



2020 NSCA COACHES CONFERENCE & LIVESTREAM



#Coaches20

THE TRAINING PROCESS

*BO SANDOVAL, MS, CSCS, RSCC*D*

DIRECTOR OF STRENGTH & CONDITIONING

UFC PERFORMANCE INSTITUTE

CONFLICT OF INTEREST STATEMENT

I have no actual or potential conflict of interest in relation to this presentation.

What is the UFCPI?



MMA?

The Unified Rules of Mixed Martial Arts (MMA) aim to provide a clear set of rules governing professional MMA competition that remain consistent across the jurisdictions of various athletic commissions and other regulatory bodies. The framework of the Unified Rules of MMA was proposed and agreed upon by various athletic commissions in the 2000s and unanimously adopted by the Association of Boxing Commissions (ABC) on July 30, 2009.



MMA IN THE UFC

- 3-5 X5MIN ROUNDS (1MIN BTW ROUNDS)
- 8 MENS DIVISIONS, 4 WOMENS DIVISIONS
- SCORING = STRIKING, WRESTLING/GRAPPLING, TAKEDOWNS, SUBMISSIONS, OCTAGON CONTROL/AGGRESSION
- AVG 2-4 FIGHTS PER YEAR



ASSESS FIRST

- SQUAT
- ESD



Name:											Date:	7/15/2019	
Sex:	Male	Male	Female								CMJ BW(kg):	68.00	150lbs
Wt. Class:	125	115	125	135	145	155	170	185	205	265			
Phase:	Out-of-camp	Out-of-camp	In-camp (early)	In-camp (mid)	In-camp (late)								

Tests	Results				Weight Class Comparisons		
		Left	Right	Deficit (%)			
Hand Grip (Grip Strength and Endurance)	Maximum Strength (kg)	22.900	34.700				
	Maximum Average Strength (kg)	18.800	28.300	33.800			
	Jump Height (cm)	47	47	46	Fair (42.1 - 49.6)		
Countermovement Jump (Lower Body Power)	Peak Force (N)	1650	1580	1720	Very good (1689 - 1745)		
	Peak Power (W)	3670	3650	3760	Fair (3323 - 3761)		
	Weight (lbs)	75	90	120	150		
Speed Squat (Lower Body Speed-Strength)	Peak Power (W)	510	613	791	844	World-leading (≥ 753)	
			2 sec	6 sec			
Isometric Mid-thigh Pull (Maximal Strength)	Peak Force (N)		2880	3190		Very good (3172 - 3325)	
	Lift Force (N)		2213	2523		Good (2372 - 2530)	
	Relative Lift Force (N/N)		3.32	3.78		Good (3.71 - 3.98)	
	1A 2A 3A 4A 5A 6A •			Position	Slot		
	1B 2B 3B 4B 5B 6B —			3A	-	3A-	
Landmine Throw (Upper Body Speed-Strength)	Weight (kg)		20	25	30		
	Peak Power Right (W)		2104	2057	1837	World-leading (≥ 2037)	
	Plant Foot (in)	60.0	Back Foot (in)		20.0		
	Peak Power Left (W)		1436	1413	1280	Good (1346 - 1482)	
	Plant Foot (in)	60.0	Back Foot (in)		20.0		
Dynamic Strength Deficit (Lower Body Power-to-Strength Ratio)	CMJ F_{max} / IMTP F_{max}		0.68			DESIRED RANGE: 0.60 - 0.81	
	Ballistic Training Requirement $\leftarrow 0.60 > DSD > 0.81 \rightarrow$ Max Strength Training Requirement						

Comments: Pre Camp... this is an excellent starting point. Based off of this assessment it is suggested that this athlete focus on peak power improvements with a balanced approach between ballistic training and max strength training. During the IMTP there was a 13%-15% difference in force production displayed with his left side being less productive. Collaborative efforts w/ the PT staff will be put in place reduce this differential.

Name:									Date:	7/15/2019
Sex:	Male	Male Female								
Wt. Class:	125	115	125	135	145	155	170	185	205	>205
Phase:	Out-of-camp	Out-of-camp	In-camp (early)	In-camp (mid)	In-camp (late)					

