

CURRENT TRENDS IN STRENGTH & CONDITIONING

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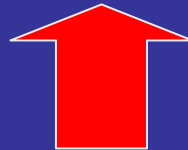
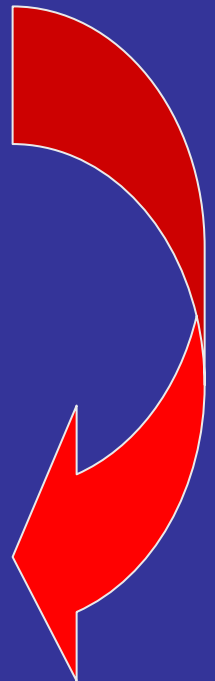
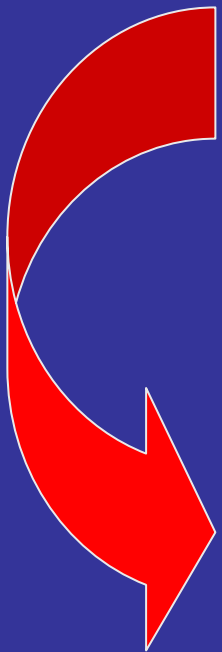
TRAINING

- LOAD
- VOLUME (SETS X REPS)
- SPEED
- REST TIME
- RANGE OF MOTION
- MODALITY UTILIZED

FORCE PRODUCTION

STABILIZATION

FORCE REDUCTION



TIME UNDER TENSION

- THE LONGER THE MUSCLE IS UNDER TENSION, THE MORE MOTOR UNITS AND MUSCLE FIBERS WILL BE CALLED INTO PLAY. "TUT"

DYNAMIC ISOMETRICS

- A FUSION OF THE CONCEPTS OF ISOMETRIC TRAINING AND DYNAMIC TRAINING IN ORDER TO CREATE A STRONGER, MORE POWERFUL MUSCLE.

FORCE ABSORPTION FORCE PRODUCTION RELATIONSHIP

- THE MORE FORCE THE ATHLETE CAN ABSORB, THE MORE FORCE THE ATHLETE CAN PRODUCE.

FORCE ABSORPTION FORCE PRODUCTION RELATIONSHIP

- FORCE ABSORPTION - ECCENTRIC STRENGTH
- FORCE PRODUCTION - CONCENTRIC STRENGTH

ELASTICITY

- THE MORE INHERENTLY ELASTIC THE ATHLETE IS, THE QUICKER THE ATHLETE CAN GO FROM THE LOADING PHASE TO THE EXPLODING PHASE. IN OTHER WORDS, THE QUICKER THE AMORTIZATION PHASE.

AMORTIZATION PHASE

- THE ABILITY TO SWITCH FROM STRETCH/ECCENTRIC TO SHORTENING/CONCENTRIC IN THE STRETCH – SHORTENING PHASE.
- THE MORE EXPLOSIVE THE ATHLETE, THE QUICKER THIS SWITCH IS AND THE MORE POWERFUL THE FINAL MOVEMENT.

SPEED – STRENGTH CONTINUUM

SPEED

STRENGTH

FAST

SLOW

LIGHT

HEAVY

SPEED

STRENGTH

DYNAMIC

ISOMETRIC

BALLISTIC

STATIC

SPEED

STRENGTH

POWER

FAST

SLOW

COMPENSATORY ACCELERATION

- IRREGARDLESS OF THE LOAD, MOVE THE BAR, BODY, OR IMPLEMENT AS FAST AS POSSIBLE.

HOLDS/PAUSES

- AT A SPECIFIC JOINT ANGLE, THE ATHLETE WILL HOLD THE MOVEMENT FOR 1 – 30 SECONDS. AT THE END OF THE HOLD THE ATHLETE WILL EXPLODE DYNAMICALLY AND MOVE THE BAR, DB OR BODY AS QUICK AS POSSIBLE.

POWER

$$\frac{\text{FORCE X DISTANCE}}{\text{TIME}}$$

DYNAMIC ISOMETRIC LOADS

- BODYWEIGHT (PUSH – UPS, JUMPS)
HOLD UP TO 30 SECONDS
- WEIGHT TRAINING
AN INVERSE RELATIONSHIP OF
TIME TO LOAD

WEIGHT TRAINING LOADS

INCREASE THE LOAD, DECREASE THE HOLD.

PERCENTAGE

TIME

40%

10 SEC.

45%

8 SEC.

50%

6 SEC.

55%

4 SEC

60%

2 SEC.

65%

1 SEC.

*VERY CONSERVATIVE LOADS/HOLDS

APPLICATION

- HOLDS – AT VARIOUS JOINT ANGLES THE ATHLETE WILL HOLD THE POSITION FOR 1 – 3 SECONDS IN ORDER TO INCREASE THE TIME UNDER TENSION.

