Training Baseball/Softball Athletes

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PROGRAM / PHILOSOPHY

- philosophy- a.) a theory underlying or regarding a sphere of activity or thought. 2a.) the most general beliefs, concepts, and attitudes of an individual or group (Miriam-Webster)
  - Research vs. Anecdotal Evidence
  - Collective Experience
  - What do you “hang your hat on”?

TRAINING PHILOSOPHY

TRAINING PHILOSOPHY

* TRAIN EXPLOSIVELY
* TRAIN MOVEMENTS, NOT MUSCLES
* UTILIZE GROUND-BASED MOVEMENTS TO DEVELOP TOTAL BODY STRENGTH
* TRAIN PROGRESSIVELY AND TRAIN SPECIFICALLY
* TRAIN THE CORRECT ENERGY SYSTEM

TRAIN EXPLOSIVELY

- In baseball/softball, the amount of time available to make forceful movements is often very brief (0.1 – 0.3 seconds). The amount of time it takes for a muscle to develop maximum force is much longer than what is often available in athletic situations.

TRAIN MOVEMENTS, NOT MUSCLES

- Sports skills involve compound (multi-joint) movements in 3 planes of space simultaneously. The only way to effectively train in these three planes are through the use of free weights.
- Baseball/Softball involves movements at all the body's joints via the recruitment of many muscle groups. Strength gains made with isolated joint exercises will have little if any carryover to the compound movements typical in softball.

UTILIZE GROUND-BASED MOVEMENTS TO DEVELOP TOTAL BODY STRENGTH

- Most sport skills are initiated by applying force with the feet against the ground. Total body strength is the ability to transmit large lower-body pushing forces through the trunk to the upper extremity. It requires a highly coordinated effort from the body's prime movers, synergists, and stabilizing muscles. This is exactly how your muscular system is overloaded during ground-based training activities.

TRAIN PROGRESSIVELY & SPECIFICALLY

- We will utilize different combinations of volume (repetitions) and intensity (weight) as we progress through the training year. We will train in a highly specific way to improve the expression of the velocity of movement, force of contraction, movement pattern, muscle fiber recruitment, metabolism, and flexibility.

TRAIN THE CORRECT ENERGY SYSTEM

- In order for conditioning to be effective, it must occur at the same intensity and duration that is used in competition. That ensures that we are improving our energy capacity, and therefore our performance.

GOALS

- **IMPROVE PERFORMANCE**
- **PREVENT INJURY**
- **INCREASE TOTAL BODY STRENGTH & POWER**
- **INCREASE LEAN MUSCLE MASS AND DECREASE BODY FAT**
- **IMPROVE SPORT SPECIFIC CONDITIONING**
- **IMPROVE SPEED AND AGILITY**
- **IMPROVE MENTAL AND PHYSICAL SELF ESTEEM**

TRAINING TO IMPROVE PERFORMANCE

- High force, high velocity, movement-specific training exercises
  - Throwing, hitting, and fielding are all complex movements involving many muscle groups working together in a coordinated fashion

