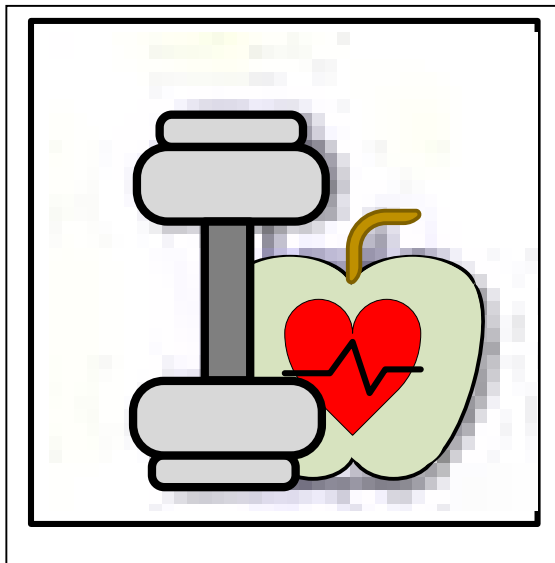


Lifestyle Change 3030

Week 2- The Power Plant, Your Mitochondria, and the Benefits of Exercise

Empower Your Health Journey and Lifestyle Change



Keith Walden
1-26-2025

Week 2 – The Power Plant, Your Mitochondria, and the Benefits of Exercise

Agenda

Introduction

Prayer & Bible Verse

1 Timothy 4:8:	Lack of Exercise
New International Version	Testimonies for the Church 3:76. <i>HL 28.2</i>
For physical training is of some value, but godliness has value for all things, holding promise for both the present life and the life to come."	<i>91. Neglecting to exercise the entire body, or a portion of it, will bring on morbid conditions. Inaction of any of the organs of the body will be followed by a decrease in size and strength of the muscles, and will cause the blood to flow sluggishly through the blood-vessels.</i>

Group Response

- How was the week? Any interesting moments, Did you stop eating or drinking so
- Rebounder – How to Use

Topic/Presentation of the Day – Benefits of Exercise and its effect on Mitochondria

Group Participation Time

- Exercises to get started
- Walking vs Running
- Balance and Coordination

Weekly Homework

- Motivation and Daily Tip List

The Benefits of Exercise: A Cornerstone for Lifelong Health

Week 2
Lifestyle Change 3030



Introduction

- **Welcome**
- *Always talk to your doctor or health care professional about any health and lifestyle changes that will affect your medications or condition.*
- The information presented here is for your enlightenment and is based on providers that are medically based or highly regarded in their field.
- I am not a medical professional, nor expert in the field, and the knowledge attained is from my experiences in making my own lifestyle change and research into the areas covered in Lifestyle Change 3030.

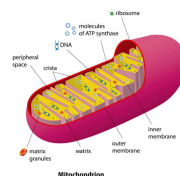
Prayer & Bible Verse

- **1 Timothy 4:8:**For physical training is of some value, but godliness has value for all things, holding promise for both the present life and the life to come.“ (NIV)
- **Lack of Exercise**
- 91. Neglecting to exercise the entire body, or a portion of it, will bring on morbid conditions. Inaction of any of the organs of the body will be followed by a decrease in size and strength of the muscles, and will cause the blood to flow sluggishly through the blood-vessels.—Testimonies for the Church 3:76. *HL 28.2*

Week 2 – The Power Plant, Your Mitochondria, and the Benefits of Exercise

Group Response

- How was everyone's week? Any interesting moments? Anybody want to share any changes you made?
- Anyone got a question on anything from last week?
- Did anyone decide not to eat ultra processed food or fast food?
- Did anyone increase their walking this week?
- Did anyone start tracking their food intake?
- Did anyone reduce their sugar intake this week?
- Did everyone work on their Motivation and Commitment sheet?



Topic/Presentation of the Day

- Benefits of Exercise and its effect on Mitochondria

Week 2 – The Power Plant, Your Mitochondria, and the Benefits of Exercise

Diseases are Associated with Mitochondrial Dysfunction

- 1. Neurological Disorders
 - 2. Metabolic Disorders
 - 3. Cardiovascular Diseases
 - 4. Mitochondrial Myopathies
 - 5. Cancer
 - 6. Inflammatory and Autoimmune Diseases
 - 7. Aging and Age-Related Diseases
 - 8. Chronic Fatigue Syndrome (CFS)/ Myalgic Encephalomyelitis (ME)
 - 9. Kidney Diseases
 - 10. Pulmonary Diseases
 - 11. Ophthalmologic Diseases
 - 12. Other Disorders
- **Hearing Loss:** Mitochondrial dysfunction contributes to age-related and noise-induced hearing loss.
 - **Autism Spectrum Disorders (ASD):** Some evidence suggests mitochondrial dysfunction may play a role in certain cases of ASD.
 - **Immune Dysregulation:** Impaired mitochondrial function can alter immune responses, increasing susceptibility to infections and inflammation.

Mitochondrial Health –What Creates High Performance

Nutrient-Dense Diet:- Include whole, unprocessed foods rich in vitamins, minerals, and antioxidants

Exercise – Aerobic, Strength, and High-Intensity interval Training (HILT)

Lifestyle Practices – Intermittent Fasting, Caloric Restriction, Adequate Sleep, and Stress Management

Environmental Factors – Reduce Exposure to Toxins, Cold Exposure,

Hydration and Oxygenation – Stay Hydrated and breathing techniques

Increased mitochondrial biogenesis, enhancing energy capacity.

Enhanced efficiency in ATP production with less oxygen.

Improved function by regulating energy production and reducing oxidative stress.

Promotes mitochondrial health through the removal of damaged mitochondria (mitophagy).

