

Supplement Table 1: Semi-Structured Interview Guide.

Framework	1. Demographics 2. Reasons for adoption the NTLP 3. Participants' experience of the NTLP implementation/process, including benefits/facilitators and barriers/hindrances 4. Motivations or intentions for maintaining the NTLP 5. Health outcomes.
Demographics	What is your age? What is your current/ previous occupation? Can you describe your previous/ current activity level? What other programs/ rehabilitation have you tried?
Medical History (injury, mental health condition)	Can you tell me about the state of your health prior to beginning the program? Past or current interventions/treatment?
Reach (the percentage and representativeness of individual willing to participate/exposure of the program)	How did you become aware of the program?
Perceived Effectiveness/Outcome Evaluation (the effect of the intervention on target outcomes/assessing the effectiveness of a program in producing change)	What do you perceive to be the greatest benefits from the program? Can you describe how the program has influenced your quality of life? Has it impacted your happiness or mental well-being?
Adoption	What conditions/ injuries/ surgeries brought you to the program? Did you need much encouragement to start/ continue the program?
Implementation/Process evaluation	What were your initial impressions of the program?
Facilitators/Benefits and Barriers	What aspects of the program do you enjoy the most? What factors help you to continue with the program? What do you perceive to be the greatest benefits of the program? Is the social aspect of the program important to you?
Perceived views, factors or circumstances identified as challenges for implementation	What have been the most challenging moments? Have there been any mental barriers? Have there been any barriers to continuing the program? How has your interactions with others been (e.g. trainer/staff, other participants)? Did the trainer provide constructive feedback, support etc?
Maintenance (degree to which the program is or intended to be maintained/sustained overtime)	Do you think you will: -continue being involved in the program? -continue attending real strength studio? Would you recommend this program to others? Why/why not? Any other comments?

Supplementary Table 2: Researcher's observation of movement, coach and participant interaction, facial expressions

Observation record	
Description of the studio	The studio consists of one room in an old repurposed brick woollen mill, dimensions approximately 20m X 8m with 3 windows and no internal mirrors.
	The equipment consists of 3 squat cages, 3 benches with stands for barbells, weight plates, 20kg and 6kg bars, 2 platforms for deadlifts, a 3-tiered stand holding kettlebells, wooden broomstick handles.
Description of activity during part of one the sessions	P3 is ready to perform her final deadlift as the coach cues, "You must get into a position of power. Focus. Push." Everyone claps P3's deadlift. P6 starts a bench press and the coach gives the cues, "Go to the sternum; the power spot on the chest. Chest up."
	P2 begins a deadlift warmup in the squat cage, P9 and P7 are sitting chatting, P6 and P3 are putting plates on a bar for P3's next deadlift, P9 and P7 are changing the plates for a squat while P8 is bench pressing. Everyone claps P8's bench press.
	The coach says to P7, "If you can laugh at the bottom of a squat you need more weight." P6 is bench pressing 60kg. The coach says, "Sharp breath. Push the feet into the floor. Chest up." Everyone claps P6's effort. P3 asks P6, "Is it harder to bench press 60kg or deadlift it?" P9 and P6 perform broomstick squats. The coach says to some of the others, with a big grin, "Come on. Wasting time."
	The coach keeps them moving so that energy levels don't drop. He believes if participants are not occupied doing the exercises or helping others stack/remove weights they lose their focus. P9 is squatting using a 20kg bar. Everyone claps and someone says, "Well done [P9]."
	The focus is on the person moving. P7 bench presses. The coach says, "The more your chest opens, the less pressure on your arms. Connect to the front of your body." Platforms are used for P2's feet to rest on during her bench press. The coach says, "Stand on your feet as though you're upright."
	The researcher notices that some participants are getting on and off the bench more easily than they did in the initial sessions. Everyone is moving: adding or removing plates, performing an exercise one to one with the coach or, helping with spotting.
Description of activity during part of another session	Facial expressions – participants are smiling while chatting with others, there are expressions of concentration while performing the exercises. Participants chat about holidays and organizing a catch-up coffee.
	The coach uses constant cuing and maintains lively rapport with the participants. Participants take turns to do kettlebell squats. The coach says, "Stand tall in your body. I like that. Push your legs through the floor. Wider. Tilt and sit. Sit into your bum. Push bum back; it takes pressure off the knees."
	While the coach is one on one with the participant doing kettlebell squats, P6 is doing broomstick squats. P7 is performing a weighted barbell squat in a cage. "Stop. Wider feet. I like what I'm seeing. Lower. Drive it up. Chest up. Sitting low."
	P2 does a kettlebell squat, P6 bench presses, P3 and P7 chat, P2 and P8 chat. P3 performs a deadlift in a squat cage, "We want to generate tension. Drive your legs through the floor. Lean and sit back." Every movement is cued.
	P8 bench presses, "Prop the sternum up. Open the chest." P2 and P9 chat. P9 performs a kettlebell squat. P2 and P8 are putting plates on a bar for bench press. P3 is moving, walking. P7 is performing a weighted squat. P2 and P8 are chatting.

Supplementary Table 3: Thematic analysis.

The six steps of thematic analysis	
Familiarization with data	Transcribing, reading, rereading
Generation of initial codes	Coding relevant excerpts across the entire data set
Searching for themes	Collecting codes into potential themes, gathering all data relevant to each potential theme
Reviewing themes	Generate a thematic map of the analysis and review the relevance of themes in relation to the coded extracts and the data set
Defining and naming themes	Ongoing analysis to refine themes with names and definitions
Producing the report	Selection of extract examples to tell a story, analysis of selected extracts, relating the analysis to the research question and literature

Supplementary Table 4: Quotes within themes and subthemes.

