

Incorporating Injury Prevention into Training

Starting point: understanding how the body adapts to training

Supercompensation

1. Apply new stress
2. Recovery and return to homeostasis
3. Supercompensation: adaptive rebound above homeostasis
4. Apply new stress (if not, then detraining occurs)

Identify 3 key issues:

1. Body's inability to handle new stress (typically a structural issue)
2. Incomplete recovery
3. Not applying new stress (taking time off due to injury)

As coaches, our job is to address these issues with each athlete.

Thoughts on Training design

Basic training rules:

- a) 10% increase rule
 - b) Hard days followed by easy days
 - c) Irene Davis: injury-threshold amounts of 11, 25 and 40 mpw
1. Developing your training plan
 - Miles vs Minutes
 - Individualize the training plan – know your kids
 - Early-season variations in daily training volume
 - Breaking up longer runs
 - Remember that central nervous system work requires more recovery
 - Down weeks and understanding the role of mental fatigue
 2. Concerns with keeping recovery days as true recovery days
 - Beware the driven athlete (e.g. highly driven students)
 - Beware the kids who push easy days, back off on harder days
 3. The value of crosstraining
 - Converting crosstraining into equivalent running mileage
 - Effective miles
 - Crosstraining on recovery days
 - Returning from injury – incorporating crosstraining into weekly training
 4. Returning from injury: one good day/week doesn't mean you're ok

Thoughts on General Strength training

1. Strength, muscular weakness/imbalance and activating the glutes
 - Developing quads and calves as shock absorbers
 - Addressing core and hip girdle weaknesses
 - Running with the glutes
 - Operating in 3 planes of motion
 - Sagittal - front/back (forward/backward lunges)
 - Frontal - side/side (lateral/side lunge)
 - Transverse – twisting/rotation (upper body rotation – walking lunge w/ twist)
2. Equipment
 - Mini-Exercise-bands (www.performbetter.com)
 - Foam roller
 - Kettlebells (10, 15, 20 lbs)
3. The importance of good form (and patience)
4. Record keeping
5. Areas of concern
 - Core strength – planks, resisted movement, no crunches
 - Hip girdle – Myrtl, hurdle walkovers
 - Developing balance
6. Progression (periodized strength training)
7. Individualized strength training

Seniors 1-6/10 (Bailey)		Week #	Running range		Average Running	Ave Run 10% inc	Effective range		Average Effective	Cumulative Running range		Average Cumulative
Theme	Week											
Build/Just run	6/25-7/1	1	28	32	30		28	32	30	28	32	30
Build/Just run	7/2-7/8	2	28	32	30	33	34	38	36	57	64	60
Build/Just run	7/9-7/15	3	31	35	33	33	37	41	39	88	99	94
Build/Just run*	7/16-7/22	4	34	39	37	37	46	51	49	122	138	130
Build/Just run**	7/23-7/29	5	38	42	40	40	51	55	53	160	180	170
Build/Just run	7/30-8/5	6	41	46	44	44	55	60	58	201	226	214
Harder	8/6-8/12	7	47	53	50	48	61	67	64	249	279	264
Back off	8/13-8/19	8	25	28	27		25	28	27	274	307	291
Harder	8/20-8/26	9	48	53	50	55	62	67	64	322	360	341
Harder	8/27-9/2	10	48	54	51	55	57	63	60	370	414	392
Harder	9/3-9/9	11	48	53	51	56	62	67	65	418	468	443
Trinity	9/10-9/16	12	46	51	49	56	46	51	49	464	519	492
Palatine	9/17-9/23	13	35	38	36	54	35	38	36	499	556	528
Transition	9/24-9/30	14	40	44	42	40	50	54	52	539	601	570
Great American	10/1-10/7	15	34	37	36	46	34	37	36	573	638	605
Manhattan	10/8-10/14	16	24	25	25	39	24	25	25	597	663	630
Transition	10/15-10/21	17	33	36	34	27	33	36	34	629	699	664
Regional	10/22-10/28	18	29	32	31	38	29	32	31	659	731	695
State	10/29-11/4	19	21	22	21	34	21	22	21	679	753	716

