

## Combat Sports Principles

Most of the combat sports have similar physiological demands. They adhere to general structures which usually include work periods of 3-5 minutes per round, rest periods of 1-5 minutes, 2-5 round matches and travel and weigh-ins are required. Since most of the combat sports are similar in nature, the physiological and metabolic demands are also similar.

Combat sports offer a wide variety of unique problems from a physical preparation standpoint. Most combat sports are diverse and require unrelated skills, there is no “off-season”, you may be getting punched and kicked in the face and most are trying to cut 5-10% bodyweight up until 24 hours before the fight. All of this must be taken into consideration.

As a rule of thumb, a successful combat athlete should be demonstrating the following qualities:

- High level of aerobic fitness (resting HR in upper 40’s to low 50’s and HRV in mid-80’s to low 90’s)
- Good shoulder and hip mobility
- Strong mental performance in the face of pain and high-stress, high-fatigue situations

Combat Sports are usually based on two components.

1. Skill and fitness development (the training week) and
2. conditioning and competition preparation (the training camp).

Within a normal training environment, weekly volume and intensity will remain consistent. Once the training camp begins, both volume and intensity will progressively increase as the athlete prepares for the competition.

## Program and Fatigue Monitoring

Having a coach who understands how to monitor and adapt to you as you progress through a training program is one of the most important aspects of his/her job. I understand however, that not everyone can afford a full-time coach. Here are some excellent ways YOU can monitor your fatigue and recovery. It is important to avoid high intensity workouts on days that you are fatigued.

Fatigue Indicator	Meaningful Change
Recovery Score (if using HRV app)	Decrease > 2%
Heart Rate Recovery (HRV app)	Decrease < 5bpm
Explosive Power	Decrease by > 10%
Speed/Acceleration (GPS)	Decrease by > 5%
Change in Resting HR	3-5bpm Increase
Monitoring body temp.	Change by .5 deg.
Higher RPE	Increase in 2 pts or more

### **Rate of Perceived Exertion (RPE)**

9-10: Maximum training- very high fatigue

7-8: Hard training – fatigue will accumulate

4-6: Recovery work – reduced soreness/fatigue

1-3: Very easy – minimal activity

### **Testing, Assessments and Athletic Profile**

Testing and assessment is the first component of programming because it shows us what needs to be trained. It is important that we realize that we cannot improve everything at once.

Hypertrophy and aerobic conditioning pair well together, while absolute strength/power and anaerobic conditioning pair well together.

Every assessment is a different way to evaluate movement:

Strength and power – speed of movement

Movement Screen – quality of movement

Conditioning – movement endurance

Motivation – effort of movement

Movement drives energy production and expenditure.

Athletic Profile – always start a program with this information

- Height and Weight
- Body Fat
- Resting HR/HRV
- VO2 Max, Anaerobic Threshold, Max Heart Rate
- 60 second Recovery Heart Rate Drop

## The Training Week

### Recreational Level:

The goal is to develop enough strength to support skill development and enough conditioning to recovery quickly.

More than likely you have a full-time job and can only train **3-4 days per week**. You are training to stay in shape, learn self-defense, and because you genuinely enjoy Jiu-Jitsu and Combat Sports. It is important that you DO NOT overload yourself.

The key is to build strength and conditioning work around existing training sessions. Avoid training strength and conditioning to a level where you become fatigued.

#### Stimulation Days:

- Technique and Situational Rolls. Lower Intensity Live Rolls
- Cardiac output or conditioning workout heart rate at 60-70% Max.
- Unilateral Strength Training at tempo (eccentric, isometric, concentric).