Themes and subthemes	Quotes
<i>Motivators or Reasons to adopt the program</i>	
Advertising and promotion of exercise benefits	"...it was a matter of the coach's write up about helping people who are older and so, for us, we are not coming from a previous program or anything of that sort. And we know about the concept of strength training and its usefulness, so we thought 'This is maybe a good point for us to do this anyway, we've got nothing to lose and everything to gain.'" (P9)
	"...when I saw the advertisement for the Never Too Late program, it had a bit of an article about it, I thought 'Right, this will be the place', because I liked the idea that it was suitable for people who have various issues with their body, so that's what got me started." (P5)
	"I just happened to see in our local paper a big article about Real Strength here in Castlemaine and I was absolutely mesmerized because I thought 'Well if this can't help me, nothing can.'" (P3)
Encouragement from family and friends	"It was actually [my friend]. I do Tai Chi with [her] and my hip has been getting progressively worse and I'm on the list for hip replacement and have been for a while. It's been troubling me enough to see a surgeon for the last 5 years. I've had moments of being unable to walk at all. After he showed me the prosthesis and how it can dislocate, I thought, 'I don't think I want that', so when [my friend] said, 'I've been doing this and it really works', I thought 'I'll have a go at that.'" (P8)
	"My daughter goes there, and she said, 'Mum, I really think it might do you good'. I refused at first because I said, 'I'm not doing weights and all that ridiculous stuff. It's just not me'...the coach had a talk on It's Never Too Late, and she encouraged me to go to that, and I thought, 'Yes. I will go.'" (P7)
	"I had a lot of support from my wife who goes to the Real Strength gym who was a former powerlifter in her younger days and had gone back to the gym for strength training. She became aware of the program and put me onto it. She was fairly insistent that I should do it." (P6)
Inability to continue valued activities	"I've got a granddaughter who is 4 and I have her every Tuesday and that's another thing that made me think 'I've got to keep a bit fitter than this because she's getting livelier and I'm getting more incapacitated.'" (P7)
Lack of improvement/ slow progress from other rehabilitation programs	"Whilst I'd had muscle growth and increased strength to some degree I had never really regained the strength that I had before the injury. It seemed slow progress and because it was being paid for by work cover, who kept cutting it back and cutting it back, it ended up being once a fortnight and it just wasn't improving. It got up to a moderate level, not the level I'd like, but certainly better than what it was. Eventually, I was cut off from doing any more physiotherapy." (P6)
	[Prior to starting the NTL] "So after I'd done all those rehabs and tried to keep up with my exercises, I wasn't getting anywhere, and I must admit I did give up." (P3)
Decreased balance and postural changes	"I was starting to notice some things about my physical well-being that were expected of old age...I was starting to wobble when I walked, and my posture was becoming the posture of an old man and I didn't have a great deal of core strength." (P1)
	Loss of balance and loss of certainty of what I could do next and whether I could do anything are things that worried me." (P2)
Mental health decline due to injury	"I've had 3 operations on the right knee, the final operation being in 2016 because of a severe injury to the meniscus inside the knee. It probably needed a knee replacement, but the surgeons refused to do it and it was a WorkCover injury and as a result of the injury...I retired 5 years before I planned to, so there are financial implications as well, it can mentally push you into a not so good place... I could see how those sorts of physical impairments; you could spiral down to where you basically couldn't function in society." (P6)
Themes and subthemes	Quotes
Reduced ability and confidence to navigate external environment	"I was having increasing difficulty navigating city pavements. I was finding it very difficult to get on and off and I found myself, one day, standing on the curb in Collins Street unable to decide which foot to put down next. And a nice gentleman put a hand under my elbow and said, 'Allow me Madam'. And I thought 'Oh God, I've got old. I have to do something.'" (P2)
	"I was starting to think 'Well, I really am getting old and the rot is really setting in' because I really was very bumble footed and so that means you're going to fall, which makes you feel unsure and you hesitate, or you don't do things." (P7)
Emotional/ social isolation	"Emotionally, I guess I was getting very isolated and rather lonely, and more and more inclined to think of myself as a frail old lady." (P2)
Decreased strength and confidence with movement	"And I really noticed that from being a really strong person, I was losing that strength and generally stiffer, not able to move quite as smoothly and I just put it down to old age. Then I thought, 'Well, I probably need to do something about this.'" (P5)
Use exercise to improve mental health	"I'd been on antidepressants for 3 years after my dad had died and I'd tried to keep up my exercise and my fitness, but it had been a rocky time. I was going off the antidepressants, with my doctor's support, after mum died because I figured 'It's now or never, let's try this.'" (P4)
Neurological damage	"I had a car accident about a year ago ... 18 months ago. It was a head on collision with a safety rail. Luckily it was the old type, which was good. And it's not quite clear to me, I don't know if it's clear to the medical people [inaudible]. It seems I've had a small stroke." (P9)
<i>Perceived benefits, and facilitators</i>	
<i>Psychological/Mental Health</i>	

