

8 Parameters of Fitness & Wellness

By:

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Topics about 8 Parameters

- Strength
- Flexibility
- Endurance
- Balance
- Coordination
- Posture
- Nutrition
- Body Mechanics

Strength

- 3 times each week with a rest day between sessions is recommended

- Health clubs vs. home programs:

- Health clubs:

Pros: Newest, highest quality equipment, latest trends and classes

Cons: Expensive, waiting for equipment, not convenient

- Home programs:

Pros: Inexpensive usually, very effective if initial consult is guided

and structured

Cons: Home distractions



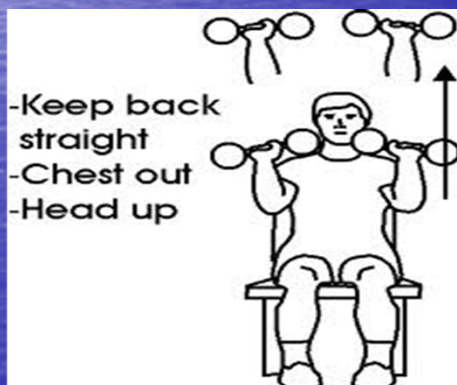
Lateral Raise



Chair Squats



Over Head Press



Opposite Arm and Leg Raises



Flexibility



- Benefits:

1. Decrease chance of injury/re-injury
2. Improve joint function
3. Decrease neck and back pain
4. Reduced muscle tension
5. Improved circulation and overall energy

Endurance/Aerobic:

- **Aerobic exercise:** is a continuous, rhythmic movement of major muscle groups operating at an elevated heart rate
- **Benefits:**
 - Increases the overall strength of your heart and lungs making them more efficient
 - Increase metabolic rate
 - Reduce risk of obesity, heart disease, hypertension, type II diabetes, strokes and some cancer
 - Increase HDL (Good Cholesterol) and reduce LDL (Bad Cholesterol)
 - Start out at a slow pace then gradually build up over time, remember the talk test.
 - Plan a time of day that works best in your schedule

Frequency: A minimum of 3 times each week to daily.

Intensity: 65-85 percent of your max heart rate which is $220 - \text{age}$.

Duration: 20 minutes minimum building up to 40 minutes or longer. Remember, cardiovascular exercise should be fun not exhausting.

Modalities:

Walking
Running
Swimming
Biking
Elliptical machines
Treadmills



Balance and Coordination:

- Balance and coordination exercises are a big part of any fitness and wellness program
- Activities include using wobble boards, bosu® trainers, balance beams and physioballs
- Exercises can be performed most days of the week
- **Benefits:**
 - Increased safety when performing ADL
 - Prevent injury from falls
 - Improved athletic ability
 - Improved core strength which improves posture
 - Improved joint stability
 - Stimulates brain activity



Posture:

- Posture refers to the position we hold our bodies in during sitting, standing, sleeping, walking and any other position we may move through out a day
- Posture helps determine the amount and distribution of stress we place on bones, muscles, tendons, ligaments and discs
- Core strength is important along with middle back and posterior shoulder exercises
- Pay attention to sit, stand, lift, carry, twist, turn and bend
- Research shows that people who exercise regularly are less likely to suffer from back injuries and pain
- The three key components are strengthening, stretching and cardiovascular activities

Postural mistakes include:

1. Slouching
2. Rounding the shoulders
3. Hiking the shoulders
4. Forward head position
5. Chin tilted upward
6. Forward trunk lean
7. Locking the knee

Benefits:

Improved appearance
Decreases chance of osteoporosis
Decreases risk of arthritis
Decreases risk of cervical and lumbar pain



Official Results/ Post Tests

- % Improvement
- 145 Male Clients and 44 Female Clients
- 17 measurements

Compliance

- Average Male Compliance- 82%
- Strive for 100% but...

