



## Move Your Body, Stimulate Your Brain, Power Your Mind

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## What Are the Key Steps Used to Improve Cognitive Function?



- Add brain boosting foods and lower glycemic load
- Meet essential nutrient needs
- Add physical and mental fitness
- Proactively manage stress
- Avoid brain toxins
- These have become the five steps in my Better Brain Solution program

## Add Activity

- Both your body and your mind need activity.
- Spending time and counting minutes isn't the objective
- You benefit from:
  - Reeling up your heart rate
  - Building muscle mass
  - Learning new things

## What Single Thing Will:

- Burn away fat
- Improve blood sugar control
- Enhance your cholesterol ratio
- Reduce stress levels
- Strengthen bones
- Sweat away toxins
- Reduce constipation
- Make you mentally sharper and quicker
- Lower inflammation
- Improve your sleep
- Decrease your risk of cancer
- Make you look trim and sexy
- Make you a better lover

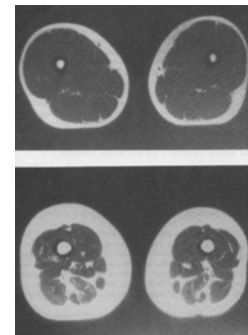
## Yes, Exercise Has Many Benefits

- Both aerobic activity and strength training improve blood sugar control and reduce insulin resistance
- Both improve cognitive performance and help to prevent memory loss
- Studies have shown that exercise not only increases brain processing speed, but it also makes your brain larger
- It's never too late to benefit, even 80 year olds can increase their brain size with exercise

## Body Weight vs. Body Comp

Two thighs, cross-section

- Same weight
- Same circumference
- Top is nearly all muscle
- Bottom is ~50% fat



## BODY COMPOSITION

- Fat-free (lean) mass
- Fat mass
- Body fat goals on subsequent slide
- If you don't measure body fat and lean mass separately, at least measure waist circumference

## Age Marker: Body Fat

- Weight is the worst measure of body comp
- BMI is better, but not good enough
- Much better would be to measure your percent body fat to follow your true fat mass!
  - Look at your lean mass, too
- Also compare your waist/hip ratio
  - More fat on your waist means fat on your heart and liver

## Age Marker: Muscle (Lean) Mass

- Muscle is the motor that burns calories, 1 pound of muscle burns > 40 calories each day
- With typical aging, muscle mass decreases by 1% and fat mass increases 1% every year
  - Shifting from free range to prime cut
- Muscle mass is the best predictor of surviving pneumonia, surgery, and being independent into your golden years
- Muscle mass makes you shapely and sexy (in contrast to being thin and flabby)
- Muscle improves cognitive function and decreases insulin resistance
- Measuring your strength is EASY and FUN to do!

## No Matter What Your Current Fitness Level, You Benefit from Exercise

- **Step 1:** Ensure that you get moving and reach 10,000 steps every day,
  - Start where ever you are, and add 10% extra each week
- **Step 2:** This provides a big jump in brain benefit
  - Get aerobic for 25-30 minutes 5 days/week (or interval training for 15-20 minutes 3 days per week)
  - Add strength training for 2 days/week
- **Step 3:** Mix it up (your brain just keeps getting better)
  - Add interval training 2-3 days per week
    - Once fit, Interval training 20 min x 3 day/week (60 min) as or more beneficial as moderate aerobic activity 30 minutes 5 days/week (150 min)
  - Add yoga or Pilates at least 1-2 days per week
  - Continue strength training and moderate aerobic activity 2-3 days per week

## How Much Do Small Improvements in Fitness Make?

- From computerized cognitive testing data at the Masley Optimal Health Center:
  - Increase your push up strength by 10% and see an 18% increase in cognitive score
  - Increase your sit up score by 10% and seen a 17% increase in cognitive score
  - Increase your aerobic capacity (MET) score by 10%, and you'll see a 19% increase in cognitive score

## What to Eat Before & After a Workout?

- You improve your aerobic performance if you have a health mix of carbs, fat, & protein before your workout
  - Good choices: Veggie omelet, [protein shake with berries & greens](#), plain yogurt with berries and nuts
- If this is your partial intermittent fasting day, it's fine to skip breakfast and work out (ok to have coffee or tea, with or without MCT oil, as well)
- After strength training, you get a big benefit from adding 20 grams of clean protein after your work out, such as a protein shake

## What Fitness Data Should You Monitor Over Time?

- 1-minute heart rate recovery (use a HR monitor with a chest strap to calculate this)
- MET level achieved (VO<sub>2</sub>max score)
- Total body lean mass (measure of your muscle mass—best is to use a bio-electrical impedance scale)
  - Link for a bio EI scale: ([drmasley.com/resources](http://drmasley.com/resources) <http://www.thecompetitiveedge.com/bf684w/>)
  - Enter code **DrMasley2017** for 10% off and free shipping for a **Tanita BF-684W** bioelectrical impedance scale