Exercise has several beneficial effects on mitochondria, the energy-producing organelles in your cells:

- 1. ****Increases Mitochondrial Biogenesis****: Regular exercise stimulates the production of new mitochondria in muscle cells, a process known as mitochondrial biogenesis. This increases the capacity for energy production.
- 2. ****Enhances Mitochondrial Efficiency****: Exercise improves the efficiency of existing mitochondria, allowing them to produce more ATP (adenosine triphosphate), the energy currency of the cell, with less oxygen.
- 3. ****Improves Mitochondrial Function****: Physical activity enhances the overall function of mitochondria, including better regulation of cellular energy production and reduction of oxidative stress.
- 4. ****Promotes Mitochondrial Health****: Exercise helps in maintaining the health of mitochondria by promoting the removal of damaged or dysfunctional mitochondria through a process called mitophagy.
- 5. ****Increases Antioxidant Production****: Regular exercise can boost the production of antioxidants in the body, which protect mitochondria from oxidative damage.

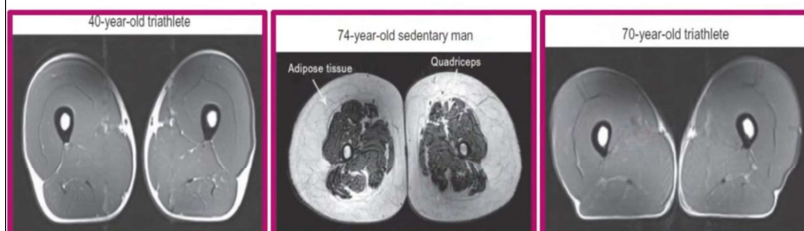
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Physical Health Benefits of Exercise



- **Cardiovascular Health:** Strengthens the heart and lowers the risk of heart disease, hypertension, and stroke.
- **Weight Management:** Burns calories and maintains metabolic rate, reducing obesity-related risks.
- **Muscle and Bone Strength:** Improves muscle tone, builds endurance, and enhances bone density, preventing osteoporosis.
- **Flexibility and Balance:** Reduces injury risk and helps prevent falls, especially in older adults.
- **Digestive Health:** Stimulates digestion and prevents constipation.
- **Immune Function:** Strengthens immunity to fight off illnesses.

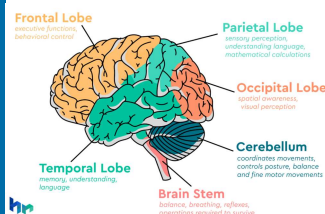
THE ONE: MUSCLE



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Mental and Emotional Well-being

- **Cognitive Function:** Stimulates the hippocampus, improving memory, focus, and neuroplasticity.
- **Prevention of Cognitive Decline:** Reduces Alzheimer's risk by 45% and reverses mild cognitive impairment in nearly half of cases.
- **Stress Reduction:** Regular exercise boosts endorphins, reducing stress, anxiety, and depression.
- **Improved Sleep:** Promotes better sleep by balancing hormones like melatonin.



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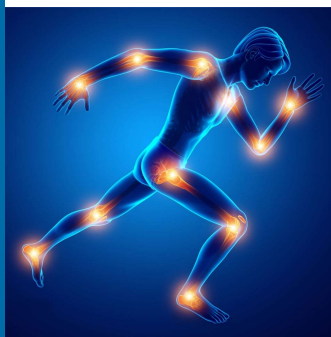


Lifestyle choices at 60 linked to dementia risk decades later, study shows – ABC News, Dec. 3, 2024

- "Lifestyle factors like minimal exercise, extreme obesity, and both excessive and no alcohol consumption also emerged as important contributors. These findings highlight the complex interplay of behavioral, social, and genetic factors in dementia risk," Hudomiet said.
- Chronic health conditions including diabetes, obesity and stroke by the age of 60 were strongly linked to a higher chance of dementia later in life, according to the study.
- An estimated 6.9 million Americans are living with dementia, according to the National Institutes of Health. Those numbers will double by 2060, the Centers for Disease Control...

Pain and Chronic Condition Management

- Pain Relief: Activates natural pain suppression pathways.
- Joint Health: Stimulates joint fluid production, nourishing cartilage.
- Chronic Disease Prevention: Lowers the risk of type 2 diabetes, arthritis, and other conditions.



How Old is your Body?

- TEST how old your body is:

1. Cross arms
2. Lift leg
3. Close eyes and hold

5 SECS > 65 YRS
 10SECS= 55 YRS
 15SECS = 45 YRS
 20 SECS =35 YRS
 25SECS=30 YRS
 30 SECS < 30 YRS

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Exercise Modalities and Goals

Cardio vs. Strength Training



- **Cardio:** Effective for calorie and heart health.
- **Strength Training:** Builds muscle, enhances metabolism, and offers sustained calorie burn post-workout.
- **Balanced Approach:** Incorporate both based on goals—cardio for endurance and fat burning, strength training for muscle building.

- **Post-Meal Activity:** Short walks immediately (10–15 minutes) can lower blood sugar and improve glucose uptake.



Lifestyle Integration

Consistency is Key

Showing up daily ensures long-term success.

Variety

Tailor activities to personal preferences and abilities (e.g., swimming, walking).

Social Connection

Exercise with friends for motivation and enjoyment.

Balance

Avoid overexertion; prioritize rest, hydration, and nutrition.

Key Takeaways from “Younger Next Year”



- **Exercise, Nutrition, and Commitment:** The foundation of lifestyle change.
- **Aerobic vs. Strength Training:** Aerobic exercise saves your life; strength training makes it worth living.
- **Lifespan Extension:** Lifestyle changes could prevent over half of premature deaths and diseases after age 50.
- **Decay Triggers Growth:** Regular exercise stimulates repair and rejuvenation within the body.

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Key Takeaways from “Younger Next Year”



“It makes sense to think of this as a job because once you pass the age of fifty, exercise is no longer optional. You have to exercise or get old.”

