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Beginners' Gym Training Guide for Kuntokeskus Balance



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Abstract

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The purpose of this thesis was to create a beginners' gym training program with a guide video for Kuntokeskus Balance and its new customers to have an efficient and clear way of starting their resistance training. The commissioning party was Kuntokeskus Balance, which is a Kajaani-based gym offering gym and fitness related services from gym memberships and personalized gym programs to supplements and sports massages. The thesis searched answers for the following questions: 1) Is it safe for a 13-year-old to start resistance training? 2) What should be considered when creating resistance training programs to 13- to 18-year-old adolescents? This thesis was a development task-based work.

The product (gym training program) was made by using a service design toolkit model. This model uses four different stages when creating a service. These stages are defining objectives, learning from customers' point of view, finding a solution, and finally testing and gathering feedback. The final product was two different resistance training programs for beginners; one being full body workout and the other one being an upper and lower body split program. The program gives exercises, repetition ranges, general information on resistance training and progress. Along with these, the programs include a guide video how to perform the exercises and comments on the focus in each exercise.

The theory part provides information on how resistance training is performed with a correct form and weights, and when the training does not have negative impacts on growth plates of the adolescent. The theory section also maintains that there are no serious risks for injuries as long as training guidelines and recommendations are followed. The product itself has not been yet published to the public due to time constrains and unexpected issues at the time of the thesis presentation but it is available in YouTube on the commissioning party's channel. The product is intended to be published to new and current customers of Kuntokeskus Balance during June 2022 by the commissioning party. With unexpected issues delaying the progression of thesis, the author was not able to test the program and guide video with real customers to evaluate its usefulness and gather feedback. In the future, the testing should be conducted to further improve the guide.

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List of Symbols

Reps = Repetitions

Volume = In resistance training lifted total repetitions (sets x repetitions) Sometimes this is multiplied with resistance weight

Set = Continually repeated repetitions amount.

RM = Repetition maximum, for example 1RM = largest possible weight you can do one repetition with, or 10 RM = largest possible weight you can do 10 repetitions with.

ROM = Range of motion

RIR = Repetitions in reserve, basically an estimate how many repetitions you could've done more in that set until failure

(Hulmi 2015, 10-11)

1 Introduction

For many people, starting to workout in gym environment can be intimidating. Thoughts such as everyone will stare at you because you're new and you don't know what you're doing and that your lack of skill and knowledge of this kind of training is visible to others (Hurley et al. 2018). This is one of the many barriers that keeps people from starting a healthier lifestyle among other issues.

Commissioning party of this thesis is Kuntokeskus Balance, where I have been training myself resistance training on my own time for years, and also where I have done both of my practical trainings. Kuntokeskus Balance is a gym based in Kajaani, and it is modern and diverse gym in terms of equipment selection and accessories. They offer from gym memberships to supplements and personal training, and they have been operating since 2009. Subject itself was familiar for me, as I've done both my practical trainings in gym environment as a personal trainer and as a gym employee in commissioning party's gym. Thesis and its theory that I will have to study will deepen my knowledge and give me great tools for critical learning and defining good sources of knowledge.

Purpose of this thesis is to provide beginner gym trainers a guide that will have good knowledge about training itself, and a starting program to follow with exercise guidance video that has commentary to supplement on what to focus on. For commissioning party, purpose is to be able to offer to all clients' exercise guidance through the guide video and to give them new basic training program to offer to new and current customers. In addition to this, the guide will set solid foundations for more demanding and progressive workout programs in future. Aim also is for author to understand what it takes to make a well-rounded and safe starting program for adolescents, and to give a chance for longevity in training if their motivation continues to train, and even if not, gives them a safe and efficient way to test resistance training. Thesis and end product was created for adolescents between ages of 13-18-year-olds but is applicable for any ages older than 13-year-olds.

The product is two different resistance training programs for beginners and a digital video guide with commentary to help visualize and understand what to focus on each exercise. Aim is that for the commissioner, to help retain new customers that want to try out this kind of training, by giving clear program and technique help, as following one will motivate easier to keep going when

results will show sooner. This product also in theory should help personal trainer (PT) services at Kuntokeskus Balance, if client has started with this program, PT has clear idea what client has done previously and how to progress from there. The thesis will be demonstration of authors expertise in health enhancing physical activity.

2 Resistance training

2.1 What is resistance training

“Resistance training is the use of resistance to muscular contraction to build the strength, anaerobic endurance and size of skeletal muscles” (Department of health 2018). The term resistance training is general and includes variety of methods and modes. These modes may include both machine weights and free weights. Most often resistance training is to obtain one or more of following goals: Preventing injuries and rehabilitating from one, general fitness training, physique training (bodybuilding) or training to benefit another competitive sport. (Stone et al. 2007, 1.) According to Kraemer & Ratamess, essential part of success in resistance training at any level of fitness is proper program design. This includes good instructions on exercises such as good use of equipment, proper technique and breathing, proper program also has clear goal for what the athlete or client is striving forward and also way to assess progression of the training and goals. (Kraemer & Ratamess 2004). When weight training is done consistently and often enough, along with proper nutrition the physique changes in positive ways (Baechle & Earle 2020, xiii).

