

Assessing Health & Functional Fitness

MUSCULAR STRENGTH
ASSESSMENT AND PULLING IT
TOGETHER

Why Strengthen?

- ❑ Crucial for ADLs and Function
- ❑ Improves confidence
- ❑ Promotes stability
- ❑ Increases and maintains muscle mass
- ❑ Promotes psychological well-being
- ❑ Reduced BMR
- ❑ Reduced injury risk / osteoporosis
- ❑ Weight Management

Critical Questionning?

- What role should strength training have in a fitness program?
- Should people be motivated for the health fitness benefits or should they participate to enhance their body image?

Types of Muscular Testing

- Isometric
 - Manual Muscle Testing
 - Dynamometer
 - Force Plates
 - Muscular Endurance (Wall sit, Plank)
 - Cable tensiometer
- Isokinetic
- Isoinertial Tests
 - 1-10RM
 - Tendo Units
- Ballistic Tests
 - CMJ

Standardisation of Testing

- Maintain proper technique
- Consistent repetition duration or movement speed
- Full ROM
- Use of Spotters
- Equipment familiarisation
- Proper Warm-up

Grip Strength

- ▣ Correlation to total body strength
- ▣ Link to cognitive decline in elderly
- ▣ Increased dependency in ADLs
- ▣ Lack of Specificity

Leg-Back Dynamometer

- Link to total body strength
- Correlates to back squat and power clean
- Easy to perform (i.e. reduced familiarisation needed)
- Sometimes uses in conjunction with force plates

Isokinetic Testing

- Highly accurate
- Determines possible asymmetries
 - Left v Right
 - Agonist v Antagonist
- Hamstring : Quads ratio (Consensus? 0.6 Nominal figure)
- Functional?

Repetition Maximum (RM) Testing

- Calculations can be made in relation to 1RM dependent on the 1-10RM achieved.
 - Free Weights
 - Smith Machine
 - Machine weights
- Can be used to determine:
 - Bench Press V Bench Pull
- Issues:
 - Potential for injury
 - Multiple repetition testing only provides estimate of strength
 - Requires educated estimates of weights; inexperienced testers

Multi-stage sit-up test

- Test for hip flexor and abdominal strength
- Arm and hand modifications

Power Based Tests

- Bench Throw
- Reactive Strength
- Countermovement vertical jump test
- Vertical jump and reach test
- Standing long jumps

Strength Endurance Tests

- Push Ups
- Curl Ups

Writing a Report

- Introduction
 - Summary and Recommendations
- Role of exercise and lifestyle choices in health
- Review of each test (inclusive of norm data)
- Overall evaluation of Health
- Recommendations

Results

- Table format with recommendations

TEST	Result	Norm Data	Difference
Test 1			
Test 2			
Test 3			
Test 4			

Results

■ Comparison with Normative Data

TEST	Poor	Below Average	Average	Good	Excellent	Referral
Test 1						
Test 2						
Test 3						
Test 4						

Referrals

- Assessment information
- Be objective
- Who to
 - Dietician
 - Psychologist
 - Therapist
 - GP