APPLICATION - HOLDS

- 3 POSITION GLUTE HAM RAISES
- 3 POSITION DIPS
- 3 POSITION PULL – UPS
- 3 POSITION PUSH – UPS
- 3 POSITION PRESSES, SQUATS, STEP – UPS, LAT PULLS, CLEANS, ETC.

EXAMPLE

- SPLIT SQUAT HOLD JUMPS
30 SEC HOLD & 5 DYNAMIC REPS
LOAD = BODYWEIGHT
- BENCH PRESS
X SEC. HOLD & X DYNAMIC REPS
LOAD = VARIES

DYNAMIC ISOMETRICS WITH A PARTNER

AT THE POSITION OF THE PAUSE, THE PARTNER WILL PROVIDE ADDED RESISTENCE TO THE BAR/BODY OF THE ATHLETE. THE ATHLETE WILL INCREASE HIS FORCE INTO THE BAR OR GROUND, MAINTAINING POSTURE AND TECHNIQUE. AT THE END OF THE PRESCRIBED TIME, THE PARTNER WILL RELEASE AND THE LIFTER WILL EXPLODE FOR THE ASSIGNED REP SCHEME.

UNILATERAL TRAINING

- EXCELLENT FOR LIMITING IMBALANCES AND CREATING STRENGTH IN NATURALLY WEAK OR UNDER USED MOVEMENTS.

APPLICATION

- EXTENDED PRESSES – USE DB'S AND EXTEND THEM TO ARMS LENGTH. ALTERNATELY PRESS ONE AT A TIME WHILE KEEPING THE OTHER EXTENDED.
- CONTRACTED PULLS – USING DB'S OR MACHINES, PULL THEM IN AND HOLD WHILE ALTERNATELY EXTENDING AND PULLING ONE AT A TIME.

WAVE TRAINING

- EXERCISE WAVE TRAINING

EXAMPLE – SQUATS

3 + 3 + 3

HIGH – DO 3 ¼ SQUATS, 3 FULL SQUATS, THEN 3 ¼ SQUATS.

LOW – DO 3 FULL SQUATS, 3 ¼ SQUATS, THEN 3 FULL SQUATS.

WAVE TRAINING

- PURPOSE – TO OVERLOAD THE JOINT ANGLE AT THE AMORTIZATION PHASE OF THE STRETCH – SHORTENING CYCLE IN ORDER TO INCREASE THE ELASTICITY OF THE MUSCLE-TENDON UNIT AND ITS ABILITY TO STORE AND USE KINETIC ENERGY.

WAVE TRAINING

- PERCENTAGE WAVE TRAINING
EXAMPLE – POWER CLEAN

5 X 2

ODD SETS AT 75%

EVEN SETS A 82.5%

SET 1	SET 2	SET 3	SET 4	SET 5
75%	82.5%	75%	82.5%	75%

WAVE TRAINING

- PURPOSE – TO GET THE BODY (NERVOUS SYSTEM) TO MOVE THE BAR AS FAST AS POSSIBLE REGARDLESS OF THE LOAD IMPOSED.

WAVE TRAINING

- CONTRAST WAVE TRAINING – CONTRAST THE LOAD OR SPEED OF ONE EXERCISE TO ANOTHER.
- EXAMPLE – RESISTED SPRINTS FOLLOWED BY ASSISTED SPRINTS.
- EXAMPLE – SQUATS FOLLOWED BY BODYWEIGHT SQUAT JUMPS.
- EXAMPLE – BENCH PRESS AND MEDIBALL BENCH PRESS

WAVE TRAINING

- PURPOSE - TO ENHANCE THE ABILITY OF THE ATHLETE TO MOVE WITH SPEED AND POWER IN SIMILAR MOVEMENTS, REGARDLESS OF THE IMPOSED LOAD.

BASIC PROGRESSIONS MODALITIES

- BILATERAL TO UNILATERAL
- HARD SURFACE TO SOFT SURFACE
- 4 POINT TO 3 POINT TO 2 POINT TO 1 POINT BASE OF SUPPORT
- BODYWEIGHT BEFORE EXTERNAL LOADS

BASIC PROGRESSIONS WORKOUT

- WARM - UP
- LOOSEN – UP
- TURN - ON
- BUILD – UP
- PRACTICE/COMPETE
- RECOVER/RESTORE

THANK YOU

- FOR ATTENDING TODAY
- COACHES
- THERAPISTS
- TRAINERS
- ATHLETES
- M – F PERFORM BETTER
- VERN GAMBETTA
- MY FAMILY