TRAINING TO PREVENT INJURY

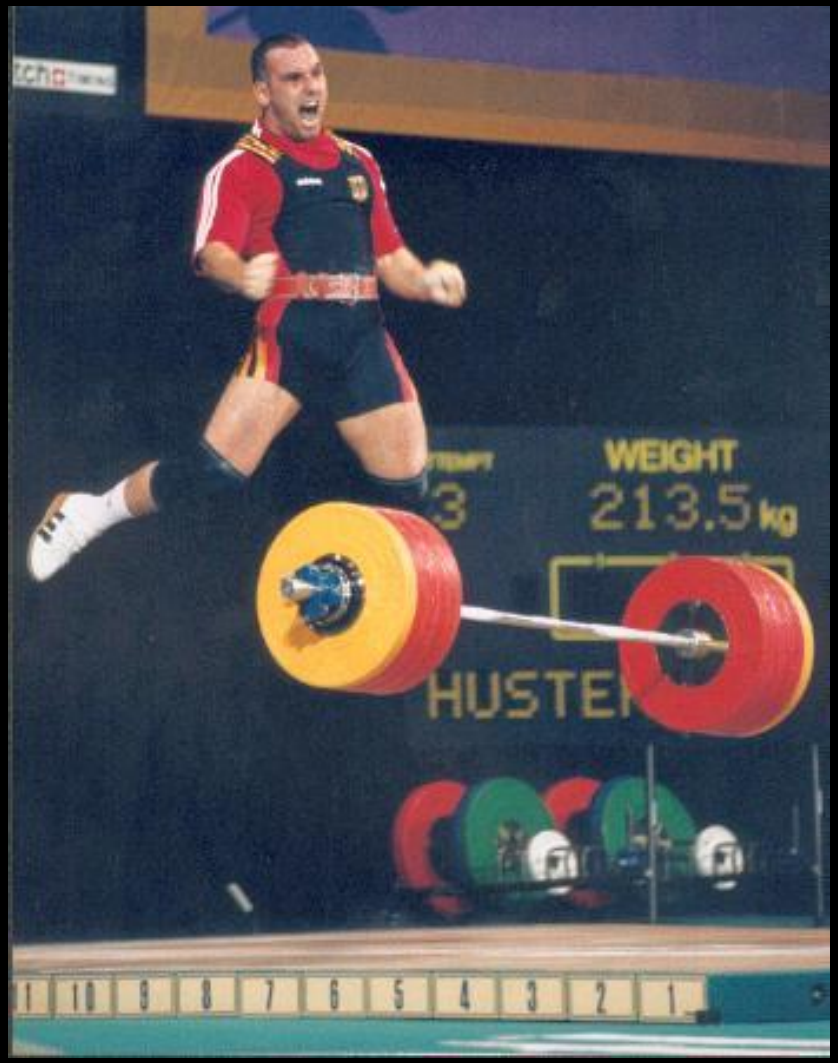
- Tissue Strengthening
  - Heavy weight training increases the strength of muscle, connective tissue, tendons, ligaments, and cartilage. Training-induced changes at the cellular level enable these structures to tolerate higher levels of stress without damage.
- Ground Reaction Forces
  - It is theorized that many injuries occur because of the body's inability to absorb and transmit forces effectively.
  - The explosive nature of Olympic weightlifting- perceived as dangerous by some- is the very quality that that conditions the body to resist injury.

RATIONALE FOR USING WEIGHTLIFTING MOVEMENTS

- POWER OUTPUT
- ACCELERATION
- DYNAMIC FLEXIBILITY
- TORSO STRENGTH
- ECONOMY OF TIME
- SAFETY

POWER OUTPUT

- Power output in Olympic-style weightlifting is the highest ever documented, and is comparable to the maximum theoretically possible for a human. (Garhammer, 1993)



ACCELERATON IS THE RULE…NOT THE EXCEPTION

- 90 MPH fastball
  - .40s. to reach batter
  - .20s. needed to “observe, process, decide”
  - .15s. needed to swing
- Sprinting

  .08 - .2s. of ground contact time

…More Acceleration

- Even if stride frequency is at an “optimal” rate, if the forces applied are not sufficient, an athlete will not reach top speed quickly, and “top speed” will not be very fast.

- RFD can be improved by either decreasing the time of force application or increasing force production.
  - Greater potential to increase RFD by increasing force production.

FLEXIBILITY

Lifters spend little or no time on generalized or isolated stretching drills, but simply use the competitive lifts themselves in a progressively loaded manner

SHOULDER FLEXIBILITY?

- 1.75lbs
- Clean, snatch, squat, press
- Very little time spent on auxiliary lifts
- Throw, throw, throw!

SHOULDER FLEXIBILITY?

- 5 oz. (softball = 7oz.)
- Nothing overhead?
- “Cuff” series, tubing?
- Little time spent on non-baseball conditioning
- Throw, throw, throw!!

