Exercise is Medicine!
Food is Fuel!

By: Wendy L. Johnson MS, RDN
• Would you take your prescribed medicines once or twice a week and expect them to be effective?
Exercise is Medicine

- Cost of Inactivity
  - 250,000 premature deaths per year

Fed up with how her diet is going, Charlene takes a more serious aim at her target weight.
Regular physical activity is one of the most important things you can do for your health. It can help:
- Control your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk for type 2 diabetes and metabolic syndrome
- Reduce your risk of some cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to do daily activities and prevent falls
- Increase your chances of living longer
- Quality of Life!
Benefits of Exercise-Physical

- Physical
  - Endurance
    - Improve your ability to “last longer”
  - BMR
    - Increase your daily calorie burn (at rest!)
  - Muscle Efficiency
    - Stronger-Longer
    - Reduced risk for falls
  - Stronger Bones
    - Decreased Risk for Injury
    - Reduce/Prevent Osteoporosis
  - Resting Heart Rate
    - Improves “pump efficiency”
  - Resting Blood Pressure
    - Vasodilation happens naturally
  - Improved Breathing
    - Rate and depth of breathing, less SOB
Benefits - Psychological

- Self Esteem/Self Confidence
- Self Confidence
- Brain Power!
  - Increase Growth Factors in Brain to make new cells and connections
  - Improves ability to learn/retain information
    - The more complicated the movement the bigger the boost
      - Ie: dance/tennis/ ZUMBA
- Stress
  - Decreases in serotonin, dopamine, norepinephrine
  - Decreases bloodflow to the area of the brain involved in causing us to relive stressful thoughts over
- Depression
  - Boosts connections between nerve cells in the brain that act as a natural anti-depressant (350 calories 3 days a week)
  - Yoga-increases brain chemicals to improve mood and decrease anxiety
Benefits-Chemical

- Cholesterol
  - Decreases: Total Cholesterol, LDL, Triglycerides
  - Increases: HDL
- Platelets
  - Less sticky
  - Decreased #
- Glucose Tolerance/Insulin Sensitivity
- Natural Anti-Inflammatory
- Decreased Circulating Cortisol
  - Weight loss
- Adrenaline Response
  - Stress
Disease Prevention - Cardiovascular

- Improvements in Cardiac Function
  - Improvement in circulation of blood
- Reduction in Blood Pressure (8-10 mm)
- Reduce your risk of developing DM / May help to slow progression of DM
- Improve DM control
- Reduction in Plaque formation
- Weight Control
Disease Prevention Alzheimer’s

• Alzheimer’s
  – raise brain chemicals to protect nerve cells
  – Promotes normal day and night routines
  – Improve mood
  – Improvements in cognitive function *
  – Increased blood flow to area of brain responsible for memory and higher level processing
  • 14% lower level of protein that shows brain neuron’s dying/Alzheimer’s underway.
  • 70-80% of max heart rate for 30-45 mins.

Hasselbach et al, Univ. of Copenhagen
Disease Prevention – Parkinson’s

- Parkinson’s
  - Improvements in:
    - Motor Function, Coordination, Manual Dexterity *
    - Help Brain Maintain “old” connections, form new one and restore lost ones. (improvements in neuroplasticity!) **
  - Minimum 2.5 hours per week (vigorous) = slowed the decline in QOL
  - Vigorous Exercisers have fewer brain changes caused by aging
  - Why?
    - - using dopamine in brain more efficiently
    - Modifies areas of the brain where dopamine signals are received
    - More receptors (D2) with Stronger signals being received

*Alberts, et al, Cleveland Clinic, ** Fisher et al USC ***
Parkinson’s Outcomes Project
Enhanced immune function
Enhanced antioxidant defense
Lower Blood sugar levels, reduction in insulin sensitivity (sugar)
Weight Control- Fat Cell produce excess estrogen
Exercise keeps hormones at healthy levels
Increased Life expectancy
Decreased Cancer recurrence
Decreases time organs are exposed to potential carcinogens (colon)
Reduction in inflammation

AICR.org, www.cancer.gov, National Cancer Institute
<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Intensity</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Sedentary-minimal</td>
<td>3-5</td>
<td>Light to Moderate 55-75% of Heart</td>
<td>20-60 minutes (start with accumulating 20</td>
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<tr>
<td>physical activity,</td>
<td></td>
<td>Rate Max</td>
<td>working towards goal of 60 min)</td>
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<td>deconditioned</td>
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<tr>
<td>Average/ Moderate</td>
<td>3-5</td>
<td>Moderate-Hard 75-90% of Heart Rate</td>
<td>30-90 minutes</td>
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<tr>
<td>Activity/Regular Exerciser</td>
<td></td>
<td>Max</td>
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<tr>
<td>High Amount of</td>
<td>3-5</td>
<td>80-95% of Heart Rate Max</td>
<td>30-90 minutes</td>
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<td>exercise, regular</td>
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<tr>
<td>vigorous intensity</td>
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<tr>
<td>exercise</td>
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</table>
How do you feel?

