THE REGULATION OF MULTI-SEMESTER ATHLETES

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THANK YOU

- LON RECORD and HAMMER STRENGTH
- Shaun Huls, Josh Hingst, Keith Gray, Ben Wagner, Mike Minnis, and the Philadelphia Eagles Performance Staff
- Princeton University Performance Staff
 - Jason Gallucci, Angie Brambley-Moyer, Terry Joria, Mike Tufo, Matt Fleekop and Jeromey Johnson
- All of our Presenters
- Crystal, Maddie and Brendan

THE REGULATION OF MULTI-SEMESTER ATHLETES

• WHAT THIS PRESENTATION IS:

- A LOOK INTO THE COMPLEXITIES OF TRAINING THE MULTI-SEMESTER ATHLETE
- A VIEW INTO HOW WE USE AUTOREGULATION AT PRINCETON TO MAXIMIZE ATHLETIC POTENTIAL
- A COMPLIMENT TO TECHNICAL MASTERY
- A REWARD FOR MAXIMAL EFFORT
- GIVES US A BETT<mark>ER INSIG</mark>HT INTO WHAT OUR ATHLETES ARE DOING WHEN THEY AREN'T WITH US
- HOW EFFECTIVE IS OUR PROGRAMMING FROM A HOLISTIC VIEW



WHY

- Majority of strength and conditioning coaches work with teams whose seasons span multiple semesters
 - Principles are not unique to "single semester" sports or multisport athletes
- Limited opportunities to assess if our athletes are getting stronger.
 - Assess the needs of the sport, and how the strength program can compliment the season
- Maximize the potential of each day.
- Over-Training can happen at a higher rate if the "whole athlete" is not assessed.

PRINCETON UNIVERSITY

37 Varsity Sports 5 Strength Coaches WHO I WORK WITH:

- Men's Basketball
- Baseball
- Wrestling
- Men's Swimming
- Men's and Women's Diving
- Men's and Women's Water Polo

ISSUES FACED:

- High Academic Demand
- Frequent Training Interruptions
- Under-Staffed
- Coach and Athlete Communication
- Athlete Self-Regulation

HOW DO WE ATTACK OUR ISSUES EFFECTIVELY?

ISSUES FACED:

- High Academic Demand
- Frequent Training Interruptions
- Under-Staffed
- Coaches' and Athlete Communication
- Athlete Self-Regulation

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AUTOREGULATION

WHAT IS IT? "A Structured approach for embedding a respect for individual variation within a program."- Eric Helms

AUTOREGULATION- MAXIMIZING THE POTENTIAL OF EACH TRAINING SESSION!

Autoregulation 1:

- Subjective:
 - RPE?
 - RIR- Gas in the tank
 - QUESTIONAIRE/SURVEY

Autoregulation 2:

- Objective:
 - FAILURE SETS
 - HIT
 - 5/3/1
 - APRE
 - PERCENTAGE MANIPULATION
 - JUMP TESTING- ME/RE
 - VBT
 - HEART RATE

AUTOREGULATION- SUBJECTIVE

• RPE

• WHAT IS IT?

• RIR

- WHAT IS IT?
- HOW?
- SURVEY

Borg's Rating of Perceived Exertion (RPE) Scale

Perceived Exertion Rating	Description of Exertion
6	No exertion. Sitting & resting
7	Extremely light
8	
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

	RPE Scale Based On Repetitions In Reserve
10	Could not do more reps or load
9.5	Could not do more reps, could do slightly more load
9	Could do 1 more repetition
8.5	Could definitely do 1 more repetition, chance at 2
8	Could do 2 more repetitions
7.5	Could definitely do 2 more repetitions, chance at 3
7	Could do 3 more repetitions
5-6	Could do 4 to 6 more repetitions
1-4	Very light to light effort MUSCLEANDSTRENGTHPYRAMIDS.COM

AUTOREGULATION-SUBJECTIVE SURVEYS

- ALLOWS COMMUNICATION BETWEEN ATHLETE AND COACH
- IF ADMINISTERED CONSISTENTLY, SUBJECTIVE MEASURES HAVE BEEN FOUND TO BE MORE EFFECTIVE THAN OBJECTIVE MEASUREMENTS IN RESPONSE TO BOTH ACUTE AND CHRONIC TRAINING LOADS*
 - IF ADMINISTERED CONSISTENTLY WITH OBJECTIVE DATA, CAN POINT US FURTHER IN THE RIGHT DIRECTION!