Overall improvements in health and wellbeing status	"It was becoming clearer and clearer through research that was being published, things in the media and things that were coming across my table, that strength training was responsible for many different elements of well-being and health, and as something someone could do for themselves in an engaged manner to have a positive impact on their well-being." (Coach)
Enhanced self-efficacy/ confidence	"I very quickly began to realize that I could do some of it...and it just became a pleasure really, to expose oneself to these weight bars and then manfully heave the things about." (P1)
	[Participating in the program has] "...shown me that I could do things that I didn't think I could. I don't think I'll ever hesitate on the curb in Collins Street and have to be helped over by a member from the gentleman's club again." (P2)
	"I couldn't do some things on my own, but I can now...you have to learn how to do the actual movements and then you build up." (P3)
	"I've regained quite a bit of confidence in my body. I've put my back to the test, under controlled circumstances [by doing the exercise in the NTL], and found there are still things I can do provided I don't do the wrong thing and provided I do things in the full knowledge of my back limitations." (P5)
	"I have confidence that the muscle will work because I've made it work under extreme conditions." (P8)
Decreased cognition and memory	"Since the prang, I've had difficulty doing mental arithmetic, I've had some difficulty with organising spatial constructs on paper, which before, I could express isometric drawings freehand and I can't now. I've had trouble reading the time on an analogue clock." (P9)
	"We had had a diagnosis of memory loss...and we have always been aware about fitness, not specifically strength, we've just done mainly aerobic to keep fit. So it wasn't, for us, a matter of fitness." (P9)
Themes and subthemes	Quotes
Improved mood	"Being more physically active, you have a much more positive outlook on life. You look forward to things more. You can plan things for the future knowing that you are going to be able to do them, whereas there were all those doubts beforehand. It's a huge improvement in your stability, particularly mentally." (P6)
Exercise to improve mental health	"When I say powerlifting is my antidepressant, I think that is probably true because there would have been too much to manage, without something like this, which for me which ticks all the boxes."
	"What then happened was, I got fitter and stronger quite quickly...and my mental health stayed up because I didn't need the antidepressants." (P4)
Stress management/ mindfulness	"I've realised that's my place to be mindful...it's all good...when there has been a lot of stress in my life...this is the light in the day or the week." (P4)
Purpose and meaning in life	"I think it helps with becoming more purposeful and you become more confident. So that's a real benefit. Every day, as you are old, it can be a reminder. We are of a generation where we are much more youthful in our outlook but we can't deny the fact that we are inhabiting an aging body and so I think that any encouragement that our body can still do a number of things is helpful for our well-being and outlook on life." (P5)
	"I feel better physically, I have improved mood, it gives you some enthusiasm for life because as you get older, you have to constantly work at giving life meaning or purpose." (P6)
Increased mental strength	"I was fairly fragile when I started and I'm much stronger in every sense now." (P4)
Sense of achievement	"There's a sense of achievement when you increase your well-being and I guess that's just the overall thing, a sense of overall well-being from doing the program." (P1)
	"I felt challenged but not in a bad way, and I was able to do it." (P3)
Improved cognitive function – focus, memory, attention/ awareness	"I was having a great deal of difficulty recalling the names of people I encountered that I should have been able to recall fairly easily and since I've been doing the program I've noticed my recall is a lot better than it had been, probably than it had ever been." (P1)
	"I think mentally I do feel better. I seem to recall things quicker. I feel more alert in myself, really, I do. I feel more alert and with it." (P7)
Confidence to continue valued activities	"It means that I've been able to sustain activities that matter to me which I was looking at having to give up. And I feel much more confident about being able to continue that." (P2)
Improved mindset and sense of self	"People were encouraging and helpful...family and friends, but I don't think they really understood. If you come to a mountain and it's just too hard, you feel you can't get over it, there's no point trying. So I had given up. I'm really pleased I have a better frame of mind now and I feel better in myself." (P3)
	"You have challenges in life and sometimes you don't meet the challenge and other times you do, and I think it's really interesting because physically, a lot of women don't really challenge themselves. I know I haven't. So that's another aspect in life I'm really grateful to have the opportunity." (P3)
Quality of life	"I think the benefits I get from it are enough to keep me going as long as I can..."
	"I feel more secure in the fact that turning down a hip replacement is the best thing to do...Quality of life is simply that I can get out in the mornings and stick my gum boots on and walk. All the little improvements in mobility make me happy....it's also opened up an avenue of exercise that I see as a positive possibility for me to continue with." (P8)
Themes and subthemes	Quotes
Mind-body connection	"I think regaining confidence in my body, and regaining trust in my body, is a really powerful thing and then that translates across to your well-being as well."
	"It's also that close relationship between the physical and the psychological where one benefits the other. The better you feel mentally, the more you are able to push yourself a little bit further with physical exercise." (P5)
	"Being more physically active, you have a much more positive outlook on life. You look forward to things more. You can plan things for the future knowing that you are going to be able to do them, whereas there were all those doubts beforehand. It's a huge improvement in your stability, particularly mentally." (P6)
Physical health	
Increased strength	"I do feel physically stronger and more able to do things that need doing on our little 5 acres." (P9)
	"I can squat down now, and I can just get up again, which is fabulous." (P7)
	"The factors are that I do feel better for it, my body feels stronger, so I think there are a number of physical factors that keep up my enthusiasm and momentum for it, and that's feeling stronger in your body." (P5)
	"Outcomes, obviously strength, physical strength is just something I never understood before, but I really enjoy it. I like being strong."
	"When I'm gardening at home and with just everyday activities I'm much stronger, more efficient about things I do. If I'm picking up a bag of compost, or whatever, I mean I'm getting older as well so there are changes that come with that, so it's not all miraculous stuff. But definitely I'm more physically confident and efficient the way I do things." (P4)
	"I step off trams more boldly which means I can still move around the city. I'm able to move bigger logs of wood into