#### Development Methods:

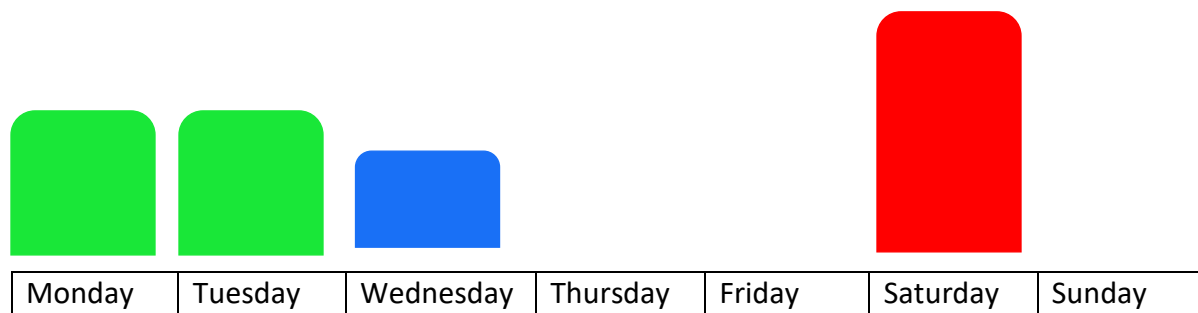
- Multiple High Intensity Live Rolls/Sparring
- Circuit Training
- Explosive Repeats

Stimulation (low to moderate intensity) = Green

Active Recovery (low intensity) = Blue

Development (moderate to high intensity) = Red

### Sample Weekly Training Organization



## The Training Week

### The Competitor:

The goal is to eliminate individual weaknesses in skill, strength, and conditioning while preventing/managing injuries.

More than likely you have a full-time job as well and still train about **5-6 days per week**. You **ARE THE MOST LIKELY** to over train and are **MORE** injury prone because of the stress from both work/family and the demands of training and competition.

#### Stimulation Days:

- Technique and Situational Rolls. Lower Intensity Live Rolls
- Cardiac output or conditioning workout heart rate at 60-70% Max.
- Unilateral Strength Training at tempo (eccentric, isometric, concentric).
- Alactic Intervals

#### Development Methods:

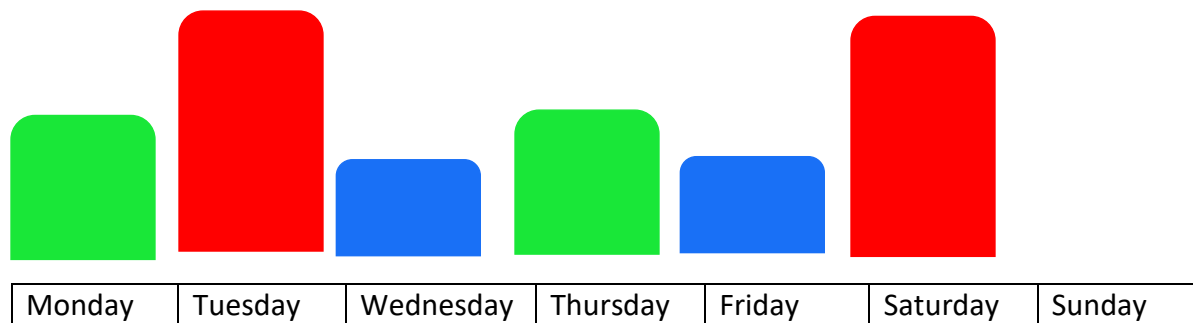
- Multiple High Intensity Live Rolls/Sparring
- Circuit Training (can be done with specific grappling drills or bodyweight/weights)
- Explosive Repeats
- Max Effort Strength Training