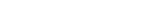


🖗 FIT FOR 90

11/08/2017

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Metrics - James Devincenzi -

Princeton Men's Basketball All Players

Overview

警 Roster

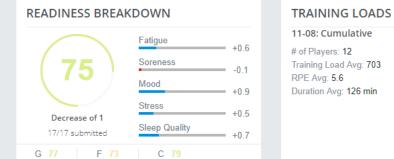
SMS Reminders

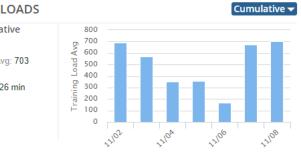
📴 Groups & Positions

Edit Training Loads

Lill Charts

🆽 Historical Data





Readiness Training Loads Overview

		R	EADINE	\$ S	SLEEP	TRAININ	G LOAD	RECOVERY	SITE	HYDRATION	WEIGHT	
^ PLAYER	POS	SCORE	+/-	TREND	HOURS	11/8	11/7	POINTS	SORENESS	SCORE	VALUE	
Brennan, Alec	F	50	↓ 20	ull I.	7.0	960 (1)	840 (1)	7	Critical			
Morales, Jose	G	63			5.0	600 (1)		9	Mod-High	3	160.0	
eynoso-Avila, Vittorio	G	65			4.0	600 (1)		13	Critical	2	203.0	
Barnes, Elijah	F	67	♦ 5	11	6.5			0	Low			
Schwieger, Ryan	G	68		11100 0	8.0		600 (1)	10	Low-Mod	2	202.0	
Young , Aaron			♦ 5	8888888	7.0	360 (1)	540 (2)	12	Critical	3	178.0	
Gladson, Will	С	71	0	ı Ilu	8.0			0	Critical			
Bramalge, Noah	F	72	↓ 14	ul IIı	7.5			0	Low-Mod	0	220.0	
Berbari, Elias	G		0	111	7.0	1020 (2)		9	Mod	2	183.0	
Desrosiers, Jerome	F		0	1. 11 10	8.0	840 (1)	900 (2)	12	Critical	0	226.0	
Stephens, Myles	F			I I	8.0	600 (1)		9	Low-Mod	3	207.0	
Bagin, Charlie	G	84	1 2		7.0	360 (1)		7			162.0	
Much, Sebastian	F	85		0.11	7.0			0		3	225.0	
Bell, Amir	G	87	↓ 10	tı illi	8.0	600 (1)	600 (1)	11		2	194.0	
Aririguzoh, Richmond	С	87	^ 2		7.0	900 (2)	700 (1)	0	Low		230.8	
-	F	87	▲ 39	I	8.0	720 (1)	600 (1)	11	Low-Mod	2	200.0	

https://app.fitfor90.com/c/teams/princetonmenbasketball/dashboard

Last Name

Your answer

How much sleep did you get last night?

0 <5

O 5-6 Hours

6-7 Hours

O 7-8 Hours

8-9 Hours

9-10 Hours

O 10+ Hours

How many times did you wake up last night?

1 Time

2 Times

O 3 Times

○ 4 Times

O 5+ Times

Did you turn all electronics off/blue-light reduced?

O Yes

O No

Approx. how much water did you drink today? (1 cup= 8oz., 1 Water Bottle= 16oz., 1 Gallon= 128oz.)

RECOMMENDED WATER INTAKE

BODY WT	OUNCES
160-179	80-90
180-199	90-100
200-219	100-110
220-239	110-120
240-259	120-130
260-279	130-140
280-300	140-150

\bigcirc	<80oz.
0	80-100oz.
\bigcirc	100-120oz.
\bigcirc	120-140oz.
\bigcirc	140-160oz.
0	160+ oz.

Current stress level? 1- Not Stressed 5- Extremely Stressed

- 01
- O 2
- Оз
- 04

0 5

Soreness Level: 1- Not Sore 5- Extremely Sore

AUTOREGULATION-OBJECTIVE

• FAILURE SETS:

- HIT
- 5/3/1 OR JUGGERNAUT
- APRE

• WHY?