	the fire. My physical strength and dexterity have regained themselves a bit, I guess." (P2)
Increased ability to perform ADLs	"I can go up and down steps now and I don't need to hang onto anything." (P7)
	"I've got more confidence and I'm doing more than I used to do, physically, around the place and if I didn't need to sit down a lot when I'm out shopping, I wouldn't need my walker to walk." (P2)
Improved gait and balance	"I feel like I can walk more evenly, and possibly walk a bit further." (P8)
	"I feel stronger when I'm walking, for example, I feel more stable, I've got historic balance problems which I've had checked out, and I've just got balance problems of no known aetiology, but I'm not as wobbly when I walk. So these are physical benefits which encourage me to keep going." (P5)
	"I can walk without wobbling, I used to walk along the footpath and would just wobble a little bit to the left and I wouldn't know why it would happen. Well it doesn't happen now." (P1)
Decreased fatigue	"I can squat down now, and I can just get up again, which is fabulous....I just don't get as tired or fatigued as I did." (P7)
Increased ability to navigate the external environment	"I can go up an incline. Well, we can walk around the lake or we can walk up the hill, we can walk down the hill." (P7)
Increased range of motion	"I can pick things up off the floor that I couldn't do before, I can get my own shoes on which I couldn't do comfortably before, I find it easier to get into tights. All those simple little getting yourself out to face the world tasks are easier" (P2)
Themes and subthemes	Quotes
Social environment – social support and connectedness	
Sense of shared achievement/ experience	"I enjoy sitting around the benches laughing with the others and watching people doing good things. It's tremendous to see...the improvement in those other 5 people, and hear them praising me. There is that sense of corporate working which is really reassuring." (P2)
	"I think we all feed off each other a little bit, off each other's achievements. We all encourage each other. I've found that really good." (P6)
	"It's a very friendly environment. There's something about that shared experience of coming in together and you're all at different levels, you're all wondering how you're going to do this, so there's that sort of shared experience that bonds people together fairly quickly as a group." (P5)
Support and encouragement from others	"I was so used to doing gym stuff on my own I didn't expect so much support and encouragement. Everyone is excited when something goes well, not just the person lifting and there's this really good energy."
	"That's a very, very, strong, supportive environment. There has been some quite vulnerable people start off there since I've been there...you can see people finding their way, feeling their way, not quite sure how to do it and how to fit in but everyone is so welcoming and inclusive." (P4)
	"I became really enthusiastic. It was such a terrific group of people and they were all really enthusiastic and so being amongst a peer group like that was also very encouraging, we encouraged each other." (P5)
Social connection/ combat social isolation	"There's lots of laughter, so there is that social aspect to it. It's got the potential to help with isolation that can occur, and we know how detrimental that is in the aged population, so I think the social aspect is very important. Some people are living on their own and may not have a lot of social interaction." (P5)
	"You feel like you've got a connection because we are all saying the same thing to one another, quietly, 'Are you feeling better?' 'Yes. We are all feeling better.'" (P7)
Watching others make progress	"I enjoy that I'm not the only one there, that there's other people, and I enjoy seeing their progress."
	"The people in there are quite a bit older than me, I'm the youngest in the group by some considerable way, and to see their progress, they walk better, they hold themselves better, they are obviously stronger, and some of them have got more physical setbacks than I have, so seeing that progress pushes you, if that makes sense." (P6)
Perceived Barriers	
Perceived Costs	"First up I thought, "My god, I can't afford it." (P8)
	"It was much more expensive than anything else I'd done before and that was one of my anxieties at the time." [making a decision prior to the program] (P4)
	"Well, if I get a really good result out of this, it's money well spent." Which is the attitude I took in." (P6)
	"It's not a cheap program, financially, but what cost do you put on your health?" (P6)
	"The only barrier is a financial one because it is a significant financial drain compared with some other programs, but those other programs can't compare with what we get at Real Strength." (P1)
	"I forgot about the money within a couple of weeks, it was totally right, very quickly, for me at that time." (P4)
Themes and subthemes	Quotes
Low perceived self-efficacy and doubt	"I started with a little bit of doubt. "Can I do it, will it be too hard for me?" (P3)
	"Had I found I was the least competent and looked an idiot I wouldn't have come back." (P2)
	"I looked at the gym and the apparatus that was used, which was basically free weights, and I thought "No. I won't be able to do this." (P1)
	"The very first day I was struck by the limitations of my body, even getting up and down off the bench...I thought "I wonder if I'm going to be able to do this." (P5)
	"He says, 'When the technique fails, that's when I stop you.' So ... I've absolute confidence that he knows that, that's not right. So no, there's nothing that made me think, 'I can't do this.'" (P8)
	"I knew [the coach] thought I could do it and I wanted to do it, so no I wasn't scared or nervous because he talks you into it and I thought, 'Now this is going to be hard', and it was. And I was able to do it." (P3)
	"I went along and met the coach and I said, "I don't think I can do this" and he said, "I think you could." (P1)
	"Negative things might be a sense of inability to do what is asked of you...which may be for mental...or physical reasons and I think the program helps you overcome those." (P1)
	"Sometimes...you think "I don't know whether I can do this" ...I just use my self-talk and say, 'Of course you can do it, concentrate, focus, breathe.'" (P5)
Time	"He said the other day, 'You did that so much better,' and I said 'Yes, because I decided to put my mind to it, and I really focused on instructing my legs...and it made such a difference, rather than having my mind off in some other direction whilst I was doing it.'" (P5)
	"...there are things I want to do on Monday and Wednesday. I have to renavigate, renegotiate and it's a lot of time. I don't yet know what level you could just maintain where you are at...it does take a lot of time and I would need to be persuaded that was the only way that I could maintain the physical changes I've achieved. If I saw after a month that I'd lost that, I'd go back. Immediately. And it's one of those things that as you get older you have to do." (P2)
Motivation	"The biggest barrier has been the stressors in my life, but I usually go, so I haven't let them be barriers, but certainly challenges."

