



Only the Strong Survive

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Survival Of The Fittest

“Survival of the fittest” is a phrase that was first used by Herbert Spencer to exemplify Charles Darwin’s law of natural selection. This is the process by which individual organisms with favourable traits are more likely to survive and reproduce than those with unfavourable traits. This law is considered highly immoral in our Australian society, yet still applies in various cultures around the world and is probably most prominently envisaged in sport. Only the fastest, biggest, strongest, smartest, toughest and most enduring athletes become top competitors in their chosen activity, and this is no different when moved into the context of Jujitsu. It is commonly thrown around martial art dojos that technique will always beat

strength; strategy will always defeat speed and tactical brilliance will out play endurance.



“Only the most physically adept become champions in their chosen sport”

But when one finally faces facts and watches a variety of competitions, they will often see tactically brilliant martial artists get

massacred by their enormous opponents. This simply occurred because the opposition was stronger, more physically adept and more aggressive than the other martial artist. That being said, in a competition between two equally fit giants, the more technically sound individual will be the one to walk away with the trophy. So how does one ensure that they succeed to the best of their capabilities? Firstly, get the technique down to near perfect, then work on the power aspect.

Strong as an Ox, Fast as a Cheetah, or as Enduring as a Horse?

What is more important - strength, speed or endurance? The answer usually comes down to the style of the competitor. Does your competitor like to feel the surge of adrenalin when wrenching an opponent clear off his feet and slamming him with a ura-goshi-makikomi? Would they prefer to nimbly jump in as soon as the bout starts with a beautiful seoi-otoshi? Or maybe

they would prefer to drag out the grueling match until their opponent is dead on their feet and then simply take them down with a basic osoto-gari. Each of these strategies apply respectively to strength, speed and endurance and neither is greater than the other. It is dependant upon the competitor’s winning strategy and technique that will determine how

they train. All competitors should have a solid base of all three types of fitness, so they are not so easily overcome by their own physical weaknesses. A sound strategy is, when competing play on your own strengths, and force the opposition to play on their weaknesses.

Jujitsu Specific Muscle Groups



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Ippon-seoinage

Jujitsu is a combat martial art where all muscles of the body are used in a strenuous manner. In controlled competitions, there are three main skill sections - grappling, standing techniques and sparring. Each section contains different strengths needed, and different levels of endurance. Grappling is an area where speed is not of great value. The type of strength mostly used is upper-body muscular strength and endurance. The main muscle groups used are chest, lats,

trapezius, delts, biceps, triceps and forearms. This section needs a large amount of muscular endurance. In standing competitions, speed is important for pulling off smooth techniques before the opposition has a chance to respond with a defence. The main strength used in this area would be a combination of lower-body and upper-body strength, with the emphasis on lower body. For execution of throws the Jujitsuan has to have particularly powerful quadriceps, calves

and thighs. For entry into throws and grip fighting it is a must to have powerful forearms, biceps, triceps and delts. Cardiovascular endurance is important in this section because there are more long distance and speed movements rather than sheer strength. Sparring involves all **the body's muscles, but rather** than necessarily being strong, the competitor must be mostly physically flexible, involving cardiovascular endurance, muscular endurance and speed.

“The main power muscles in the upper-body are utilized in pulling and pushing motions.”

The Upper Body

The upper-body is an important tool for all Jujitsu competition, but mainly for people most involved in grappling. The main power muscles in the upper-body are utilized in pulling and pushing motions. The power muscles of the upper body are listed to the right with their major accompanying exercise movements.

Chest: Flat Bench-press
Incline/decline Bench-press
Dumbbell Flyes

- Trapezius: Dumbbell/Barbell Shrugs
High Pulls
- Lats: Wide-grip Chin-ups
Bent Over Rows
Machine Pull-downs
- Delts: Bent Over Side Raises
Lateral Raises
Military Presses
Front Lifts
- Biceps: Bicep Curls
Preacher Curls
Alternate Curls
Hammer Curls
Reverse Curls
- Triceps: Dips
Skull-crushers
Tricep Extensions
Cable Pushdowns
- Forearms: Wrist Curls
Rolls
- Abdominals: Crunches
Sit-ups
Hanging Leg Raises
Cable Crunches

A powerfully built back does wonders for all Jujitsu pulling motions



Lower Body



The lower part of the body's muscles are mainly situated in the back and lower legs. The major movement and lifting muscles used in competitions are quadriceps, thighs, calves and lower back. To the right are the major exercises for these groups.

