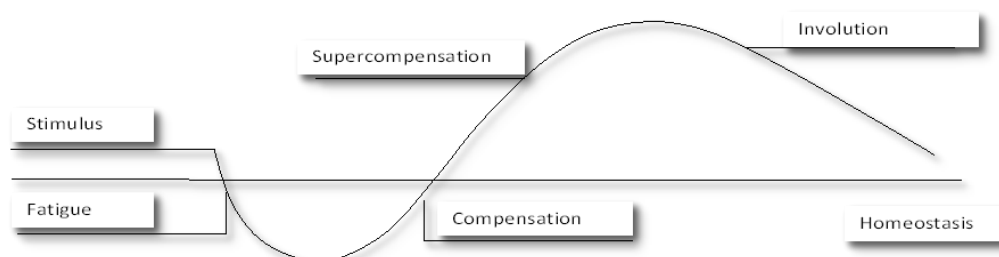
Adaptation produced will be specific to the nature of the stimulus (Specific Adaptation to Imposed Demand - SAID Principle). The adaptations produced from resistance training are particularly concerned with the neuromuscular system although the endocrine and cardiovascular systems are extensively involved. Resistance training has the capacity to produce many very specific adaptations particularly in relation to force production and body composition changes.

Individualisation

The stimulus needs to be specific to the needs/abilities of the individual. For a training program to be both safe and maximally effective, it needs to be designed to reflect an individual's need or goals and their ability to cope with it.

Reversibility

Non-continuance of the stimulus will result in the organism returning to pre- training levels. This principle can be summarised by the phrase "use it or lose it". As with any other type of exercise, if training is not performed above the minimum threshold required to improve or maintain the desired physical state, there is no biological reason for the body to remain at that higher level of readiness. In relation to resistance training, this may mean a decrease in the level of strength or a reduction in the amount of muscle mass.



The image: Supercompensation Cycle (above) outlines the generalised response to a stimulus based on the G.A.S (General Adaptation Syndrome) concept as proposed by Hans Seyle. Following training (stimulus), there is fatigue from the workout such as depletion of energy stores, damage to muscle fibres and neural fatigue. The body then starts to recover or compensate by restoring energy/muscle glycogen, repairing muscle cells and improving neural control. However at the point of homeostasis (previous performance or functional level) the body undergoes a process of supercompensation or overcompensation. This is a survival mechanism of the body, designed to prevent any excessive damage occurring to the structures and systems that have been stressed. In simple terms the body prepares for the next bout of stress (training) by improving above the previous level of function. In this case it replaces more of the energy stores, increases the size and strength of the cells and improves the neural control. If the body did not undergo these changes, any more stress may cause damaged to the various structures or systems. This produces the adaptation to exercise that in the long term leads to increase in strength or size of the muscles or the body simply becomes more efficient in its function. The final part of the curve (involution) demonstrates what occurs when no further training is applied. If there is no biological reason for the body to remain at a higher state of readiness to cope with the stress it returns to the pre-stress (exercise) level. Therefore strength levels will decrease, muscle mass will be lost and decreases in neural activation will occur.

SECTION 2 – F.I.T.T. PRINCIPLES

The FITT principle is used as a recommended guideline for including the specific principles into programming. These principles include:

Frequency	Intensity	Time	Type
How many sessions will the person perform in a given period of time per week? The frequency of the workouts is dependent upon the training intensity.	Intensity refers to the workload or effort expended during a workout session. This can be measured a number of ways including the percentage of maximum heart rate, percentage of maximum weight lifted, speed etc.	Duration of a program will be dependent on the goal and time availability of the client. Generally 30-60 minutes is the average time duration of a session. Also how often should programs be changed?	The type of program will be goal dependent. Goal being a cardiovascular type, which will mean prioritising the aerobic component of program. Strength; Emphasise the resistance training component or General fitness; Balance of all fitness component.

SECTION 3 – PROGRAM TERMS EXPLAINED

Reps

‘Reps’ is short for repetitions. A repetition is one complete movement through an exercise. A bicep curl is a great example. You curl your arm up and then back down. This complete action is one rep. The lifting phase of a rep is called the concentric phase, and the lowering part is called the eccentric phase.



Sets

A set is a group of repetitions. Although a typical set will be anywhere from eight to twenty or more reps, many programs use sets that include total reps of around eight to twelve. The idea behind a set is to use a weight that, by the end of the set, will have fatigued the muscle or muscle group that you are exercising.

No. of Repetitions	1	3	5	7	9	11	13	15+
No. of Sets	HIGH (5-12)				← ----- →			LOW (2-4)

Tempo (also known as time under tension or the speed of movement)

Tempo is a commonly used term in strength and conditioning. In short, tempo refers to how long the muscle is under strain during a rep. This is articulated through concentric (shortening), eccentric (lengthening), and transition phases.

You can write desired tempo in a program like a three letter word in a game of ‘hang man’: ____ ____ ____.



For example, in an exercise where the movement begins in an eccentric phase, like a squat, you might like the eccentric phase to take two seconds, the transition to take one second, and the concentric phase to take three seconds. You would write your specifications like this: 2 1 3

As another example, in an exercise where the movement begins in a concentric phase, like a seated row, you might like the concentric phase to take four seconds, the transition to take two seconds, and the eccentric phase to take three seconds. You would write it like this: 4 2 3

Concentric (or) eccentric phase

Transition phase

Concentric (or) eccentric phase

Rest

One thing to know about sets is that some programs utilise a rest period between them. This is how you relax between sets. A typical rest period should correlate to the goal of the resistance training guideline and will generally last from around 30 seconds to between three and five minutes.

The effects of different rest intervals and uses in training

Duration	Effects	Training Goal
< 1 min	- Increased GH release - Increased waste product build-up - Decreased ATP regeneration	- Hypertrophy - Lactate tolerance
1-3 min	n/a	- General fitness Stability/control - Mixed strength and hypertrophy
3+ mins	- Increased testosterone release - Increased neural recovery - Increased ATP stores	- Power - Strength

SECTION 4 – PROGRAM DEVELOPMENT STEP-BY-STEP

Designing fitness programs is like building a house. You start your design with the foundation. These steps will help you keep your program design in order so that you are able to create the most effective and efficient exercise regime

Step 1:

- Establish the GOAL and relate it to the FITT Principle (resistance, cardiovascular or flexibility)

- Resistance Guidelines 1RM%

Goal	% 1RM range	No. of reps	No. of sets	Rest between sets
Power	90 – 100%	1-4	3-6	3-5 minutes
Strength	75 – 90%	5-8	3-5+	2-5 minutes
Hypertrophy	65 – 75%	9-15	2-4	2 minutes
Endurance	50- 65%	15-20	1-2	30-60 Seconds