	<p>"There are some days when your brain just doesn't want to know about it. You have to work quite hard to be focused...if I'm not doing so well...and we're in a stressful period, the hardest thing for me is to actually focus and switch off for an hour and not be distracted by those things." (P4)</p> <p>"And surprisingly, usually, the session goes really well, and I go home feeling great. It works when I've had a really poor start to the day, it still works for me and I guess that's why I make myself go." (P4)</p>
Themes and subthemes	Quotes
<i>Psychological barriers</i>	
Fear of injury	"My main mental concern was doing something that would cause me injury." (P 6)
Fear of increasing pain	"When you get older and you start to develop a few niggles, groans and injuries, you start to get very protective of your body and you start to lose confidence in your body because it feels like pieces are falling off everywhere." (P5)
	"It was partly balance and partly the pain in my knee and just general anxiety about whether I could manage to do anything." (P2)
Fear of lifting weight	"There was that initial apprehension of, "Was this going to cause more pain than what I've already got." (P6)
	"I must have had some kind of fear of squatting in the beginning because I couldn't actually put the 20kg bar on my shoulders and squat with it. I could put it there, but I couldn't squat with it...there was a blockage, but once I got past it, it was ok". (P4)
Fear of the unknown	"It's always a challenge when you start working with weights that are up around the maximum you've done before. It's a head business as much as it's a muscle business. You've got to prepare yourself to do something you haven't done before when you're lifting a heavy weight, and I suppose that's the challenging part of it." (P1)
	"The first time was challenging in the sense that you didn't know what you would be doing." (P3)
Self-limiting thoughts	"I had a lot of apprehension because I'd never been into one of those places and all it was were weights sitting everywhere. I'd never heard of a bench press; I didn't even know what it was...I was very nervous." (P7)
	"Physical well-being and mental well-being are connected. When...you can't do the things you used to be able to do and you start getting thoughts in your head that, "I'm never going to be able to do things, I'm useless, I'm not ever going to be able to...walk properly again, run"...it affects your mental health in a massive way. It can consume you." (P6)
	"Physical barriers, as you get older, provide incredible mental barriers." (P2)
<i>Enablers/Facilitators during program implementation</i>	
Social environment / connection	"...immediately the feel of individual coaching and a small group of people around completely changed my experience." (P4)
	"What is different about this gym is that, if you go to a regular gym and you're given a program, you work your way around and might never speak to any one and that can be quite isolating, that wouldn't motivate me one bit." (P5)
Inclusive	"It doesn't matter whether you're old or young or tall or short or fat or thin or whatever it is, you can still do it and you can still be strong. ... that is not the culture of regular gyms. It's a different culture, it's very inclusive and sort of levelling, no not levelling, it's equitable" .(P4)
	"...you can see people finding their way, feeling their way, not quite sure how to do it and how to fit in but everyone is so welcoming and inclusive." (P4)
Themes and subthemes	Quotes
Coach qualities	"[The coach] was exceptionally good at insisting on proper technique for doing these things and I got to like it." (P1)
	"I was never asked to do something that was beyond my competence."
	"He seems to be very quick to read the way my body's working and very quick to know just when I've reached the point when I can't possibly do any more, and say 'Well that's enough'..... that is a rare and special quality."
	"He's shown me that I could do things that I didn't think I could." (P2)
	"...he seems to be very quick to read the way my body's working and very quick to know just when I've reached the point when I can't possibly do any more, and say "Well that's enough". And I think, speaking from the experience of somebody who has taught teachers, that is a rare and special quality." (P2)
	"[The coach] is so encouraging... that you're on a bit of a natural high. He's right there in your ear while you're doing these, you can deadlift this or bench press that...[he's] trained us really well to listen to our bodies."
	"He is very encouraging he's very professional ...he would push you but not say you had to do it, he would just expect that you could do what he was asking you to do and I was very impressed with that because I do have a high level of expectation in anything I do." (P3)
	"He was so supportive and encouraging that I did persist when I really didn't feel like it..." (P4)
	"[The coach] is such a central part of it because his enthusiasm is contagious, his sense of belief that you are going to be able to do it, and the other thing that became clear very early on is that it was all going to be titrated against your capacity."
	"I take myself as a sort of psychological subject. I have a nice relationship with [the coach] because he analyses too. He analyses your movement very finely."
	"The other thing that encourages and keeps me coming is that there is a terrific atmosphere. [The coach] brings something that is very engaging and so you enjoy going, there's always laughter, always enthusiasm, there's a sense of vitality about living and its contagious, and you feel younger."
	"...a special combination, because of his clinical experience, because he's a chiropractor and his knowledge of anatomy. This lies at the heart of my trust in him to be able to monitor what I do and knowledge of my anatomical issues."
	"... he's able to individualise everything in a group setting. It's a remarkable skill."
	"...as we get older, particularly as a woman...we become irrelevant in life...become invisible. But everyone who walks through that door, no matter what size, shape or age, is made to feel special. Somebody said to me that I only come as this is the only place that they get all this positive reinforcement, 'I'm told that I'm amazing.'" (P5)
	"There is obviously a huge amount of trust put in Dean to make sure that it's never to the point of injury. And I've found that he's really on the ball. I think there was only one time that I struggled with some shoulder pain and struggled with a lift and he stopped it straight away, before it became an injury. He was really on top of it and picked up on it really quickly and that was just a matter of dropping back a little bit. And that was fine." (P6)
	"...it was like air traffic control. I never felt like I was being asked to do so much that I couldn't do it, but I was certainly being asked to do more than I did the time before".
	"I think he's very clever at picking the point [to stop the movement]. He says, 'When the technique fails, that's when I stop you.' So I've absolute confidence that he knows that, that's not right." (P8)
Themes and subthemes	Quotes
Opportunity for observational learning	"I observed this morning how much everybody concentrated on the person moving, all their attention was on them and then when they'd achieved it there was clapping and praise." (P2)

