

Hypertrophy Training

Muscle Hypertrophy

- All programs are based upon: intensity, volume, and frequency (collectively referred to as *training load*)
- Progressive overload, muscles must continuously be programmed to do more work
- Muscular work = Force x Distance
 - Force: load 67-85% 1RM
 - Volume: 3-6 sets, 6-12 reps
 - Distance: full R.O.M. with every repetition

Muscle Hypertrophy

- Muscular work continued
 - The shorter the rest periods, the more work that be achieved in a workout session (beginner 90 sec → advanced 30 sec)
 - The longer the muscle is under tension, the greater the work demands on the muscle: “time-under-tension” concept
 - ea. set should take between 45-60 sec
(in contrast: strength: 4 – 20 sec, endurance: >60 sec)
 - ea. rep should take about 4-8 sec
 - Lifting tempo: 5 0 2 1 (ECC/pause/CON/pause)

Muscle Hypertrophy

- Mode of exercise:
 - The greater the amount of muscle mass used in a lift the greater the stimulus for size adaptation
 - Multi-joint, compound movements are best
 - Isolation training should only be used by advanced bodybuilders
 - More WORK is accomplished with compound movements
- Training frequency:
 - Variable, depends on approach (whole vs split-body approach)
 - Typically 2-4 times per week

Muscle Hypertrophy

- Hypertrophy training is very exhausting, physically and mentally. It may require several weeks to finally build the tolerance to such training methodology
 - Important to set realistic training expectations
- Exercise Order
 - Upper & Lower body split routines
 - Push & Pull routines
 - Supersets & Compound sets

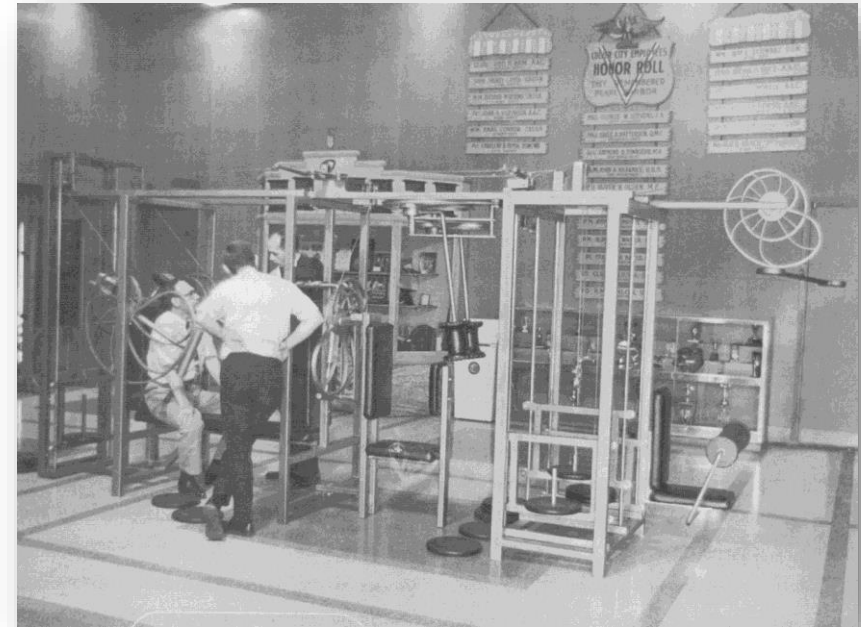
Overview of Training Recommendations

- Training sessions should minimize the number of exercises
 - Generally aim for 3-6
- Select a fatigue-inducing method
 - Maintain method for 3-4 weeks before changing
 - Change is important after 3-4 weeks
- Examples of some traditional fatigue-inducing methods:
 - Super and Compound sets
 - Drop sets
 - Assisted repetitions
 - Cheated repetitions

Hypertrophy Programs

High Intensity Training (HIT)

- Developed by Arthur Jones in the 60's
 - Creator of Nautilus exercise machines
- HIT adheres to three principles:
 - High intensity
 - Low volume
 - Low frequency