- Cardiovascular Guidelines MaxHR % (or HRM %) training zones

Heart rate zone	Heart rate percentage	Ideal for fitness level
Energy efficient or recovery zone (fat burning or weight loss zone)	50 – 70 %	Beginner Fitness Level
Aerobic (developing cardiovascular fitness whilst still using fat as a fuel source)	70 – 80 %	Average Fitness Level
Anaerobic (lactic acid zone; develops cardiovascular fitness but reduces fat usage as a fuel source)	80 – 90 %	High Fitness Level
Maximal (develops speed and can be performed in short amounts of time)	90 – 100%	

- Flexibility/Mobility Guidelines ROM degrees

Range of Motion	
Shoulder	
Movement (Joint Action)	Ideal Range of Motion (degrees)
Flexion	180°
Extension	45°
Abduction	180°
Adduction	0°
Medial Rotation	70°
Lateral Rotation	90°
Hip	
Flexion	125°
Extension	15°
Knee	
Flexion	140°
Extension	0°
Ankle	
Planter Flexion	45°
Dorsi Flexion	20°
Elbow	
Flexion	140°
Extension	0°

Step 2:

- Length of time for individual session MINUTES

Prep	Warm-up phase. 10% of total session
Conditioning	Working phase of the exercise program
Recovery	Cool-down. 10% of total session + extra stretching and length of time before next training session
Adaptation	how long between commencing program and client's fitness capabilities progress beyond initial program

Step 3:

- Type of Exercises relative to a) specificity b) exercise type

Specificity – each client has individual needs; ensure you account for their goals.

Capabilities or restrictions to consider:



Exercise type	Benefits
Compound Exercises that simulate real-life activities and that use a wide variety of movements through a wide range of motion. More than one joint used across multiple muscles, e.g. squat.	• More calories burned • Simulates real-life activities • Allows full body workout sooner • Improves coordination, reaction time, and balance • Improves joint stability • Decreases risk of injury during sports • Keeps heart rate up and provides cardiovascular benefits • Allows you to lift heavier loads and build full body strength
Isolated Exercise that utilises one muscle or muscle group and only one joint at a time. e.g. leg extension. Frequently used in physical therapy clinics and rehabilitation to correct specific muscle weakness or imbalance that often occurs after injury, illness, surgery, or certain diseases.	• Focus can be placed on one area • Muscle imbalance can be treated • Easier to complete unilateral movements • Improves joint stability before moving to compound movement • Builds confidence in beginner clients/special populations • Regression movement from compound movements • Provides more general stability across lever system
Isometric Where there is little to no muscle movement. The muscle tries to contract, but the body part does not move. Also known as 'static movement', e.g. an abdominal plank.	• Working muscle fibres that would otherwise remain 'idle' • Isometric movements force all muscle fibres to become fatigued • They allow you to "get the last rep first"
Metabolic Conditioning (Cardiovascular training) Is any exercise that raises your heart rate. Cardio exercise uses large muscle movement over a sustained period of time. e.g.	• Increase in VO2Max • Decrease in resting heart rate • Increase in stroke volume • Decrease in blood pressure • Decrease in body fat • Improvement in cholesterol

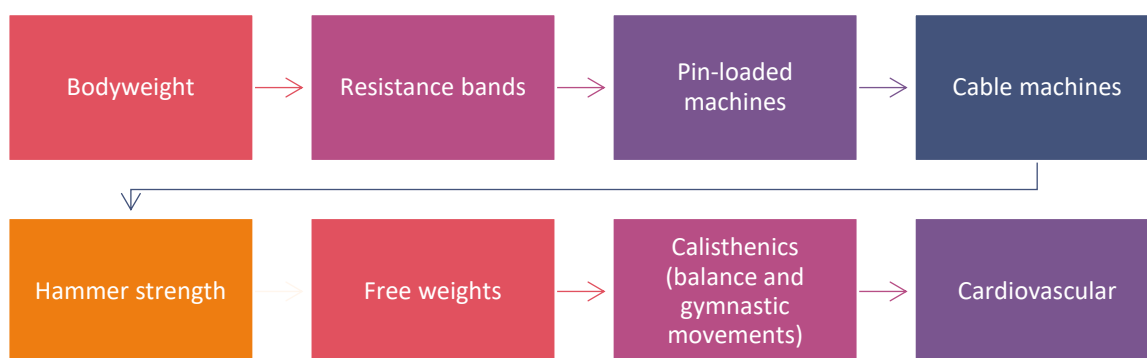
walking, running, bike riding, swimming, rowing, aerobic workouts.

- More effective transport and use of oxygen
- Improvement of glycolytic metabolism

Step 4:

- Equipment to help facilitate exercise.

A range of equipment may be used in order to help facilitate a specific exercise. This equipment could include:



Be sure to consider if the equipment you have chosen work well with the layout of the space and ultimately the program efficiency.

Step 5:

- Choice in overload method or exercise drills

Method	Description
Ascending pyramid system	Whereby the number of reps evenly decreases across many sets. For example, 10, 9, 8, 7...
Reverse pyramid system	Also known as descending pyramid system, whereby the number of reps increase evenly across many sets. For example; 1, 2, 3, 4...
21's, Partials or Matrix training	The range of movement of an exercise is altered to part range only for 7-10 reps over 3 sets. For example, the bottom range of a bicep curl is 7 reps, the top range of a bicep curl is 7-10 reps, the full range of a bicep curl is 7-10 reps
Eccentric training	Whereby the 'time under tension (TUT)' is altered to focus on longer activation time during the eccentric phase of the movement. A spotter may assist on the concentric phase.

