Measures of Health

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I have no disclosures.
Objective

- Conduct an online search for quantitative measures of health
- Search list included:
  - “Measure of health”
  - “Measuring women’s health”
  - “Measuring men’s health”
  - “At home health measurements”
  - “Common health metrics”
  - “Easy health measure”
  - “How can I check my health”
Weight Measurement

BMI

• Calculation of weight and height that calculated body fat
• Higher BMI → higher risk for certain diseases
  – i.e. heart disease, high blood pressure, etc…

Waist Circumference

• Measurement taken around the abdomen
  – Around the navel for men, level with the least width for women
• More fat around ones waist rather than their hips puts them at a higher risk for:
  – Heart disease, type 2 diabetes, etc…
• Risk increased with waist size
  – Greater than 35in for women, greater than 40in for men

10-Second Balance Test

Can you pass the 10-Second Balance Test? Maybe it’s time to try these five exercises

Balance training is an important, but often-neglected skill – one that affects our longevity and quality of life

Can you pass the 10-second balance test? It may predict how long you’ll live

Researchers found that people who couldn’t stand on one foot were nearly twice as likely to die in the next 10 years.
Successful 10-second one-legged stance performance predicts survival in middle-aged and older individuals

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10-Second Balance Test

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• Inability to balance is associated with a twofold risk of death from any cause within 10 years

• Strength and balance tend to decrease with age, quickly diminishing after the mid-50’s
  – Results in frailty

• Balance training affects both longevity and quality of life

• Balance can be impacted by many things, including:
  – Cataracts
  – Slowing of the nerve signals from feet to brain
Five Do-It-Yourself Tests

1. One legged standing test
2. Sit-to-stand test
   - Average time per age: 60's- 11.4 seconds, 70's- 12.6 seconds, 80's- 14.8 seconds
   - Evaluates lower extremities strength & long-term health
3. Push-up test
   - Useful for measuring musculoskeletal health
   - Male participants (average age 40) unable to complete 10 push-ups were at a significantly higher risk for cardiovascular disease compared to men who could do >40
4. Six-minute walk test
   - How far can you walk in 6-minutes? Under 350ft can indicate other health issues relative to cardiovascular and lung health
5. Cognitive test
   - Self-Administered Gerocognitive Exam (SAGE) an at home 10-15min
   - Help detect early signs of cognitive, memory, or thinking impairments
Measuring Heart Rate Variability

• Smartwatches track and measure:
  – Steps, distance traveled, active minutes, floors climbed, calories burned, heart rate & heart-rate zones, sleep time & quality, & pace.

• HRV- Amount of time between each heartbeat

• Values needed for measuring HRV:
  – Resting and max heart rate, exercise, and sleep patterns

• Varies by age and individual

• **Higher** HRV = **Healthier** Lifestyle
  – Can be a reflection of how much stress your body is under and an insight into overall **fitness level**

https://www.cnet.com/health/fitness/most-people-arent-tracking-this-key-health-metric-and-they-should-be/
Scales Can Measure More than Just Weight

1. Bone Mass
   - Low bone mass increases risk of fractures
   - Increased bone density helps reduce osteoporosis

2. Total body water percentage
   - Measures extracellular water
   - Too much extracellular water may indicate possible malnutrition, heart, liver, or kidney disease

3. Body fat percentage
   - Lower percentage of body fat is indicative of better health while a higher percentage puts one at a greater risk for cardiovascular disease
   - For women, too low a percentage can cause amenorrhea

4. Muscle mass
   - Higher muscle mass increases metabolic rate, prevents falls, and can protect against developing diabetes

https://www.womenshealthmag.com/health/a27383215/what-body-composition-metrics-mean-for-health/
Next Steps

- How can technologies and imaging measure similar health indicators, including
  - Overall fitness
  - Frailty
  - Body measurements
  - Body composition
Thank you