

PROGRAMMING THROUGH DESIGN VARIABLES

NSCA ESSENTIALS OF STRENGTH & CONDITIONING

DESIGN VARIABLES

1. Needs Analysis

2. Exercise Selection

3. Training Frequency

4. Exercise Order

5. Training Loads & Repetitions

6. Volume

7. Rest

1. NEEDS ANALYSIS

- **SPORT (TASK) / ASSESSMENT**

← ALWAYS

- HEIGHT / WEIGHT
- BROAD JUMP
- PRO AGILITY
- BENCH
- HXB DEADLIFT
- METRONOME PULLUP (30 BPM)
- 300 YD SHUTTLE (25X25)
- YO-YO RUN

2. EXERCISE SELECTION

- FROM NEEDS ANALYSIS

- ★ 7 FOUNDATIONAL MOVEMENTS

- HINGE

- LUNGE

- SQUAT

- PLANK

- PULL

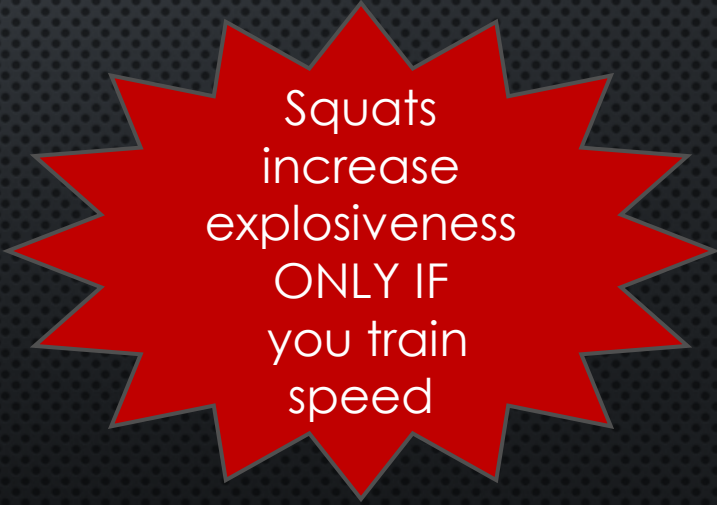
- ROTATION

- PUSH

Movement	Assessment Grade
Broad Jump	Poor
Pro Agility	Poor
PVC OHS	Avg
Bench	Good
HXB Deadlift	Good
300yd Shuttle	Poor
Metronome Pullup	Avg

EXAMPLE:

WHAT 3 MOVEMENTS WILL IMPROVE THEIR BROAD JUMP?



Squats
increase
explosiveness
ONLY IF
you train
speed

3. TRAINING FREQUENCY

- DAYS / WEEK

BASED ON?

- Training Age
- History / Ability
- Period

Example:

21 y/o

Training since age 19
2-3 years training age

4. EXERCISE ORDER

- TECHNICAL
- NEUROLOGICALLY DEMANDING
- POWER / STRENGTH
- EXHAUSTIVE

5. TRAINING LOADS & REPETITIONS

INTENSITY

- Quality of Reps
 - Rest between sets
- Goal of training
 - Strength, Power, Endurance, etc.
- Loads over time
 - Ascending / Descending Ladders

85% = 6 RM

Working Reps @ 85% 1-3 Reps

WHAT ARE OTHER TRAINING
CONSIDERATIONS?

6. VOLUME

- WEIGHT (NOT VOLUME BUT NEEDS TO BE CONSIDERED)
 - # REPS / DAY / WEEK

Monday:
4 x 3 Push Press
5 x 6 Bench Press
During Circuit: Pushups 3 x 30s

7. REST

- 1 : 1 – 3 Cardio (Aerobic)
- 1 : 3 - 5 Anaerobic
- 1 : 5+ Phosphagen

-
- 0 – 10s Phosphagen
 - 10s – 60s Glycogen
 - 60s – 2min Glycogen / Oxygen
 - 2min + Oxygen

Anaerobic glycolysis supplies approximately 40 percent of the total energy during a single six-second sprint, but this number shifts toward aerobic contribution as the number of sprints increase.

Strength / Power	2-5 Minutes	1-5 Reps
Hypertrophy	30 (60) – 120 sec	8-12 Reps
Endurance	30sec or less	15-20 Reps

Mon.	Tues.	Wed.	Thurs.	Fri.
High	Low (RPE 7)	High/Off	Low (RPE 7)	High



EXAMPLE PROGRAM

WEEK #	RPE / %	PERIOD
0	100	Assessment
1	65	Hypertrophy
2	75	
3	65-70	Strength
4	80	
5	70-75	Power
6	80-85	
7	80	Power
8	90	
9	80	Reload
10	80-85	Peaking
11	90	
12	80	
GAME	100	Sport (Task) Pre/In season

2 Weeks
(eccentric)



2 Weeks
(Isometric)



2 Weeks
(Reactive)



2 Weeks
(Reactive)



4 Weeks
(Peaking)

REFERENCES

- DIETZ, C. & PETERSON, B. (2012). *TRIPHASIC TRAINING: A SYSTEMATIC APPROACH TO ELITE SPEED AND EXPLOSIVE STRENGTH PERFORMANCE*. BYE DIETZ SPORTS ENTERPRISE.
- DONSKOV, A. (2016). 300-YARD SHUTTLE FOR ICE HOCKEY: TO TEST OR NOT TO TEST? *DONSKOVE STRENGTH AND CONDITIONING INC.*
[HTTPS://WWW.DONSKOVSC.COM/EASYBLOG/ENTRY/300-YARD-SHUTTLE-FOR-ICE-HOCKEY-TO-TEST-OR-NOT-TO-TEST](https://www.donskovsc.com/easyblog/entry/300-yard-shuttle-for-ice-hockey-to-test-or-not-to-test)
- HAFF, G. G., & TRIPLETT, N. T. (2016). *ESSENTIALS OF STRENGTH TRAINING AND CONDITIONING* (4TH ED). HUMAN KINETICS.
- SIFF, M. C. (2003). *SUPERTRAINING*. SUPERTRAINING INSTITUTE.
- ZATSORSKY, V. M., & KRAEMER, W. J. (2006). *SCIENCE AND PRACTICE OF STRENGTH TRAINING* (2ND ED). HUMAN KINETICS.

QUESTIONS?