During weight training there occurs three different types of muscle actions, these are isometric, where muscle tension happens, but there is not significant shortening or lengthening of the muscle. There is also concentric, where muscle shortens during lift. Third action is eccentric, where tension is present, but instead of shortening, the muscle lengthens (Baechle & Earle 2020, xiii).

2.2 Physical activity recommendations

Australia’s Department of Health (2017) states that young people 13-17-year-old individuals need at least one hour of moderate to vigorous physical activity per day, which should include variety of aerobic activities, and some vigorous activities. Strengthening exercises are important also, and adolescent should be doing them at least three times each week. They also state that these are minimum recommendations and adolescent who are more active than minimum will enjoy more health benefits. Furthermore, Finland’s Health and welfare department THL (2021) recommends for children and adolescent aged 13–18-year-old to have physical activity one to one and half

hours per day each day. The physical activity should be versatile and appropriate for their age. This kind of activity supports children's nervous system and helps them to develop fundamental motoric skills. Adolescent should focus more on basic skills and movements and their combinations.

NHS (2021) lists physical activity examples that strengthen muscles and bones. This list includes: gymnastics, football, jumping, martial arts, resistance exercises with exercise bands, weighted machines or handheld weights, sit-ups, press-ups, and other similar exercises.

2.3 Benefits of resistance training

Research shows that positive effects of resistance training are such as, but not limited to, increasing muscular strength and power, positive body composition, bone health and reduction of physical activity-related injuries (Faigenbaum & Myer 2010). According to Wayne (2012) resistance training also enhances mental health, these include reduction of fatigue symptoms, anxiety symptoms and depression. Recent studies also find that physical activity (PA) in general affects children's cognitive functioning which leads to improvements in cognition. (Gallotta et al. 2015; referenced Tomporowski et al. 2008 & Diamond, et al. 2011)

Adolescent and children who regularly attend in resistance training activities appear to gain strength-based progression easier than hypertrophic progression compared to adults. This is due to inadequate levels of circulating testosterone to stimulate their muscle sizes. (Faigenbaum et al. 2009)

2.4 Resistance training programs

According to Wathen & Hagerman (2010) one of the toughest parts that strength and conditioning coaches face is that their designed programs should provide greatest benefit to their client. This can be achieved by having proper overloading to the muscles without inducing overtraining.

As there are unlimited number of ways that components of training program can be made, there isn't a single absolute best program for everybody. However, for beginner resistance trainer good

rule of thumb is to follow guidelines set by National Strength and Conditioning Association. These guidelines state that 1-3 sets of 6-15 repetitions per exercise. (Wathen & Hagerman 2010, 47-51; referenced Baechle & Earle 2004, 370-383). Medicine & Science in Sports & Exercise (2009) states that beginners who have not done resistance training before, should follow a repetition range of 8-12 per set. However, starting with just one set per exercise might be limiting gains because of small total volume of exercise, this means 2-3 sets per exercise should be completed. Training intensity is relative amount of lifted weight of trainer's maximum capacity for a set number of repetitions, this is usually indicated by %1RM, which means percentage of perceived one repetition maximum weight that the trainer should be able to lift. For example, if trainer is able to bench press 100kg for one repetition at their best effort, their 1RM is 100kg. If trainer lifts same exercise with 70kg for 6 repetitions, their set %1rm is 70% (Wathen & Hagerman 2010, 47-51).

Starting with 50-60% of 1RM for novice resistance trainer is sufficient for beginning, but as training keeps progressing, later should greater %1RM be used. Training volume should be increased gradually in order to keep client interested and progressing. However, technique in exercises should be first priority instead of increasing weights and volume of exercises immediately, this will bring longevity and safety to the programs and training. (Wathen & Hagerman 2010, 47-51).

Structure of programs should also be taken into consideration in order to keep training as efficient and safe as possible. According to Medicine & Science in Sports & Exercise (2009), programs should take into consideration the order of exercises, such as large muscle groups at the start of training, and smaller in the later part of training, multiple-joint exercises first and single-joint exercises after these and to start with higher intensity exercises and lesser intensity exercises towards the end.

2.5 Concerns of resistance training in adolescent

In past there has been concerns of negative impact to youth's growth and injury risks when starting training too early. According to Faigenbaum (2010) recent studies show that there is no evidence that suggest resistance training would negatively affect youths' growth or maturation. When performed with proper lifting technique and adequate weights, the injury occurrences are either extremely low or nil. However, if proper resistance training guidelines and

recommendations are not being followed, there is potential for serious risk. In 2010, there were only three published training studies that had reported weight training-related injuries, this gave Faigenbaum et al. an estimated rate of injury between 0.053 to 0.176 per 100 participant hours. All of these injuries were minor with longest resolving within one week of resting (Faigenbaum 2010). These findings can be interpreted in a way that when youth train correctly according to proper program and guidance instead of aiming straight for highest possible weight on the bar without learning proper technique, the results should be safe.