Blue Monster on display at the
1970 Mr. America contest

HIT Program

- High Intensity:
 - Characterized by effort, performing each exercise to the point of momentary muscular failure
 - Each repetitions are performed slowly, 4 0 2 0 tempo
 - Work in the 67-85% 1RM range, ultimately 10RM (75%)
- Low Volume:
 - Typically 8-10 reps per set
 - In most cases, one set per exercise
 - Rest between exercises 30-90 sec

HIT Program

- Low Volume
 - No. of exercises per session 3 - 15
 - Beginner: 1 set for 1 exercise in each of 3 movements
 - Progression:
 - Separate horizontal & vertical movements
 - Add exercises instead of sets (1-3 exercises for each movement)

<u>Leg/Hip</u>	<u>Upper Body Pressing</u>	<u>Upper Body Pulling</u>
- Squat	- Parallel dip (vertical)	- Seated row (horizontal)
- Deadlift	- Overhead press (vertical)	- Chin-up (vertical)
- Leg press	- Bench press (horizontal)	

HIT Program

- Low Frequency
 - Whole body routines 3x per week, reduced to 2x if progress is not observed
 - Some HIT proponents recommend training every 4-5 days, even once per week once heavier weights are used
- Miscellaneous
 - Proper form/technique very important
 - Order of exercise must change with every workout
 - Heavy focus on multi-joint exercises that are most likely of beneficial use in day-to-day functioning
 - Mantra: Train hard enough (intensity) | Don't do too much (volume) | Must have enough rest (recovery) | Chart training so that exercises order can be varied

Hypertrophy Programs

German Volume Training (aka ten-sets-method)

- Originated in Germany circa mid-1970's, brought to popularity by Charles Poliquin in the 90's
- Goal: complete 10 x 10 with the same weight for specific exercises
- Starting load ~20RM, usually represent ~50-60% of 1RM



GVT Program

- Rest Intervals:
 - 60s b/w sets of single exercises
 - 90-120s when performing supersets
- Tempo: 4-0-2 for multi-joint exercise; 3-0-2 for single joint exercise
- No. of exercises: usually one per body part
- Training frequency: variable, usually 5-6 day bodybuilding (muscle group split) routines
- After 1-month, volume decreases for 3 wks w/ 4-6 x 6-8 reps
- After which volume returns w/ 10 sets x 6 reps using 12RM load (75% 1RM)

GVT Program

- Sample bodybuilding routines

Sample Routine 1				
Day 1	Day 2	Day 3	Day 4	Day 5
Chest & Back	Legs & Abs	Off	Arms & Shoulders	Off

Sample Routine 2					
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Chest & Shld	Off	Back & Hams	Off	Quad & Arms	Off

Hypertrophy Programs

Escalating Density Training (EDT)

- Developed in 2002 by Charles Staley
- Program focuses on progressively increasing the amount of work done in a set period of time
- There are no predetermined numbers of sets, reps, or rest periods. The goal is to continually improve the total amount of reps performed



EDT Program

- Exercises: usually superset 2 antagonistic exercises
 - Selection varies from multi- to single-joint movements
- Intensity: 10-12RM loads (75% 1RM) are used for a given exercise
 - Initial target 5 reps per set performed at a dynamic pace
 - As fatigue sets in, reps decrease

Exercise	Starting load 10RM, aim for 5 reps at a time								Total
A	5	5	5	4	3	2	1	1	26
B	5	5	4	4	2	2	2	1	25

EDT Program

- Volume: typically 1 – 2, 20 minute periods
 - Goal is to perform as many reps/sets as possible with no predefined rest intervals
 - 5 – 10 min rest between 20 min periods (different exercise set)

↙ As many sets as possible in 20 minutes ↘

Exercise	Starting load 10RM, aim for 5 reps at a time								Total
A	5	5	5	4	3	2	1	1	26
B	5	5	4	4	2	2	2	1	25

EDT Program

- Frequency:
 - Bodybuilding split – 4 days per week
 - Whole-body training – 3 days per week
- Progression:
 - 20/5 rule – once the total reps has increased by 20% or more from the original training session, the weight is increased by approximately 5%