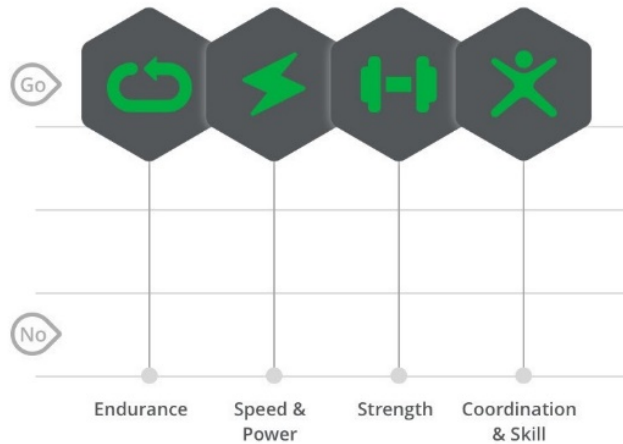
Tests				Results									
Watt Bike - 6 s Repeat Test (Max Alactic Power/Alatic Endurance)				Peak Average Power (W)		911		Peak Power (W)		1011			
				Minimum Average Power (W)		621		Rel. Peak Power (W/kg)		14.87			
	Height	Length		Avg Power Fatigue Index (%)		31.83							
Seat	2	1.5		Peak HR (BPM)		166							
Handlebar	11	0		Average HR (BPM)		150							
				BW	68	Resistance	6						
Watt Bike - 3 min Critical Power Test (Sustainable Glycolytic Power)				Average Power (W)		256							
				Average Relative Power (W/kg)		3.7647059							
				Average HR (BPM)		150							
	Height	Length		Peak HR (BPM)		176							
Seat	2	1.5		Average Cadence (RPM)		102							
Handlebar	11	0		BW	68	Resistance	3.5						
VO_{2max} (Maximum Aerobic Capacity)						ml/kg/min	HR	% Max	"Performed on a Bike"				
				VT ₁ (Aerobic Threshold)		2.32		124		63			
				VT ₂ (Anaerobic Threshold)		2.72		139		74			
				VO _{2max}		57		166					
HR Recovery (Recoverability)						BPM	% Max	% Recovery					
				1 min		140		84.3%		15.7%			
				2 min		119		71.7%		28.3%			
				3 min		105		63.3%		36.7%			
				4 min		105		63.3%		36.7%			
				5 min		101		60.8%		39.2%			

Comments: Conditioning focus should be centered around glycolytic capacity and a-lactic power.

ASSESS FIRST



Windows of Trainability™



BASED ON ECG AND DC MEASUREMENT.

Training zones

Resting heart rate: 45 bpm

- Z6 - Anaerobic development 184-194
- Z5 - Anaerobic maintenance 174-185
- Z4 - Aerobic development 163-178
- Z3 - Aerobic maintenance 147-164
- Z2 - Recovery stimulation 120-150
- Z1 - Recuperation 105-121