- Easy to implement
- Emphasizes basic/multi-joint movements
- Slow-burn progression
- Praises **EFFORT** not result

- Has a high carry-over with RIR subjectivity
 - In-Season
 - Off-Season

AUTROREGULATION-OBJECTIVE

• PERCENTAGE MANIPULATION

- 1 RM IS HIGHLY VARIABLE
 - In a given day your 1RM can fluctuate ±18%**
 - Can be higher with weight cutting sports
 - The "FLOAT" or "CUT"

WRESTLING CLEAN CHART

1RM	3	3		3x2	
			CUT 1	WORK	BIG 1
165	100	120	120	135	150
225	135	150	160	160	205
205	125	135	145	145	185
240	145	160	170	170	220
205	135	135	145	145	185
210	135	140	150	150	190
225	135	150	160	160	205
210	135	140	150	150	190
205	125	135	145	145	185
205	135	135	145	145	185
240	145	160	170	170	220
240	145	160	170	170	220
185	115	125	130	130	170
265	160	175	190	190	240
185	135	125	130	130	170
205	135	135	145	145	185
175	105	115	125	125	160
245	150	160	175	175	225
230	140	150	165	165	210

VELOCITY-BASED TRAINING









VELOCITY-BASED TRAINING (VBT) WHY AND WHAT?

- VBT- WHAT IT'S USED FOR
- USES ESTABLISHED VELO<mark>CITY</mark> ZONES AT SUBMAXIMAL WEIGHTS TO COORELATE WITH 1RM
- ALLOWS FOR A MORE IN-DEPTH LOOK AT **DAILY** INTENSITIES
 - ALLOWS FOR INTRAWORKOUT ADJUSTMENTS VIA FEEDBACK
 - ALLOWS FOR LONGITUDINAL PROGRESSION
- PROVIDES INSTANT FEEDBACK
- PROMOTES COMPETITION AND EFFORT
- PROMOTES ATLHETE AUTONOMY

- VBT- WHAT ITS **NOT** USED FOR
 - TIP OF THE ICEBERG
 - COACH COACHES-MONITOR MONITORS
 - All device measures is speed, YOU have to manage the integrity of the movement
 - NOT an extension of ego

AUTOREGULATION- OBJECTIVE VBT

VELOCITY ZONES

% 1RM 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 0 STARTING STRENGTH/ ACCELERATIVE SPEED/ NONE STRENGTH STRENGTH STRENGTH STRENGTH Velocity ranges >1.3m/s 1 - 0.75m/s 0.75 - 0.5m/s <0.5 m/s 1.3 - 1m/s

VBT- HOW DO WE USE IT?

PRINCETON TIGER STRENGTH

SPORT: RANA SOUTH CAROLINA GEORGETOWN RUTGERS/CORNELL BROWN DATE SOUTH CAROLINA GEORGETOWN RUTGERS/CORNELL BEOWN TRUTGERS/CORNELL BEOWN SC/GEORGETOWN SSU 1 8 1 8 1 8 1 8 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1 <td< th=""><th>PHASE: ROAD TO OMAHA</th><th>7</th><th></th><th>NAME</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>1</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	PHASE: ROAD TO OMAHA	7		NAME											1									
DATE SOUTH CAROLINA VI REPS SUPLED 7.8 VI	SPORT: BASEBALL								6															
EXERCISE REST % SPEED 7.8 WT REPS % SPEED 7.8	DAY 2																							
SC/GEORGETOWN 55% 36% 36% 36% 35%	DATE		5	SOUTH	CAF	ROLINA				GEO	RGETOV	VN			RUTGI	ERS	/CORNI	ELL	BROWN					
SQUAT 55% 36% 36% 35% 36% 35% <td< th=""><th>EXERCISE</th><th>REST</th><th>%</th><th>SPEED</th><th>.78</th><th>WT</th><th>REPS</th><th>%</th><th>SPI</th><th>EED .78</th><th>WT</th><th>F</th><th>REPS</th><th>%</th><th>SPEED .7-</th><th>.8</th><th>WТ</th><th>REPS</th><th>%</th><th>SPEED</th><th>.78</th><th>WT</th><th>REPS</th></td<>	EXERCISE	REST	%	SPEED	.78	WT	REPS	%	SPI	EED .78	WT	F	REPS	%	SPEED .7-	.8	WТ	REPS	%	SPEED	.78	WT	REPS	
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HEART RATE