6
7  Very, Very light
8
9  Very Light
10
11  Fairly Light
12
13  Somewhat Hard
14
15  Hard
16
17  Very Hard
18
19  Very, Very Hard
20
Exercise Guidelines - Frequency, Intensity & Time
Strength Training/Stretching

**Strength Training**
- 2-3 days per week
- 10-15 repetitions
- 8 to 10 exercises for major muscle groups
- 48 hours between strength training same body part

**Stretching**
- Daily
- Options:
  - Stretches
  - Yoga
  - Pilates
  - Tai Chi
  - Body Flow
Nutrition

- Review Popular Diets
- Grocery Shopping
- Eating out and Social Situation
- Fitness and Nutrition Tracking
Why do we eat?

Why do we choose what we eat?
Popular Diets Reviewed

• DASH Diet

• Paleo Diet

• Mediterranean Diet
DASH DIET-

• Dietary Approaches to Stop Hypertension
• Two levels of Sodium Intake
  – 2300mg
  – 1500mg
• Goal:
  – Improve Blood Pressure 14-16 points
    • By increasing:
      – Potassium, magnesium, calcium, protein and fiber
    • By decreasing:
      – Saturated fat, trans fat, sugars
• Intake Focus
  – Increase: Fruits, Vegetables, seeds, nuts, legume
  – Include: whole grains, low fat dairy, lean proteins
  – Reduce: Sugars, Red Meats, Saturated Fats,
  – Reduce Alcohol Intake

*NIH: Nat’l Heart, Lung, and Blood Institute
**Mayoclinic.org
# DASH Diet

## Following the DASH Eating Plan

Use this chart to help you plan your menus—or take it with you when you go to the store.