Stimulation (low to moderate intensity) = Green

Active Recovery (low intensity) = Blue

Development (moderate to high intensity) = Red

### Sample Weekly Training Organization



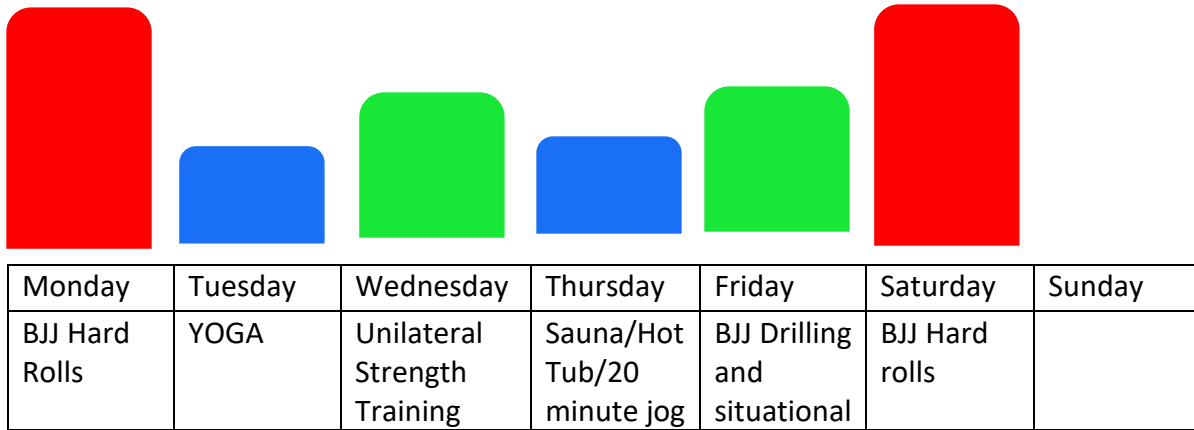
It is extremely important to monitor and track the volume and intensity of the strength and conditioning work, so you **DO NOT** fatigue during skill training.

## Programming your Own Week

Utilizing the information above and with the help of your coach, create your own weekly overview based on your current training schedule. Take time to identify where you may be bunching up hard BJJ sessions with hard workout sessions and see if you can spread them out over the week.

You should always follow a development day with an active recovery day or a complete rest day if you can. RARELY should you have two development days back-to-back, and never should you have multiple consecutive weeks with multiple development days congruently.

Example:



### Example Workout Idea 1

1A: Trap Bar Deadlift: 4x6

1B: Banded Glute Bridge: 4x10

2A: Close Grip Bench Press: 3x6

2B: Band Pull Aparts: 3x10

3A: Bent Over Single Arm Dumbbell Row: 3x8

3B: Scap Push Up: 3x12 - [RPE - 7

Farmers Hold with Anterior/Posterior Neck Isometrics: 4x90 seconds - 45 second each way -

Aerobic Conditioning (6 hours before or after resistance training) - LSD Run

30 Minute Jog Target HR 140bpm or 75% of Max HR

### Example Workout Idea 2

1A: Zercher Squat: 4x6

1B: Banded Side Clamshell: 4x8 each side

2A: Incline close grip bench press: 3x6

2B: Banded Face Pulls: 3x10

3A: Weighted Pull Ups: 3x8

3B: Supine Weighted Y,W,T's: 3x10

4A: Reverse Plank Hold (on GHR) with banded neck Isometrics: 2x45 seconds

4B: Plank Hold (on GHR) with band neck Isometrics: 2x45 seconds

Anaerobic Threshold Conditioning - Tabata 2:1 ratio

20 seconds of battle ropes 10 seconds rest (shake arms and legs out): 4 minutes in total for 5 rounds 20 minutes all together

### **Grappler Circuit during technical training days (Thursdays)**

Grappling Circuit: 3 sets with a 2 minute break between each. (Increase time for each by 15 seconds each week)

- Pummel- 30 seconds / Sprawl to double leg partner lifts- 30 seconds
- High Knees from the clinch to the armpit – 30 seconds / Pummeling – 30 seconds
- Lift and dump (bear hug to single leg lift, take to mat) – 30 seconds
- Lift and Return to the mat (wrestling stand up) – 30 seconds / Pummeling – 30 seconds
- Sprawl to partner lift- 30 seconds / Pummeling – 60 seconds / Partner Carries – 60 seconds