Functional state



Comments

Feeling great

ASSESS FIRST

12:35 PM Mon Nov 25

UFC Las Vegas

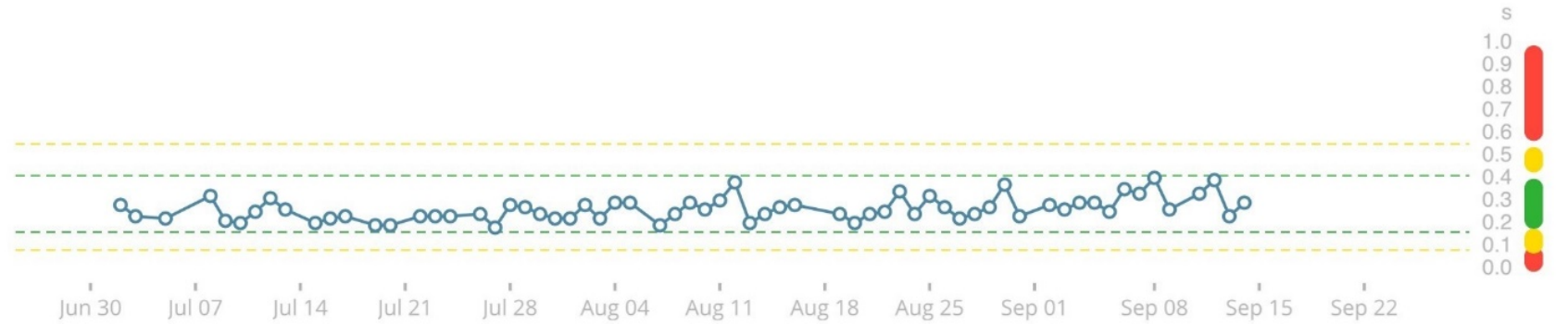
Last synchronized: 11/25/19, 12:30 PM

Overview Detailed Analysis

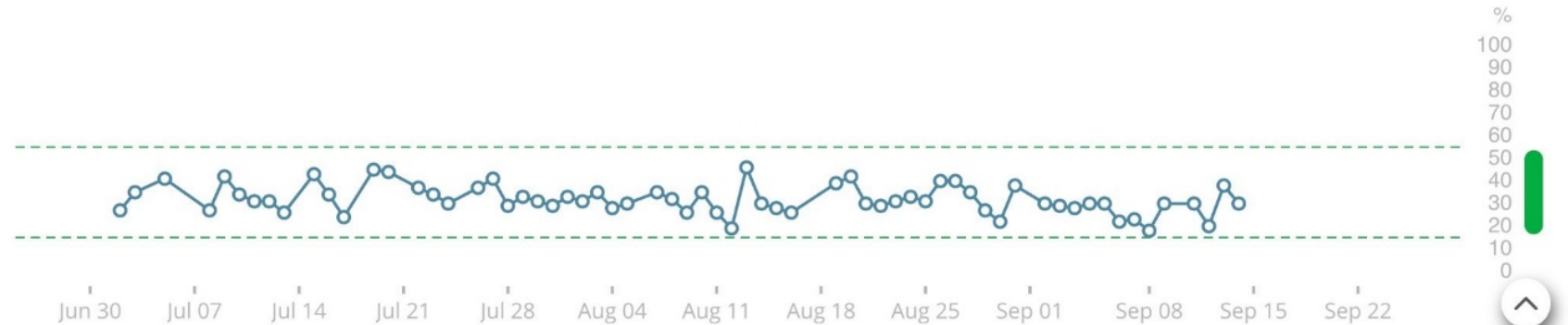
Athlete [Redacted] Time 26/06/2019 - 29/09/2019 Assessments Analysis