• POLAR TEAM PRO 2

- MONITOR TRAINING LOAD SCORES
 - TRAINING LOAD BLOCKS LEVEL 1-5
- GPS
 - IN-SEASON
 - OFF-SEASON



Player name	HR max [bpm]	HR max [%]	Recovery time [h]	Time in HR zone 1 (50 - 59 %)	Time in HR zone 2 (60 - 69 %)	Time in HR zone 3 (70 - 79 %)	Time in HR zone 4 (80 - 89 %)	Time in HR zone 5 (90 - 100 %)	Total distance [yd]	Calories [kcal]	TOTAL TIME	TOTAL TIME SPENT IN ZONES 4 NAD 5	PERCENTAGE OF PRACTICE SPENT
	194	92	41.0	0:29:30	0:12:21	0:14:11	0:32:51	0:03:51	5355	1484	1:45:52	0:36:42	0.35
	187	94	6.4	0:47:24	0:20:44	0:07:17	0:08:34	0:02:17	1582	840	1:45:52	0:10:51	0.10
	198	97	101.5	0:12:11	0:21:14	0:23:30	0:38:40	0:18:31	5971	1741	1:45:52	0:57:11	0.54
	166	83	2.8	0:12:22	0:06:23	0:09:24	0:01:58	0:00:00	2138	524	1:45:52	0:01:58	0.02
	165	83	2.4	0:09:24	0:06:38	0:08:23	0:02:12	0:00:00	2563	592	1:45:52	-	0.02
	180	90	42.0	0:22:53	0:28:50	0:25:31	0:30:50	0:00:05	4904	1661		0:30:55	0.29
	196	96	69.0	0:15:19	0:17:12	0:13:32	0:29:46	0:21:03	5446	1392	1:45:52	F	0.48
	181	91	20.0	0:20:27	0:22:57	0:34:11		0:00:51	6524	1492		0:24:21	0.23
	148	74	0.1	0:02:15	0:00:03	0:00:04	0:00:00	0:00:00	438	387	1:45:52	0:00:00	0.00
	191	97	60.7	0:22:21	0:18:35	0:23:37	0:33:43	0:09:15	6986	1604		0:42:58	0.41
	192	96	48.3	0:22:41	0:21:19		0:22:02	0:15:21	6752	1244	1:45:52	0:37:23	0.35
	178											0:17:51	
												0:18:26	
	186	93										0:32:49	
	189	95										0:35:01	0.33
	189	95	48.7	0:22:51	0:21:09	0:19:22	0:35:19	0:07:11	6307	1335	1:45:52	0:42:30	0.40

HOW DO WE MOVE FORWARD AT PRINCETON

• THIS SPRING:

• USING VBT TO TRACK PITCHING VELOCITY

• FUTURE:

- USING VBT TO CHART MAX E LIFTS
- USING VBT TO REGULATE FAILURE SETS INSTEAD OF BAR LOAD
- BUILDING QUESTIONAIRE DATA AND LOOKING AT INJURY RATE DURING EXAM TIMES FOR WRESTLING
- USING HEART RATE DATA TO ESTABLISH TRAINING ZONES FOR SUMMER TRAINING FOR MEN'S BASKETBALL
- USING DAILY VERTICAL JUMP TESTING TO ESTABLISH OFF-SEASON AVERAGES AND THEN UTILIZING A DROP-OFF PERCENTAGE TO DICTATE VOLUME IN-SEASON

QUESTIONS?

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THANK YOU!

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PRINCETON TIGER STRENGTH

PHASE: IVY SEASON		MA	XES	_	PHASE: IVY SEASON		MA	XES				
SPORT: MBBALL	RT: MBBALL BENCH SQUAT DL PS SPORT: MBBALL											
DAY 1					DAY 2							
DATE					DATE							
EXERCISE	REST	%	WT	REPS	EXERCISE	REST	%	wт	REPS			
CLEAN				3	HIP CLEAN							
				3								
	-			3								
				3								
				-	BB BENCH PRESS				<u> </u>			
			_	3	BB BENCH PRESS	RIR	7.5- <i>LEA</i>		V THE			
ME- LOWER BODY VARIATION	RIR	9- LEA		THE			TA	NK!				
TB RACK PULL		TA.	NK!			_	65%		5			
		60%		5			75%		:			
		70%		3			85%	_	4-8			
		80%		4-8	KB BAND ASSISTED LATERAL				3e			
PULL-UPS				5	LUNGE				3e			
				5		1			3e			
pair w/				5	pair w/	/			-			
DB/KB RACK REVERSE LUNGES				+	WTD. SIT-UPS							
DB/ KB KACK KEVERSE LONGES					w1D. 511-015				-			
	_			3ea					1			
pair w/	-4				pair w/							
SUPINE PALOFF PRESS HOLD			:	20+ 6ea	DB SA ROW				5e			
+ PRESS				:20+ 6ea					5e			
				:20+ 6ea					5e			
DIPS				8	BB LANDMINE JAMMER				· ·			
				8								
				8	pair w/		1		4			
HIP VARIATION	-4	SLID	E LEG	±	SL REVERSE HYPERS				6ea			
				8					6e			
				0	TRX FACE-PULLS			_				
									2x12			
MOD-SIDE PLANK TOP-LEG					BAND TKE		1" OB		2x8e			
ABDUCTION			3x w/	:06ECC.	WTD. PLANK		i		2x:30			
			3x w/	:06ECC.	RPE Scale Based On Repetitions	n Reserve						
					10 Could not do more reps or load							
					9.5 Could not do more reps, could do slightly n	nore load						
					9 Could do 1 more repetition 8.5 Could definitely do 1 more repetition, change	o at 2						
					8.5 Could definitely do 1 more repetition, chance 8 Could do 2 more repetitions	edt 2						
					7.5 Could definitely do 2 more repetitions, char	ice at 3						
					7 Could do 3 more repetitions							
					5-6 Could do 4 to 6 more repetitions							
					1-4 Very light to light effort	MUSCLEANDSTR	ENGTHPYRAM	IDS.COM				