Method	Description
	In this method of training, you must communicate how fast you want each phase of the movement – eccentric phase, transition phase, and concentric phase – to be performed at. Note: Eccentric training on clients who have been exercising to a specific program are more susceptible to a lethal condition called ‘rhabdomyolysis’. Rhabdomyolysis is the breakdown of muscle tissue that leads to the release of muscle fiber contents into the blood. These substances are harmful to the kidney and often cause kidney damage.
Ascending pyramid system	Whereby the number of reps evenly decreases across many
Drop sets	Whereby the number of sets decrease over 4-6 sets and the weight remains the same, or the weight decreases over 4-6 sets with the reps remaining the same.
Super setting	Completing two opposing exercises and repeating without rest. Often seen as a ‘push/pull’ combination or ‘upper/lower’ combination or ‘bicep/triceps’ combination etc.
Pre-fatiguing	In exercise ordering of required program, compound movements precede isolation exercises of the same muscle group. For example, squats to leg extension, etc.
H.I.T (High Intensity Training)	For this style of training, a client’s 1 repetition maximum (1RM) must be known so that the weight selection can be as accurate as possible. This training method is usually used in programming for ‘power resistance goals’. This method is either programmed for ‘Endurance resistance goals’ (high reps), or higher desired Heart rate training zones (> 80% MaxHR). Short, sharp bursts of exercise with little to no rest periods.
H.I.I.T (High Intensity Interval Training)	This method is either programmed for ‘Endurance resistance goals’ (high reps), or higher desired Heart rate training zones (> 80% MaxHR). Short, sharp bursts of exercise with little to no rest periods.
Giant sets	Involve four or more sets of each exercise focused on the same muscle group.
Tabata training	Is intervals of 20 seconds working phase, followed by 10 seconds of recovery and repeated eight times. A true Tabata is four minutes long.
A.M.R.A.P (as many round/reps as possible)	Stipulate a timeframe and exercises to be included, and repeat until time is up. Great for competitive groups. Count the completed rounds, or add up all your completed reps.
E.M.O.M (every minute on the minute)	- Combine ascending method. Start the timer. Commence at 1 rep, and balance of 60 seconds is recovery. After first minute, then commence two reps, and balance of that 60 second set is recovery. Repeat every 60 seconds, increasing reps until client can no longer fit reps into 60 seconds. - Set exercises for desired amount of time. Choose one or more exercises, and allocate reps to each movement within 60 seconds.

Method	Description
	Client is to perform as efficiently as possible, with remaining time being considered rest. Repeat for desired time.
For Distance	Client performs travelling drill in a predetermined time. Distance achieved in timeframe should be recorded.
For Time	Client performs predetermined drill as fast as they can. Time to complete drill should be recorded.

Step 6:

- Trial program on effectiveness

Trial	Consider
Timings	• Did the session run on schedule or a little over? • Will there be enough room to include time for coaching?
Intensity suitability	• Gain feedback • Refine • Repeat • Gain feedback • Repeat

Step 7:

- Record and file programs

Trainers, coaches, and players all transition in and out of their sports. It is important to record all information so that future stakeholders can review previous program information. This information helps build the athlete's and club's training profiles.



Step 8:

- Coaching exercises - ESIC – explain, show, instruct, cue.

ESIC is an acronym and excellent tool for remembering the important information you need to convey during an exercise demonstration. It's also beneficial in catering to all learning styles as some people learn better from watching, some from listening, and others from doing.

Coaching method	Action
Explain. (great for auditory learners)	Name the exercise Establish main target area of exercise Highlight the exercise benefits relative to the client's goal
Show Silence Shhhhhhhh. (great for visual learners)	• Trainer should perform the exercise without verbal communication • Showcase 3-4 repetitions, emphasizing on breathing technique • Client observes
Instruct. (great for kinesthetic learners)	Trainer to repeat showcase and break movement into three important steps. (using a squat as an example) 1. Setup (feet shoulder width apart) 2. Technical (sit back in a chair) 3. Core (chest proud) Trainer includes 3-4 essential verbal instructions whilst moving through the breakdown stages (refrain from using 'no' and 'don't' when instructing movements) • Refrain from anticipating need for correcting technique until you've seen the client perform the exercise (see below stage 'cue') • Refer to manufacturers equipment specifications for safe use and techniques where necessary
Cue Congratulate Communicate Correct. Client to do.	Cue stages of movement 1. Setup 2. Technical 3. Core • Congratulate client on movement/acceptance of challenge/great technique • Communicate and evaluate client's RPE to establish whether exercise intensity is within the desired training principal. – MaxHR, 1RM, ROM – Heart rate monitors – Observation – Completed sets/reps/load lifted with ease – Look for signs and symptoms of exercise intolerance • Correct client on performance

Coaching method	Action
	– Stop client if movement is detrimental to health/injury. Repeat (Instruct) phase of ESIC – If client's technique is not going to result in injury, stop after 3-4 repetitions. Give client one cue to ensure correction is made and then praise, repeat if necessary. Ask for feedback to validate clients 'feel' during correct movement. – Other signs of errors ○ Weight is too heavy or intensity level is too high ○ Exercise is too advanced for the client ○ Client has poor posture or a weak core ○ Client's flexibility or range of motion is insufficient to the movement

Module four: Programming templates

The following three programs have been designed with a similar foundation. Whilst they are different by nature of exercises, they achieve the same results. Their main point of difference is who the ideal client using each program would be, i.e. beginner, intermediate, or advanced.

SECTION 1 – BEGINNER PROGRAM

Exercises that have a low technical demand are best suited for individuals commencing an exercise program. This does not necessarily mean that machine or single joint isolation exercises are mandatory but exercises that can be safely performed by the client.

If a client has no previous injuries to limit performance, is reasonably fit and has sufficient coordination, then free weight movements may be utilised. There may also be a greater training effect from compound exercises due to the training of stabiliser muscles and integrated coordination patterns. Indeed over utilisation of machine based movement may have limited transfer to real world functional activities based on the lack of involvement of stabilising muscles.

Program example – Beginner Resistance Program (Muscular Endurance)

FitPlus Gym – Guaranteed results or your old body back.						
Program:	Beginner program – Machine weights – 30 minutes					
Warm-up:						
Dynamic exercises – leg swings, arm swings, trunk rotations, wrist and ankle rotations						
Duration will be between 3-5 minutes						
Exercise	Intensity 1RM%	Reps	Sets	Rest	Tempo	Notes/ comments
Lower body: horizontal leg press	60%	15	2	60 sec	303	Keep knees soft on transitions
Upper body pull: seated row	60%	15	2	60 sec	303	Retract scapula, keep elbows in towards your sides.
Upper body push: chest press	60%	15	2	60 sec	303	Adjust machine to suit client height and elbows at a 45 degree angle.
Core: toe taps	60%	15	2	60 sec	303	

						Activate core and control movement.
Cool-down:						
• 5min. Cross trainer. 50% MaxHR. • Doorway chest stretch, cross body shoulder stretch, standing lat stretch, standing quadriceps stretch, standing hamstring stretch, supine glute stretch . Hold for 30 seconds each side and repeat twice on each side						

SECTION 2 – INTERMEDIATE PROGRAM

Exercises that have a low to medium technical demand are best suited for individuals with some exercise history. Ideally the use of compound exercises and introducing more stabilisers will be beneficial for this client.