All Year Month Week Custom All Before After Cardiac System

Parasympathetic activity



Sympathetic activity



CRITERIA FOR PRIORITIZING OBJECTIVES

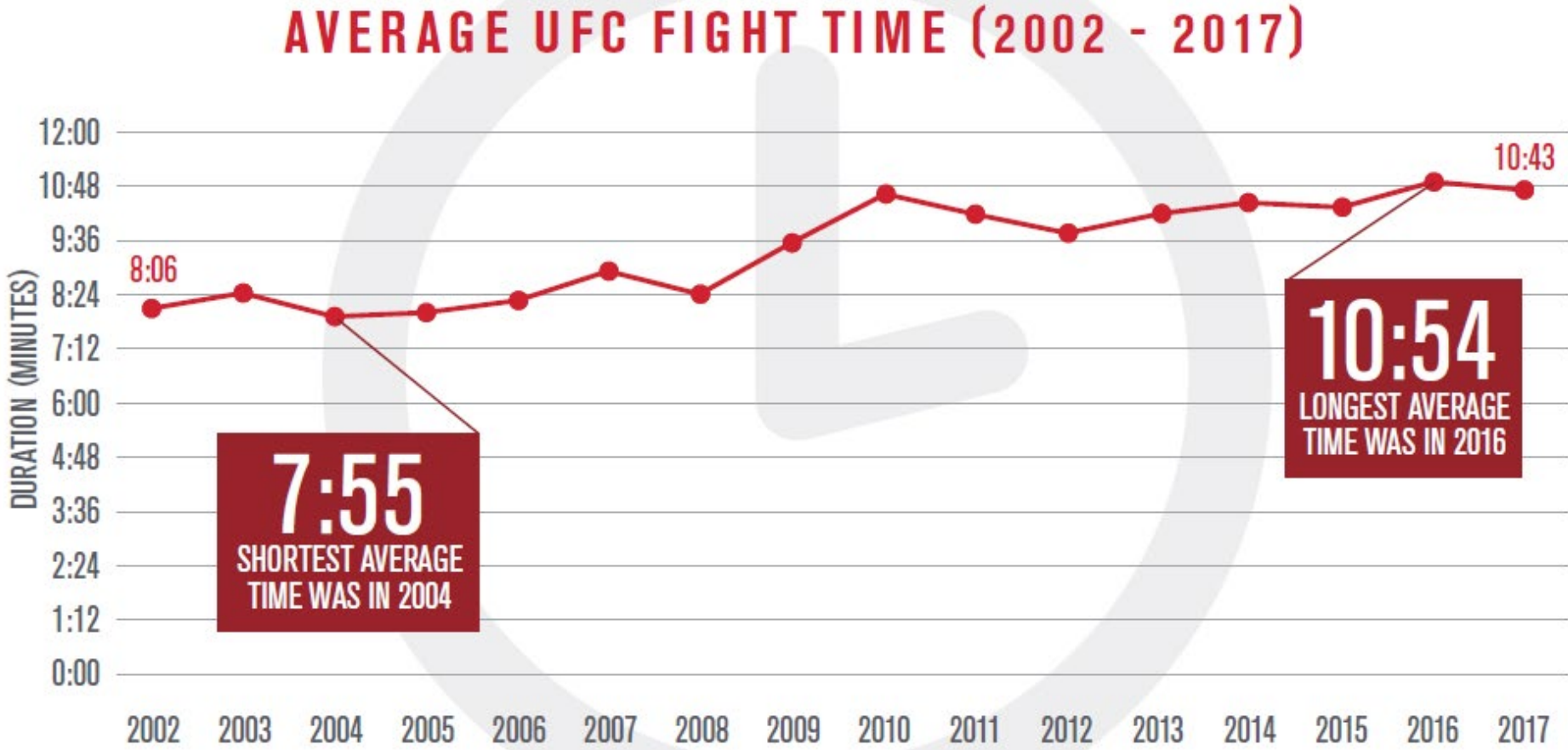


Figure 1.1

CRITERIA FOR PRIORITIZING OBJECTIVES

WIN METHODS BY WEIGHT CLASS

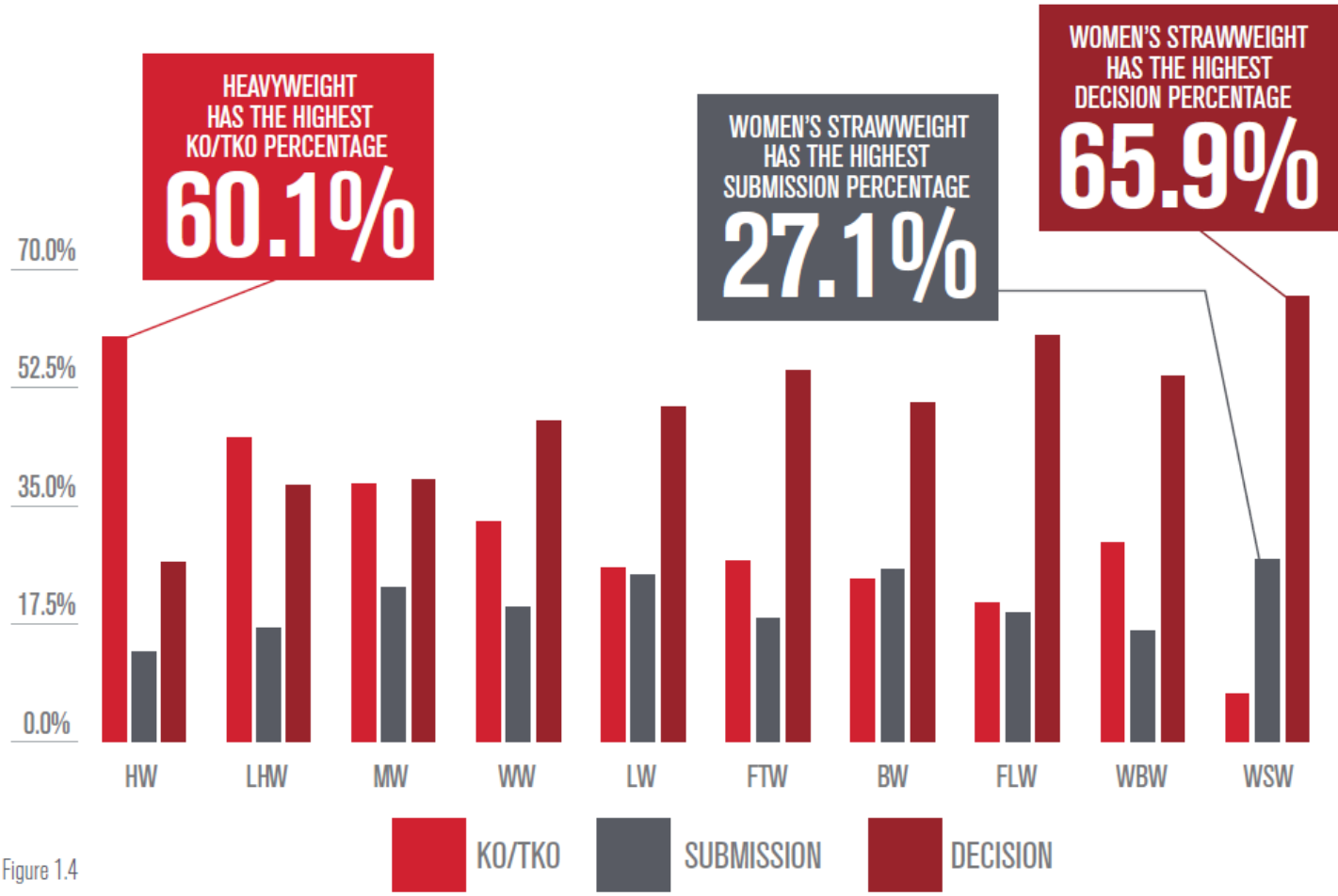


Figure 1.4

CRITERIA FOR PRIORITIZING OBJECTIVES

FINISH TYPE BY WEIGHT CLASS (%)