TORSO STRENGTH

- All squatting, pulling, and overhead lifting simply cannot be performed without a strong, well-stabilized torso.
- Core vs. Peripheral Stability
  - Without peripheral stability, there can be no core stability

ECONOMY OF TIME

- Time efficiency
  - Classes, practice, batting cages, meetings, study hall, etc.
  - Multi-joint, high muscle mass lifts = maximal training in minimal time

SAFETY

- Landing forces from a vertical jump can be up to 8 X's bodyweight.
- Female athletes and ACL injuries – Inadequate absorption/dispersion of force.
- Overhead components? No greater occurrence of shoulder injuries in weightlifters… and that is all they do.

OVERHEAD LIFTING

- Overhead lifting = shoulder injuries?
  - Volume
    - Pitchers throw 100-200 pitches 2 X's week, (games, bullpens, drills, etc.)
    - Weightlifters perform 150-250 lifts/week (cleans, snatches, jerks, and variations)
  - Torque
    - Baseball = 5 oz.
    - Weightlifters = 60% - 90% 1 RM
  - Muscular Forces
    - Beginner lifters are able to hold their bodyweight overhead (abduction and external rotation)

IS OVERHEAD LIFTING RISKY?

- If weightlifting was inherently dangerous, there would be a tremendous number of shoulder injuries in weightlifters… this is simply not the case.
- Periodization
  - This is not to say that these exercises are at all times appropriate for any sport.
    - Manipulate volume/intensity/exercise selection.
    - COACH!

TRAINING CYCLES

- **POST-SEASON**
  - Recovery and re-orientation of basic movements
  - General training
  - Individual attention to player weaknesses

Name:		**POWER CLEAN 1 RM:**	100	
Sport: SOFTBALL - PITCHER		**BACK SQUAT 1RM:**	100	**REAR PUSH PRESS 1 RM:** 100
POST-SEASON		**BENCH PRESS 1RM:**	100	

WASHINGTON HUSKIES SOFTBALL

DAY 1			**DAY 2**		
WARM UP	DYNAMIC		**WARM UP**	DYNAMIC	
OLYMPIC			**OLYMPIC**	1 X 3 light DB's	
COMPLEX			**COMPLEX**		
			ISO DB	20 X 5 + 5	
			SNATCH	22 X 5 + 5	
ABOVE KNEE	60 X 5			22 X 5 + 5	
HIGH PULL from	64 X 5			24 X 5 + 5	
SCOOP	68 X 4			24 X 5 + 5	SIGN
	68 X 4		**EXPLOSIVE**	bar X 5 + 5	
	70 X 4	SIGN	**STEP-UPS**	45 X 5 + 5	
BEAR SQUAT	60 X 8		BOX ON HOLE #2	47 X 5 + 5	
	65 X 6			49 X 4 + 4	SIGN
	65 X 8		**DB RDL**	22 X 8	
	65 X 8			24 X 6	
ISO DB	warm-up X 10			24 X 6	
PUSH JERK	24 X 5 + 5		**HORIZONTAL**	X MAX	
	26 X 5 + 5		**PULL-UPS**	X MAX	
				X MAX	
DB ROW	X 10		**DB CURL**	4 X 10	
	X 8		**DB ALT.**	X 5 + 5	
	X 8		**UPRIGHT ROW**	X 5 + 5	
	X 8			X 5 + 5	
REVERSE	3 X 12	BAND	**DB SCRAMBLE UP**	2 X 5 + 5	
HYPEREXTENSION					
MED BALL	3 X 5		**SPEEDBAG**		
SHOULDER WALK			**SERIES**		
TRICEP EXTENSIONS (bar)			**CORE WORK**	DAY 2	
CORE WORK	DAY 3				
PIPE	2 X 15		**PIPE**	2 X 20	
GET SIGNED OUT			**GET SIGNED OUT**		
BY COACH			**BY COACH**		

TRAINING CYCLES

- **OFF SEASON**
  - Develop foundational strength & conditioning
  - Muscle hypertrophy
  - Core strength
  - Skill development/improvement
  - Low intensity agility and speed work
  - Anaerobic conditioning – interval training

Name:				**POWER CLEAN 1 RM:**	100					WEEK 10	
Sport:	**SOFTBALL**			**BACK SQUAT 1RM:**	100		**REAR PUSH PRESS 1 RM:**			100	
SUMMER 2006				**BENCH PRESS 1RM:**	100						