“It’s (exercise) what sets off the cycles of strengthening and repair within the muscles and joints. It’s the foundation of positive brain chemistry. And it leads directly to the younger life we are promising, with its heightened immune system; its better sleep; its weight loss, insulin regulation and fat burning; its improved sexuality; its dramatic resistance to heart attack, stroke, hypertension, Alzheimer’s disease, arthritis, diabetes, high cholesterol and depression. All that comes from exercise.”

Key Message

- Embrace exercise as a lifelong commitment. It’s not just about physical fitness; it’s the cornerstone of improved quality of life, resilience, and vitality. Move daily, prioritize variety, and make exercise your ultimate tool for thriving at any age.

There’s A DIFFERENCE BETWEEN INTEREST AND COMMITMENT.

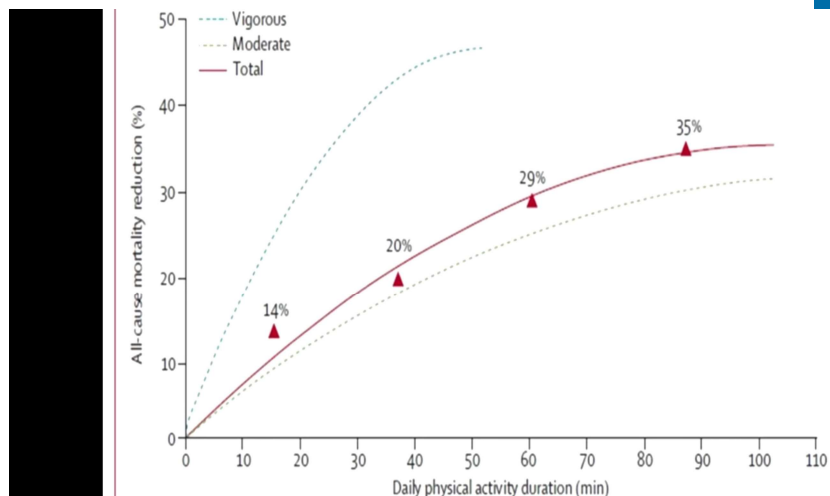
When you’re INTERESTED in
doing something,
You D IT ONLY WHEN ITS
CONVENIENT.

When you’re committed to
something,
You ACCEPT NO EXCUSES;
ONLY RESULTS.

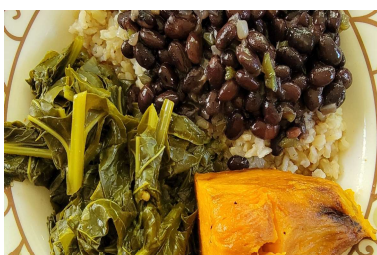
Group Participation Time

- Group Participation Time
- Exercise and Mortality
 - Walking vs Running – Heartrate and Fat Burn
 - Up to 1.6 x your resting heart rate, your body burns fat
 - Over 1.6 x your resting heart rate, your body burns glucose
 - Watch Video – MFH-E13, More than Muscles
- Weekly Homework
- Motivation and Daily Tip List

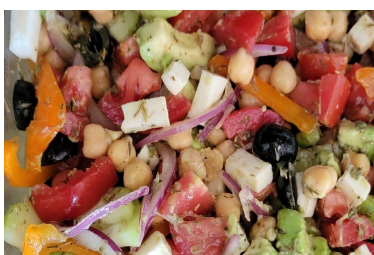
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Recipes of the week



Black Beans, Quinoa, Kale, and Sweet Potato



Greek Salad with Avocado and Cannellini Beans or Chickpeas



THE REAL BENEFIT OF REBOUNDING EXERCISE

- NASA -RESEARCH on JUMPING ON A TRAMPOLINE
 1. CONVENIENT
 2. HELPS WITH MOBILITY
 3. HELPS WITH BALANCE
 4. HELPS WITH POSTURE
 5. HELPS REDUCE FEAR OF FALLING
 6. REDUCE RISK OF OSTEOPOROS
 7. STIMULATES THE ENERGY LYMPHATIC SYSTEM

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Group Homework

1. Walk 30 minutes a day for burning fat. Walk with purpose! Not strolling along.
2. Complete strength exercises or resistance exercises 3 times a week for 15 to 30 minutes a day for building muscle for glucose storage.
3. Utilize your Resource Guide to educate yourself.
4. Find a Gym to go to for big results. (YMCA, Crunch, Planet Fitness, Gold's Gym)
5. Watch Videos on 3ABN
 - a. Made for Health-E13, "More than Muscles"
 - b. Watch Video - Made for Health-E1, "Turnip the Beet"
 - c. Watch Video - Made for Health-E2, "Losing Steam"
 - d. Watch Video - Made for Health-E3, "Pumped"
6. Remove non-nutritional foods from your diet.
 - a. Fried foods, triple the calories
 - b. Sugary drinks, including most bottled teas, coffees, energy drinks.
 - c. Package foods with sneaky sugars
 - d. Foods loaded with stealth salt. Watch frozen and can foods.
 - f. Ultra-processed snacks
 - g. Alcohol

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Study Guide: The Power of Mitochondria in Human Energy Production

Introduction

- Humans are powerful energy producers, generating energy internally 24/7 through cellular processes.
 - This guide will explore the role of mitochondria, often called the "power plants" of our cells, and their significance in energy production and overall health.
-

Energy Basics

- **ATP (Adenosine Triphosphate):** The primary energy currency of the body.
 - Produced by mitochondria from food (fats, carbohydrates) and oxygen.
 - Necessary for all cellular functions, survival, and health.
 - **Analogy:** Mitochondria function like a car engine, converting fuel (food) into usable energy (ATP).
 - **Key Fact:** Humans produce their body weight in ATP daily.
-

Importance of Mitochondria

1. Energy Production:

- Every cell requires ATP to function.
- Organs like the heart and brain are particularly energy-intensive.
 - Example: A single heart cell contains thousands of mitochondria.
 - The brain, although only 2% of body weight, consumes 20-25% of energy.