Quadriceps:	Squats Leg Press Leg Extensions
Thighs:	Squats Lunges
Calves:	Machine Calf Raises Standing Calf Raises Seated Calf Raises
Lower Back:	Deadlifts Good-mornings Cable Rows

Cardiovascular and Muscular Endurance

Cardiovascular and muscular endurance are important factors in a Jujitsu's ability to compete. Both areas are often viewed under the term of endurance, but each is different in their utilisation and effect upon the body. Cardiovascular endurance is simply the body's own efficiency at using oxygen and producing energy for the muscles. It primarily involves the heart and lungs. Muscular

endurance is the muscles' efficiency at using that energy, and its capability of performing when depleted or starved for energy. It usually involves the body's capability of tolerating lactic acid produced during anaerobic activity. To enhance cardiovascular endurance, running is a good impact way of strengthening leg muscles and bones while improving cardio endurance. If running is not util-

ized, then a non-impact exercise like cycling is very satisfactory. To improve muscular endurance, high repetition weight training or swimming are excellent activities. Each area will usually have an effect on the other after a period of training.

[www.timinvermont.com/fitness/trainin3.htm]



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Getting Started - Beginner Stage



Starting a new training program for Jujitsu can be a particularly daunting process. You are bombarded with a huge variety of information and controversial ideals while at the same time having people with strict formulae trying to sell their ideas. The truth is, there really is no set format. Over time the trainer will find out what works best for them. To start training it is best not **to throw one's self off the deep end.** This can cause injury and overtraining, which will only hamper the participant's progress. **Instead, start with the basics.** People just starting should focus mainly on isometric exercises (using

static positioning), body weight exercises and plyometric actions (dynamic movements). The beginner should at first perform the three main exercises - squats, push-ups and sit-ups. When the beginner is capable of performing these three exercises to fifty repetitions in a row, then they may advance to stage two. At first, 50 repetitions may seem like a tall order, but remember this is all about progressive overload. This means that each session as a beginner, work out about 5 times a week. Aim to do more repetitions each session. If last session you performed 25 good push-ups, next time aim for 27 and

so on, and the numbers will accumulate over time. Make sure that the pushups are done meticulously with perfect form. An excellent strategy to build up to fifty repetitions is to use target repetition sets. This means that you do as many pushups as you can to muscular failure, then have a two minute break and continue until you reach your goal number of repetitions. This beginning phase is used to ensure that the trainee is capable of using correct movement and builds a solid foundation of fundamental strength.

“...will have built up an adequate amount of basic strength and should be able to grasp the concept of excellent form...”

Beginner Stage Two

In this phase the participant will have built up an adequate amount of basic strength and should be able to grasp the concept of excellent form, so now they can advance without causing themselves injury. When reaching this level, we change the exercises slightly, and add in some new movements. This phase is all about strengthening the joints and ligaments while producing gains so that when reaching the intermediate level the trainee does not cause injury to themselves. In this phase we perform jumping 180 degree turn squats, weighted pushups, variation pushups, pause crunches, under and over arm grip chin-ups and

burpees. In this phase the trainee should use three sets for each exercise, the first two are at a certain repetition number, while the last set is till muscular failure of that muscle. To work out the starting repetition range perform each exercise to muscular failure, then that is the number of repetitions for the first two sets. This means that for the first session, the trainee is working to failure on all three sets, which is necessary for the beginning adaptation to the new session. After that, they progress by adding one (or two, depending on growth rate) to the **first two sets, and then perform the last one to failure.** Before entering the next phase the trainee should be able to perform 25 jumping turn squats (over a

metre distance), 25 weighted pushups (with 30 kilograms of weight on back), 10 Japanese pushups, 25 pause crunches, 15 on both over arm and under arm grip chin-ups, and also at least 15 - 20 burpees. This segment is preparing the trainee for using weights and machines.