Program example – Intermediate Resistance Program (Hypertrophy)

FitPlus – Gym Guaranteed results or your old body back.						
Program:	Intermediate program – Free Weights – 30 minutes					
Warm-up:						
Dynamic exercises – leg swings, arm swings, trunk rotations, wrist and ankle rotations (5-10 reps per movement)						
Duration will be between 3-5 minutes						
Exercise	Intensity 1RM%	Reps	Sets	Rest	Tempo	Notes/ comments
Lower body: squat	70%	12	3	2 mins	323	Drive weight through heels. Chest up.
Upper body pull: cable row	70%	12	3	2 mins	323	Retract scapula and keep elbows close by your sides.
Lower body: stationary lunge	BW	12	3	2 mins	323	Feet shoulder width apart (like railway tracks)
Upper body pull: assisted chin-up	BW	12	3	2 mins	323	Set the scapula and lead with your chest.

Upper body push: push up	BW	12	3	2 mins	323	Place hands inline with nipples and keep shoulders at a 45degree angle.
Core: russian twist	BW	12	3	2 mins	323	Keep neutral spine and follow the direction you're going with your head.
Cool-down:						
• 5min. Cross trainer. 50% MaxHR. • Doorway chest stretch, cross body shoulder stretch, standing lat stretch, standing quadriceps stretch, standing hamstring stretch, supine glute stretch . Hold for 30 seconds each side and repeat twice on each side						

SECTION 3 – ADVANCED PROGRAM

More technically demanding exercises that require a base level of strength in prime mover or assistant muscles can be prescribed for more advanced clients. Once again the level of the client's fitness, previous training background, injury history and goals are all important factors in exercise selection.

Program example – Advanced Resistance Program (Strenth)

FitPlus Gym – Guaranteed results or your old body back.						
Program:	Advance program – Large functional movements – 30 minutes					
Warm-up:						
Dynamic exercises – leg swings, arm swings, trunk rotations, wrist and ankle rotations						
Duration will be between 3-5 minutes						
Exercise	Intensity 1RM%	Reps	Sets	Rest	Tempo	Notes/ comments
Lower body: front squats	75%	8	4	2 mins	323	Weight through whole foot. Parallel angle between torso and chin.
Upper body pull: chin ups	BW	8	4	2 mins	323	Set the scapula and lead with your chest. Slow and controlled eccentric phase

Upper body horizontal push: d-bell bench press	75%	8	4	2 mins	323	Hands inline with the nipples and shoulders at a 45degree angle.
Lower body: step ups with dumbbells	75%	8	4	2 mins	323	Drive on the way up and controlled step back.
Upper body pull: cable one arm rows	75%	8	4	2 mins	323	Retract the scapula and keep your elbows close to your sides
Upper body vertical push: shoulder press	75%	8	4	2 mins	323	Elbows slightly forward and close to your body.
Core: reverse crunches	BW	8	4	2 mins	323	Relax shoulder and head on ground.
Cool-down:						
• 3min. Bike. Lower heart rate to <60% MaxHR • Doorway chest stretch, cross body shoulder stretch, standing lat stretch, standing quadriceps stretch, standing hamstring stretch, supine glute stretch . Hold for 30 seconds each side and repeat twice on each side						



Attachments 1, 2, 3

The above Beginner, Intermediate and Advance programs are also available as PDF documents to download for your reference.

Please open and read:

- **Attachment 1 – Program example Beginner**
- **Attachment 2 – Program example Intermediate**
- **Attachment 3 – Program example Advanced**

The key point to note is that for the vast majority of clients, these templates will provide the foundation for the most effective and efficient program design. While these templates will cover the vast majority of client's goals and ability levels, it does not prevent the instructor from incorporating other exercises and movement patterns in the clients program.

SECTION 4 – PROGRESSION VS PREREQUISITE

Establish your client's ability to perform basic movements before asking them to attempt technically advanced movements.

The first rule of progression is that it has to make sense to the client. Simply making an exercise more challenging does not necessarily mean that it is the most effective option. For example, you might argue that squatting on a fit ball with one leg is more challenging than a simple bodyweight squat, but that does not mean that the client is improving on their squat.



In order for progression to make sense, the fundamental movement pattern has to remain the same, no matter what modification is made. For example, a single-leg squat is a progression from a standard squat even though they look similar, and as one is more difficult than the other, they require activation of different musculature. Hence, progression of the two movements should be pursued independently.

A distinction between progression and prerequisite needs to be made. For example, if your client wants to bench press, they should have been able to master the basic push-up first. The basic push-up is a prerequisite. Another example of a prerequisite for a kettlebell swing is a deadlift - if a client cannot safely deadlift then do not give them a kettlebell swing.

Client capabilities will vary when first starting their program. As the body adapts to the training, you'll be able to further the technical level of the exercises. Here's some ideas, showing the following movement progressions:

9 ways to progress the squat :		Supported to Unsupported Isolated to Compound
Progression Technicality	Suggested Exercise	
1 Isolated Exercises	Leg Extension or Hip Extension	
2 Supported Compound Pinload	Horizontal Leg Press	
3 Semi Supported Bodyweight	Fitball Wall Squat	
4 UnSupported Bodyweight	Bodyweight Squat	
5 Supported Hammer Strength	45 degree Leg Press	
6 UnSupported with Weight	Back Squat	
7 UnSupported with Weight +	Kettlebell Goblet Squat	
8 UnSupported with Weight ++	Front Squat	
9 UnSupported with Weight +++	Overhead Squat (OHS)	

+++ added intensity due to equipment or technique

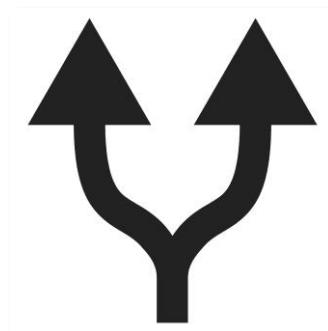
However, just because your client 'graduates' from the push-up does not mean that the movement should be left in the dust. Rather, it means that your client now has a larger range of exercises to choose from.

Not surprisingly, fitness professionals can become so focused on progressing clients that they often fail to realise that regression, or reducing the technicality of movement, is in fact still progression.