WEIGHT	Punches	Elbows	Knees	Kicks	Armbar	Shoulder	Leg Lock	Other Lock	RNC	Triangle	Guillotine	Arm Triangle	Other Choke	Dr. Stoppage
HW	67.4	4.2	3.4	4.2	2.7	1.5	1.9	1.5	3.4	0.8	3.8	1.5	1.5	2.3
LHW	56.7	3.2	5.3	4.0	2.8	2.4	0.4	0.4	10.5	0.8	5.7	2.4	2.4	2.8
MW	41.9	5.1	4.8	6.6	4.0	1.4	1.7	0.6	12.0	5.1	10.0	3.1	1.1	2.6
WW	41.8	4.9	7.1	4.6	4.9	1.7	0.7	0.0	14.9	3.2	6.4	2.9	3.4	3.4
LW	33.9	2.5	3.3	6.8	5.5	1.5	1.0	0.0	23.4	4.5	9.5	1.3	3.8	3.0
FTW	49.0	2.0	4.8	2.0	2.7	0.7	0.0	0.7	14.3	4.1	11.6	1.4	4.8	2.0
BW	39.6	3.0	3.0	2.2	8.2	1.5	1.5	0.7	21.6	3.0	10.4	3.7	1.5	0.0
FLW	39.3	3.6	3.6	1.8	5.4	3.6	0.0	0.0	28.6	0.0	10.7	1.8	0.0	1.8
WBW	28.9	15.8	7.9	7.9	13.2	0.0	0.0	0.0	10.5	2.6	2.6	5.3	2.6	2.6
WSW	13.8	3.4	0.0	3.4	20.7	0.0	0.0	0.0	48.3	0.0	6.9	0.0	3.4	0.0

Table 1.1

CRITERIA FOR PRIORITIZING OBJECTIVES



PRIORITIZING TRAINING

When prioritizing training, there needs to be a flow of decision-making that will realistically set the fighter up for success. There are many factors to consider around camp time, performance goals, weight loss, etc. This decision-making tree for prioritizing the emphasis within the periodization structure should reflect something similar to the process shown in figure 4.8.

