# HSC HEALTH METABOLIC & LONGEVITY CENTER

## STRENGTH TRAINING, LEAN MUSCLE MASS, AND METABOLIC SYNDROME

Metabolic syndrome is a cluster of conditions that occur together, increasing the risk of heart disease, stroke, and type 2 diabetes. These conditions include increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels. One of the most effective ways to prevent and treat metabolic syndrome is through the acquisition of lean muscle mass and strength training.

### The connection between strength, lean muscle, and metabolic syndrome

- Improved insulin sensitivity
  - Muscle is a primary site for glucose disposal. The more muscle you have, the more glucose you can store and utilize, leading to better blood sugar control and improved insulin sensitivity.
- Increased Basal Metabolic Rate (BMR)
  - Muscle tissue is metabolically active, meaning it burns calories even at rest. By increasing muscle mass, you boost your BMR, which aids in weight management and reduces the risk of obesity, a significant factor in metabolic syndrome.
- Reduction in visceral fat
  - Strength training helps reduce visceral fat, the deep abdominal fat associated with metabolic syndrome and other health issues.
- Improved lipid profiles
  - Regular strength training can lead to better cholesterol levels, reducing the risk of atherosclerosis and heart disease.
- Enhanced hormonal balance
  - Strength training positively influences hormones like growth hormone and testosterone, which play roles in muscle growth, fat metabolism, and overall health.

## Minimum requirements to support muscle growth

- Resistance training
  - Engage in strength training exercises at least 2-3 times a week, targeting all major muscle groups. This can include free weights, resistance bands, or bodyweight exercises.
- Adequate protein intake
  - Protein is essential for muscle repair and growth. Aim for at least 1.2 to 2.4 grams of protein per kilogram of body weight daily, depending on activity levels.
- Caloric balance
  - To gain muscle, you need a caloric surplus (consuming more calories than you burn). However, this doesn't mean overeating but rather increasing caloric intake strategically with nutrient-dense foods.
  - Note: For those who are novice athletes or starting from a point of obesity it is possible to gain some muscle while in a calorie deficit. Please speak with your provider regarding specifics as needed.
- Rest and recovery
  - Muscles grow and repair during rest, not during the workout itself. Ensure you get adequate sleep and allow muscles to recover between training sessions.
- Consistency
  - Muscle growth and strength gains don't happen overnight. Stay consistent with your training and nutrition for best results.
- Hydration: Muscles are about 75% water. Staying hydrated supports metabolic reactions necessary for muscle growth.

## The Big 5 Movements

- Push - This movement involves pushing weight away from your body. It primarily targets the chest, shoulders, and triceps.
  - Examples: Push-ups, bench press, overhead press, dips.
- Pull - Pulling movements work the opposite muscles of the push exercises, focusing on the back, biceps, and rear shoulders.
  - Examples: Pull-ups, bent-over rows, face pulls, lat pulldowns.
- Hinge - Hinging at the hips targets the posterior chain, which includes the hamstrings, glutes, and lower back.
  - Examples: Deadlifts, kettlebell swings, Romanian deadlifts.
- Squat - Squatting is a fundamental human movement that targets the quadriceps, hamstrings, glutes, and core.
  - Examples: Back squats, front squats, goblet squats, lunges.

- Loaded Carries: This movement involves carrying weight for a distance, challenging the entire body, especially the core and grip strength.
  - Examples: Farmer's walks, suitcase carries, overhead carries, bear hug carries.

## Why the Big 5 Matter

- Comprehensive training
  - The Big 5 ensures that you're working all major muscle groups, leading to balanced strength and muscle development.
- Functional fitness
  - These movements mimic everyday actions, making daily tasks easier and reducing the risk of injury.
- Efficiency
  - By focusing on these foundational movements, you can achieve more with less time in the gym.
- Versatility
  - The Big 5 can be adapted to fit various fitness levels and goals, from beginners to advanced athletes, and from hypertrophy to strength.

## Training the Big 5

- Start with bodyweight
  - Before adding weight, ensure you can perform the movements with proper form using just your body weight.
- Progressive overload
  - Gradually increase the weight or resistance to continue challenging your muscles and making progress.
- Variety
  - While the fundamental movements remain the same, you can introduce variety by changing the type of exercise (e.g., switching from back squats to front squats) or adjusting the set and rep schemes.
- Consistency
  - Like any strength training regimen, consistency is key. Aim to train each of the Big 5 movements at least once a week.
- Seek guidance
  - If you're new to these movements, consider working with a personal trainer or joining a class to ensure you're performing them safely and effectively.

## Frequently Asked Questions

**Do I need to become a bodybuilder to reap the benefits?**

- No, even moderate strength training and muscle gains can have significant health benefits. The goal is overall health, not necessarily achieving a bodybuilder physique.

**I'm older; is it too late to start strength training?**

- It's never too late! Strength training is beneficial at any age and can be particularly crucial for older adults to maintain muscle mass and bone density.

**What if I have never done strength training before?**

- Start slow, consider hiring a personal trainer or joining a beginner's class, and always prioritize proper form over lifting heavy weights.

Acquiring lean muscle mass through strength training is a powerful tool in the prevention and treatment of metabolic syndrome. By understanding its benefits and the basics of muscle growth, individuals can take proactive steps towards better health and longevity.