In general, even in current days there might be some misconception towards strength training for children amongst adults. Study made in 2015 by ten Hoor et al. had 314 parents of adolescent children between ages 12- to 15-year-old fill a survey regarding their attitude towards physical activity in forms of aerobic exercises and strength exercises. Results show that while only 4% of parents didn't allow their adolescent to participate in aerobic exercises, 29,6% of study's parents didn't allow their adolescent to participate in strength exercises due to belief that it could have negative impact on their optimal physical development. (ten Hoor et al. 2015).

3 Purpose & aims of thesis

Purpose of the thesis is to create a clear structured start to weight and resistance training for beginner customers of Kuntokeskus Balance while also gaining further information about programming for beginners. Questions that this thesis aims to answer are as follows. How should basic resistance training program for adolescent made and what should be taken into consideration when making resistance training program for adolescent? Is it safe for example 13-year-old to start resistance training or will it have significant injury risk, or will it stunt growth plates?

While there are similar theses done to Kuntokeskus Balance such as “A Free Weight Video Guide for Balance Fitness Center Customers” by Lausti and Lehtinen in 2015 and “Online Beginner Fitness Guide Designed for Gym Balance Customers.” By Alakärppä and Vatanen in 2013, they have mainly focused on working life people and their physical issues that they have because of their sedentary lifestyle. Aim of this thesis is to have a modern version which customer can watch for example on their phone during their resistance training session if they are unsure if they are performing the exercises given correctly. By giving clear and basic program paired with how to execute guide video, ideally should ease, and motivate person starting their journey into resistance training.

Idea is to have two different programs. First program is one split, meaning it is one single workout that is repeated from one to two times per week with focusing first on technique learning and secondly progression in either repetitions or weights each session. The program aims to have 6-8 exercises, focusing mostly two exercises per major muscle group. For example, chest press & pec deck for chest, pulldown, and supported row in machine for back, leg press and seated leg curls and then one exercise for arms and core. Second program which would be split into two different days would have upper body day and lower body day. These would have same principles, two exercises for each major muscle group, but on top of that could also focus one exercise for shoulders, calves, abductor/adductors and biceps and triceps muscles. For commissioning party having two base programs for beginners helps their workload as they can offer these as starting point for new customers, who which if want further guidance later on after they have learned fundamentals of resistance training, can offer personalized training programs and guidance as more specific product. Having done this way, the product helps customers who perhaps aren't ready to invest straight away for personal training as it might be costly especially for young

adolescent who are full time students but gives them a clear starting point without having to spend more than for the gym membership.

4 Training program development process

Aims of this thesis was to follow service design toolkit model which is a tool made by JAMK University of Applied Sciences in 2012 (SDT - Service Design Toolkit, JAMK University of Applied Sciences). This model follows four step model which consists of defining, learning, solving and finally testing.

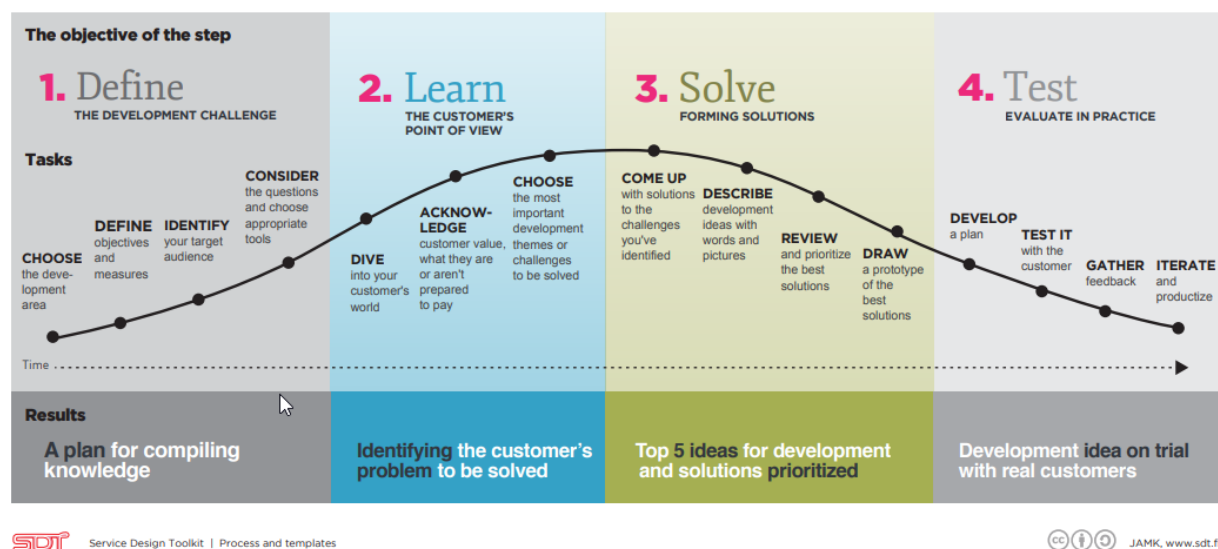


Figure 1: Steps of SDT (SDT - Service Design Toolkit, JAMK University of Applied Sciences).