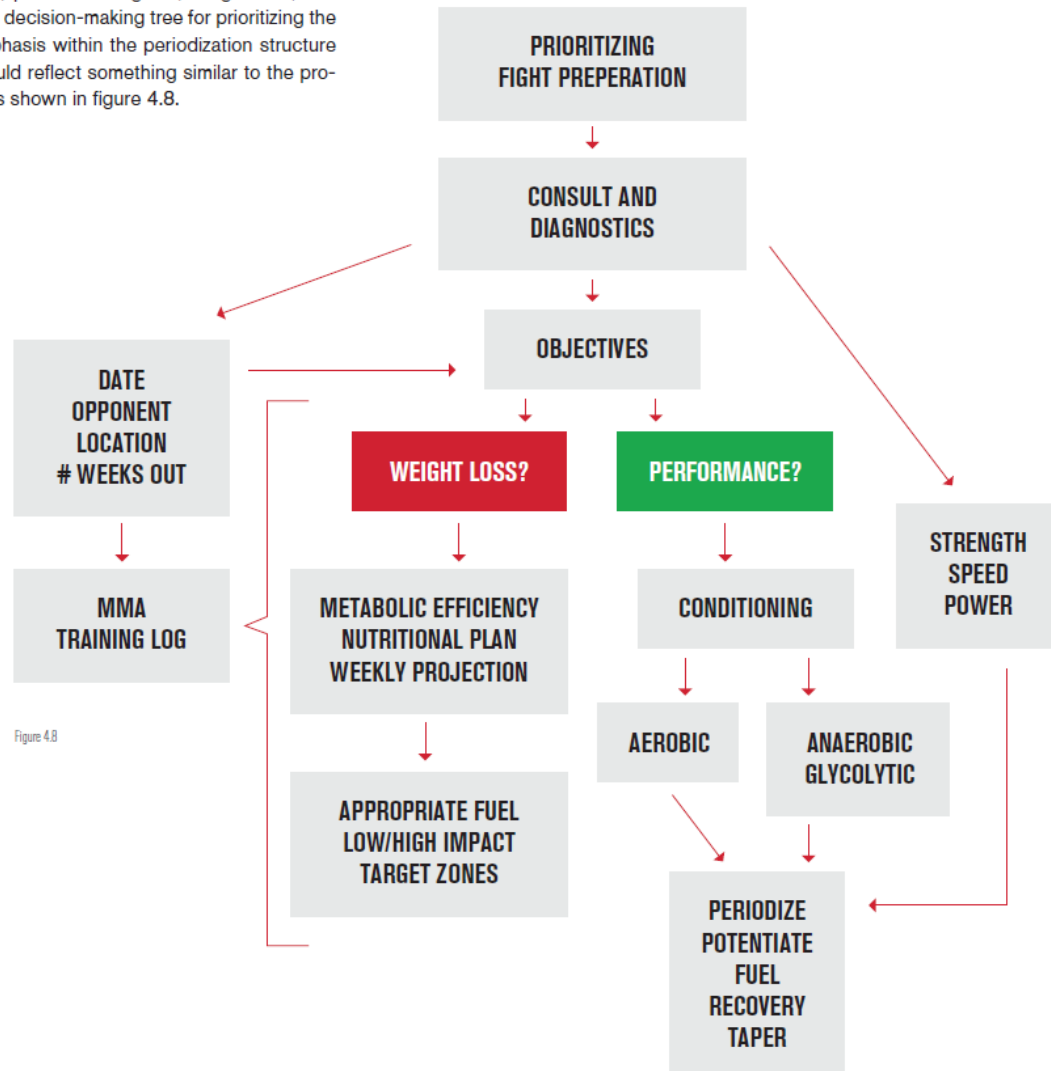


Figure 4.8



THE PROCESS



THE PROCESS

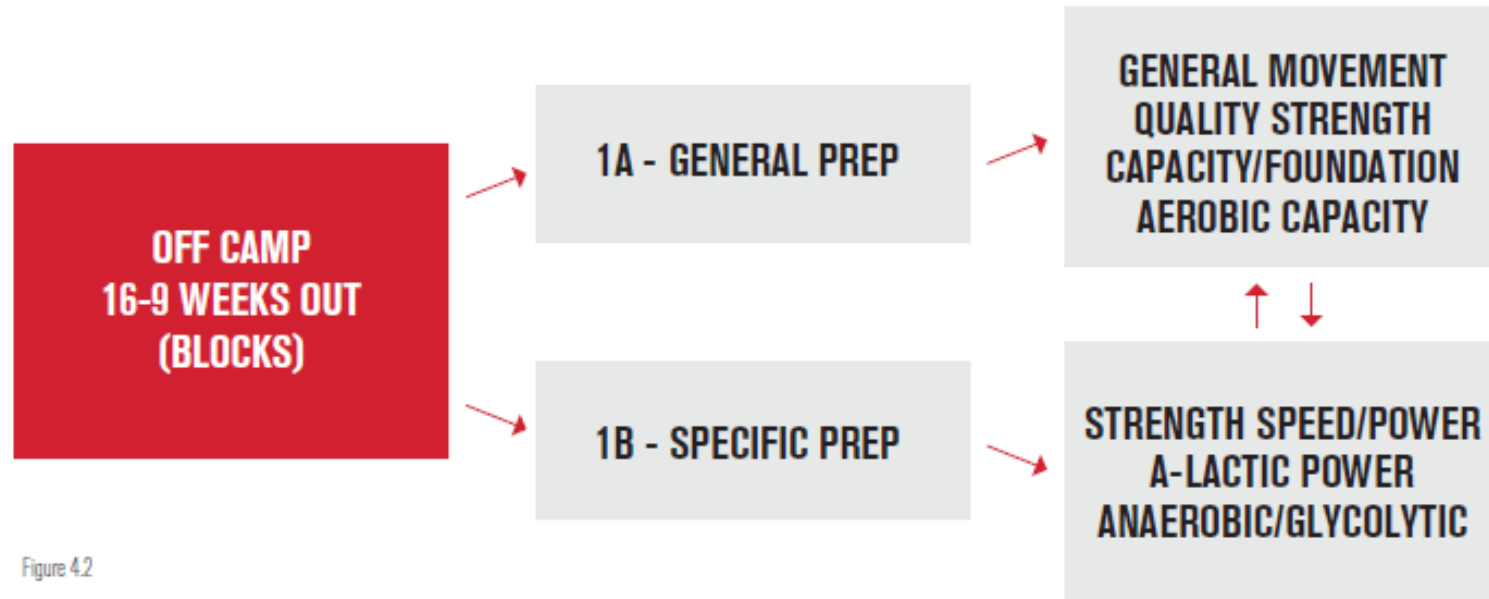


Figure 4.2

“Off Camp” blocks tend to be composed of four microcycles (stages/weeks): **Introductory, Accumulation, Peak and Deload** (see figure 4.3). The emphasis and objectives of the daily regimens remain the same during “off camp” linear blocks. Each micro phase progresses as the descriptions below imply:



THE PROCESS

**FIGHT CAMP
10-4 WEEKS OUT
(DAILY UNDULATING)**

REALIZATION

**MAXIMUM STRENGTH
DYNAMIC STRENGTH/
PEAK POWER
SPEED/ALACTIC POWER
ANAEROBIC/GLYCOLTIC
CAPACITY**

Figure 4.4



DAY 1

**POWER PEAK - MOD/
HIGH RESISTANCE
HIGH RATE OF FORCE
DEVELOPMENT
FULL RECOVERY**

**A-LACTIC CONDITIONING -
MAX EFFORTS
<10 SEC OF WORK
1X12
FULL RECOVERY**

DAY 2

**RESISTANCE CIRCUIT -
5 EXERCISES (40-60%)
5 X 20 SEC / 20 SEC
1 MIN RECOVERY BTW ROUNDS**

**GLYCOLTIC CONDITIONING -
3 X 30 SEC (2 MIN ACTIVE REC)
5 MIN REST
60 SEC (2.5 MIN ACTIVE REC)
5 MIN REST
90 SEC (3 MIN ACTIVE REC)
5 MIN REST**

DAY 3

**MAX STRENGTH -
6 X2 @85-95%
FULL RECOVERY BTW SETS**

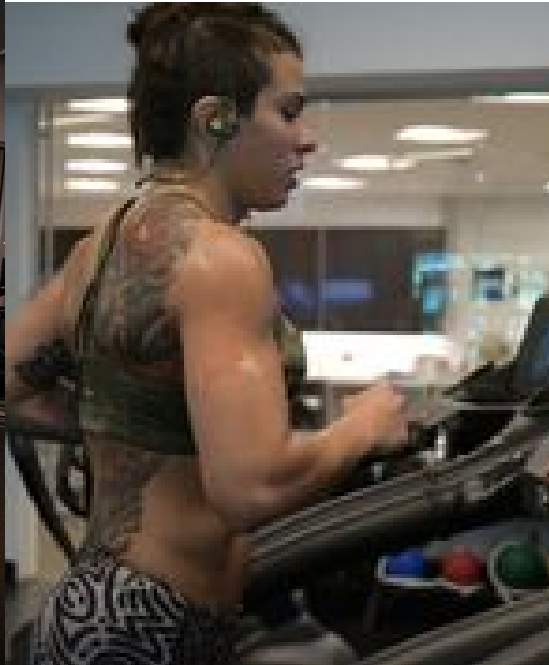
**AEROBIC DEVELOPMENT -
CONTINUOUS RUN OR BIKE
10 MIN - HR 120-140
25 MIN - HR 155-165
10 MIN - HR 115-130**

- A de-load week is recommended around 4 weeks out
- Fight week is primarily weight cutting and technical training

NAME: _____
 Weight Class: 205

Start 9-10-18 - 4 weeks out!

		DAY 1 - Explosive Strength/ A-lactic conditioning																		
		9/10/2018				9/17/2018				9/24/2018				10/1/2018						
		WEEK 1				WEEK 2				WEEK 3				Fight Week						
MAX	EXERCISE	SETS	x	REPS	%	WEIGHT	SETS	x	REPS	%	WEIGHT	SETS	x	REPS	%	WEIGHT				
	<u>Dynamic Warm Up</u> refer to attachment																			
	<u>Plyometrics</u> Circuit: take 1:00min btw rounds																			
	Lateral Skater Jump	3	x	6			4	x	6			3	x	6						
	Zig Zag Skater Jump	3	x	20yds			4	x	20yds			3	x	30yds						
	Sprawl + lateral jump over box	3	x	3ea			4	x	4ea			3	x	4ea						
	<u>Explosive Strength: 2min rest btw sets</u>																			
	Trap Bar Deadlift (stand w/ speed)	5	x	2	85.0%		5	x	2	85+%		3	x	2	85+%					
	Trap Bar Squat Jump	5	x	4		95lbs	5	x	4		95lbs	3	x	3		95lbs				
	Drop Jump - Flying Knee (max height)	5	x	2ea			5	x	3ea			3	x	3ea						
	<u>Medball Circuit: 2min rest btw sets</u>																			
	Medball Chop + Lateral Slam (quick transition)	3	x	5			3	x	5			2	x	6						
	Hip Swivel + Medball Rotational Punch (alternate sides)	3	x	5			3	x	5			2	x	6						
	Medball Overhead Sit Up Throw	3	x	8			3	x	10			2	x	10						
	<u>Intervals</u>																			
	Airdyne - Max effort 5sec(20sec rest) 2min btw sets	3	x	3			4	x	3			3	x	3						
	Sled Push (light) - Max effort x20yds (20sec rest) 2min btw sets	3	x	3			4	x	3			3	x	3						
	Neck Flexion/Extension (HEAVY)	2	x	15			3	x	10			3	x	8						
	Stretch, Eat, Recover																			