2. Brain Energy Needs:

- The brain performs constant activities, even during sleep.
 - Example: Elite chess players can burn 6,000 calories/day due to intense mental activity.
-

Oxidative Stress and Free Radicals ("Ross")

- **Reactive Oxygen Species (ROS):** Byproducts of energy production that can damage cells if not controlled.

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- **Antioxidants:** Neutralize ROS to prevent cellular damage and support mitochondrial health.
 - **Balance is Key:**
 - Excess ROS leads to oxidative stress, contributing to aging, diseases, and mitochondrial dysfunction.
 - Controlled ROS can aid in detoxification, wound healing, and immune defense.
-

Factors Affecting Mitochondrial Function

1. Lifestyle Choices:

- Poor diet, lack of exercise, and chronic stress can impair mitochondria.
- Clean living—balanced diet, regular physical activity, and stress management—enhances function.

2. Sleep:

- Essential for brain detoxification and mitochondrial repair.
- Melatonin, a hormone and antioxidant, plays a critical role during sleep.

3. Sunlight:

- Infrared light stimulates mitochondria to produce melatonin, aiding in ROS management.
-

Mitochondria Beyond Energy

- **Hormone Production:**

- Mitochondria produce essential hormones like cortisol, testosterone, estrogen, and even vitamin D.

- **Calcium Regulation:**

- Mitochondria maintain calcium homeostasis, crucial for cell signaling and muscle function.

- **Cellular Health:**

- Regulate cell survival and programmed cell death (apoptosis).
-

Health Implications of Mitochondrial Dysfunction

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1. **Cardiovascular Diseases:**

- Oxidative stress can damage heart cells, leading to conditions like hypertension and heart failure.

2. **Neurodegenerative Diseases:**

- Impaired mitochondria are linked to disorders like Alzheimer's and Parkinson's.

3. **Aging:**

- Reduced mitochondrial function accelerates aging and energy decline.
-

Practical Tips for Mitochondrial Health

1. **Diet:**

- Consume nutrient-rich, antioxidant-packed foods to minimize ROS.
- Avoid excessive sugars and processed foods that generate harmful byproducts.

2. **Exercise:**

- Promotes mitochondrial biogenesis (creation of new mitochondria).
- Improves energy efficiency and resilience to stress.

3. **Sleep Hygiene:**

- Maintain a regular sleep schedule.
- Ensure complete darkness to optimize melatonin production.

4. **Sunlight Exposure:**

- Spend time outdoors to benefit from natural infrared light.

5. **Stress Management:**

- Practice mindfulness, meditation, or other relaxation techniques to reduce cortisol levels.
-

Conclusion

- Mitochondria are vital for energy production, cellular health, and overall well-being.
- By making simple lifestyle changes, we can support mitochondrial function, enhance energy levels, and promote longevity.
- Remember: Small, consistent actions can empower you to flourish and thrive.

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Study Guide: Understanding Energy, Mitochondria, and Factors Affecting Them

Why Do Children Have So Much Energy?

1. Mitochondria Abundance and Efficiency:

- Children have more mitochondria compared to aging adults.
- Mitochondria in children function more effectively.

2. Role of Mitochondria:

- Mitochondria are the internal power plants of the cell, producing energy by converting food and oxygen into ATP (the body's energy currency).
 - Chronic low energy levels are often linked to mitochondrial dysfunction.
-

Causes of Mitochondrial Dysfunction

1. Chronic Conditions:

- Diseases like diabetes and obesity can shrink and impair mitochondria.
- Dysfunctional mitochondria contribute to energy imbalance, especially in older adults.

2. Stress:

- Stress forces mitochondria to overwork, producing reactive oxygen species (ROS).
- ROS can damage mitochondrial DNA, leading to permanent dysfunction.
- Antioxidants help neutralize ROS and protect mitochondrial function.

3. Toxins:

- Environmental toxins (e.g., mercury, glyphosate) harm mitochondria.
- Toxins can enter the body through air, food, water, or skin contact.
- Examples include mercury in fish or lead exposure from industrial materials.

4. Poor Diet:

- Diets high in fried, barbecued, or processed foods increase oxidative stress.
- Hypercaloric malnutrition (overconsumption of calorie-dense, nutrient-poor foods) stresses mitochondria.
- High-fat diets lead to smaller, less functional mitochondria but are reversible through dietary changes.

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5. Aging:

- As bones lose mass with age, stored toxins like lead reenter the bloodstream, contributing to dysfunction.
-

Supporting Healthy Mitochondrial Function

1. Stress Management:

- Rest and relaxation are critical to reducing mitochondrial strain.
- Practices like mindfulness and deep breathing can mitigate chronic stress.

2. Dietary Choices:

- Emphasize whole, plant-based foods rich in antioxidants (e.g., fruits, vegetables, nuts, and seeds).
- Reduce processed and high-fat foods.
- Avoid environmental toxins by choosing organic produce and limiting fish consumption.

3. Toxin Reduction:

- Swap out chemical-laden cleaning and personal care products for natural alternatives.
- Increase ventilation in living spaces to reduce exposure to off-gassing from furniture.

4. Physical Activity:

- Regular exercise supports mitochondrial health and increases their number and efficiency.
- Activities like intermittent fasting and cold exposure activate brown fat, aiding in energy release.

5. Brown Fat Activation:

- Techniques include cold showers, physical exercise, and consuming foods like jalapeño peppers or plant-based proteins.
-

Key Concepts in Optimizing Health

1. Balancing Nutrients:

- Provide necessary nutrients in optimal amounts for energy production and healing.
- Avoid "hypercaloric malnutrition," ensuring food choices are nutrient-dense.

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2. Minimizing Interference:

- Remove toxins and other interfering elements that hinder mitochondrial efficiency.

3. Synergistic Factors:

- Integrate good nutrition, exercise, stress management, and adequate sleep for overall mitochondrial and cellular health.