When following service design toolkit model, it is easy to see tasks to follow and focus on each phase of service development process as it gives goals. Purpose of thesis was to provide a good starting program for new and old customers of commissioning party, and with help of SDT, it was easy to define target audience and to develop a product that is easily accessible.

4.1 Defining

Aim was to define where is need for a service or product. Thesis idea came from personal experiences and through practical training which was part of my studies before thesis. Defining part started with laying foundation and educating themselves through theory. Since not everybody has access to personal trainer or a proper training guide since internet is full of guides, how can a beginner assess which ones are good solid ones and which ones are just exotic or "out of the box" exercises just for sake of appealing more and attracting more viewers and customers.

Aim of thesis becomes clear to author this way and identifying target audience was made by taking a look at other similar thesis done before and finding a target group that hasn't been done already, which in my opinion is adolescent who are interested in trying out resistance training. As I have previously done personalized resistance training programs for customers through learning on the job, this product would be different, and I needed more theory in order to create a valid product. This product differs in a sense that it should be easily accessible for anyone and everyone who is interested in starting resistance training as a hobby or a lifestyle, since previously author had one on one contact with clients and could assess their specific needs and make programs fit for them. This product doesn't have luxury of such specificity. Also, the exercises would have to be lower barrier of entry in order to keep it accessible for everyone, while also giving some variability other than just stating that client should go through all of the pressure operated machines. Defining target audience which to focus to was done by taking a look at previously done thesis for commissioning party and attempting to focus on new target audience. Previously done thesis mostly focused on working aged people and those with sedentary lifestyle, and because there has been in my opinion a rise of interest in attempting resistance training amongst adolescent in commissioning party's facilities in recent years.

From beginning it was clear to author that they should make two different programs. Reasoning here is that it helps author, since creating only one program with same exercises every session is very restricting when thinking of number of exercises to include and time available for these resistance training sessions. Two different programs with a lower barrier of entry, being the single split workout where customers perform whole body each session they have, and an upper lower split program where client performs two different workouts alternating every other session that is slightly more complex but still great for beginner. If customers decide to, they could start with single split program, and then move onto upper lower split workout after they feel more comfortable and want to change routine.

4.2 Learning

When product and target audience was defined, it was time to learn more theory about structuring resistance training programs and looking at scientific studies that tell us about resistance training in adolescent, since as there were at least previously concerns of risks and issues thought to be involved. Aim was to find good sources such as peer reviewed scientific studies from google

scholar, scientific articles from highly educated persons and generally scientifically proven information where you can find facts behind these statements and conclusions. Major part of theory and literature review was taking a good look at literature of science based efficient workout programs and programming in general for beginners. This way there will be solid foundation and relevancy for the program, and it can be reliable this way. As for customers value and what they are prepared to pay, doesn't fall under this product since it's going to be a free guide video provided to all members of the commissioning gym if they are interested and it can be found on commissioning party's website. After theory part was complete, author moved onto structuring the program by narrowing down the number of exercises in total, number of exercises per major muscle group and deciding which are most important ones to focus on for beginners based on the theory that they previously had gone through. Guidelines set by National Strength and Conditioning Association in 2000 are good baseline for beginners, as they have information about structuring and exercise and repetition ranges. Author had information from scientific sources, but also had discussions with commissioning party about their ideas. During these discussions author acquired great amount of information, but also commissioning party's owner made a good note that while they give me their perspective, it is not their way of saying that how author should do it, but to emphasize that this is their reasoning and perspective and that author should use this as part of information, just as another source, and form their own vision. Combination of these sources, authors own ideas and perspective as well as available exercise equipment at commissioning party's facilities the author created the programs.

4.3 Solving

Next step in product development process was planning out filming of these exercises. Idea was to film during day middle of week when there weren't many customers working out, in order to not disrupt other customers who are using the facilities. Original plan was to film the material for guide video at the end of April, but because of author suffering from covid-19 during this time, filming had to be postponed for two weeks in order for author, who was performing the exercises in guide video to recover. With already tight schedule towards the end of thesis, this meant that there was no time for testing the final product with client or clients before publishing it. Planning phase wasn't done well enough to take into consideration that this could happen, which was an obvious oversight on my part in hindsight. When filming started, author I travelled to commissioning party's facilities in order to make test filming with commissioning party's supervisor,

Pekka Vallo, this was just two different exercises we filmed, tried out different angles and if the camera was suitable for filming such content. With these test videos author was also able to test if making commentary on top of these videos was suitable and if there had to be any changes to be made in filming in order the commentary to fit. Everything from test filming to commentary went smoothly, and I made plans to film whole material needed for product to be filmed the following week. Author and commissioning party were debating if they should film the guide video vertical or horizontal, but during film testing both came into conclusion that video should be filmed vertical, due to adolescent most likely would be using their phones to watch the videos during their workout if they forget or are unsure if they are performing the exercises properly.