Cervical ROM

- Rotation- 32%
- Lateral Flexion- 37%
- Extension- 34 %

Shoulder ROM

- Flexion- 35%
- Extension- 35%
- Abduction- 29%

Lumbar ROM

- Hamstring ROM- 28%
- Lumbar Extension- 17%
- Lumbar Flexion- 13%

Strength/Endurance and Body Fat

- Hand Grip- 9%
- 1 RM Leg Press- 10%
- Heart Rate- -1%
- Body Fat -11%

Pain Level, Physical Capacity and Balance

- Average Pain Level- -34%
- Physical Capacity- 29%
- Balance- 27%

Compliance

- Average Female Compliance- 87%
- Strive for 100% but...

Cervical ROM

- Rotation- 39%
- Lateral Flexion- 49%
- Extension- 24 %

Shoulder ROM

- Flexion- 32%
- Extension- 58%
- Abduction- 63%

Lumbar ROM

- Hamstring ROM- 25%
- Lumbar Extension- 16%
- Lumbar Flexion- 11%

Strength/Endurance and Body Fat

- Hand Grip- 18%
- 1 RM Leg Press- 28%
- Heart Rate- 4%
- Body Fat- -6%

Pain Level, Physical Capacity and Balance

- Average Pain Level- -53%
- Physical Capacity- 43%
- Balance- 38%

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Questions?

Nutrition:

- The key is to eat healthy most days of the week, eating from all the food groups
- Try to eat smaller portions several times each day vs. few large meals
- If you crave a sweet, have one, but make it a small one
- Try to include several sources of anti oxidants daily
- **Healthy eating consists of:**
 - Complex carbohydrates
 - Lean sources of protein
 - Monounsaturated or polyunsaturated fats
- **Recommended Daily Amounts:**
 - 50-60% of caloric intake comes from carbohydrates
 - 20-30% from protein
 - 20-30% from fat
- **Carbohydrates:** 4 calories per gram
- **Protein:** 4 calories per gram
- **Fat:** 9 calories per gram



Carbohydrates

- Good or bad?? **BOTH**
- **Good carbs:** *Fiber rich* foods such as whole grains, healthy cereals, fruits, vegetables, brown rice, whole grain pasta, whole grain breads, beans and foods that have been minimally processed.
- **Bad Carbs:** These are foods that have a high **glycemic index** such as soda pop, candy, sugar, white rice, white bread, white pasta, sweetened cereals and processed snack food.
- 4 calories per gram
- Approx. half of daily intake or 275 grams daily
- Number one fuel for working body and working brain

Protein

- Sources: Chicken, turkey, fish, lean beef, pork, yogurt, soy, beans, peanut butter, nuts and seeds, cheese and dairy products. Protein based bars, like Kashi[®]
- 4 calories per gram
- Approx. 25% of daily intake or 75 to 80 grams
- Important for building and maintaining lean tissue
- Important for making the enzymes that help balance fat

Fats

Good or Bad?? BOTH

Saturated fat: Butter, lard, shortening, cream, meats, coconut oil, palm oil, ground beef

- these fats are solid at room temperature
- no more than 10% of daily intake
- linked to arteriosclerosis and atherosclerosis

9 calories per gram

Total fat intake no more than 30% of daily intake or 60 grams daily

Dietary fat helps the body absorb vitamins

Mono unsaturated is heart healthy

Poly or mono unsaturated fat: Olive oil, canola oil, sunflower oil, safflower oil, sesame oil, corn oil, avocados, nuts and seeds

- these fats are generally liquid at room temperature
- no more than 20% of daily intake
- considered **heart healthy**
- moderation is very important even for these healthy fats

Trans Fat

- Sources: Cookies, crackers, snack foods, vegetable shortening, margarines
- Read labels, avoid products made with **partially hydrogenated** oils
- Linked directly to heart disease

Body Mechanics:

- Using proper lifting techniques is vital to maintaining a healthy spine
- 8 out of 10 people experience significant lower back pain at one time or another in their life
- Most of this can be avoided

- **Causes for lower back pain:**

- 1) Heavy physical work
- 2) Bending and/or twisting activities
- 3) Lifting and forceful movements
- 4) Whole body vibration
- 5) Static work postures