4. The Bigger Picture:

- Mitochondria affect nearly every cell in the body.
 - Dysfunctional mitochondria are linked to diverse chronic conditions, emphasizing the importance of comprehensive lifestyle changes.
-

Actionable Tips

- Start small: replace one processed food item with a whole food alternative.
 - Incorporate stress-reducing practices daily.
 - Exercise regularly and try cold exposure or intermittent fasting to activate brown fat.
 - Transition to natural cleaning and personal care products to reduce toxin exposure.
 - Educate yourself on the sources of environmental toxins and how to avoid them.
-

Study Notes: The Benefits and Importance of Exercise

Rethinking Exercise

- **Beyond Looks:** Exercise isn't just about losing weight or gaining muscle. It significantly impacts overall health and quality of life.
 - **Low Physical Activity Levels:**
 - 77% of Americans do not meet aerobic and muscle-strengthening guidelines.
 - The USA ranks in the bottom 15% globally for physical activity.
 - **Key Takeaway:** Exercise is essential for a vibrant, energetic, and flourishing life.
-

Health Benefits of Exercise

1. Physical Health:

- Reduces pain and improves joint, muscle, and bone health.
-

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- Decreases the risk of type 2 diabetes.
- Enhances digestion and immune function.

2. Mental Health:

- Reduces stress and depression through endorphin release.
- Boosts mood, mental function, and overall outlook on life.

3. Hormonal Balance:

- Supports healthy melatonin levels for better sleep.
 - Promotes balance through physical activity and exposure to sunlight.
-

Exercise and Type 2 Diabetes

- Exercise post-meal improves glucose uptake into muscles, reducing fat storage.
 - Short walks (10–15 minutes) after meals can effectively lower blood sugar.
-

Brain Health and Neuroplasticity

1. Cognitive Benefits:

- Stimulates growth in the hippocampus, improving memory and focus.
- Increases levels of Brain-Derived Neurotrophic Factor (BDNF), enhancing neural connections.
- Promotes neuroplasticity—brain remodeling continues throughout life.

2. Preventative Benefits:

- A brisk 25-minute walk reduces Alzheimer's risk by 45%.
 - Strength training reverses mild cognitive impairment in 47% of cases, with sustained effects.
-

Mental Resilience and Stress Management

- Exercise induces short-term stress (elevated cortisol), which builds resilience to long-term stressors.
 - Regular exercise is as effective as antidepressants for improving mental health.
-

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Exercise and Pain Management

- Activates natural pain suppression pathways in the brain through endorphin release.
 - Improves joint health by stimulating joint fluid production, nourishing cartilage.
 - Tailored, moderate exercise can alleviate chronic pain without overexertion.
-

Cardiac Health and Rehabilitation

- Vital for recovery post-cardiac events: reduces hospitalizations and complications.
 - Cardiac rehab programs provide structured exercise, education, and social support.
-

Sustainable Exercise Habits

- **Variety and Adaptation:** Tailor activities to personal abilities (e.g., swimming, biking).
 - **Social Aspect:** Exercise with friends or partners for motivation and enjoyment.
 - **Balance:** Avoid overexertion; prioritize nutrition, rest, hydration, and recovery.
-

The Gift of Movement

- Exercise fosters physical, mental, and emotional well-being.
 - Movement is integral to human design and crucial for a fulfilling life.
-

Key Message

Embrace exercise not just as a physical activity but as a cornerstone for holistic health and lifelong vitality.

Week 2 – The Power Plant, Your Mitochondria, and the Benefits of Exercise

Key Takeaways:

- **Exercise is about more than aesthetics:** The majority of Americans fail to meet recommended exercise guidelines, highlighting a limited understanding of its true value. Exercise should be seen as essential for a vibrant and flourishing life, not just physical appearance.
- **Exercise benefits all aspects of health:** Exercise improves overall health, reducing pain, improving mood, boosting joint, muscle, and bone health, decreasing diabetes risk, and contributing to hormonal balance.

"Exercise improves your mood. It improves your joint health as well as your muscle health as well as your bone health. It improves or decreases your risk for diabetes."

- **Exercise is crucial for blood sugar control:** For those with type 2 diabetes, exercising after meals is particularly beneficial for managing blood sugar levels by aiding glucose uptake into muscle cells.

"For example, for people with type 2 diabetes who struggle with blood sugar control after the meals...going for a walk after each meal is more beneficial than exercising in general."

- **Exercise is "brain fertilizer":** Exercise promotes the production of BDNF (brain-derived neurotrophic factor), which supports brain health, cognitive function, and neuroplasticity. It even helps grow the hippocampus, the brain region responsible for learning and memory.

"Exercise is such a gift. When people exercise, they literally grow their brain...the parts of the brain that are responsible for memory, focus, and attention, the hippocampi...they literally grow."

- **Exercise protects against cognitive decline:** Studies show that regular exercise, particularly strength training, can reverse mild cognitive impairment and reduce Alzheimer's risk by a significant 45%.

"A 25 minutes brisk walk...consistently...reduce your chance of Alzheimer's by 45%."

- **Exercise and mental health:** Exercise releases endorphins and other mood-boosting chemicals, making it as effective as antidepressants for some in managing depression, anxiety, and addiction.

"Well, exercise is actually the quickest thing we can do to improve our mental health."

- **Exercise builds resilience to stress:** The temporary stress induced by exercise, followed by rest, helps the body and mind become more resilient to long-term stress.

"If you have that transient elevation of cortisol like with exercise...it actually makes our bodies more resilient to long-term stress."

- **Exercise aids chronic pain management:** Contrary to past beliefs, exercise is crucial for managing chronic pain by stimulating the nervous system's descending pain pathways and releasing natural painkillers.

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"So years ago...the general um talk was to tell patients...be careful, don't move...But we've learned since then that that is the exact opposite is true."

- **Finding joy in movement:** Enjoying your chosen activity is key to long-term adherence. Exercise shouldn't feel like a chore but rather a social and enjoyable experience.

"Finding an activity that someone loves to do that they can do with one or more other people...is probably the key in getting someone to exercise."