	<p>“...you watch other people and you know other people have had issues.” (P3)</p> <p>“It’s as much about all the other elements, the social stuff, the peer support stuff, the good coaching, excellent coaching.” (P4)</p> <p>“I think it’s small, strong and focused. And feedback! And it’s not just his [coach] feedback, it’s the other participants feedback. Today, [another participant] lifted a huge weight, and everybody claps and took a video of [this participant] lifting this weight. [The participant] got a lot of feedback from that. That’s got to be good.” (P8)</p>
Coach and peer feedback	
Simple and safe	<p>“We work in a way where we make strength training simple, we make it safe, we provide encouragement, we provide groups of similar skilled people so that not only do they progress together, they encourage one another together. So different elements of being in a group with similar people, having it safe, having them be able to trust themselves, seeing how they progress has led to a great success.” (Coach)</p> <p>“The biggest thing is to create safety and certainty with people.” (Coach)</p> <p>“[Initially] I felt a little bit lost, but I also felt safe, very quickly, with other people and with the coach.” (P4)</p>
Program characteristics	<p>“There are a lot of factors about it that make it different from anything I’ve done before. Not just the physical, it’s powerlifting and it’s heavy weights but it’s a combination of coaching, social interaction and a very supportive group and the other thing I worked out eventually, there is a mindfulness attached to it.”</p> <p>“All the things that are good for me are more consistent in my week. It’s secure and a very predictable environment.” (P4)</p> <p>“...so I thought this really offered a combination of structured movement and exercise but with somebody who was like a personal coach but with more expertise.” (P5)</p> <p>“I find I get mindfulness from powerlifting because you have to be 150% there to do it and that’s something I probably don’t do any other time in my day or my week. So that’s the other element that I realised, eventually, that was there. It’s not just a few weights, it’s much more.” (P4)</p> <p>“... because there are basically only 4 movements there that you have to do, that really suits an older population.....because you don’t have to remember a thousand different things. That’s a really good aspect of it.” (P5)</p> <p>“... we coach every movement. Within powerlifting and powerlifting coaching, you’re wanting to create neural schemas, so you say the right cue at the right time when the body needs to adjust before it needs it, so you create really clean patterns of movement and clean patterns of function. We coach all of the movements for all of the time, and I guess that’s the difference so that nobody feels that they’re on their own, and nobody feels lost.” (Coach)</p> <p>“It’s the weight. It’s very measurable. I actually quizzed him today because I noticed that we are beginning to get specialties. [One participant] is constantly doing deadlifts, [another] is doing lots of the squats with the bar on her back, which I never do and I’m doing lots of bench presses. And he said, ‘It’s about success.’ Everyone will have one area where they do better, and he said ‘What we do is have some success, if you have something that you can do, then you have some more confidence,’ and so he reckons that giving you something that you can do builds some confidence. And it is actually working on all your body, even though it is only one exercise, so then you start to achieve on the others as well.” (P8)</p>
Themes and subthemes	Quotes
Commitment (financial and personal)	<p>“Mind you, paying a huge amount up front does encourage you to keep on going. I guess financial commitments do matter”. (P2)</p> <p>“The cost [helps me continue]. You’ve made a commitment and so you want to carry through on that and also you realise that it’s only twice a week and if you missed one because you didn’t feel like it then there would be a big gap in what Dean has organised for you so I think most people, if they are prepared to pay the money they go and seeing how well organized and well run it is, that means you’re quite happy to continue.” (P3)</p> <p>“I stuck with it, because it worked. It’s 2 ½ years now.” (P4)</p> <p>“In a nutshell, something’s working here and so I’d be stupid not to keep going. The other thing I do know, is that when you get older, the moment you give up something you lose your conditioning very quickly, so consistency is critical... as far as I’m concerned, as long as I can get there, I’ll keep going for as long as I can.” (P5)</p> <p>“The fact that you commit yourself to do it, which means that if you are housebound or not in a good place mentally, and don’t have support systems, there’s a reason to go and do something.” (P6)</p> <p>“Then I thought, ‘Well, I suppose I can commit to 3 months.’ And I did. And I’m on my second 3 months. I wasn’t quite up to scratch I think, but it’s wonderful. I can’t believe the difference. I really can’t.”</p> <p>“If I can go into the ordinary class, which he said I can, so I will continue it. I’ll try and still go twice a week.” (P7)</p> <p>“It’s been nice being with a group of people and it’s also opened up an avenue of exercise that I see as a positive possibility for me to continue with it.” (participant 8)</p> <p>“... we’ve committed to a year.” (P9)</p>
Recommendations to develop the program	
Overcoming cost and facilitating program funding	<p>“I think cost would hold a lot of people back.” (P6)</p> <p>“It’s quite expensive so it’s a bit hard for some people to manage that...There are a lot of economically disadvantaged people in Castlemaine...It makes me think it is such a shame that cost would be a barrier.” (P3)</p> <p>“I would like to see funding available because that would be the only setback for some people.” (P6)</p> <p>“I’ve improved more in 10 weeks, going twice a week, with this program than I did in 3 years of physio...I would like to see the health institutions and WorkCover, TAC, and those kind of funding bodies be able to fund this kind of program...3 years of physio...it was very slow progress...I hate to think what 3 years of physio cost. It would pay off, actually save them a fortune if they funded these types of programs.” (P6)</p> <p>“Perhaps in 10 years’ time, Medibank and all the medical establishment who paid for my rehab at the hospital...that’s the sort of thing they could pay for because it gets results.” (P3)</p>
Addressing attitudes to ageing	<p>“It’s very difficult when you’re old to deal with the general impression of the public. You know, pat you on the head and say ‘There, there dear you are old, and we won’t pay any attention to you, but we’ll be nice to you.’ (P2)</p> <p>“The whole process is a winding down process as you get older. It’s going to happen inevitably, but you can slow the progression down. So you feel a bit more optimistic, you think, ‘I can do that,’ and you don’t have to protect yourself quite as much.” (P5)</p> <p>“I think where I see and position older people, firstly, I love them, and I don’t know why I have this natural attraction to love them. I feel that they are resourceful, I feel their egos have dropped, I love them. What I have noticed, is that often people don’t value older people, so if they don’t value them, they can’t really connect with them. So first you have to value them.”</p> <p>“With older people, they’re resourceful, they can do more than you might imagine, they’re readily open to change if you can challenge them in a safe way. I challenge people on doing things that I know that they can do.” (Coach)</p>
Themes and subthemes	Quotes