## Bruce Protocol Fitness Test

MINUTES COMPLETED	SPEED (MPH)	ELEVATION (% GRADE)	MET LEVEL MEN	MET LEVEL WOMEN
1	1.7	10%	3.2	3.1
2	"	"	4.0	3.9
3	"	"	4.9	4.7
4	2.5	12%	5.7	5.4
5	"	"	6.6	6.2
6	"	"	7.4	7.0
7	3.4	14%	8.3	8.0
8	"	"	9.1	8.6
9	"	"	10.0	9.4
10	4.2	16%	10.7	10.1
11	"	"	11.6	10.9
12	"	"	12.5	11.7
13	5.0	18%	13.3	12.5
14	"	"	14.1	13.2
15	"	"	15.0	14.1

## Strength Training

- Once per week to maintain muscle
- Two, preferably three, times per week to build muscle mass
- Use a balance of 12 muscle groups
- Essential to becoming younger and permanently impacting body shape and composition



## What Should We Be Promoting and Testing?



Push-up Percentiles for Age and Gender: 50<sup>th</sup> % means average for age group. 10<sup>th</sup>% means the worst 10% for that age. 90<sup>th</sup>% means the top 90% for that age. Female push-ups are with knees on the floor and males with toes on the floor. Performed consecutively without rest. Chin but not stomach must come within 1-2 inches of the floor, such that elbows are bent 90 degrees.

PUSH-UP TABLE	AGE									
	20-29		30-39		40-49		50-59		60-69	
Gender:	M	F	M	F	M	F	M	F	M	F
Age % Below										
90th	41	32	32	31	25	28	24	25	24	23
80th	34	26	27	24	21	22	17	17	16	15
70th	30	22	24	21	19	18	14	13	11	12
60th	27	20	21	17	16	14	11	10	10	10
50th	24	16	19	14	13	12	10	9	9	6
40th	21	14	16	12	12	10	9	5	7	4
30th	18	11	14	10	10	7	7	3	6	2
20th	16	9	11	7	8	4	5	1	4	0
10th	11	5	8	4	5	2	4	0	2	0

Sit-up Percentiles for Age and Gender: 50% means average for age group. 10<sup>th</sup>% means in the worst 10%. 90<sup>th</sup>% means in the top 90%. Lie on back with knees at 90°. Arms at side with fingers touching a tape line. A 2nd tape line is placed 8 cm (3 1/4-inch) distant if <45 yrs; 12 cm (4 3/4-inch) distant if <45 yrs. A metronome is set for 40 beats per minute and a sit-up must be performed with each beat. Fingers must touch the second tape line with each and every beat. Maximum sit-ups performed without missing a beat is performed.

SIT-UP TABLE	AGE									
	20-29		30-39		40-49		50-59		60-69	
Gender:	M	F	M	F	M	F	M	F	M	F
Age Percentile										
90th	76	70	75	55	75	50	74	50	53	50
80th	76	45	75	43	69	42	60	30	33	30
70th	66	37	61	34	57	33	45	23	26	24
60th	51	29	49	27	36	27	35	20	19	19
50th	39	25	31	21	27	21	27	19	16	13
40th	26	22	24	21	23	17	21	15	9	9
30th	26	17	20	12	19	14	19	10	6	3
20th	13	12	13	10	11	5	11	0	0	0
10th	10	5	10	0	3	0	0	0	0	0

### Ideally, Everyone Should Have a Fitness Eval Yearly, like a BP $\checkmark$ (AHA 2017)

- Find an exercise physiologist (best= American College Sports Medicine certified) to do:
  - Aerobic fitness testing, such as a treadmill stress testing that monitors your heart rate, MET level, and 1 minute heart rate recovery
  - ACSM sit up, push up, and sit and reach testing
  - Measure your lean mass and body fat mass (with bio-electrical impedance)
  - If you don't have training to lift weights, consider 4 sessions with the trainer to get started

### Mental Challenge & Purpose

- The worse thing that could happen in retirement would be to stop working, play golf, and wait for cocktails at 5 pm—your brain will shrink without purpose and challenge
- New learning is the key, spend at least one hour daily learning new things

### What to Learn?

- Learn a new language and use it (this alone delays the onset of Alzheimer's disease by 4-5 years)
- Play a musical instrument, perhaps several instruments
- Play bridge, sudoku, chess, cross word puzzles—something that makes you learn new things,
  - Not just something that you are already good at.
- Continue to be challenged at work, long after you retire. All of my clinic patients are expected to work 10-20 hours per week until age 85+, but they don't need to worry about earning \$\$\$

### Do Computer Games Help?

- If designed to keep you learning, and you keep learning and expanding over time, then yes
- If you use them for six weeks and stop, that limited exposure likely won't help
- Best options
  - Brain HQ
  - Luminosity

### 5-Step Guide to a Better Brain

- Step 1: Fabulous Foods
- Step 2: Essential Brain Nutrients
- Step 3: Physical and Mental exercises
- Step 4: Stress management
- Step 5: How to avoid brain toxins

Combine as many steps as feasible.