Product filming day went according to plan mostly, author with help of commissioning party's supervisor filmed all of the needed exercises, but after filming all the exercises and moving onto warmup and stretches, there were some technical difficulties with filming camera, and these couldn't be filmed. With schedule already being behind, author considered scrapping filming these parts and writing more detailed information about them. However, author travelled next week once more to film these missing parts, and during this time there were no technical difficulties and author was able to film all parts that were originally planned to be included in the guide.

With all material filmed and ready, author moved onto adding commentary over these videos. First day was spent writing a script for commentary and deciding key points to focus on without adding too much information that could make movement seem too complex, main points were to keeping exercise safe and focus on using full range of motion, as well as controlling the weight during these exercises. This recording part was made using authors headset and Window's own voice recording program.

Final part of product was editing the video material and fitting the commentary in these videos that show the exercises. Editing was done with free editing program called Shotcut, idea was to keep editing to minimalistic and to make commentary go along as author was performing the exercises on the video, this meant sometimes pausing the video at the beginning, for commentary to give information about the exercises that is shown, and for example pause during video if needed. In warmup part where there is no commentary, author used free copyright music from YouTube, so that there wouldn't be only silence, but that the video would be more enjoyable to watch. After editing was made, video was uploaded to YouTube, and it was made available to only those who have the link to it. With guide video and program done, author presented finalized product to commissioning party for them to give feedback and to use as they intend.

4.4 Testing

As previously mentioned, because of unexpected issues and tight schedule planning, author was not able to perform last part of service design which is testing. Original plan was to test final product on one or two clients and gather feedback from them and further improve the product before publishing it. As the product hasn't been made public yet, there is still chance for commissioning party to carry out testing and gathering feedback before making the product available for their customers.

5 Discussion

Aim of this thesis and guide video, is to stick to basics that have been scientifically proven to work and to be efficient and safe. Guide aims to be easily approachable and available for all customers of commissioning party and practices good form and full range of motion first and foremost before focusing on weights that are lifted and progression in terms on load on the bar.

Aim of this thesis also was to have a different approach compared to theses that have been done previously to commissioning party. A new updated approach was found and it in theory should be more accessible and enjoyable for target audience, since they have an option to watch on their phone if they are unsure how to perform a given exercise during the workout.

Purpose of having two slightly different programs was to have more freedom for me in terms of choosing exercises, repetitions, sets, and number of exercises. As for client it gives them freedom of deciding if they want slightly more complex and varied workout program or want to stick to simple one type of program. For example, I wouldn't necessarily choose hack squat to full body workout program for beginner as it could be bit too fatiguing on a full body day, but might choose it in two split workout program, which could be more challenging but still safe basic program. Another point to keep in mind that preferences differ from person to person greatly. This is another reason the product will include two versions of programs. One that's more fitting for a person who wants to keep it simple and go to the gym once or twice per week and have whole body session, and another program that is more varied and can be performed multiple times per week, with also having two separate days instead of one simple workout each time.

For full body workout I've decided on having one compound movement which is leg press and one isolating movement which is seated leg curls. This way both quadriceps and hamstrings are trained, and also because of lack of time/space for additional exercises there isn't exercise dedicated for calves, these aren't as important to directly focus on for beginners as bigger leg muscles. For chest there is one exercise, and I've chosen chest press machine which mostly focuses on pectoral muscles, but also focuses indirectly on anterior deltoids as well as triceps muscles. For lateral part of deltoid, there is one isolated exercise because pushing or pulling movements do not target them. Back has large muscles and different muscle groups such as latissimus dorsi, trapezius and posterior deltoids. I have chosen two different exercises to be performed on back, firstly seated lat pulldown with wide grip to target mostly latissimus dorsi and middle and lower

part of trapezius. Seated cable row is to target the latissimus dorsi again, but also posterior deltoids, erector spinae and biceps muscles. And lastly to focus on core muscles such as rectus abdominis and obliques.

For upper lower split workout program, I felt making these was easier since you aren't as restricted by number of exercises that you can use, I felt like there is more room for specificity. I've started with lower body day which starts with horizontal leg press, again to focus on quadricep muscles mainly. Second exercise is hack squat, which works your whole lower body, emphasis on glutes, quadriceps, and hamstrings. This of course depends on how your legs are placed on the platform, but generally most emphasis is on posterior side of legs, such as glutes and hamstrings. Third exercise for lower body day is seated leg curls, and here is where we move from compound movements which train many muscle groups at the same time, to isolating movements which mainly target one muscle group. Generally speaking, isolating movements are preferred to be done after compounds movements after the heaviest exercises are done and want to shift focus to more specific muscle groups to train. There are cases when person should start with isolating movements, for example when they want to specifically focus on muscle that is inferior compared to other muscles in symmetry of size or strength and when the person is unable to properly perform isolating movements for said muscles after big compound movements. For example, a personal reason for me was when few years back I was unable to properly train my arms at the end of pulling day, there I changed from three split, push, pull, legs split to a push, pull, legs, arms split where I would have a separate day for arms in order them to catch up in symmetry to rest of my body.