WASHINGTON HUSKIES SOFTBALL

MONDAY	**21-Aug**		**WEDNESDAY**	**23-Aug**		**FRIDAY**	**25-Aug**
OLYMPIC	* POWER SHRUG		**DB OLYMPIC**	* POWER SHRUG		**WARM UP**	DYNAMIC
COMPLEX	* HI PULL		**COMPLEX**	* HI PULL			
	* POWER CLEAN			* POWER CLEAN			
	* POWER CLEAN & JERK			* POWER CLEAN & JERK			
POWER CLEAN	#REF!		**ISO DB**	#REF!	EACH ARM	**OLYMPIC**	1 X 3 @ 45lbs
	#REF!		**SNATCH**	#REF!		**COMPLEX**	
	#REF!		FROM FLOOR	X 3 + 3			
	#REF!			X 3 + 3		**HIGH PULL**	#REF!
	#REF!		**DB PUSH JERK**	#REF!			#REF!
	#REF!		DIP AND DRIVE	#REF!			#REF!
BACK SQUAT	bar X 10	DEPTH!!		X 3			#REF!
	#REF!			X 3		**PAUSE SQUAT**	bar X 10
	#REF!					sit and hold for	X 6
	#REF!		**STEP-UPS**	#REF!		1 sec. at bottom	X 6
	#REF!		MEDIUM BOX	#REF!			X 6
				#REF!			
DB BENCH PRESS	#REF!					**UNEVEN BENCH**	2 X 5 RIGHT SIDE
	#REF!					**PRESS**	2 X 5 LEFT SIDE
	#REF!		**REVERSE**	X 10		LOAD WT. ON ONE	
RDL	#REF!		**HYPEREXTENSION**	X 10		SIDE OF THE BAR!	
	#REF!					**DB ROW**	X 8
	X 6						X 8
DB ROW	#REF!		**DB ALT.**	3 X 10 + 10			X 8
	#REF!		**UPRIGHT ROW**			**HORIZONTAL**	X MAX
	#REF!		**SUPERSET W/**			**PULL UPS**	X MAX
CABLE TWIST	3 X 8	EACH WAY	**REAR DELT RAISE**				X MAX
ANY CURL &	4 x 10 + 10					**DB CURLS**	4 X 10 + 10
TRICEP			**ANY ARM CURL**	4 X 10		**SUPERSET W/**	
						DB TRICEP	
						EXTENSIONS	
GET SIGNED OUT			**GET SIGNED OUT**			**GET SIGNED OUT**	
BY COACH			**BY COACH**			**BY COACH**	

TRAINING CYCLES

- **PRE SEASON**
  - Increase power capacity
  - Increase and peak agility and speed work
  - Increase position-specific metabolic conditioning
  - Skill specificity

Name:		POWER CLEAN 1 RM:	100			WEEK 5	
Sport:	SOFTBALL	BACK SQUAT 1RM:	100		REAR PUSH PRESS 1 RM:	100	
FALL		BENCH PRESS 1RM:	100				