Seniors 1-6/10 (Bailey)		Running Sum	Run-Sum 10% inc	Std Dev	SUN	MON	TUES	WED	THURS	FRI	SAT
Theme	Week										
Build/Just run	6/25-7/1	255		4.2	40	35	45	45		45	45
Build/Just run	7/2-7/8	255	281	6.9	45	30	45	45		40	50
Build/Just run	7/9-7/15	282	281	9.8	50	30	45	50	45		60
Build/Just run*	7/16-7/22	309	310	12.4	65	35	45	60	40		60
Build/Just run**	7/23-7/29	339	339	17.2	80	35	45	70	45		60
Build/Just run	7/30-8/5	369	372	17.7	80	35	45	75	60		70
Harder	8/6-8/12	420	405	21.8	90	35	45	80	65		80
Back off	8/13-8/19	225		9.8	45	35	25	25	45		45
Harder	8/20-8/26	420	461	25.4	90	70	30	35	80		80
Harder	8/27-9/2	427	462	27.3	90	80	45	80	20		80
Harder	9/3-9/9	422	469	26.5	90	20	45	70	80		80
Trinity	9/10-9/16	398	464	24.1	90	20	45	70	60		45
Palatine	9/17-9/23	292	438	20.6	70	20		60	45		30
Transition	9/24-9/30	350	321	21.4	60		70	45	20	45	80
Great American	10/1-10/7	287	385	29.3	90	20	45	60			
Manhattan	10/8-10/14	188	316	12.6		20	45		30		
Transition	10/15-10/21	285	207	19.5		45	60	70		60	20
Regional	10/22-10/28	247	313	14.4	60	45	30	25	30		
State	10/29-11/4	164	271	14.4	45			20	20		

Strength routine

Session 1 (Jan 1 – Feb 3)

Wall Psoas hold – 30 sec per leg

Single leg step up & pose – 15 reps per leg

Hip drop – 15 reps per hip

Bench Bar dips – 2 sets of max reps

Walking lunge w/ A-march pose – 2 sets of 15 steps

Walking lunge w/ A-march pose & twist – 2 sets of 15 steps

One leg balancing w/ overhead and front clap – 30 sec per leg

(raise arms above head/clap, then lower arms and bring arms out front/clap)

One leg balancing w/ arms out and twist – 30 sec per leg

(arms out to sides, slow twist back and forth)

* Dumbbell pushups – 2 sets of max reps

* Dumbbell Arm swings – 2 sets of 30 sec

* Dumbbell Flys – 2 sets of 15 reps

* Dumbbell Tricep curls – 15 reps per arm

Static Hip flexor stretch

Glute bridge - abduction w/ bands – 2 sets of 15 reps

One leg Glute bridge w/ pelvic thrust – 15 reps per leg

* One leg Kettlebell Upright rows – 15 reps per leg

* Kettlebell Deadlift – 2 sets of 15 reps

2 leg squat (no weight) – 2 sets of 15 reps

* Goblet squat w/ 5 curls per rep – 1 set of 10 reps

* Goblet squat w/ 5 heartbeats per rep – 1 set of 10 reps

* Goblet squat w/ 5 bootstrappers per rep – 1 set of 10 reps

2 leg squat (no weight) – 2 sets of 15 reps

One leg balancing ABCs – 1 set per leg

Pull-ups – 1 set of max reps

* *weights (dumbbells or kettlebells)*

Strength routine

Session 2 (Feb 4 – Mar 3)

Wall Psoas hold – 30 sec per leg

Single leg squats – 15 reps per leg

Hip drop – 15 reps per hip

Bench Bar dips – 2 sets of max reps

Forward walking lunge w/ A-march pose – 1 set of 15 steps forward

Reverse walking lunge w/ A-march pose – 1 set of 15 steps backward

Forward walking lunge w/ A-march pose & twist – 1 set of 15 steps forward

Reverse walking lunge w/ A-march pose & twist – 1 set of 15 steps backward

* One leg balancing w/ weighted (dumbbells/kettlebells) halos – 30 sec per leg

* One leg balancing w/ weighted (dumbbells/kettlebells) shoulder press – 15 reps per arm

* Dumbbell pushups – 2 sets of max reps

* Dumbbell Arm swings – 2 sets of 30 sec

* Dumbbell Flys – 2 sets of 15 reps

* Dumbbell Tricep curls – 15 reps per arm

Glute bridge - abduction w/ bands – 2 sets of 15 reps

One leg Glute bridge w/ pelvic thrust – 15 reps per leg

(new hamstring exercise with resistance bands)

* One leg Kettlebell Upright rows – 15 reps per leg

* Kettlebell Deadlift – 2 sets of 15 reps

* Goblet squat – 2 sets of 10 reps

* Goblet squat w/ 5 curls per rep – 1 set of 10 reps

* Goblet squat w/ 5 heartbeats per rep – 1 set of 10 reps

* Goblet squat w/ 5 bootstrappers per rep – 1 set of 10 reps

* Goblet squat – 2 sets of 10 reps

One leg balancing ABCs – 1 set per leg

Pull-ups – 1 set of max reps

* *weights (dumbbells or kettlebells)*