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings Per Day</th>
<th>Serving Sizes</th>
<th>Examples and Notes</th>
<th>Significance of Each Food Group to the DASH Eating Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grains</strong></td>
<td>6</td>
<td>1 slice bread, 1 oz dry cereal, ½ cup cooked rice, pasta, or cereal</td>
<td>Whole wheat bread and rolls, whole wheat pasta, English muffin, pita bread, bagel, cereals, grits, oatmeal, brown rice, unsalted pretzels and popcorn</td>
<td>Major sources of energy and fiber</td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
<td>3–4</td>
<td>1 cup raw leafy vegetable, ½ cup cut-up raw or cooked vegetable, ½ cup vegetable juice</td>
<td>Broccoli, carrots, collards, green beans, green peas, kale, lima beans, potatoes, spinach, squash, sweet potatoes, tomatoes</td>
<td>Rich sources of potassium, magnesium, and fiber</td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td>4</td>
<td>1 medium fruit, ¼ cup dried fruit, ½ cup fresh, frozen, or canned fruit, ½ cup fruit juice</td>
<td>Apples, apricots, bananas, dates, grapes, oranges, grapefruit, grapefruit juice, mangoes, melons, peaches, pineapples, raisins, strawberries, tangerines</td>
<td>Important sources of potassium, magnesium, and fiber</td>
</tr>
<tr>
<td><strong>Fat-free or low-fat milk and milk products</strong></td>
<td>2–3</td>
<td>1 cup milk or yogurt, 1½ oz cheese</td>
<td>Fat-free (skim) or low-fat (1%) milk or buttermilk; fat-free, low-fat, or reduced-fat cheese; fat-free or low-fat regular or frozen yogurt</td>
<td>Major sources of calcium and protein</td>
</tr>
<tr>
<td><strong>Lean meats, poultry, and fish</strong></td>
<td>6</td>
<td>1 oz cooked meats, poultry, or fish, 1 egg</td>
<td>Select only lean; trim away visible fats; broil, roast, or poach; remove skin from poultry</td>
<td>Rich sources of protein and magnesium</td>
</tr>
<tr>
<td><strong>Nuts, seeds, and legumes</strong></td>
<td>3 per week</td>
<td>½ cup or 1½ oz nuts, 2 Tbsp peanut butter, 2 Tbsp or ½ seeds</td>
<td>Almonds, hazelnuts, mixed nuts, peanuts, walnuts, sunflower seeds, peanut butter, kidney beans, lentils, split peas</td>
<td>Rich sources of energy, magnesium, protein, and fiber</td>
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<tr>
<td>Nutrition Intake for 1500 Calories/1500mg Na</td>
<td>To Increase to 1800 Calories /</td>
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<tr>
<td><strong>Breakfast</strong></td>
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<tr>
<td>½ cup of berries</td>
<td>¾ cup of regular oatmeal</td>
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<tr>
<td>8 oz skim milk</td>
<td>¾ cup of berries</td>
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<tr>
<td>½ cup regular oatmeal w/ 1 tsp cinnamon</td>
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<tr>
<td><strong>Lunch</strong></td>
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<tr>
<td>3 oz of chicken baked or grilled</td>
<td>4 ounces of baked or grilled chikcen</td>
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<tr>
<td>½ whole grain pita</td>
<td>1 whole grain pita</td>
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<tr>
<td>2 cups of raw vegetables/salad with EVOO &amp; Vinegar dressing</td>
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<tr>
<td>1.5 ounces of part skim mozzarella cheese</td>
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<tr>
<td>8 oz skim milk</td>
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<tr>
<td>1 apple</td>
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<td></td>
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<tr>
<td><strong>Dinner</strong></td>
<td></td>
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</tr>
<tr>
<td>3 oz of salmon baked or grilled</td>
<td>6 oz of salmon baked or grilled</td>
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<tr>
<td>½ cup of steamed brown rice</td>
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<tr>
<td>½ cup of steamed broccoli</td>
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<tr>
<td>1 cup of spinach salad w/ EVOO/ &amp; Vinegar dressing 1 TBSP</td>
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<tr>
<td>½ cup/ 1 sliced of melon</td>
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</tbody>
</table>
PALEO Diet

• Caveman Diet    Ancestral Approach to Eating
• Premise:
  – What Do We Eat
  – Industrialized Foods
  – Chemicals, GMO
  – Increase Incidence of
    • CAD, DM, Auto Immune Disorders, GI disorders

• Variations
  – Low Carb, High Carb
PALEO Diet

- Include: Unprocessed Nutrient Dense Foods
  - Grass Fed & Pasteurized Meats and Eggs
  - Wild Caught Seafood
  - Organic Vegetables
  - Fruits and Nuts in Moderation
  - Nuts/Seeds in Moderation (Almonds, Walnuts, Pumpkin, Sunflower)
  - Non Gluten Grains: Almond Flour, Coconut Flour
  - Oils: Coconut, Avocado, Macadamia
- Avoid: Inflammatory Foods that irritate the gut & natural metabolic process
  - Gluten containing grains: wheat, Oatmeal, Pastas,
  - Rice, Millet, Potatoes
  - Legumes: Beans, Peas, Peanuts, Tofu, Soy, Lentils
  - Refined vegetable and seed oils
  - Sugar
  - Alcohol
  - Chemical concocted foods
## PALEO Diet