- **3 important rules to follow when lifting:**

- 1) Load close-reaching puts 7 times pressure on neck and back
- 2) Lift with legs
- 3) Do not twist when lifting-Spinal force increases significantly

Chronic pain group

- Chronic pain is a condition that affects a lot of people. It is defined as nerve and muscle pain that lasts for over six months. Chronic pain can affect the lower back, neck, shoulders, pelvis, knees, head and other parts of the body.
- Inflammation is the condition that lies behind the chronic pain. Chronic pain sufferers usually manage their pain by seeing a medical specialist, exercise and taking meds. You can also lower your pain by the foods that you eat.
- I will be talking about 5 areas of your physical health that **YOU** can control and work on.

Nutrition

- Eat healthy most days of the week. Do not be too hard on yourself if you cheat a little.
- Eat healthy fats like mono or poly unsaturated and foods with omega 3 fatty acids.
- **Salmon** is a great source of omega 3 fatty acids. Also try sardines, herring and mackerel.
- **Onions** are rich in antioxidants known for fighting enzymes that cause inflammation. Onions also contain sulfur compounds that help improve the immune system.
- **Blueberries** are high in antioxidants. Anti oxidants battle free radicals that can trigger inflammation which can make chronic pain worse.
- **Sweet potatoes** contain carotenoids that are anti oxidants that battle inflammation and strengthen you immunity. Papayas, carrots, mangoes and red peppers are also good sources of carotenoids.
- **Garlic** is one of the most anti inflammatory foods you can eat to alleviate your chronic pain. It is rich in sulfur which can boost the immune system. Generally gluten rich foods and animal products are known to be highly inflammatory.
- Try to eat healthy carbs, protein and fat. Avoid sugar based foods and foods that have highly processed.

Posture

- Posture refers to the position we hold our bodies in during sitting, standing, sleeping walking and any other position we may move throughout the day. Core strength and upper back strength are the keys to good posture. Pay attention to how you sit, stand, lift, push, pull, twist, bend and carry.
- Reaching out will put seven times the pressure on the cervical and lumbar spine. Hold the load close and lift with the legs.
- Good posture improves your appearance, decreases your chance of osteoarthritis and can decrease your neck and back pain.

Flexibility

- Decreases chances on re-injury.
- Improves joint function
- Decreases neck and back pain
- Decreases muscle tension
- Improves circulation and overall energy

Cardiovascular Exercise or Endurance Exercise

- A continuous and rhythmic movement of major muscle groups operating at an elevated heart rate.
- This form of exercise can decrease risk of obesity, heart disease, diabetes, high blood pressure, strokes and some cancer. It will improve your blood chemistry.
- Always start out slowly and build up gradually. Remember the talk test. Plan a time of the day that works best in your schedule. Try to do 3 times each week for at least 20 minutes working in the target heart rate zone.
- Good activities include:
 - Walking
 - Biking
 - Running
 - Swimming
 - Skiing
 - Treadmills
 - Elliptical machines

Body Mechanics

- Proper lifting technique is the key to maintaining a healthy spine.
- 8 of 10 people will experience lower back pain some time in their lives
- Try to avoid work that is outside of your safe capacity
- Avoid bending or twisting of the spine
- Avoid bending at the waist
- Avoid static work posture for prolonged periods
- Always lift with your legs and keep the load close, reaching puts 7 times the pressure on the neck and back

- Remember folks, safe, slow and gentle is the key!! Listen to your body, stay consistent and do NOT give up ever!! You can and will get better. You have to work towards the goal daily. Good luck, contact Dr. McKinney or myself if there are any questions.

Therapeutic Recreation



Therapeutic Recreation Cont.