Module five: Split programs

The next progression from the total body program performed three times per week involves changing the frequency or amount of exercise being performed. Often the program is designed to train different body parts on different days. This is commonly known as a split program. Splitting the workout into different body parts on different sessions has a number of benefits:

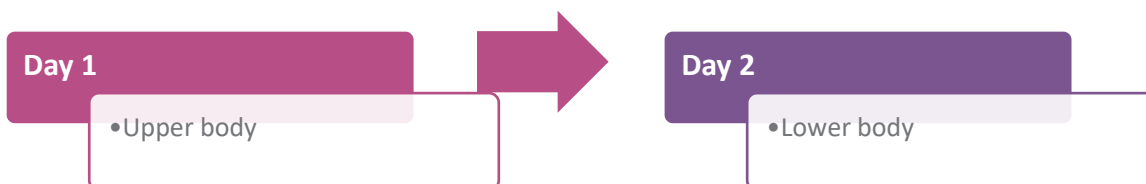
- Allows a greater volume of work higher level of intensity to be performed on each body part
- Allows more recovery for each body part
- Allows exercise session to be of a shorter duration
- Allows concentration on weaker body part
- Allows programming of other activities (e.g. sports training, CV activities) whilst minimising potential effects of fatigue



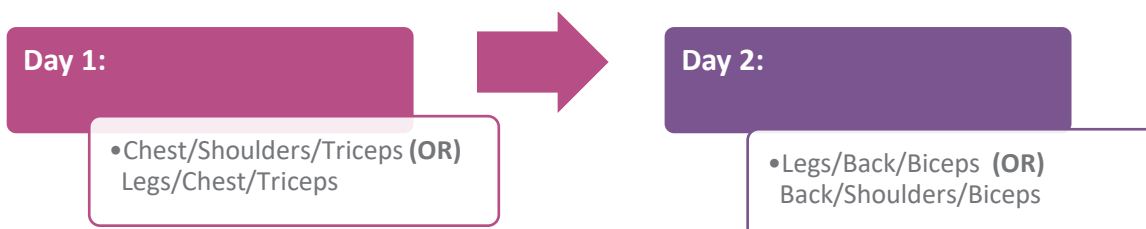
SECTION 1 – 2 DAY SPLIT PROGRAM

The most basic split program is to separate the upper and lower body into two workouts. Athletes who have a high volume of training using their legs often use this type of split since it allows them to schedule leg training alone without interfering with the demands of their sport.

One limitation is the high volume of exercises on upper body day.



Another common type of split program is based on the concept of training the pushing muscle groups (chest, shoulders, and triceps) together with the pulling muscle groups on the other day (back, biceps).

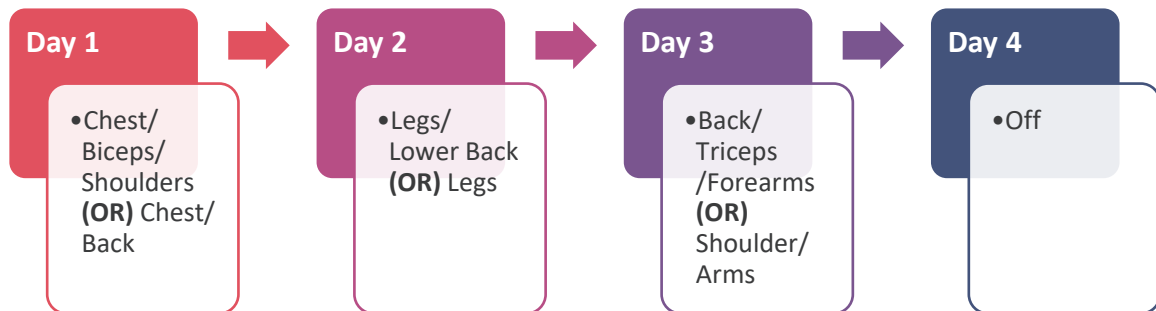


These training splits allow the client to train 2 consecutive days and have the weekend free for recovery and other activities. This would lead to a training format of:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Day 1	Day 2	Rest	Day 1	Day 2	Rest	Rest

SECTION 2 – 3 DAY SPLIT PROGRAM

A further advanced training split involves dividing the body part over three days as outlined below.



The benefits of such a split include:

- Training of one large and one smaller body part together
- Shorter more intense training session
- More rest for larger muscle groups over the training cycle since they take longer to recover
- Working smaller muscles more often since they recovery faster
- Rolling schedule - have rest days when life interrupts



This particular split is for advanced trainers only since there is the need to be able to train every day of the week. There are many ways of designing split programs but the key factor in all of them is to allow sufficient rest between training sessions to maximise recovery and progress. Without recovery, compensation and overcompensation will not occur and poor results or injury will result.

Module six: Flexibility

Flexibility is defined as the range of motion within a joint along the various planes of motion. Within each joint, there is an optimal range of motion (ROM) that is essential for peak performance.

Stretching refers to the process of elongating the muscles to improve ROM.