WASHINGTON HUSKIES SOFTBALL

MONDAY	24-Oct		TUESDAY	25-Oct		FRIDAY	28-Oct	
WARM UP	DYNAMIC		WARM UP	DYNAMIC		WARM UP	DYNAMIC	
			DB OLYMPIC	* POWER SHRUG		OLYMPIC	* POWER SHRUG	
			COMPLEX	* HI PULL		COMPLEX	* HI PULL	
OLYMPIC	* POWER SHRUG			* POWER CLEAN			* POWER CLEAN	
COMPLEX	* HI PULL			* POWER CLEAN & JERK			* POWER CLEAN & JERK	
	* POWER CLEAN		ISO DB	22 X 5 + 5		CLEAN &	56 X 4 + 6	
	* POWER CLEAN & JERK		HANG SNATCH	25 X 5 + 5		BACK SQUAT	59 X 4 + 6	
HANG ABOVE	55 X 5			25 X 5 + 5		COMPLEX	61 X 4 + 6	
KNEE CLEAN	57 X 5			28 X 5 + 5	SIGN			
	60 X 5		DB PUSH JERK	X 5		BENCH PRESS	bar X 10	
	63 X 5	SIGN		X 5			X 10	
BACK SQUAT	bar X 10	DEPTH!!	SAME WEIGHT AS 2ND	X 5			X 8	
	50 X 10		SET DB SNATCH	X 5			X 8	
	55 X 8						X 8	SIGN
	57 X 8		HI-BOX	X 5 + 5		CLEAN DEADLIFT	X 6	
ISO INCLINE	X 10	EACH ARM	STEP UPS	X 5 + 5			X 6	
DB BENCH PRESS	X 8		BOX AT #2	X 5 + 5			X 6	
	X 8					DB ROW	X 8	HEAVY!
CLEAN DEADLIFT	bar X 6		REVERSE	3 X 12	BWT.		X 8	
	bar X 6		HYPEREXTENSIONS				X 8	
	bar X 6					CABLE TWIST	2 X 8	
CABLE TWIST	3 X 8	EACH WAY	DB ALT.	3 X 10 + 10				
			UPRIGHT ROW					
			SUPERSET W/			CURL (STRIP SET)	1 X 10 + 10 + 10 + 10	
DB LATERAL RAISE	3 x 10 + 10		REAR DELT RAISE					
SUPERSET W/			ON BENCH			DB TRICEP	3 X 10	
TRICEP EXTENSIONS (bar)			ANY ARM CURL	4 X 10		EXTENSIONS		
PIPE	2 X 15							
			PIPE	2 X 15		PIPE	2 X 15	
GET SIGNED OUT			GET SIGNED OUT			GET SIGNED OUT		
BY COACH			BY COACH			BY COACH		

TRAINING CYCLES

- **IN SEASON**
  - Peak power
  - Position-specific training
  - Power, strength, and conditioning maintenance
    - ***PAC 10 CHAMPIONSHIP***
    - ***COLLEGE WORLD SERIES***

Name:			POWER CLEAN 1 RM:	126			
Sport:	SOFTBALL		BACK SQUAT 1RM:	150	REAR PUSH PRESS 1 RM:	100	
IN-SEASON			BENCH PRESS 1RM:	120	CHIN UPS:		
DAY 1 - Week 4 - 6							

WASHINGTON HUSKIES SOFTBALL

TUESDAY	30-Jan		TUESDAY	6-Feb		TUESDAY	13-Feb	
WARM UP	DYNAMIC		WARM UP	DYNAMIC		WARM UP	DYNAMIC	
OLYMPIC	3 X 3 X 3 X 3		OLYMPIC	3 X 3 X 3 X 3		OLYMPIC	3 X 3 X 3 X 3	
COMPLEX			COMPLEX			COMPLEX		
HIGH PULL &	79.38 X 2 + 3		HIGH PULL &	81.9 X 2 + 2		HIGH PULL	85.68 X 5	
POWER CLEAN	84.42 X 2 + 3		POWER CLEAN	90.72 X 2 + 2			98.28 X 4	
	90.72 X 2 + 3			95.76 X 2 + 2			103.32 X 4	
	90.72 X 2 + 3			95.76 X 2 + 2			107.1 X 3	
BACK SQUAT	bar X 10	DEPTH!!	BACK SQUAT	bar X 10	DEPTH!!		107.1 X 3	
	88.5 X 10			94.5 X 8		BACK SQUAT	bar X 10	DEPTH!!
	97.5 X 8			102 X 8			85.5 X 8	
	97.5 X 8			109.5 X 6			94.5 X 8	
	97.5 X 8	SIGN		109.5 X 6	SIGN		102 X 6	
							108 X 6	SIGN
ISO DB BENCH	warm-up X 5 + 5		ISO DB INCLINE	warm-up X 5 + 5		ISO DB BENCH	warm-up X 5 + 5	
PRESS	27.6 X 5 + 5		BENCH PRESS	22.8 X 5 + 5		PRESS	27.6 X 5 + 5	
	30 X 5 + 5			24 X 5 + 5			27.6 X 5 + 5	
	30 X 5 + 5			24 X 5 + 5			27.6 X 5 + 5	
CHIN UPS			CHIN UPS			CHIN UPS		
Superset with bench!			Superset with bench!			Superset with bench!		
HI ROPE PULLS	3 X 10 + 10		REAR DELT RAISE	3 X 10 + 10		HI ROPE PULLS	3 X 10 + 10	
SUPERSET W/			SUPERSET W/			SUPERSET W/		
TRICEP EXTENSIONS			TRICEP EXTENSIONS			TRICEP EXTENSIONS		
ISO LEG CURL	2 X 6 + 6		SINGLE LEG RDL	2 X 12		F.B.U.R. on	2 X 12	
						BOSU BALL		
CORE WORK	DAY 1		CORE WORK	DAY 1		CORE WORK	DAY 1	
PIPE	2 X 15		PIPE	2 X 15		PIPE	2 X 15	
GET SIGNED OUT			GET SIGNED OUT			GET SIGNED OUT		
BY COACH			BY COACH			BY COACH		