PRINCETON TIGER STRENGTH

PHASE: GET BIG SEASON		MA	XES		PHASE: GET BIG SEASON		MAX	KES		PHASE: GET BIG SEASON		MAX	KES	
SPORT: MSWIMMING						BENCH	SQUAT	DL	FS	SPORT: MSWIMMING	BENCH	SQUAT	DL	FS
DAY 1					DAY 2					DAY 3				
DATE					DATE					DATE				
EXERCISE	REST	%	WТ	REPS	EXERCISE	REST	%	WТ	REPS	EXERCISE	REST	%	WТ	REPS
SQUAT		50%		3	BB BENCH PRESS		55%		3	TB DEADLIFT		50%		З
pair first 3 sets w/		55%		1	pai <mark>r fir</mark> st 3 sets w/		<mark>65%</mark>		5			55%		1
BAND ANKLE MOBILITY x8ea		65%		5	PE <mark>C TIE-IN</mark> FOAM ROLL x10-20		75%		5			65%		5
INCLINE Y-TO-W'S x5ea		75%		5	CA <mark>T+CAMEL</mark> +4-pt. SUPERMAN x 3ea		85%		5+			75%		5
		85%		5+	BB RDL				6			85%		5+
PULL-UPS				5					6	DB/KB NG ALT. BENCH PRESS				беа
				5					6					беа
pair w/				5	pai <mark>r w/</mark>					pair w/				беа
DB/KB RACK REVERSE LUNGES				3ea	WT <mark>D. SIT-UPS</mark>				8	WTD. PLANKS				:30
				3ea					8					:30
pair w/				3ea	pair w/				8	pair w/				:30
SUPINE PALOFF PRESS HOLD	1		:	20+ 6ea	NARROW-GRIP PUSH-UPS	1			6	PIGEON HOLD				:15ea
+ PRESS			:	20+ 6ea					6					:15ea
			:	20+ 6ea					6					:15ea
DIPS				8	DB SA ROW			/	8ea	BB SPLIT SQUAT				3ea
				8			1		8ea					3ea
				8	pai <mark>r w/</mark>	-				pair w/				3ea
HIP VARIATION	1	SLID	E LEG	CURL	BW SL SQUAT-TO-BENCH	1			беа	DB INCLINE ROW				6
				8					беа					6
				8						pair w/				6
				8	TRX FACE-PULLS				2x12	TOWEL KARATE-KID				беа
MOD-SIDE PLANK TOP-LEG	1		3x w/	:06ECC	BAND TKE	1	1" OB		2x8ea					беа
ABDUCTION			3x w/	:06ECC	BENT-KNEE V-UPS	1			2x25					беа
			3x w/	:06ECC	RPE Scale Based On Repetitions In Res	2017/0				SEATED PLATE FRONT RAISE				8
BANDED SHOULDER WALL SLIDES				6	10 Could not do more reps or load									8
				6	9.5 Could not do more reps, could do slightly more k	oad				pair w/				8
pair w/				6	9 Could do 1 more repetition 8.5 Could definitely do 1 more repetition, chance at 2					REVERSE HYPERS				12
BAND RDL+ROW	1			8	8.5 Could definitely do 1 more repetition, chance at 2 8 Could do 2 more repetitions	<u>.</u>								12
				8	7.5 Could definitely do 2 more repetitions, chance at	3						BB CUR	LS 2x8	3
4 P +				8	7 Could do 3 more repetitions					ARM FARM		BAND T		
- 3 & 5	-				5-6 Could do 4 to 6 more repetitions 1-4 Very light to light effort	NUSCLEANDSTR	ENGTHEVRAMI	DS COM				EXTENS	-	