SECTION 1 – TYPES OF STRETCHING

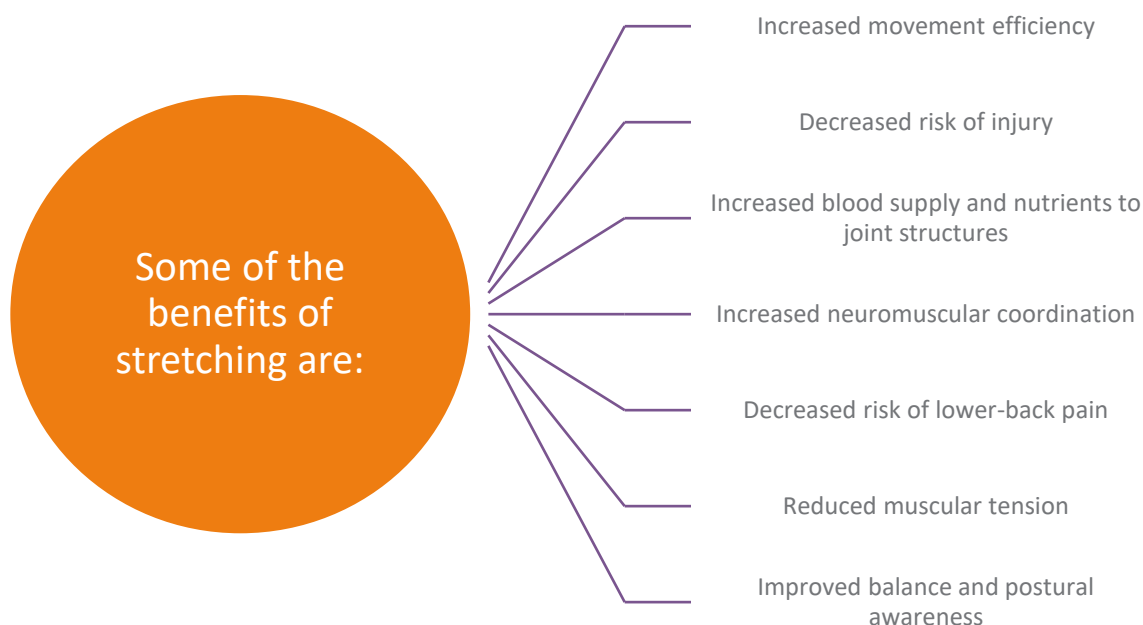


	Static Stretch	Dynamic Stretch	Proprioceptive Neuromuscular Facilitation (PNF) Stretching
What is the stretch?	Static stretching, is the stretch you are commonly used to such as reaching down to touch your toes. Static stretching, as the name implies, requires no movement.	Uses sports-specific movement to prepare the body for the activity to come. Contrary to static stretching it does not concentrate on stretching one single muscle, but rather to simulate movements that are important for a certain activity or sports.	Starts with a passive stretch held for about 10 seconds, and followed by an active contraction of that recently stretched muscle, then relaxes again. For example, in a PNF hamstring stretch, the hamstring is first stretched, followed by client applying gentle force against partner or band, and then relaxing again. This is repeated until an increased range of movement (ROM) is achieved.
Benefits of the stretch?	Effective in increasing range of movement.	- Excellent full body warm up before any type of intense activity whether you're about to play sports, or lift weights. - Improves Kinaesthetic Awareness. Preparing you for the intensity of your workout and all the different movement patterns that you will likely use. - Increased flexibility.	- Increased Flexibility - Enhance motion efficiency - Facilitate effective rehabilitation - Reduces likelihood of injuries - Great for gymnasts, figure skaters and dancers who already have a great ROM

	Static Stretch	Dynamic Stretch	Proprioceptive Neuromuscular Facilitation (PNF) Stretching
Limitations of the stretch?	- The major downside of the traditional static stretching is that it doesn't prepare you for the intensity of your workout. - Should be done at end of a session.	Less effective in increasing Range of Motion than Proprioceptive Neuromuscular Facilitation.	Requires partner or equipment to assist.

SECTION 2 – BENEFITS OF STRETCHING AND WHEN TO STRETCH

Flexibility is an important factor in all aspects of human movement, especially sport. Research has shown that athletes who are more flexible are generally better performers in their sport. Limited flexibility can result in a poor ROM and a greater possibility of injury to the surrounding muscles. Flexibility is improved by reduced muscle tension and using controlled force to increase the range of motion. Stretching refers to the process of elongation.



Depending on the method used, stretching in the warm up may have little or no effect on injury prevention or subsequent exercise performance.

For many years, static stretching was as an essential component of a warm up. However, static stretching involves holding the muscle in a stretched position. When, if ever, do we replicate this movement in exercise?

Dynamic stretching involves a controlled movement through the full range of motion. It can replicate the actions involved in various conditioning activities, hence may be more useful to include in a warm up.

SECTION 3 – SIMPLE STRETCHES, STEP BY STEP

Hamstring stretch

1. Lie on your back with your legs extended and your back straight.
2. Keep your hips level and your lower back down on the floor.
3. Bend your right knee towards your chest, keeping your left leg either bent or extended on the floor.
4. Slowly straighten your right knee, grabbing the back of your leg with both hands.
5. Pull your leg towards your gently while keeping both hips on the floor.
6. Hold 10-15 seconds. Release. Repeat. Swap legs.



Seated glute stretch

1. Sit on the floor, back straight, shoulders down, abs engaged, and knees bent with one foot on the floor.
2. Cross your right ankle at your left knee.
3. Apply a gentle push on suspended knee.
4. Breathe deeply, and hold for 10-30 seconds. Repeat on opposite side.

Standing quad stretch

1. Stand tall, holding onto a chair or wall for balance if necessary.
2. Keep your feet hip-width apart, your back straight, and your feet parallel.
3. Reach back and grab your left foot in your left hand, keeping your thighs lined up next to each other and left leg in line with the hip, not pulled back behind you.
4. Breathe deeply, and hold for 10-30 seconds. Repeat on opposite side.





Shoulder stretch

1. Stand tall or sit upright.
2. Bring your left arm across your chest, holding it below the elbow with your opposite.
3. Keep the shoulders relaxed away from the ears.
4. Squeeze arm to chest.
5. Breathe deeply and hold for 10-30 seconds. Repeat on opposite side.

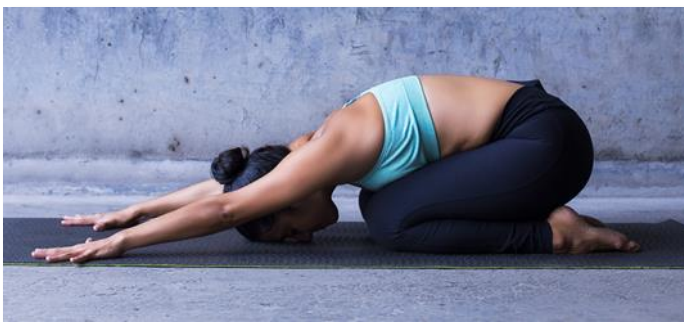
Doorway chest stretch

1. Stand at end of wall or in doorway facing perpendicular to wall with straight arm.
2. Place inside of arm on surface of wall.
3. Position arm shoulder height.
4. Lean body forward from positioned arm. Hold stretch 15-20sec. Repeat with opposite arm.



Lower back stretch

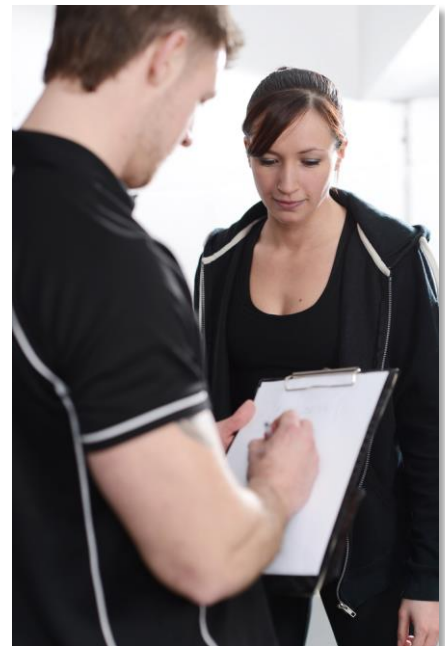
1. Begin on your hands and knees.
2. Spread your knees wide apart while keeping your big toes touching.
3. Sit up straight and lengthen your spine up through the crown of your head.
4. On an exhalation, bow forward, draping your torso between your thighs.
5. Keep your arms long and extended, palms facing down.
6. Hold 15-20 seconds. Repeat.