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td>3 eggs omelet with spinach and tomatoes</td>
<td>Coconut milk with almonds, blackberries and raspberries</td>
<td>Paleo oatmeal</td>
<td>2 fried eggs in coconut oil over avocado and sliced tomato</td>
<td>Fried eggs with sweet potato hash and bacon</td>
<td>Smoothie with strawberries, banana, spinach, coconut milk, whey protein</td>
<td>Egg muffins with spinach, red peppers, and chicken sausage</td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td>Paleo hummus (cauliflower base) with veggies</td>
<td>Salad with salmon, capers, tomatoes, cucumber, lemon juice, olive oil</td>
<td>Salad with turkey cucumbers, tomato with Paleo honey mustard dressing</td>
<td>Spinach salad with shrimp, avocado, tomato, cucumber, cilantro, lemon, olive oil</td>
<td>Cauliflower fried rice with green onions, mushrooms</td>
<td>Spicy sausage with peppers, onions, and horseradish mustard</td>
<td>Canned salmon salad (salmon, avocado, mustard) over lettuce and sliced tomatoes</td>
</tr>
<tr>
<td><strong>Dinner</strong></td>
<td>Ginger carrot soup with shredded chicken</td>
<td>Chicken marinated in Dijon mustard with apples, celery, and almonds</td>
<td>Portabella mushrooms stuffed with spicy sausage, spinach, tomatoes</td>
<td>Paleo meatloaf with Paleo BBQ sauce</td>
<td>Chicken sauteed in coconut oil with green beans with roasted root veggies</td>
<td>Gluten Free Cheat (Like pasta with sardines! No? Fine. Sushi.)</td>
<td>Beef stir fry with peppers, carrots, zucchini and ginger</td>
</tr>
<tr>
<td><strong>Snack</strong></td>
<td>Almonds Tea Apple</td>
<td>Frozen Strawberries Tea Larabar</td>
<td>Tea Piece of dark chocolate (dairy free) Mixed nuts</td>
<td>Tea Coconut yogurt Frozen Blackberries</td>
<td>Tea Sliced tomatoes with fresh basil and olive oil</td>
<td>Coconut milk with berries Tea</td>
<td>Tea ½ protein shake with coconut milk</td>
</tr>
</tbody>
</table>
Mediterranean Diet

- “Overall Healthy Diet”
- Improvements in Risk for Chronic Disease
  - Reduced risk for CV mortality
    - Study done on 1.5 million healthy adults
  - Reduced risk in overall mortality
  - Reduced risk of Cancer, Parkinsons, Alzheimer's
    - With addition of nuts and EVOO= ↓ risk of Breast Ca

- Goals
  - Focus on fruits, vegetables, whole grains, reduce red meat
  - Reduced intake of saturated fats and trans fats
  - Use polyunsaturated and monounsaturated fats
    - Aids in improvements in cholesterol profile, clotting, blood pressure, blood vessels
  - Limit alcohol
Mediterranean Diet

- Include:
  - 7-10 servings of Fruits and Vegetables
    - 4-6 servings of vegetable
    - 3-4 servings of fruit
  - Switch to Whole Grains
    - Avoid refined, bleached enriched
  - Nuts!
    - Almonds, walnuts, pistachios,
    - Natural nut butters
  - Use EVOO or Canola oil, tahini spreads..
  - Herbs and spices for flavor
  - Fish
    - Twice a week
    - Oily fish (omega 3’s)
  - Low Fat Dairy/ Dairy Alternatives
- Avoid/ Reduce:
  - Red Meat
  - Alcohol
Shopping

- With all the unhealthy, highly processed foods that make it to the shelves of our local grocery stores, it’s important to stop and think about what we put into our bodies, where that food comes from and how it reaches us.
- Do you know what the ingredient on the label is? How to pronounce it?
- Consider Local CSA’s
Fruits and Veggies

- Ideal- Fresh Fruit and Fresh Veggies
  - Organic?
- Frozen Fruit and Veggies

- Canned?- only if you have to....
  - Veggies- **No Sodium Added**- then rinse
  - Fruits: Beware the sugar!
• Make it a Rainbow
  – Red/Orange
    • Tomatoes, carrots, strawberries, peaches, sweet potatoes, apricots, tangerines
  – Yellow/Green
    • Spinach, broccoli, celery, pineapple, corn, kiwi, asparagus
  – Blue/Purple
    • Eggplant, beets, blueberries, blackberries, purple cabbage
  – White/Light
    • Onion, mushrooms, cauliflower, pears, bananas, jicama
Farm Raised vs. Wild Caught
  - Where caught?
Color
  - White, light-lean protein
    - Cod, mahi-mahi
  - Darker fish-lean protein, high in Polyunsaturated Fats
    - Tuna, Halibut, Orange Roughy..
Canned
  - Choose canned in water, low sodium
    - Tuna and salmon
Shellfish-
  - Shrimp, crab, lobster, mussels, scallops, clams, oysters........
Meat Section

- **Red Meats**- maximum - twice a week (4 oz)
  - Beef, Lamb, Pork, Venison, Veal
- **Ideal**: Grass Fed – No Hormones
- **Skinny Cuts**
  - Beef, Veal: “round”, “loin”
  - Lean Ground Beef >92%
  - Pork, Lamb: “leg”, “loin”
  - Grass Fed,
  - Venison
  - Less marbling
Meat Section