Name:		POWER CLEAN 1 RM:	132		
Sport: SOFTBALL		BACK SQUAT 1RM:	185	REAR PUSH PRESS 1 RM:	100
IN-SEASON 2007		BENCH PRESS 1RM:	120	CHIN UPS:	
Day 2 - WEEK 4 - 6					

WASHINGTON HUSKIES SOFTBALL

THURSDAY	1-Feb	THURSDAY	8-Feb	THURSDAY	15-Feb
WARM UP	DYNAMIC	WARM UP	DYNAMIC	WARM UP	DYNAMIC
OLYMPIC	1 X 3 light DB's	OLYMPIC	1 X 3 light DB's	OLYMPIC	1 X 3 @ 45lbs
COMPLEX		COMPLEX		COMPLEX	
ISO DB	26.4 X 5 + 5	ISO DB	26.4 X 5 + 5	ISO DB	42.24 X 5 + 5
SNATCH	29.04 X 5 + 5	SNATCH	29.04 X 5 + 5	HIGH PULL	44.88 X 4 + 4
	29.04 X 4 + 4		29.04 X 5 + 5		44.88 X 4 + 4
	31.68 X 4 + 4		31.68 X 4 + 4		47.52 X 4 + 4
	28.8 X 3 + 3				
REVERSE LUNGE	bar X 5 + 5	REVERSE LUNGE	bar X 5 + 5	LOW BOX	bar X 5 + 5
	64.75 X 5 + 5		74 X 5 + 5	STEP-UPS	86.95 X 5 + 5
	64.75 X 5 + 5		74 X 5 + 5		90.65 X 4 + 4
	74 X 4 + 4		83.25 X 4 + 4		94.35 X 4 + 4
DB RDL	40.7 X 8	DB RDL	40.7 X 8		94.35 X 4 + 4
	44.4 X 6		44.4 X 6	ROMANIAN	bar X 8
	44.4 X 6		44.4 X 6	DEADLIFT (RDL)	88.8 X 8
DB ROW	44.4 X 8	LAT PULLDOWN	X 9		88.8 X 6
	X 8		X 7		
	X 8		X 5	DB ROW	44.4 X 8
DB CURL	4 X 10	DB CURL	4 X 10		X 8
REVERSE	X 10	REVERSE	X 10		X 8
HYPEREXTENSION	X 10	HYPEREXTENSION	X 10	REVERSE	X 10
BAND		BAND		HYPEREXTENSION	X 10
DB SCRAMBLE UP	2 X 5 + 5	DB SCRAMBLE UP	2 X 5 + 5	BAND	
				DB SCRAMBLE UP	2 X 5 + 5
CORE WORK	DAY 2	CORE WORK	DAY 2	CORE WORK	DAY 2
PIPE	2 X 20	PIPE	2 X 20	PIPE	2 X 20
GET SIGNED OUT		GET SIGNED OUT		GET SIGNED OUT	
BY COACH		BY COACH		BY COACH	

SUMMARY

- There is potential to improve a baseball/softball player's performance capability and reduce the risk of injury through the use of weightlifting movements.
  - RFD, muscular strength, flexibility, etc.

- Coaching = manipulating variables to produce the greatest benefits without excessive risks.