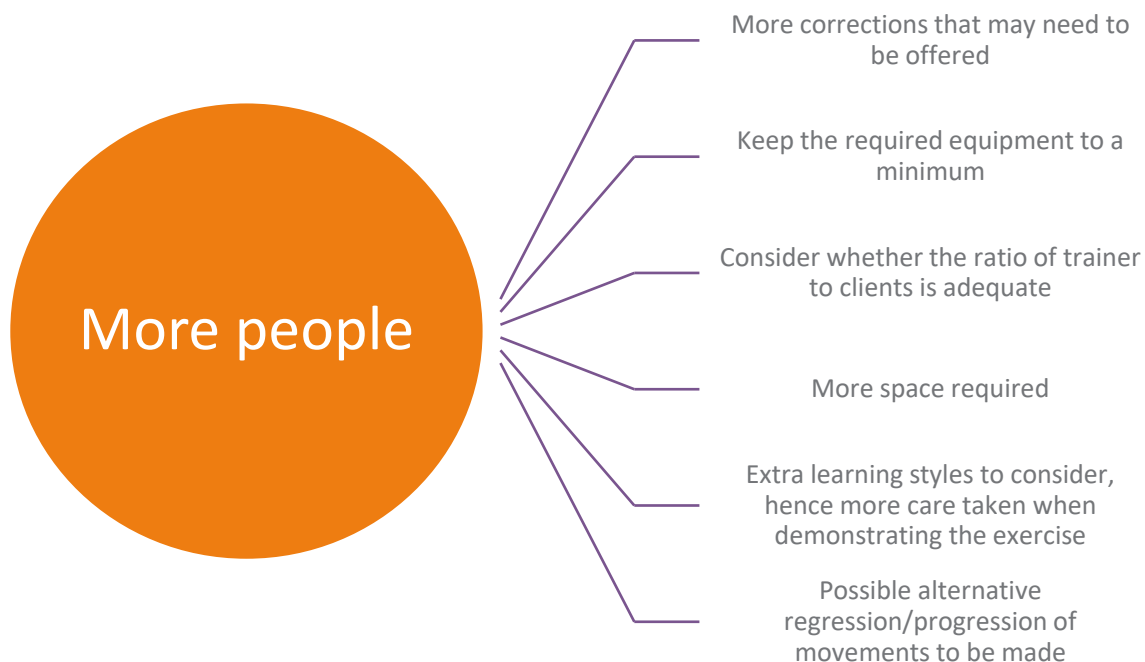
Module seven: New client program timeline / individual training session vs group training session

Starting with a new client is also like building a house. You have got to get the foundations built correctly. This graphic will help you set up an effective client management strategy/timeline for your new client. Anticipating a new client's timeline assists in creating the most effective and efficient exercise regime. If you start a client out on their fitness journey well, you will get repeat business. Remember that it is easier to retain an existing client than it is to find a new one.

1. New meet and greet. PRE Exercise Questionnaire, Measurements and possible referral.
2. New Program Design
3. Re-evaluation of Initial setup – 2/3 weeks.
 - Psychology of why?
 - Retention/engagement
 - Provides space for open communication client/trainer
 - Goals
 - Measurements
 - Program
 - Debrief with client and decode outcomes. Keep records.
4. Document management / filing
 - Privacy
 - Review
 - Easily accessed for future reference



Considerations/adjustments that need to be made when training more than one client at a time:

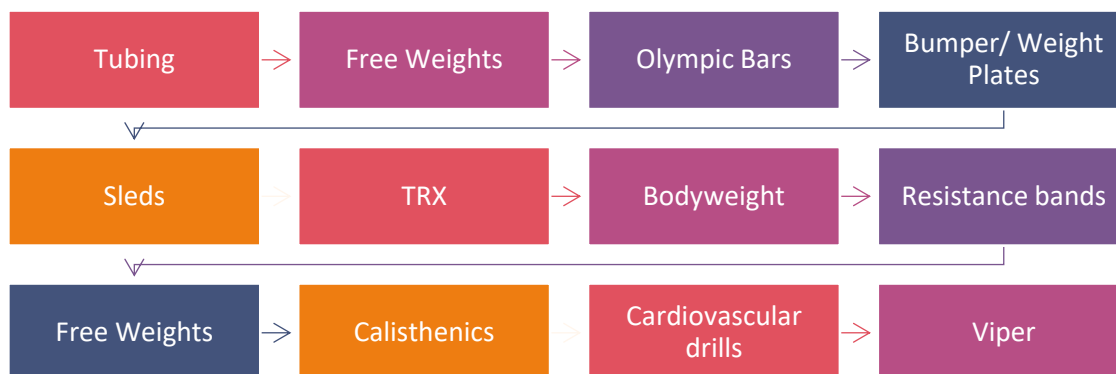


SECTION 1 – CIRCUIT TRAINING

Circuit training is a form of cardiovascular conditioning and/or endurance resistance training, which can use low impact to high-intensity exercises. Circuits are designed for clients that have some exercise history.

An exercise "circuit" is one completion of all prescribed exercises in the program.

It's best to keep equipment for circuit training to a minimum. The less information and technique a group of clients need to remember, the better. Here is an example of ideal equipment to utilise.



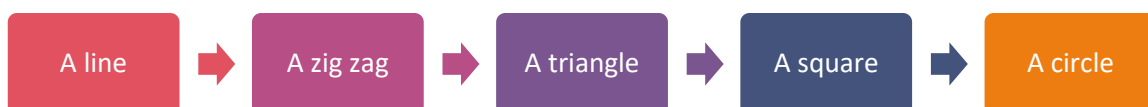
A circuit could look like any of the below drills mentioned earlier in the “Designing a Program” section of this learner guide.

- a) H.I.I.T (High Intensity Interval Training). This method is either programmed for ‘Endurance resistance goals’ (high reps), or higher desired Heart rate training zones (> 80% MHR). Short, sharp bursts of exercise with little to no rest periods.
 - The key to programming for a circuit with this style of drill is high reps, quick transitions and varied recovery time.
- b) Tabata training is intervals of 20 seconds working phase, followed by 10 seconds of recovery and repeated eight times. A true Tabata is four minutes long.
 - For a circuit this could be repeated multiple times to form a longer session.
 - If repeated many times this could be broken up by placing a separate modality in-between each 4-minute round, like a run for example.
- c) A.M.R.A.P (reps as possible). Stipulate a timeframe and exercises to be included, and repeat until time is up. This is great for competitive groups.
 - For a circuit, this is best set out for timed rotations. Set out the exercises and instruct clients to move at end of specified time.
 - Good times for this type of circuit are 30-60 seconds.
 - For more competitive clients, ask them to count the completed reps in each rotation, add them up at the end of the workout to discover the winner!
- d) For Time. Client performs predetermined drill as fast as they can. Time to complete drill should be recorded.
 - For circuit training this drill works well when the workout lasts 20 or so minutes. You want clients to complete it within a desired time (so your session remains timely). You can also have a cut off time to complete before reining in your group and stretching.