The seated leg curls are isolate movement for your hamstrings and that is our focus on this exercise. Then comes seated leg extensions which are another isolating exercise. This exercise focuses on your quadriceps. Fifth exercise I've chosen for lower body day is abductor & adductor machine, which focuses on your outer hip and thigh muscles. I feel like this is good movement when focusing on longevity, as these muscles are often lacking on beginners and are needed on movements such as barbell squats and sumo deadlifts. Lastly, I've added abs machine to work on your core muscles, which are important and should be trained straight from the beginning.

Upper body day starts with two options, I've put into the program that client should start with either chest press machine or regular barbell bench press. Because the barbell bench press might be hard for some clients to begin with, I haven't restricted to using only it, but I've given them a choice to choose from either one. With first exercise being chest focused compound movement, while also targeting anterior deltoids and triceps on top of pectoral muscles, I have chosen

pectoral deck machine as second, isolating movement to give pectoral muscles a good focus. This is where these two programs differ. In the full body workout program, there isn't space for second, an isolating movement to be done on every exercise because the workout would drag on too long for beginner, on upper lower split program, there is more room for isolating movements and specific muscle groups. For third exercise, I have chosen seated lateral raise machine. Again, because lateral part of deltoids isn't being used in pushing or pulling exercises, it is important to give them their own movement to keep healthy balance between deltoid muscles. Then we move on to backs muscles. Here, I've gone on same route as on full body workout program because there isn't any reason to differ from that when they are good options for beginners. Starting with seated lat pulldown with wide grip for latissimus dorsi and middle and lower part of trapezius. This is followed by seated cable row with neutral, narrow grip handle for targeting latissimus dorsi, posterior deltoids and erector spinae. Lastly, I've added two isolating movements for arms, which didn't have place or space in the full body program. Starting with close grip cable triceps pushdown, which focuses as the exercise says, your triceps. And the final exercise on this program is standard dumbbell bicep curls, for your biceps. As the programs don't differ very much from each other, I feel that upper lower split program brings a bit more depth into training and specificity. The whole-body program is simple and concise, and if client wants, they can start with that and then progress after few weeks to the upper lower body program.

With fitness being at it's all time high, and social media being full of information about fitness and working out, it can be hard to find reliable sources. Most often the basic, working information and exercises are overlooked when a physically appealing and fit person shows some extreme exercise you've never seen before and you think, well since he's in such a good shape, this must work! Most often this is not the case. People want results fast and effortless with cutting corners, but most of the time this isn't sustainable or best route. This I find true especially in adolescent who are exposed to fitness through friend of a friend or fitness influencers on social media who promote their "own secret steps of making quick gains". Possibly dangerous techniques and supplements that these influencers may offer and promote can be harmful and give unrealistic expectations about progression and reality of how long it takes to make significant progression and physique changes, just for their own monetary gain without thinking about consequences there might be to young audience that is watching and following them. This doesn't mean that every fitness influencer is giving false expectations and selling their own "secret shortcuts" to success, but for a person who isn't familiar with fitness concepts and reality it is difficult to truly know "what is what".

5.1 Conclusion

With such product being quite common among sports & leisure management students the author wished to be able to add something new and different perspective instead of repeating what has been previously done. Theory as whole in this thesis is quite significantly shorter when comparing to other similar thesis done from authors who have completed same degree. However, from the beginning the main focus was on creating a product which is helpful for everyone involved. The author, commissioning party and clients of commissioning party in my opinion will benefit from clear guide that has been provided through the process of this thesis. Also, author proves good support against common or previous misconception that teenager or adolescent might be too young to start resistance training due to risk of major injury or stunting growth plates. In general, the finished product is great for beginners in terms of giving them clear idea and laying solid foundation for future progression. Commissioning party should with help of this product be able to provide service for more customers and be able to help them further along if customers decide to have more complex and specific program afterwards.