- Avoid Organ meats—↑ fat ↑ cholesterol
- Bacon:- Have you tried Canadian Bacon?
- Buy value, portion out and freeze at home
- Try to avoid processed meats.. but-----
  - Ask for lean, low fat,
  - low/no sodium
Poultry Section

• **Lean varieties**
  – chicken, turkey, pheasant, quail
  – limit Duck & Goose - high in sat fats

• **Skinless**
  – 50% ↓ fat grams (total and saturated)

• **Lean Cuts**
  – Breast

• **Ground Turkey Breast**
  – avoid “ground with Dark Meat/Skin”
Dairy Products

- 3 servings a day!
- Cheese-
- Low fat Dairy
  - 1% or skim milk
  - 2% or lower greek yogurts, cottage cheese
    - Greek Yogurt > protein, plain < sugar
- Dairy Alternatives
  - Soy milk, Almond Milk, Rice Milk
    - Be careful of flavors = inc. sugar
Grains/Bakery Items

- “Whole” grain Breads, Pastas, Cereals
  - Cheerios (yellow box), Bran, Flaxseed, Oatmeal
- Brown Rice, Wild Rice, Bulgur, Couscous, Kasha, Quinoa, Barley
- Avoid on the ingredient list
  - Enriched, Bleached, Fortified, Corn Meal
- Avoid-
  - (croissants, doughnuts, cookies, cakes most crackers, WhiteWheat, WheatWhite...)


Oils and Seasonings

• Choose Healthy Oils
  – Extra Virgin Olive oil, Canola oil, Flaxseed Oil
  – Avoid- Corn oil, Vegetable Oil
  – Use Fresh herbs, spices
  – I.e.- crushed red pepper, cumin, turmeric, garlic, mustard seeds, oregano, chili powder....

• Avoid seasonings with sodium

• Avoid seasoned salts
  – (garlic salt, onion salt......)
Shopping

- Decide on recipes for 3-4 days (2 trips per week)
- Write all ingredients needed
- Look in your pantry first
- Reduces impulse buying
- STICK TO THE LIST!!!
- DON’T GO HUNGRY!!
Eating Out and Social Situations

What’s on the Menu?
• Eating out is a special treat
• Plan ahead
  – where, what’s on menu, call ahead, sharing
  – Find Restaurant Menu, Nutrition Facts online
• Eat/Order out 1-2 times a month
  – It’s a Treat not a meal plan!
• Avoid buffets/ all-you-can eat
• If at a party / BBQ- eat a light meal before you go
Appetizers

• Salad-
  – ask for low-fat/fat free
  – Oil & vinegar
  – Dressing on the side
• Breadbasket
  – Avoid
  – Ask for whole grain
  – No butter
• Avoid key words
  – Crispy, Crunch, Fried
Entree

- Choose-lean meats, skinless chicken, fish
- Choose-Grilled/ Broiled/Roasted/Baked selections
- Avoid: sautéed and fried, marinated in oil, breaded, crispy, creamed, buttered
Entree

• Ask how prepared if unsure
• Ask for nutrition facts sheets
• Choose healthy selections
• Pasta Dishes
  – Choose tomato based sauces vs cream
Dessert

- Fresh fruit
- Sorbet or sherbert
- Frozen Yogurt
- Share
Portion Sizes

- Rule of thumb- plate contents 2x necessary portion size
- Plan to split a meal
- Plan to take 1/2 home
  - Ask for the take home box when your meal comes!
- At a party use the size of the palm of your hand as a serving size guide to manage portion control.
• Beverages
  – water is best, 1 glass of wine
• Side dishes
  – potatoes
    • baked (try salsa) avoid toppings, avoid mashed/fried
  – rice
    • brown, long grain, wild rice
  – vegetables
    • grilled, steamed
Fitness Trackers*

- Fitbit-Surge
- Basis Peak
- Fitbit-Charge HR
- MIO-Fuse
- Garmin-Vivoactive

Tracking Apps**

- LoseIT
- My Fitness Pal
- Map My Fitness
- Fitbit

PC Mag May 15, 2016
Diet and Exercise together provide the best defense in disease prevention, progress and rehabilitation

You can’t out exercise a bad diet”
Resources

- ACSM Guidelines for Exercise Testing and Prescription
- CDC.org
- www.eatright.org
- www.mayoclinic.org
- www.allrecipes.com
Final Thoughts


- [https://youtu.be/UUP2Z_-QxNI](https://youtu.be/UUP2Z_-QxNI)