General Effects of Alcohol on the Brain

- Alcohol can affect several parts of the brain, but in general, alcohol contracts brain tissue and depresses the central nervous system. Also, alcohol destroys brain cells and unlike many other types of cells in the body, brain cells do not regenerate. Excessive drinking over a prolonged period of time can cause serious problems with cognition and memory.
- When alcohol reaches the brain, it interferes with communication between nerve cells, by interacting with the receptors on some cells. The alcohol suppresses excitatory nerve pathway activity and increases inhibitory nerve pathway activity. Among other actions, alcohol enhances the effects of the inhibitory neurotransmitter GABA. Enhancing an inhibitor has the effect of making a person sluggish. Also, alcohol weakens the excitatory neurotransmitter glutamine, which enhances the sluggishness even farther.

Source: <http://www.bloodalcohol.info/how-alcohol-affects-the-brain.php>

Post Injury Abuse

- Substance abuse leading to injury leading back to abuse is common. Thirty to forty percent of patients admitted to traditional substance abuse facilities had one to three mild head injuries in their lives. After returning to using substances or drinking alcohol, a client with brain injury is at a higher risk of sustaining a second or third brain injury. The effects accumulate and combine with alcohol-related cognitive deficits, compounding the residual effects.
- Substance use and brain injury also cause psychological consequences. Unfortunately, the devastating symptoms to the brain cause psychosocial effects. These effects (1) include:
 - Impaired reasoning
 - Poor impulse control
 - Difficulties in maintaining employment
 - Difficulties with social adjustment
- In addition to the psychosocial effects that the combination of substance use and brain injury has on the brain, there are direct physical effects on brain tissue. Some of the direct impairments to brain tissue include decreased oxygenated blood flow to the brain, destruction of vitamin B complexes and disruption of electrolyte balances (2). There are many factors that may contribute to an increased risk of abusing substances after injury. These include:
 - Excess time in daily schedule
 - Depression secondary to physical/cognitive limitations
 - Peer acceptance
 - Work related issues
 - Return to "normal" recreational activities

Source: <http://www.braininjurymn.org/library/BIandSubstanceAbuse.pdf>

Exercise and Traumatic Brain Injury

- How do people who currently exercise differ from people that don't? Exercise is defined as swimming, jogging, biking or any sports that raise heart rate for at least 30 minutes at a time. This study was based on 3 times each week for 6 months. In this example there were 60 exercisers and 170 non-exercisers with TBI.
- What was found??
- Inactivity has negative effects on everyone, but the effects appear to be worse for people with TBI. This study suggests that exercisers with TBI were less depressed and showed improved physical capacity compared to non-exercisers.
- The research from this study revealed a broad range of possible benefits of exercise for people with TBI:
 1. People with TBI who exercised had fewer physical, emotional and cognitive complaints and symptoms, such as sleep problems, irritability, forgetting and being disorganized.
 2. Non-exercisers with TBI complained of more cognitive problems or symptoms than did those who exercised, suggesting that exercise may improve abilities such as memory, thinking and the like.
 3. In previous studies, this research indicates that exercisers with TBI were less depressed

Source: Brain Injury Association of Minnesota

Usatoday.com

- The Twin Cities Minneapolis-St. Paul are the healthiest, fittest cities in the USA, followed by Washington, D.C., and Boston, according to a new analysis of the 50 most populous metro areas.
- Oklahoma City ranks last, and Louisville is second to last.
- The annual American Fitness Index, out today from the American College of Sports Medicine, is based on a number of health factors, including percentage of residents who smoke, obesity rates, percentage of people who exercise and availability of parks, walking trails and farmers' markets.
- Minneapolis was one of the first cities to have organized bicycle trails and to prohibit smoking in public places, she says, and it has many parks and public golf courses.
- Almost 16% of land in the city is park land vs. an average of 10% in other cities across the country.



Quotes I like to use

- Those who think they have not time for bodily exercise will sooner or later find time for illness—Edward Stanley
- The human body is the only machine that gets better with use
- Exercise adds years to your life and life to your years
- The surgeon general reports that physical inactivity may be hazardous to your health
- Life requires strength
- Sources: Reuters.com, guidelines for exercise testing and prescription, nutritional healing, Lippincott Williams and Wilkins

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Questions?



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