- **Exercise benefits everyone at any age:** Exercise can be integrated into anyone's routine, regardless of age or limitations. Adapting exercises to individual needs and finding enjoyable activities ensures its benefits can be enjoyed by all.

"Anyone can benefit from exercise at any point in their life."

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Importance of Exercise

Exercise has several beneficial effects on mitochondria, the energy-producing organelles in your cells:

1. ****Increases Mitochondrial Biogenesis****: Regular exercise stimulates the production of new mitochondria in muscle cells, a process known as mitochondrial biogenesis. This increases the capacity for energy production.
2. ****Enhances Mitochondrial Efficiency****: Exercise improves the efficiency of existing mitochondria, allowing them to produce more ATP (adenosine triphosphate), the energy currency of the cell, with less oxygen.
3. ****Improves Mitochondrial Function****: Physical activity enhances the overall function of mitochondria, including better regulation of cellular energy production and reduction of oxidative stress.
4. ****Promotes Mitochondrial Health****: Exercise helps in maintaining the health of mitochondria by promoting the removal of damaged or dysfunctional mitochondria through a process called mitophagy.
5. ****Increases Antioxidant Production****: Regular exercise can boost the production of antioxidants in the body, which protect mitochondria from oxidative damage.

Overall, these changes from exercise contribute to improved endurance, energy levels, and metabolic health, as well as a reduced risk of chronic diseases.

Other benefits of exercise, including:

1. **Improves Cardiovascular Health**: Regular exercise strengthens the heart and improves circulation, lowering the risk of heart disease, high blood pressure, and stroke.
2. **Helps Manage Weight**: Exercise helps burn calories and maintain a healthy weight, reducing the risk of obesity and related conditions like diabetes.
3. **Boosts Muscle Strength and Endurance**: Physical activity improves muscle tone and builds strength, enhancing overall physical endurance and stamina.
4. **Increases Flexibility and Balance**: Exercises like stretching and yoga improve flexibility, which helps prevent injuries, while strength training and balance exercises reduce the risk of falls, especially in older adults.
5. **Enhances Bone Health**: Weight-bearing exercises like walking, jogging, and strength training increase bone density, reducing the risk of osteoporosis.
6. **Improves Immune Function**: Regular exercise supports a healthy immune system, helping your body fight off illnesses more effectively.
7. **Improves Digestion**: Physical activity stimulates digestion and can reduce the risk of digestive issues like constipation.

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8. **Boosts Metabolism:** Exercise helps maintain or increase metabolic rate, which is crucial for long-term weight management.
9. **Improves Sleep Quality:** Exercise, especially aerobic activities, promotes better sleep by reducing stress and regulating sleep patterns.
10. **Energy Levels:** Increases overall energy and reduces feelings of fatigue.
11. **Weight Management:** Helps control weight by burning calories and increasing metabolism.
12. **Enhanced Cognitive Function:** Regular physical activity supports brain health and cognitive function.

If you can't stand on one leg for long, it might indicate:

1. ****Poor Balance**:** Balance can decline with age or due to lack of practice.
2. ****Muscle Weakness**:** Weakness in leg or core muscles.
3. ****Proprioception Issues**:** Reduced body awareness in space.
4. ****Joint Problems**:** Issues like arthritis can affect stability.
5. ****Neurological Conditions**:** Certain conditions can impact balance.

Improving balance through exercises can help mitigate these issues.

Which is more efficient in reaching your ideal physique: cardio or strength training.

According to New York City-based personal trainer Oscar Colon IV, cardio is ideal for burning more calories during a workout session -- and it's key to keeping your heart strong -- but strength training affects your body differently. 'Strength training has a two-pronged effect because you burn calories during the workout and during the recovery and restoration of muscle groups you worked,' He explains. As a result, you get more results for your effort. It's still a good idea to incorporate both cardio and strength training into a well-balanced fitness plan, so you can reap all the benefits. How much you do of one or the other may also depend on your current goals. If you're training for your first marathon, cardio is going to be your main focus as you build endurance, whereas strength training is going to be a priority when you want to get stronger or build muscles.

Excerpts from “Younger Next Year”

"Three things," for changing your lifestyle, "Exercise. Nutrition. And commitment."

Aerobic exercise saves your life, strength training makes it worth living.

Some 70 percent of premature death and aging is lifestyle related. Heart attacks, strokes, the common cancers, diabetes, most falls, fractures and serious injuries, and many more illnesses are primarily caused by the way we live. If we had the will to do it, we could eliminate more than half of all disease in men and women over fifty. Most Americans today will live into their mid-eighties, whether they're in great shape or shuffling around on walkers. Show up at the gym. Think of it as a great job, which it is. It will change your life, slowly but surely, because once you show up you are virtually certain to do some meaningful exercise. And even if you don't, you will show up again tomorrow. That's the key--showing up again tomorrow for the rest of your life. **It makes sense to think of this as a job because once you pass the age of fifty, exercise is no longer optional. You have to exercise or get old.**

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So, exercise is the master signaler, the agent that sets hundreds of chemical cascades in motion each time you get on that treadmill and start to sweat. **It's what sets off the cycles of strengthening and repair within the muscles and joints. It's the foundation of positive brain chemistry. And it leads directly to the younger life we are promising, with its heightened immune system; its better sleep; its weight loss, insulin regulation and fat burning; its improved sexuality; its dramatic resistance to heart attack, stroke, hypertension Alzheimer's disease, arthritis, diabetes, high cholesterol and depression. All that comes from exercise.** But let your muscles sit idle and decay takes over again.