Intermediate Stage 1

At this stage, the trainee should have appreciable growth in both muscle and strength. This phase is where the trainee begins to use weight machines. This is where the trainee starts utilizing gymnasium equipment. When at this level the participant should perform exercises such as weighted squats, bench press, bicep curls and triceps extensions. It is best to use machines. For weighted squats and pushups the Jujitsuan should use a Smith machine (available in most well equipped gymnasiums). For bicep curls it is

best to begin with a bicep curl machine, and for triceps extensions cables should be adequate. Along with these exercises the trainee should utilise hamstring curls, leg extensions, leg press, pectoral presses and machine military presses. Other exercises are available at the discretion of the trainee; so be creative. At this stage free weights are not the best course of action because the trainee is now just getting used to pushing weights, and free weights are likely to cause injury if not handled correctly.

Also concentrate on large compound movements such as squats and bench presses to exercise multiple muscles at once. The trainee should be using about four sets in this area, with the last two being to failure. In this phase the trainee should work out three times a week, performing half the body one day and the other half the next. At this level, the participant should spend at least three to four months and build up a large amount of auxiliary strength.

“This stage will come to be the biggest growth shock to the trainee...”

Intermediate Stage 2

This stage will come to be the biggest growth shock to the trainee. The trainee here should do away with most machine exercises and use mainly free weights (with the exceptions of bench press and squats, the Smith machine is still adequate and also leg press, leg extensions and hamstring curls). The trainee will break it up into three days per week, with arms the first day, back and chest the second day, and legs and shoulders the third. The use of free weights here should strengthen the tendons, ligaments and muscles greatly, but also will place great strain upon them. So make sure correct form is used at all times. In each exercise routine use about two to three exercises for each muscle group (see list provided earlier). It is at this phase where exercise order becomes vital.

Logically, when one begins the program, they have more energy stored within the muscles and no build up of lactic acid. This is when the trainee is at their most powerful. It is early on when the big compound movements (squats, bench press, wide grip chin-ups) should be used. Later on, when fatigue begins to set in is when the isolation exercises should be utilised. In the latter part of this phase when one has got a solid foundation of strength and is able to perform the exercises with near perfect form, the trainee should start using tactics to shock the muscles into extra growth. At this level the Jujitsuan should utilise drop sets, heavy sets and take every set to failure. (Information on exercise tactics is exemplified in the latter part of this paper) When the Jujitsuan has built up an excellent strength base and their

body has adapted to tolerate these new tactics and movements, the trainee should enter the next phase. This may last anywhere from three months to a year or even longer, but it is essential not to leave this stage early, for this is one of the major growth phases.



The bench press - the king of all chest exercises

Advanced Stage 1 - For Elite Class Athletes



“This level is not constructed for everyone; it takes serious commitment, an almost sadistic outlook upon workouts and extreme mental and physical toughness.”