5.2 Professional competences

Kajaani University of Applied Science's study guide states for bachelor's degree in sports and leisure management the student needs competence in physical activity, meaning ability to manage the fundamental knowledge and skills required in most common physical activities and to be able to apply them when instructing different groups and also that student understands the value of various physical activities as tool for developing motor skills and physical qualities. With exercise guide video, author has shown their knowledge of these exercises and professionalism towards guiding training. This video and training program shows competence in health promoting physical activity and coaching which is another competence that student of this field should possess. Professional competences gained from thesis process and product development process are important in moving onto working life from being a student. During the theory process author learned valuable lessons about critical sources and can differentiate research type of sources and sources that give information purely based on their own opinions without having any scientific or proven truth to these claims. This is important lesson to learn due to internet being full of information but being able to critically assess good information isn't always clear. When making claims as professional in health enhancement field and as personal trainer it is important to be able to

show scientific proof of such claims to clients and to other professionals. Author himself daily can observe on social media for example people claiming in their videos or comment sections pretty much anything related to resistance training, but rarely there is any merit to them if they can't show through good scientific source why such thing is as they claim it to be. Thesis itself gave new points of views also and made author realize that there is always new to learn each day, even though you have done workout programs and trained others previously.

5.3 Ethicality and validity

As there is no single workout plan that is simply best for everyone, it can be debatable if validity of my program is there. However, author focused on starting with basics and laying a solid foundation with mostly machines rather than straight away all free weights and multi joint movements that require good form in order to be efficient and safe. While these are something that I would try on clients at the start, it is not in my opinion wise to stick them into a program that is meant to be suitable for everyone, especially without a personal trainer being present checking form and correcting. Making a well-rounded program that fits for all is difficult due to people's different limitations and preferences. For example, a loaded leg press might feel uncomfortable and scary for some clients, and they would prefer leg extension instead. This is the reason why author prefers personalized programs from professionals over generic programs who are fit for anyone and everyone. With personalized programs there goes good evaluation of different variations and exercises when done correctly, and that program is specially made for the client and for the clients need. I have myself during my practical training figured out that even when you have on paper the best program that you can come up with based on interview with the client, that it is important to go through the program with the client and see if theory matches with reality. It always doesn't and from going through the program and exercises one on one with the client, you have better idea and can make small adjustments which could have difference of night and day.

5.4 Further development

Due to difficulties in keeping up with schedule and being unable to test product with real clients, should there be follow-up and possible some changes to be made to the program and guide after the product has been released to public use. Also, there is a dire need for Finnish translation with

either captions or totally separate guide video with same material, but with Finnish commentary instead of English. This would make the product more accessible for bigger audience. YouTube itself has made automatically captions in English for the commentary part, but this isn't correct in every part, although author is surprised with how close the automatically done captions are compared to what actually is being commentated on the video. This should be done manually.

With product finished and delivered to commissioning party for them to decide if they want to use it on their website directly, or if they will publish it in Facebook which is easier to manage. However, because guide video being done in English only, commissioning party might want to hold off the release of this product until they have done themselves a Finnish translation based on this product in order for it to be more accessible for everyone since major percentage of customers are Finnish based. Product is intended to be released for new and current customers of Kuntokeskus Balance by commissioning party during June 2022

6 List of sources:

Alakärppä, N. Vatanen, J. (2013). Online Beginner Fitness Guide Designed for Gym Balance Customers. <https://urn.fi/URN:NBN:fi:amk-2013120219286>

Better Health Channel. Resistance training – Health benefits. Department of health, Victoria state government. (2018). <https://www.betterhealth.vic.gov.au/health/healthyliving/resistance-training-health-benefits>. Available 31.01.2022

Baechle, T. R. & Earle, R. W. (2020). Weight training: Steps to success. Champaign, Illinois. Human kinetics.

Faigenbaum, A. Kraemer, W. Blimkie, C. Jeffreys, I. Micheli, L. Nitka, M. Rowland, T. (2009). Official Journal of the American College of Sports Medicine. Journal of Strength and Conditioning Research. 23(1), 60-79.

Faigenbaum, A. & Myer, G. (2010). Pediatric Resistance Training. Current Sports Medicine Reports. 9(1), 161-168.

Faigenbaum, A. & Myer, G. (2010). Pediatric Resistance Training. Current Sports Medicine Reports. 9(3), 161-168

Gallotta, M. Emerenziani, G. Iazzoni, S. Meucci, M. Baldari, C. Guidetti, L. (2015). Impacts of coordinative training on normal weight and overweight/obese children's attentional performance. Frontiers Research Foundation. <https://www.proquest.com/docview/2291364469?pq-origsite=primo> Available 07.02.2022

Hulmi, J. (2015) Lihastohtori I. Helsinki. Fitra Oy.

Hurley, K. S. Flippin, K. J. Blom, L. C. Bolin, J. E. Hoover, D. L. & Judge, L. W. (2018). Practices, Perceived Benefits, and Barriers to Resistance Training Among Women Enrolled in College. International journal of exercise science, 11(5), 226–238.