Building capability and capacity of staff/coaches to deliver NTL-PP successfully	"...any coach with a different style or personality can still create that stuff. It would look and feel a bit different, but it could still be good. I think any good coach is going to, it's going to feel a bit different, but you can still get the same outcomes I think." (P4)
	"I think he's pushing the program exactly enough and he's got a product that works and he's proud as punch with the fact that his product works." (P8)
	"I wonder what happens when all the people doing this say 'Oh, we'd like to come to this gym', because he's only got this much space and there's only one of him. He's going to have to train up some more people, and then it's like a lot of small businesses, they expand either successfully or they expand too much, and they collapse." (P8)
	"I know he's interested in spreading the word about this and making it available in more settings to make it available to older people more generally and it started me thinking about the psychotherapy literature, 'cos there's a solid body of psychotherapy literature that says the therapist accounts for almost 30% of improvement in psychotherapy...The technique and what you do or the sort of therapy you offer is important, but a big factor is the fit between the therapist and the patient. I think when I analyse what he [the coach] brings, he brings this wonderful amalgam of expertise of the exercise domain, so he is, in many ways, a clinician as well as an exercise expert, and to me, that's a special combination, because of his clinical experience, because he's a chiropractor and his knowledge of anatomy. This lies at the heart of my trust in him to be able to monitor what I do and knowledge of my anatomical issues." (P5)
Promoting benefits and best-practice implementation strategies	"We are in a situation where we are in low birth rate, generally, in the developed world with an aging population. That is an actuality. So, the greatest fears in most developed countries are, well there's low birth rate and prolonged life expectancy, is that those people who are no longer contributing or able to contribute from an economic perspective into the culture, whose diminishment of function and immobility and lack of independence, leads to higher degrees of care, more expensive care."
	"... if you have the funds that come out of your estate and would normally be passed onto your children, and there's this thing where, if there's no estate then the government needs to be able to do that and there are problems with this, then there has to be something that replaces it."
	"If we have something where one person can take care of 80, 90, 100 people in a fashion to keep them active, to keep them functioning, to keep them independent, keep them at home, keep them interested, keep them curious, keep them bringing their gifts into the world, it's a worthwhile thing...from an economic perspective, it is critical." (Coach)
	"[Previous rehabilitation] they organized exercises for you to do at home and I did do them. But compared with what the NTL-PP does it's like just playing, it's a token gesture. I know they do their best but having the work [the NTL-PP is] doing on us makes me realise that someone like me and someone like some of the others who have a disability as well really benefit."
	"[The previous rehabilitation exercises were] basically just bending and stretching and moving your leg, just the very basic things you do...You'd hold onto a chair and do squats and lift one leg out then lift the other leg out and lift your back and you'd work on the exercise bikes and people who had knee operations would use a piece of apparatus to help with that. It was just general, very basic physio type stuff." (P3)
	"[The experience of previous rehabilitation was] if you're in a group in a rehab program, it's almost like they don't even know what your name is, they've got another group coming after this, and whether you've achieved anything is not measurable. So whether they see that you're better or you see that you're better is all a bit fluffy." (P8)
Themes and subthemes	Quotes
	"People don't realize the difference between what the NTL-PP is doing and going to a gym. That's a big thing that people need to understand. It's different from going to get fit and it's just the weights. That's a big difference." (P4)
	"The other thing was that you had very measurable outcomes with [the NTL-PP] program, I started off lifting 12 kilos, now I can lift 20. That is very, very measurable, and so you can say, 'I'm getting somewhere', because with the other programs, it's like, 'Are you feeling better?'. 'Yeah, this morning I felt ok, yesterday I felt better, tomorrow I might feel worse.' How do you measure feeling better?" (P8)
	"If you think about it, we are there for an hour and there are 6 of us, that's only 10 minutes each, and you are not actually fully exercising for those 10 minutes. Let's say, you might actually be moving and lifting weights for 8 minutes in that hour. That's not much considering how much change you see in people's bodies. So, 8 minutes of exercise. Really? It doesn't make sense; it's got to be the weight."
	"... it's small, strong and focused. And feedback! And it's not just his [coach] feedback, it's the other participants feedback." (P8)
	Coach reflections on elements of that make the NTL-PP different from other programs for older people.
	"My experience of being in many gyms is that often people walk around quite aimlessly, not sure what to do, or they may be given a program initially and be told how to do something initially, and it may have been with the best intentions and done well, but the ability to retain information and the ability to retain movement and retain training diminishes, just like anything."
	"What I was noticing in chiropractic was that people who were most engaged in the process were those who achieved the greatest results, those that weren't engaged and were passive in the process struggled to make progress, so I was aware that engagement was critical in progress."
	"Maybe you could say from a physiological perspective that there is more muscle development, more mitochondria, more energy, faster metabolism, these things happen. Physiologically, you see hormonal changes, endorphins come in and so on. The movements help train muscles in particular ways, it gets the motor units firing in particular ways, so there's a range of different elements going on with that."
	"If they can walk up and down stairs, they can do certain movements. If they are carrying grandchildren, I know they can cope with 5 or 6 kilos of these kinds of things. I know that if they can get on and off a toilet, then there are certain movements that they can do. So we start off with movements that are even simpler than they can do in their normal day to day life and we load weight into that. Loading weight into that, because of simple postural movements, can then give a sense of power, that they are powerful and obviously, a sense of progress, in a safe environment. The movements we do are very basic movements which we add complexity to as we move forward."
Themes and subthemes	Quotes
Research	"It was becoming clearer and clearer through research that was being published, things in the media and things that were coming across my table, that strength training was responsible for many different elements of well-being and health, and as something someone could do for themselves in an engaged manner to have a positive impact on their well-being."
	"I was looking at research into strength training and geriatrics, they were coming across my pathway, early days."
	"As we started the gym, a few of my former clients cottoned on to what we were doing, they'd been looking at some of the research, things that were coming up in strength training, that were coming up on the ABC and they asked if