Circuit program layout

Your layout is dependent on your location. You may be on a gym floor, group exercise room or a park – all these locations will depend then on how you set up the circuit, because of space constraints.

Your layout is restricted to your own creativity. Set up the drill as:



Monitoring participants



Monitoring the progress of clients is another important element of instructing. Ask for the client's feedback and response on how they are feeling during the circuit session to gauge if the intensity is right for them and or to ensure that they are feeling ok. It is difficult to gauge the class intensity if you do not ask for the client's feedback. Monitoring the class is important so as to control the intensity of making the exercises more challenging or easier, for the group and for the individual.

Signs to look out for are, if clients look fatigued, their form and technique has become sloppy or if the speed of their movement has increased and their posture is not held strong. Make sure that form and technique is not compromised, otherwise there will be a potential risk of injury. Observe also for potentially harmful practices during the circuit that may cause injury.

An exercise or movement pattern may be regarded as hazardous with potential risk for injury in a group exercise class if:

- Someone who may not have a level of fitness deemed appropriate to that which is required to execute effective movement control or to maintain steady levels of exertion performs the movement.
- The exercise is performed with poor technique.
- The exercise performance instruction is not well understood by participants (and thus performed with poor technique).
- The exercise is performed without the correct developmental level of skill components (agility, balance, coordination, power, reaction time, or speed).

Keep observing your participants for signs such as looking red in the face, huffing and puffing, sweating, looking pale, disorientated and an inability to talk. These are some of the other signs to look out for when monitoring that the clients are safe and working to the intensity prescribed.

Modifications

An often forgotten consideration in selecting appropriate resistance exercises for a client is the degree of difficulty of many common exercises. Clients should progress from easier to harder in order of difficulty and in a logical, sequential progression. Resistance training exercises also rely on optimal ranges of motion at most major joints, therefore is imperative that the client develops and maintains good flexibility, if safety and therefore correct form are a priority. Tendons (connecting muscle to bone) and ligaments (connecting bone to bone), are trainable. But unlike



muscles they do not adapt to training loads as quickly. It would be prudent therefore (when training beginners), to give an ample adaptation time.

Each individual progresses and improves at a different rate so you need to be aware of this and progress gradually to avoid over training and injury. Beginners and younger clients will have faster rates of improvement. An example of this improvement rate would be the time taken for a client to progress from doing push-ups on the knees to doing push-ups on the toes.

Always give options so that the client can choose to decrease difficulty or intensity when they feel like they cannot keep up. This regression can be achieved by decreasing the load or by just using body weight, or by giving an easier level for that particular exercise or by decreasing the range of motion.



When selecting exercises for clients it is important to ensure that the exercises match the level and the strength capabilities for the client's level of experience. Knowing which exercise is easier or harder to execute based on degree of difficulty and biomechanical capacity will ensure the client performs the movement safely and with good form. If the client cannot execute the exercise either due to pain, injury or lack of skill then you must provide alternative options.

Think firstly about removing any load and decreasing the range of motion before changing the whole exercise. A bank of exercises is essential for a fitness instructor in order to suggest and offer alternatives just in case a client cannot do a particular exercise, for example, alternatives for lying barbell bench presses are a series of seated chest presses, incline chest presses, pushups.

Overtraining

Increased fatigue, lethargy, decreased performance and associated illness and/or injury can be signs of athlete fatigue due to over-training. The volume and intensity of training should be recorded and monitored to identify causes of overtraining. Sufficient recovery time should be provided between intensive training sessions. Remember to treat competition as an intensive training session.

It is difficult for many clients to juggle the demands of their sport and training with full time work or study, adequate sleep, recreation and social activities. Consideration should be given to the client's commitments as these will influence fatigue levels and therefore performance.

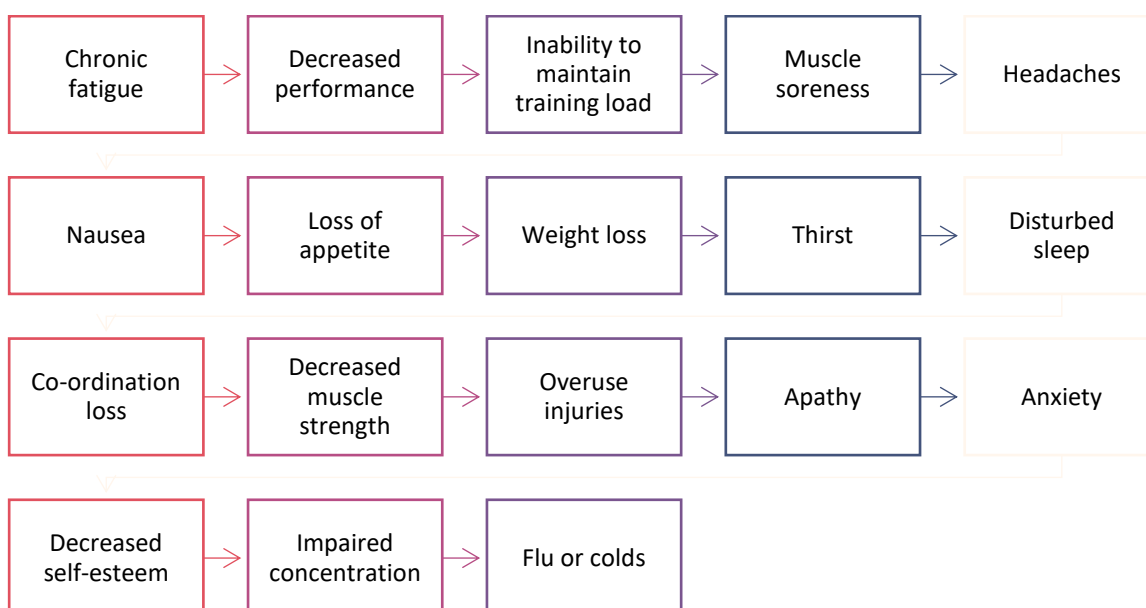
Some clients also feel great pressure from others to perform, including sports coaches, team mates, fitness instructors, family and friends. Such pressures can also lead to fatigue. You need to be aware of the pressure you can also potentially place on athletes/clients.

Adequate fluid replacement and carbohydrate consumption need to be addressed between competition and training times to ensure clients recover appropriately.



Overtraining can also lead to amenorrhoea in female athletes (loss of menstruation) particularly if associated with poor diet and insufficient caloric consumption. Correct balance between training/competition, active recovery, rest and other aspects of the client's life must be achieved. Periodisation of training, adequate nutrition and hydration as well as relaxation time should help clients to avoid the pitfalls of overtraining.

Watch Out for Symptoms of Overtraining



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