KAMK University of Applied Sciences. Bachelor's Degree in Sports and Leisure Management, Bachelor of Sports Studies: 210 ECTS. Bachelor of Sports Studies. Study guide & competences. <http://opinto-opas.kamk.fi/index.php/en/68146/en/68091>

Kraemer, W. & Ratamess, N. (2004). Fundamentals of Resistance Training: Progression and Exercise Prescription. Official Journal of the American College of Sports Medicine

Lausti, J. Lehtinen, V. (2015). A Free Weight Video Guide for Balance Fitness Center Customers. <https://urn.fi/URN:NBN:fi:amk-2015052811149>

NHS (2021.) Physical activity guidelines for children and young people. <https://www.nhs.uk/live-well/exercise/physical-activity-guidelines-children-and-young-people/>
Available 23.02.2022

Progression Models in Resistance Training for Healthy Adults. (2009) Medicine & Science in Sports & Exercise 41(3) 687-708.

Pearson, D., Faigenbaum, A., Conley, M., Kraemer, W. (2000) The National Strength and Conditioning Association's Basic Guidelines for the Resistance Training of Athletes, Strength and Conditioning Journal: 22(4) 14.

SDT - Service Design Toolkit, JAMK University of Applied Sciences, www.sdt.fi. (2012) Available
3.2.2022

Squats Are Secretly An Adductor Exercise. (2019) Stronger By Science <https://www.strongerbyscience.com/squats-adductors/>

Stone, M. H., Stone, M. & Sands, W. A. (2007). Principles and Practice of Resistance Training. Human Kinetics.

ten Hoor, G.A., Sleddens, E.F.C., Kremers, S.P.J. et al. Aerobic and strength exercises for youngsters aged 12 to 15: what do parents think?. BMC Public Health 15, 994 (2015).

Terveyden ja hyvinvoinnin laitos (2021) Liikuntasuosituksset. https://thl.fi/fi/web/elintavat-ja-avitsemus/liikunta/liikuntasuosituksset#Liikuntasuosituksset_lapsille_ja_nuorille

Wathen, D. Hagerman, P. (2010) Personal Training 101: Program Variables and Design, Strength and Conditioning Journal 32(3) 47-51.

Westcott, W. L. (2012) Resistance Training is Medicine. Current Sports Medicine Reports. 11(4), 209-216.

Appendix 1: Upper lower split workout program

Day 1: Lower body

Example sets and repetitions: 3 x 8-12 (sets x repetitions)

- 1. Horizontal leg press (3 x 8-12)**
- 2. Hack squat (3 x 8-12)**
- 3. Seated leg curls (3 x 8-12)**
- 4. Seated leg extension (3 x 8-12)**
- 5. Abductor & adductor machine (3 x 10-15)**
- 6. Abs machine (3 x 10-15)**

Day 2: Upper body

Example sets and repetitions: 3 x 8-12 (sets x repetitions)

- 1. Chest press machine OR barbell bench press (3 x 8-12)**
- 2. Pec deck machine (3 x 8-12)**
- 3. Seated lateral raise machine (3 x 10-15)**
- 4. Wide grip lat pulldown (3 x 8-12)**
- 5. Seated cable row (3 x 8-12)**
- 6. Cable triceps pushdown (3 x 8-12)**
- 7. Dumbbell bicep curls (3 x 8-12)**

Link to exercise video guide with commentary:

https://www.youtube.com/watch?v=XDN_l4fd6Ro&ab_channel=PekkaVallo

Click on timestamps in video description to choose exercise.

****Always start your workouts with 5-10 minutes warmup on either stationary bicycle, treadmill or on cross-trainer. After this, warm up specific muscles/muscle groups you are going to train with dynamic stretches.***

****Remember to focus on good form and control on every exercise.***

****Always perform warm up sets on each exercise before you start doing your working sets.***

****No need to go all out, leave approximately 2 repetitions in reserve.***

****Aim to perform more repetitions each session than previously, if easily performed upper limit of repetitions on last training session, add more weight.***

Appendix 2: Full body workout program

Whole body workout program

Example sets and repetitions: 3 x 8-12 (sets x repetitions)

- 1. Horizontal leg press (3 x 8-12)**
- 2. Seated leg curls (3 x 8-12)**
- 3. Chest press machine (3 x 8-12)**
- 4. Wide grip lat pulldown (3 x 8-12)**
- 5. Seated cable row (2-3 x 8-12)**
- 6. Lateral raise machine (2-3 x 10-15)**
- 7. Abs machine (3 x 10-15)**

Link to exercise video guide with commentary:

https://www.youtube.com/watch?v=XDN_l4fd6Ro&ab_channel=PekkaVallo

Click on timestamps in video description to choose exercise.

****Always start your workouts with 5-10 minutes warmup on either stationary bicycle, treadmill or on cross-trainer. After this, warm up specific muscles/muscle groups you are going to train with dynamic stretches.***

****Remember to focus on good form and control on every exercise.***

****Always perform warm up sets on each exercise before you start doing your working sets.***

****No need to go all out, leave approximately 2 repetitions in reserve.***

****Aim to perform more repetitions each session than previously, if easily performed upper limit of repetitions on last training session, add more weight.***

****On exercises which have 2-3 sets, start with 2 and as you progress and feel ready, add third set.***

Appendix 3: Link to YouTube video of exercise guidance

[Warm up and exercise guide](#)