This phase is where the trainee focuses on building immense strength and lean mass. This level is not constructed for everyone; it takes serious commitment, an almost sadistic outlook upon workouts and extreme mental and physical toughness. Also, unless you are almost at **peak physical condition this level will be beyond the average person’s recuperative capabilities** and will result in over-training. Not only that, the trainee absolutely must listen to their body, and know when enough is truly enough. At this level, the trainee does away with machines almost completely (except for leg extensions, calf raises, hamstring curls and leg presses). All they should need are dumbbells, barbells, weights, an opposable bench (a bench press bench and a squat rack would also be useful) and also it is completely necessary to have a spotter or training partner. In this phase the trainee should know what exercises work for them and **which ones are their favourites. Remember, do not confuse “favourite” with “easy”.** Your favourite exercises should be the ones that feel most comfortable, and allow you to push yourself to your absolute limits. The trainee should also have a fair grasp of drop sets and heavy sets and should be able to perform them adequately. The trainee should also begin cycle training. This means that you cycle throughout the year with different types of training. The type of cycle that is best for a Jujitsu and is the type that I most condone is monthly. This means that there are four cycles that the trainee goes through in a month. (This also keeps the trainee interested and guessing). These cycles are natural training, volume training, strength training and shock training. **Natural training is the trainee’s natural type of training, the one that was performed at the end of Intermediate Stage 2.** This style is adopted to give the body some consistency and a well deserved break. Volume training is when the trainee pushes themselves and reduces rest time between sets. They perform far more sets than necessary (and always include at least one heavy set, and at the most one drop set near the end). The rest time is reduced to about 60 - 90 seconds and the sets increase from about four to six or even eight. This cycle is used to allow the body to increase its recovery time between each set, and increase cardiovascular endurance and muscular endurance rapidly. Each routine in this cycle should only go for approximately one hour to one hour and 15 minutes. The strength cycle is used just so the trainee can increase their raw strength greatly and strengthen tendons and ligaments. In this cycle only the big, power exercises should be used (bench press, squats, incline bench press, standing bicep curls, drag curls, skull crushers etc.) and each set should be performed to failure. If you are in this cycle, your target repetition range where failure should ensue should be about 4 - 6, though if you find yourself more of an endurance person you may push it up to 8 at the absolute maximum. Also, always add 2 extremely heavy sets where the repetition range is about 1 - 3. It is in strength training, where the spotter begins to become invaluable. Each session in the strength cycle should only last for about 45 minutes to an hour. The last stage, shock training, is the most powerful, and dangerous part of the cycle. This is where we utilise drop sets, heavy sets, super sets and pre-exhaustion sets in one program. This phase will hurt, and is not for the faint hearted. This phase should probably be left out unless you are looking at becoming an elite athlete or else it will be beyond your recuperative capabilities. A more detailed example of shock training is provided on the next page at the top; because of its nature it must be explained in detail. When using this cycle, after ten weeks of training, take an entire week off to give your body a well deserved vacation. Make sure adequate rest is obtained and eat plenty of food. Also look towards supplements to help. This cycle should be enough to advance any trainee in the martial art of Jujitsu.

Shock Training - An overview

This stage is only for elite athletes, so think carefully before trying it or it will lead to overtraining. Shock training is used to shock your body into extra growth, use no more than for one week, then begin the cycle again. Shock training is difficult to explain without visual aide, so I will use words that will create a visual image. To perform shock training, the trainee must perform all sets to failure. They must begin with an isolation exercise (e.g. dumbbell flies) and perform as many repetitions to failure as possible, then

perform a drop set to failure once again; then they move onto a compound exercise (such as bench press) without rest and perform a full set, then drop the weight and perform a drop set with that same exercise. This method utilises drop sets, super sets and pre-exhaustion methods to shock the body into growth. Perform a maximum of 2 shock sets per superset. Always have a warm up set to failure before a shock set, then **finish with a shock set.** So that's a total of four sets.

Each shock training session should only last 45 minutes to a maximum of one hour. If performed correctly, the trainee should feel sore for the next day or two. So make sure adequate rest is obtained, and adequate food is eaten. It is in this area where the spotter must push the trainee to their absolute limits, or they have not performed this part of the cycle effectively.

*“...they
have a
sound
foundatio
n of
strength
and
fitness...”*

Advanced Stage 2

If the trainee has finally reached this stage, they know what works for them, they have a sound foundation of strength and fitness, and a healthy respect for the gymnasium. They would have made incredible gains in strength and gains in muscle size and mass. When the trainee reaches this phase they should become creative, they should mix up their exercises a little, and keep their body guessing. They should utilise training tactics every now and again, and should be pushing some incredible weights. In this phase the trainee should try new styles of training and see what works for them.

The Secret to Strength... The Fork

Whether building muscle or losing body fat, diet is always important. It is not rocket science to lose weight; simply eat less calories than one expends. It is that simple; but if you want to lose weight and maintain muscle you should eat adequate protein (about 1.5 grams of protein per kilogram of body weight) and focus on carbohydrates rather than fats. To gain muscle, the trainee must eat more calories than they expend, and eat about 2 - 3 grams of protein per kilogram of body weight. Also focus on carbohydrates rather than fats, but make sure you eat adequate omega three fatty oils to

maintain a healthy balance within the body. Focus on nutrient dense foods such as vegetables and fruits for carbohydrates, also fibre sources such as wholemeal bread. For protein, focus on lean protein choices such as lean red meats, (at least 4 times a week) chicken and turkey. For fats focus on oily fishes such as tuna or cod (not crumbed or battered, only grilled). Simply eat clean, eat five to six small meals a day and the trainee should be well on track for their physical goals in the future.