Just remember two things. One: **Decay triggers growth. And two: Exercise turns on inflammation, which automatically turns on repair.**

Food to stop eating for better health

1. Fried foods, triple the calories.
2. Sugary drinks, including most bottled teas, coffees, energy drinks.
3. Package foods with sneaky sugars.
4. Foods loaded with stealth salt. Watch frozen and can foods.
5. Ultra-processed snacks
6. Alcohol

Recipes of the week



Black Beans, Quinoa, Kale, and Sweet Potato



Greek Salad with Avocado and Cannellini Beans or Chickpeas

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Savory Black Bean Recipe

Ingredients:

• 2 tablespoons olive oil	• 1/4 teaspoon cayenne pepper (optional, for extra heat)
• 1 medium onion, finely chopped	• 2 (15-ounce) cans black beans, drained and rinsed
• 4 cloves garlic, minced	• 1/2 cup vegetable broth (or water) low Sodium
• 1 medium red bell pepper, diced	• 1 teaspoon dried oregano
• 1 teaspoon ground cumin	• 1 tablespoon fresh lime juice (about half a lime)
• 1 teaspoon smoked paprika	• Salt and freshly ground black pepper, to taste
• 1/2 teaspoon chili powder (optional, for a bit of heat)	• 2 tablespoons chopped fresh cilantro (optional, for garnish)

Instructions:

1. Sauté the Aromatics

- Heat olive oil in a large skillet over medium heat. Add the chopped onion and sauté until soft and translucent, about 3–4 minutes. Stir in the minced garlic and cook for another 1 minute, or until fragrant.

2. Cook the Vegetables

- Add the diced red bell pepper to the skillet and cook for 3–4 minutes, stirring occasionally, until slightly softened.

3. Add Spices

- Sprinkle in the cumin, smoked paprika, chili powder, and cayenne pepper (if using). Stir well to coat the vegetables with the spices.

4. Simmer the Beans

- Add the black beans, vegetable broth, and oregano to the skillet. Stir to combine. Bring the mixture to a gentle simmer and cook for 8–10 minutes, allowing the flavors to meld and the beans to absorb the seasoning. Stir occasionally and mash some of the beans with the back of a spoon for a creamier texture, if desired.

5. Finish and Season

- Stir in the lime juice and season with salt and pepper to taste. Remove from heat and sprinkle with fresh cilantro, if desired.

Serving Suggestions:

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- Serve over rice, quinoa, or your favorite grain.
- Use as a filling for tacos, burritos, or quesadillas.
- Enjoy as a standalone dish with crusty bread or tortilla chips.

Tips:

- For extra flavor, add a dash of hot sauce or a splash of apple cider vinegar at the end.
- This recipe can be made with dried black beans if you soak and cook them in advance.

Enjoy your flavorful black bean dish! 🌱

Basic Quinoa Recipe

Ingredients:

- 1 cup quinoa (any variety: white, red, black, or tricolor)
- 2 cups water (or broth for extra flavor)
- 1/4 teaspoon salt (optional)

Instructions:

1. Rinse the Quinoa

- Place the quinoa in a fine mesh strainer and rinse it under cold running water for about 30 seconds.
- This step removes quinoa's natural coating (saponin), which can cause a bitter taste.

2. Combine Ingredients

- In a medium saucepan, combine the rinsed quinoa, water (or broth), and salt.
- Stir to combine.

3. Bring to a Boil

- Place the saucepan over medium-high heat and bring the mixture to a boil.

4. Simmer

- Once boiling, reduce the heat to low, cover the saucepan with a lid, and let it simmer gently for about 15 minutes.
- Avoid lifting the lid during cooking to prevent steam from escaping.

5. Rest and Fluff

- After 15 minutes, remove the saucepan from the heat and let it sit, covered, for 5 minutes.
- Remove the lid and fluff the quinoa with a fork.

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6. Serve

- Transfer the cooked quinoa to a serving dish and enjoy as a side dish, salad base, or ingredient in your favorite recipes.

Optional Flavor Enhancements:

- **Broth:** Use vegetable or chicken broth instead of water for richer flavor.
- **Aromatics:** Add a clove of smashed garlic, a bay leaf, or a sprig of thyme to the pot while cooking.
- **Seasoning:** Stir in olive oil, lemon juice, or fresh herbs after cooking for extra zest.

Serving Suggestions:

- Use as a base for grain bowls with roasted vegetables and a protein.
- Toss with black beans, corn, and avocado for a quick salad.
- Add to soups, stews, or stir-fries for added texture and nutrition.

Enjoy your light, fluffy quinoa! 🌱

Quick and Easy Farro Recipe

Ingredients:

• 1 cup farro (pearled farro for quicker cooking) Trader Joe's take 10 mins.
• 3 cups water or broth (for added flavor) Low Sodium
• 1/2 teaspoon salt (optional)

Instructions:

1. Rinse the Farro

- Place the farro in a fine mesh strainer and rinse under cold water to remove excess starch.

2. Combine Ingredients

- In a medium saucepan, combine the rinsed farro, water or broth, and salt (if using).

3. Cook the Farro

- Bring the mixture to a boil over high heat. Reduce the heat to medium-low, cover, and simmer for **15–20 minutes** if using pearled farro. (Whole or semi-pearled farro may take 25–40 minutes.) Check for doneness—farro should be tender but still chewy.

4. Drain and Serve

- Drain any excess liquid if needed.

Serving Suggestions:

- Use as a base for grain bowls or salads.

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- Mix with roasted vegetables and a vinaigrette.
- Serve alongside your favorite proteins or in soups.

Simple and Delicious Sautéed Kale Recipe

Ingredients:

- 1 large bunch of kale (curly or lacinato), stems removed and leaves chopped
 - 2 tablespoons olive oil
 - 3–4 garlic cloves, minced
 - 1/4 teaspoon red pepper flakes (optional, for a kick)
 - Salt and freshly ground black pepper, to taste
 - Juice of 1/2 lemon or 1 tablespoon apple cider vinegar (optional, for brightness)
-

Instructions:

1. Prepare the Kale

- Rinse the kale leaves thoroughly under cold water to remove any dirt or grit. Remove the tough stems and chop the leaves into bite-sized pieces. Shake or pat dry.