		DAY 3 - Aerobic																	
MAX	EXERCISE	WEEK 1				WEEK 2				WEEK 3									
		SETS	x	REPS	%	WEIGHT	SETS	x	REPS	%	WEIGHT	SETS	x	REPS	%	WEIGHT			
	Dynamic Warm Up refer to attachment																		
	Superset: Barbell Squat + Press (behind head)(light & fast)	4	x	8		3	x	10											
	Medball Floor Punch	4	x	8		3	x	10											
	Superset: DB Lateral Raise + Extension	3	x	8		4	x	8											
	Banded 90/90 external rotation	3	x	8		4	x	8											
	Prone Rollout	3	x	8		4	x	8											
	Treadmill/Jump Rope Circuit: Continous Treadmill: Target HR 125-140	3	x	5min		3	x	8min			2	x	10min						
	2min Jump Rope																		
	2min Shadow box																		
	Stretch, Eat, Recover																		

POST FIGHT

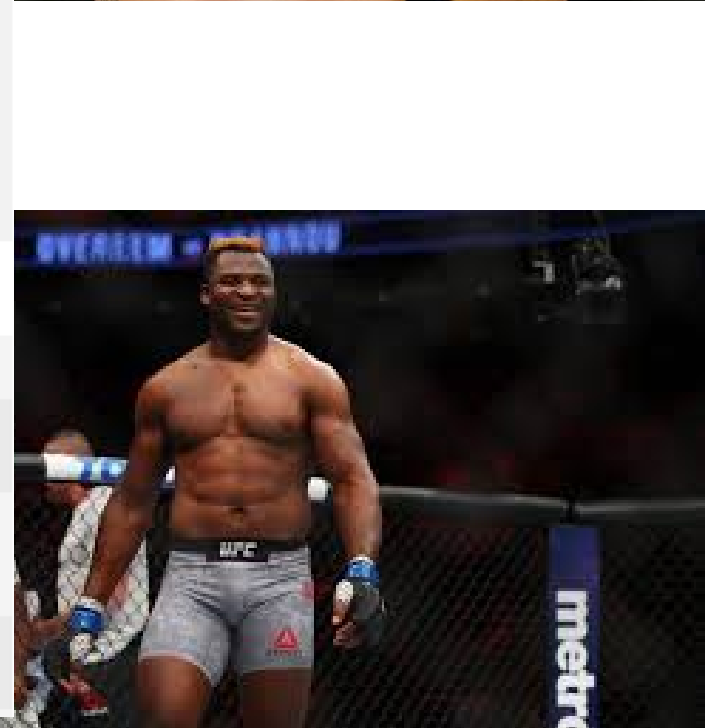
- CHECK IN
- SURVEYS
- INJURY REPORT
- TRANSITION??

32
Please indicate which UFC Performance Institute S & C services you utilized prior to this fight.
Strength and Conditioning

- Comprehensive S&C programming and coaching
- Remote S&C programming
- S&C diagnostics
- Drop in S&C sessions
- S&C consulting

33
Please rate your experience with the following.
Strength and Conditioning - If you did not use S&C services please change your answer to "no" on the previous question and proceed. If you did not use a particular service please leave the answer or option empty.

	1- Poor	2 - Fair	3 - Good	4 - Very Good	5 - Excellent
Coaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remote programming software (VCP)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff communication (with yourself and your coaches)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integration of S&C into practice schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



POST FIGHT

- CHECK IN
- SURVEYS
- INJURY REPORT
- TRANSITION??

34

How effectively were your Strength and Conditioning sessions planned to complement your MMA training?

Strength and Conditioning

35

Do you feel your diagnostic sessions helped identify key training objectives and were those objectives met?

Strength and Conditioning

36

Please comment on your experience with the UFC P.I. Strength and Conditioning department during this fight camp.

Strength and Conditioning

37

What other insights or comments do you have about your recent work with P.I. Strength and Conditioning?

Strength and Conditioning



THANK YOU