The gymnasium is your training ground, your key to growth is the fork



Supplements

When building muscle or training, it is often a good idea to look towards nutritional supplements to help fill the gaps that may occur within your diet. Although supplements are a good idea, stick to the tried and tested supplements such as protein shakes (best brands are Musashi, Body Ripped and Body Science). Stay away from things such as mental enhancers, fat loss tablets and cortisol blockers, simply because many of these supplements are a farce and have little or no effect. It is a good idea for athletes undergoing muscle building to take a good nutritional vitamin supplement, such as a multivitamin. Stick to well known brands such as Swisse, and ask your local chemist for information on what is needed to improve your diet. Also, if you are interested in building mass, try creatine for quick gains and to improve your strength, making sure that you read the label or accompanying booklet and take it in accordance with the directions. When taking supplements, stay away from any anabolic steroids, estrogen blockers and any other hormonal drugs because they can wreak havoc within your **body's internal system and cause further problems down the track for your body.** Remember the body is designed to work most effectively in a natural state - not a hormonal induced high.

“Often it is necessary to change your format of exercises in a certain manner to force the body into growth.”

Training Tactics

Often it is necessary to change your format of exercises in a certain manner to force the body into growth. There are four main strategies for growth that are provided within this paper. These are:

- # drop sets
- # super sets
- # pre-exhaustion sets
- # heavy sets

Drop sets:

Drop sets are sets where the trainee pushes themselves to muscular fatigue on a certain set; so that means that they absolutely could not perform another repetition. Then, immediately they remove a certain amount of weight from the exercise and continue with the movement until they cannot perform another repetition again. This can be performed more than once in a set.

Super sets:

Super sets are where the trainee immediately moves from one movement to another without rest. An example of this would be moving immediately from skull crushers to bicep curls. It is best to use this type of movement when the muscles are close, or they involve agonist and antagonist muscles (for example triceps and biceps or quadriceps and hamstrings).

Pre-exhaustion sets:

These are sets where the trainee performs an isolation exercise for a certain muscle group (to muscular failure) then moves immediately onwards to a compound movement. An example of this would be to move from dumbbell flies to bench press. This is used to force the muscle to work harder and stimulate more muscle fibres.

Heavy Sets:

Heavy sets are used to force the muscle to work as hard as possible and to use huge amounts of strength. A heavy set should be a set where the trainee uses a weight so large that they can only perform 1 to 3 repetitions.

All of these tactics are used to force the muscle to grow and are good to help surpass some plateaux that one may find within their training.

Train to Grow

Why is it so difficult for humans to build muscle? This answer is found way back in the times when our ancestors were hunters and gatherers. The human race is essentially **simply another basic animal, whose intelligence has surpassed their own body's biological intentions.** When the human race is viewed, it is quite peculiar in its movements. Rather than adapting itself to its environments, it adapts the environment to suit itself, and once that environment becomes completely unsuitable, it leaves. This type of behaviour is virtually unseen within the rest of the animal kingdom. It is also this type of behavior that is mirrored within the human body, for our bodies today, are essentially the same as those **of our 'cave man' forefathers. This is why muscle is so difficult to build. Back in the days** of hunting and gathering food, the human body used to run on a circadian clock. This means that it alternated from times of fasting to times of feasting. The humans used to simply eat as much as possible during the warmer months when there was plenty of food to go around, and then place as much of that food as stored energy within the body, which is simply body fat. Then in times of fasting, the humans would be able to survive due to the energy that they have stored up within themselves. Muscles, use up a large amount of energy even at rest in comparison to body fat. So when severely under-eating (fasting) for periods of time, the body begins to burn muscle rather than fat. Why? Simply because muscle uses up too much energy. So to create muscle, we must place ourselves in an anabolic state. This does not mean run out to your nearest pharmacy and attempt to bribe them into providing you with anabolic steroids; it simply means that we must alter the diet structure. Insulin like growth factor 1 (IGF-1) and testosterone are the two main muscle building hormones that cause the human body to enter an anabolic state. To enter this state, there are ten tried and tested strategies to improve your anabolism. The reasoning behind these strategies, however, are far too long to insert within this segment. So, simply put these strategies into practice, and results should ensue. These strategies are as follows:

1. Make sure your workout is dominated by big compound movements, these movements are the exercises that cause the body to release the most testosterone.
2. Try to keep most of your workouts at approximately an hour to one hour 15 minutes. Any longer and the testosterone levels drop due to the stress hormone, cortisol.
3. Use isolation exercises for target muscles and use drop sets to cause a 'burning' sensation due to a build up of lactic acid. This build up will help produce IGF -1.
4. Stretch position exercises (where the muscles are fully stretched as in dumbbell flyes) can increase androgen receptors and perhaps spur hyperplasia (muscle splitting to produce more growth).
5. Eat breakfast as soon as you wake up, and make sure the breakfast is high in carbohydrates and protein. This is because after the overnight fast, the body wakes up in a highly anabolic state.
6. Drink a post workout shake or consume a post workout meal within 45 minutes of training. This shake/meal should contain approximately 40 grams of protein and 60 grams of carbohydrates.
7. Eat six small meals a day, each based around 20 grams of protein. This helps keep the body in an anabolic state.
8. Sip a high carbohydrate shake throughout your workout. This has shown to help hamper cortisol production which prevents muscle growth.
9. Get 8 - 10 hours of sound sleep a night. When one is in REM sleep, the body produces large amounts of testosterone, so this is a time of major growth.
10. Make sleep more anabolic by drinking green tea before going to bed and throughout the day. Green tea has shown to be detrimental to cortisol.

“Muscles, use up a large amount of energy even at rest in comparison to body fat...”



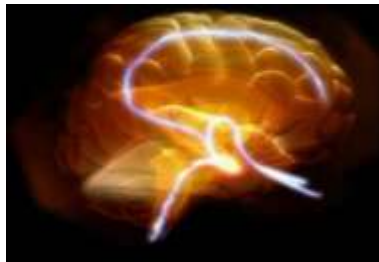
Sleep is important for growth of muscle and mass

Mind Over Matter

The mind is a powerful tool and should be used as such throughout training for Jujitsu. The mind should be kept focused through training and relatively relaxed throughout the rest of the day. These are the most productive states, and of course favourable to the community at large. Not only does it feel good to be relaxed throughout the day, but it also has numerous benefits for the body. When the body is relaxed, it releases endorphins from the brain.

These are 'happy' hormones - the same hormones that are released in laughter - because when having a good laugh, a person becomes relatively carefree and cannot feel sad or down. This has benefits for both the body and the mind. When in a **'happy' non-stressed** state the body

releases less cortisol, which is an anti-anabolic (also known as catabolic) state. This helps the body preserve muscle mass. During training the body should be utmost focused. When the body is focused it releases adrenaline, testosterone and a mixture of other hormones, all that heighten the senses and reaction times. This cocktail of hormones helps the body to perform at



The mind is the greatest tool for the trainee and should be used accordingly

its absolute best and build strength and muscle that can be used in competition. The mind is a powerful tool, although not fully understood. It has a deep effect upon the body in the way it reacts to stimulus. So, to get the most out of workouts, remember to relax, get plenty of rest, have a good laugh a couple of times a day, and stay focused on your goal. Remember, the body can only achieve, what the mind can perceive.

Final Word

Training is different for everybody. Each person has their own methods, their own beliefs, their own style and their own preferences. This is simply because everybody is emotionally, physically and psychologically unique. These differences will cause people to react differently to certain stimuli and situations, so people will naturally react differently to training. Throughout each of these programs stay focused on the goal and never become depressed or down, because workouts may not go as well as planned or progression is not as fast as first expected. People say the body is like a temple and should be treated as such; but in the gymnasium the body is more of an extreme amusement park.

The trainee should push themselves to their own extremities and have fun while doing so. They should try new things and mix things up. This is all simply because although training is serious and should be taken into account with utmost focus, it should also be fun. So when out of the gymnasium, eat well and relax, and when in training be focused on the goal. At all times have fun, because you will not be able to train forever.

At times when ragged and pushed to your limits, or when having to take a break due to injury, remember that the point of life is not to die looking perfect in a nice little box, but to skid in sideways covered in dirt with tattered clothing saying **'What a rough ride, but man was that fun!!!'**.

You only live once - so make the most of it.