2. Heat the Oil

- Heat the olive oil in a large skillet or sauté pan over medium heat. Once the oil is shimmering, add the minced garlic and red pepper flakes (if using). Sauté for about 30 seconds, stirring constantly to avoid burning the garlic.

3. Cook the Kale

- Add the chopped kale to the skillet in batches, stirring frequently as it wilts. This helps it cook evenly.
- If the pan looks dry, add a splash of water or vegetable broth to create a bit of steam.
- Sauté for about 5–7 minutes, or until the kale is tender but still vibrant green.

4. Season and Serve

- Season with salt and freshly ground black pepper to taste.
- Squeeze fresh lemon juice or drizzle apple cider vinegar over the kale for a tangy finish. Toss to combine and serve warm.

Serving Suggestions:

- Serve as a side dish with grilled chicken, fish, or tofu.
 - Add to grain bowls, pasta, or stir-fries.
 - Top with toasted nuts, seeds, or a sprinkle of Parmesan cheese for extra flavor.
-

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Cold Oven Sweet Potatoes (Caramelized Perfection)

Ingredients:

- 2–4 medium sweet potatoes (similar size for even cooking)

Instructions:

1. Prepare the Sweet Potatoes

- Wash and scrub the sweet potatoes thoroughly to remove dirt.
- Dry them completely with a towel.
- Leave the skin on for a natural caramelized exterior, or peel if preferred.
- Optionally, pierce each potato a few times with a fork to let steam escape.

2. Arrange in the Oven

- Place the sweet potatoes directly on the middle oven rack or a baking sheet lined with parchment paper. Do **not** preheat the oven.

3. Set the Temperature

- Turn the oven on to **425°F (220°C)**.
- Starting in a cold oven allows the sweet potatoes to gradually heat up, enhancing sugar caramelization.

4. Bake

- Bake for **50 minutes**. To check for doneness, insert a fork or skewer into the thickest part—it should slide in easily. If needed, bake for an additional 5–10 minutes for larger potatoes.

5. Serve

- Slice open and serve as is for a naturally sweet treat or add toppings like cinnamon or nutmeg.

Tips:

- **Storage:** Leftover sweet potatoes can be stored in the fridge and reheated in the oven or microwave.
- **Caramelization:** Baking at a higher temperature ensures the natural sugars caramelize beautifully, creating a sweet, flavorful crust.

Enjoy your perfectly caramelized sweet potatoes! 🍠

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Greek Salad with Avocado and Cannellini Beans or Chickpeas

Ingredients:

- **For the Salad:**

• 1 large cucumber, diced	• 1 ripe avocado, diced
• 1 pint cherry or grape tomatoes, halved	• 1/4 cup Kalamata olives, halved
• 1/2 red onion, thinly sliced	• 1/2 cup feta cheese, crumbled (optional)
• 2 tablespoons fresh parsley or dill, chopped (optional)	• 1 (15-ounce) can cannellini beans or chickpeas, drained and rinsed
• 1 green bell pepper, diced	

- **For the Dressing:**

• 3 tablespoons extra virgin olive oil	• 1 teaspoon dried oregano
• 1 tablespoon red wine vinegar (or lemon juice)	• Salt and freshly ground black pepper, to taste
• 1 clove garlic, minced (optional)	• Or Lemon Pepper to taste

Instructions:

1. **Prepare the Vegetables and Beans**

- In a large salad bowl, combine the cucumber, tomatoes, red onion, bell pepper, olives, avocado, and cannellini beans or chickpeas.

2. **Make the Dressing**

- In a small bowl or jar, whisk together olive oil, red wine vinegar, oregano, garlic (if using), salt, and pepper.

3. **Toss the Salad**

- Drizzle the dressing over the salad ingredients and toss gently to combine, being careful not to mash the avocado.

4. **Add Finishing Touches**

- Sprinkle with crumbled feta (if using) and fresh parsley or dill for extra flavor.

5. **Serve**

- Serve immediately as a refreshing side dish or a light, healthy meal.

Optional Additions:

- Add a handful of arugula, spinach, or mixed greens for extra texture.
- Sprinkle with sunflower seeds or toasted nuts for crunch.

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Group Homework

- 1. Walk 30 minutes a day to burn fat. Walk with purpose! Don't strolling along.
- 2. Complete strength exercises or resistance exercises 3 times a week for 15 to 30 minutes a day for building muscle for glucose storage.
- 3. Utilize your Resource Guide to educate yourself.
- 4. Find a Gym to go to for big results. (YMCA, Crunch, Planet Fitness, Gold's Gym)
- 5. Watch Videos on 3ABN
 - a. Made for Health-E13, "More than Muscles",
- <https://3abnplus.tv/programs/collection-z3xfco5wclk?cid=3531431&permalink=mh230013-22688-st-1-424c03>
 - b. Watch Video - Made for Health-E1, "Turnip the Beet",
<https://3abnplus.tv/programs/collection-z3xfco5wclk?cid=3399565&permalink=mh230001-22682-st-1-eab959>
 - c. Watch Video - Made for Health-E2, "Losing Steam",
<https://3abnplus.tv/programs/collection-z3xfco5wclk?cid=3424533&permalink=mh230002-23995-st-1-dd6574>
 - d. Watch Video - Made for Health-E3, "Pumped",
- <https://3abnplus.tv/programs/collection-z3xfco5wclk?cid=3437734&permalink=mh23003-23996-st-1-3e177d>
- 6. Remove non-nutritional foods from your diet.
 - a. Fried foods, triple the calories
 - b. Sugary drinks, including most bottled teas, coffees, energy drinks.
 - C. Package foods with sneaky sugars
 - d. Foods loaded with stealth salt. Watch frozen and can foods.
 - F. Ultra-processed snacks
 - g. Alcohol
- 7. To find a good exercise program, go to YouTube and search for 15-minute program, 30-minute program, or exercises for seniors, or chair exercises, exercises for balance, etc.
- 8. Start Drinking more water. Hydrate yourself.