

Keyword Search: Metabolism, Fat, Abs, Butt and Thighs

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Session Goal:	NOTES												
<ul style="list-style-type: none"> Discuss prevailing myths Introduce key strategies 													
<p>What is Metabolism</p> <ul style="list-style-type: none"> What science tells us: <ul style="list-style-type: none"> ✓ Metabolism – complex series of life-sustaining chemical reactions within all cells of a living organism. These enzyme-catalyzed (controlled) reactions are all finely regulated to maintain a constant set of conditions within cells (homeostasis), and allow an organism to grow and reproduce, maintain structures, and co-exist with their environment. It is typically divided into two categories: <ol style="list-style-type: none"> Catabolism breaks down organic matter, for example to harvest energy in cellular respiration. Anabolism uses energy to construct components of cells such as proteins and nucleic acids. What our clients know and care about: <ul style="list-style-type: none"> ✓ Metabolism is the process that determines how fast our body burns calories so we can lose weight to achieve our desired body shape. 													
<ul style="list-style-type: none"> Quick to blame metabolism for weight gain, but it is a natural process - generally balanced to meet your own specific needs. <ul style="list-style-type: none"> ✓ Starvation diets - body compensates by slowing down metabolism to conserve energy reserves for survival; and v.v. to a lesser degree - speeds up to offset weight gain (set-point theory). ✓ Rare situations (medical diseases) slow metabolism: Cushing's syndrome (elevated cortisol); hypothyroidism – auto-immune, hyperthyroidism or radiation treatment; thyroid removal; medications (lithium - bipolarism, depression), iodine deficiencies, pregnancy, pituitary disorders (TSH) 													
<table border="1" data-bbox="142 1266 1227 1524"> <thead> <tr> <th>RMR</th> <th>TEF</th> <th>TEPA</th> </tr> </thead> <tbody> <tr> <td>Resting Metabolic Rate</td> <td>Thermic Effect of Food</td> <td>Thermic Effect of Physical Activity</td> </tr> <tr> <td>Energy required to keep the body functioning at true rest</td> <td>Energy cost of chewing, digesting, absorbing and storing food</td> <td>Exercise Activity NEAT *</td> </tr> <tr> <td colspan="3">* Non-exercise Activity Thermogenesis: Energy expended for everything we do that does not include sleeping, eating, physical activity or exercise; ranges from simple standing, to fidgeting and moving about.</td> </tr> </tbody> </table>	RMR	TEF	TEPA	Resting Metabolic Rate	Thermic Effect of Food	Thermic Effect of Physical Activity	Energy required to keep the body functioning at true rest	Energy cost of chewing, digesting, absorbing and storing food	Exercise Activity NEAT *	* Non-exercise Activity Thermogenesis: Energy expended for everything we do that does not include sleeping, eating, physical activity or exercise; ranges from simple standing, to fidgeting and moving about.			
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<p>Prevailing Myths – Metabolism</p>													
<ol style="list-style-type: none"> Adding muscle mass dramatically increases daily caloric burn <ul style="list-style-type: none"> Caloric difference between fat tissue and muscle tissue (2 – 3 v. 7 kcal / lb.) Losing weight lowers RMR 													

	<u>NOTES</u>
1. Everything at night promotes greater increases in fat <ul style="list-style-type: none"> • Total caloric intake, not timing • TEF, body heat and sleep quality – Stage 2 sleep disruption and cortisol if eating to fulfill caloric deficits 	
1. Eating more frequently increases metabolism <ul style="list-style-type: none"> • Thermic effect of food = 10 % TDEE • Macronutrient differences and example • Effect of water 	
1. Carbohydrate-restricted diets = faster weight loss <ul style="list-style-type: none"> • Ketogenic fuels and organ activity (brain/heart v. muscle) • Blood sugar controls hunger • Glucogenic amino acids – BCAA (30% of muscle tissue) – skinny fat 	
<u>Prevailing Myths – Fat</u>	
1. Thermogenic foods can melt way fat (specific foods – peppers, green tea) <ul style="list-style-type: none"> • Thermogenesis promotes weight loss • 3 – 7 % increase in RMR (= up to 400 kcal / hour)... but, acute stress elevates cortisol levels to increase hunger (preservation of energy reserves). 	
1. Bad carbs (i.e., high glycemic carbohydrates) convert more easily to fat. <ul style="list-style-type: none"> • Compare G.I. to Glycemic load - example • Fructose and fatty liver 	
1. Your body can burn fat from specific areas <ul style="list-style-type: none"> • Genetics • Role LPL • Stress and hormones <ul style="list-style-type: none"> ✓ Roles and balance between cortisol, insulin, growth hormone, estrogen and testosterone ✓ Cortisol-blocking agents v. diseases (adrenal / pituitary insufficiencies) 	
<u>Prevailing Myths – Abs</u>	
1. Crunches promote spot reduction <ul style="list-style-type: none"> • Differentiating sit-ups from crunches; muscle function and lumbar spine loading. • Sub-cutaneous fat v. visceral fat • Hormonal effects (estrogen, progesterone, testosterone, HGH v. cortisol) 	
1. Train abdominal muscles differently from other muscle groups <ul style="list-style-type: none"> • Aesthetics v. function (54 % type II fibers) • McGill studies – balance between trunk extensors, flexors and sides. • Core v. abdominals <ul style="list-style-type: none"> ✓ Core (local) isolation – stabilization (unstable – volume) ✓ Trunk (global) isolation – mobilization (stable – load) ✓ Trunk integration – co-contraction (combinations) • Training volume and recovery • Build muscle (resistance) + cardio to lose fat = definition 	

	<u>NOTES</u>
1. Work your lower and upper abs <ul style="list-style-type: none"> • Single muscle - innervated by nerves from the anterior divisions of the seventh, eighth, ninth, tenth, and eleventh thoracic intercostal nerves (5 nerve groups) – inter-segmental stimulation, but fire as a unit. • Abdominal function <ul style="list-style-type: none"> ✓ Stabilize hips - lift trunk - relatively more muscle shortening in upper region (+ internal oblique) ✓ Reverse crunches (lifting pelvis) – relatively more shortening in lower region (+ external oblique) • Hip Flexor function 	
<u>Prevailing Myths – Butt & Things</u>	
1. Losing fat will reduce my appearance of cellulite <ul style="list-style-type: none"> • What is cellulite – Hypodermal layer under skin – areolar layer with vertical arrangement? • How does it result in the dimpled effect – protrusion of fat cells into the dermis • Differences between men and women. • How can cellulite be reduced <ul style="list-style-type: none"> ✓ Exercise ✓ Liposuction and subcision ✓ Injectable, laser and skin treatments. 	
1. Training my glutes will give me a rock-hard butt <ul style="list-style-type: none"> • Glute activation –Postural and lifestyle consequences: <ul style="list-style-type: none"> ✓ Tight hip flexors? – autogenic inhibition ✓ Foot pronation - turn on / turn off (demonstration) ✓ High heels = swayback posture – sacrotuberous ligament (sacrum to ischial tuberosity) stabilizes pelvis – no need for GM. • Fat depositions and genetics 	
1. Seated hip abduction and adduction will strengthen and firm my thighs <ul style="list-style-type: none"> • Role of estrogen in lower extremity fat storage • Gluteus medius function – concentric or eccentric – knee consequences 	