	<p>they could join us." (Coach)</p> <p>"He quoted a few recent studies showing that strengthening exercises seem to help in lots of ways and kick start your body and since then I've read a few things about some of the latest research that they're doing about this and it makes sense because you get older you don't do as much especially if you've got chronic things like arthritis. It's a vicious cycle because you don't do much, so you lose muscle strength."</p> <p>"I'm hoping that something can be done through research. Think of all the money the government would save if they could help people get better more quickly and with less effort from teams of rehab people and less effort from the people who are trying to get better." (P3)</p> <p>"I've always been interested in listening out for the research in exercise and things that are beneficial when you're older. One of the things that I've always done is that body of research, you know, getting up and down is really, I think some of the research showed, almost as beneficial as going to the gym because everything in your body has got to calibrate."</p> <p>"...there's been all this research about plasticity of the brain, one neural pathway gets blocked off you can develop others and other things will work and that's what I've discovered here with the powerlifting – well ok, I've got a crook back but there are other parts of my body that can be called into play so to speak to help support me and get stronger." (P5)</p>
	<i>Intentions to continue powerlifting</i>
Unsure about continuing	<p>"...there are things I want to do on Monday and Wednesday. I have to renavigate, renegotiate and it's a lot of time. I don't yet know what level you could just maintain where you are at" .(P2)</p>
Intends to continue	<p>"I'm going to do the course again when they do the next lot because I feel as if I need to do that and Dean agrees. So we'll see how we go and in the long term I think I'd like to join the studio where you can go in your own time and there are even times for women to go." (P3)</p> <p>"...as far as I'm concerned, as long as I can get there, I'll keep going for as long as I can." (P5)</p> <p>"If I can go into the ordinary class, which he said I can, so I will continue it. I'll try and still go twice a week. I'm going to try and take up a bit more walking. I think there are other avenues you could build on, once you've done this." (P7)</p> <p>"All the little improvements in mobility make me happy. It's been nice being with a group of people and it's also opened up an avenue of exercise that I see as a positive possibility for me to continue with it." (P8)</p> <p>[You are considering keeping up the program?] "Yes, we've committed to a year." (P9)</p> <p>"So immediately the feel of individual coaching and a small group of people around completely changed my experience. That's why I stuck with it, because it worked. It's 2 ½ years now." (P4)</p>

P = Participant.