

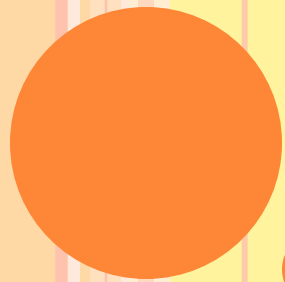
**SENSIBLE
WEIGHT LOSS**

EXERCISE

**FACTS
EXERCISE
CONTROVERSY
SOLUTION**



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EXERCISE CONTROVERSY

Facts from Fiction!

ENERGY EXPENDITURE

- BMR = 60-70% ; 1kcal/kg/hour.
- Thermal effect digestion = 10%.
- Exercise: 10 – 40% depending on activity.
 - 75kg person burns 100 kcal to walk 1 mile.
 - 3500 kcal = 1 lb of fat.
 - Person needs to walk 35 miles to burn 1 lb of fat.



BENEFITS REGULAR EXERCISE FOR THE OBESE

- Decrease loss of fat-free mass (muscle) associated with weight loss.
- Increase muscle mass and more effective fat oxidation (more fat burned per unit of exercise).
- Quick increase in fat metabolism: within 3 weeks of exercise 3x/week; within 10 days of 1-hour exercise/day.
- Improves maintenance of weight loss; exercise helps long-term!
 - More beneficial for maintenance than for initial weight loss!
 - No change for short-term weight loss results.
- Improves cardiovascular and metabolic health (independent of weight loss).



- NO advantage shown supervised versus non-supervised activity in long-term.
- Compliance higher home-based vs. group based.
- A single bout of exercise can increase BMR by 5-15% for up to 48 hours (increased systemic NE).
 - Example: 70kg person burns extra 160 kcal/day, he/she loses extra pound of fat every 20 days.
- Ideally 120 – 200 minutes/week for weight loss.
- As obese person loses weight, it takes more and more exercise just to maintain the weight loss.
- Exercise decreases appetite short-term due to reduction in visceral blood flow and catecholamine elevations.
- Exercise does not increase food intake in long-term in normal individuals.



DIET + EXERCISE = KEY

- Physical activity alone results in minimal weight loss and does not increase short-term diet-induced weight loss.
- Diet + Exercise:
 - Lose more weight than diet alone.
 - Body composition changes:
 - Increased fat loss.
 - Less lean muscle tissue loss.
 - Decrease in visceral fat.
 - Exercise is key factor in maintenance of weight loss.



CONCLUSION SO FAR...

- Diet = key factor for initial weight loss!
- Exercise = key factor for sustained weight loss!

Many dieters will plateau UNTIL they increase exercise!

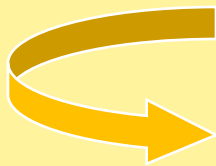


EXERCISE CONTROVERSY

Studies showed **NO** improvement and a general deepening of pain & fatigue



CVP exercise or HIT



POOR CHOICE



Too much energy
NO reserve

No bearing
with ADL's

Inflammation (friction)



EXERCISE

Increase ATP production
in tissues



Increase OXYGEN levels
(to restore full aerobic respiration of cells)



Increase # of mitochondria & nuclei in
muscles



PRE (Progressive Resistive Exercise)



EXERCISE PHYSIOLOGY

“For every increase in muscle tone there is a 40% increase in vascularization”.

Increase in # micro-circulation pathways + Increase of lumen of existing blood vessels

Vastly improves circulation of oxygenated blood to the affected areas



Emphasis has always been in developing endurance in patients, but strength must ALWAYS precede endurance. If not, what's there to endure?

Physiological law of Specificity of Exercise:

“Performance of a task only builds limited strength in that task.”

In Sports Medicine:

“Don't play to get into shape, get into shape to play”.



PRE

Builds large # of mitochondria & nuclei as a normal response to work



**Short sets with large rest segments
(avoid draining energy reserves)**

+

**Duration short
(avoid inflammation)**



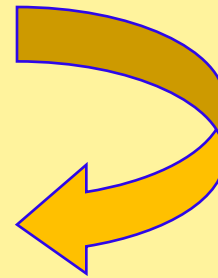
PRE IN MORE DEPTH...

Selection of exercise:

- 70% of LE's & pelvic muscles PUSH
- 70% of UE's & torso PULL

Find most effective exercises:

- Leg presses
- Back extensions
- Pull-downs
- Crunches



Low Reps with Heavy Resistance

■ Resistance:

- 70 – 80% of 1RM
- Increase with 10lbs every 4 weeks

■ 3 sets of 7 – 10 repetitions

- Increase reps gradually from week 1 – 4

■ 2 – 5 minutes rest in between sets = deep inhalation exercises

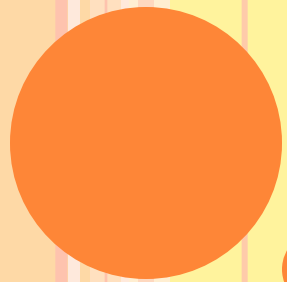
■ 3x/week



FINAL CONCLUSION ON EXERCISE

- Personalize exercise regimen:
 - Medical, physical and psychological readiness.
 - Current activity level and limitations.
- Develop plan and keep record.
- Initially: PRE 120min/week.
- Gradually increase to 200min/week; and incorporate longer, low-intensity sessions (cardiovascular).
- Compliance:
 - Home-based, lifestyle activities, variety (high vs. low intensity, short vs. long).





THE END...