CASE STUDY

WELL AT RISK

EXOS METHODOLOGY IN PRACTICE

Lowering the risk of serious health conditions while increasing functional performance with a 10-week intervention

UNDERSTANDING THE PROBLEM

Most people aren't living a healthy lifestyle, and this often leads to serious, costly problems. In fact, not exercising may be worse for you than smoking, according to a study published in the Journal of the American Medical Association.

77%
Percentage of Americans who don't get enough exercise

40%
Percentage of adults in the U.S. affected by obesity from 2015-2016

$1,429
Increase in annual medical costs compared to people at a normal weight

90%
Percentage of Americans who aren't getting enough fruits and veggies

30.3 MM
Number of U.S. adults diagnosed with Type 2 Diabetes as of 2017

Other severe health risks

- Chronic pain
- Inflammation
- Sleep disorders
- Metabolic syndrome
- Heart disease
- Stroke
- Cancer

SEEKING A SOLUTION

The right nutrition and movement habits can transform lives.

Lifestyle, diet, and physical activity have been linked to chronic disease prevention. By nourishing the body with the food it needs, optimizing movement quality, and maximizing cardiovascular training, anyone can improve overall health and vitality, and continue seeing benefits into the later decades of life.

Being proactive pays off, for everyone involved.

Avoiding health problems before they start saves time, money, and energy — for individuals, employers, and health care providers.

THE EXOS FACTOR

IN-PERSON   INDIVIDUALIZED   EFFICIENT   EFFECTIVE   SUSTAINABLE

Many wellness programs simply offer an online resource for people to learn from. And the results aren't great, with low participation and minimal change in body composition or lifestyle habits.

This study aimed to show the difference that Exos provides: a combination of digital tools as well as an environment for people to get personalized guidance on movement, nutrition, and behavioral upgrades.

In-person support allows individuals to form relationships with coaches and dietitians, ask their own questions, and feel more accountable to follow their program. The goal of Exos methodology is to get results efficiently, and lead the way to lasting, positive change for each person.

EXOS TECHNOLOGY

Exos Journey
A digital platform focused on behavioral change that contains videos, articles, and other tools such as a workout library and a meal builder

3D Movement Quotient
A 10-minute movement screen that uses 3D motion-capture technology, analyzing 171,190 data points and 70 indicators of proper movement

Energy Systems Development Technology
Providing personalized interval training programming available on treadmills, ellipticals, and bikes

THE STUDY

CAN A 10-WEEK, PROACTIVE HEALTH INTERVENTION BEGIN LOWERING THE RISK OF SERIOUS HEALTH ISSUES?

We measured these factors to find out.

Body composition

An ultrasound body composition system measured body fat and muscle mass, enabling precise tracking of fat loss and muscle gain.

Health markers in blood and nutrient status

For a subset of 13 individuals over 50 years of age, blood was drawn to measure cholesterol, omega-3 and omega-6 fatty acids, and other elements that denote health risks and nutrient status.

Movement quality, balance, and strength tests

Exos 3D Movement Quotient measured mobility, stability, and movement patterns across a series of functional movements that are foundational to the demands of how a person moves throughout the day. Other tests included balance, grip strength, and timed plank.

Cardiovascular fitness

Using Exos Energy Systems Development Technology, participants exerted themselvesto max effort on cardio machines to measure their VO2 and ventilatory threshold.

Lifestyle behaviors

Participants went through the Performance Quotient, a digital assessment within Exos Journey, to measure 21 lifestyle factors associated with performance and health across mindset, nutrition, movement, and recovery.

Quality of life

A multipurpose health survey, SF-36, was administered to create a functional health and well-being profile, measuring physical and mental health. It's among the most widely used health surveys due to its proven usefulness across general and specific populations, monitoring health status and comparing benefits of different interventions.

THE INTERVENTION

MOVEMENT

In-person coaching

- One hour, four days per week
- Small group movement and strength training
- 10-to-1 participant-to-coach ratio to maximize individualized coaching
- Cardiovascular programming with customized interval training via Exos Energy Systems Development Technology

NOT ONE-SIZE-FITS-ALL

NUTRITION

Consultations and meals

- Lunch and dinner, four days per week, prepared by the EXOS culinary team

  | Tailored to individual caloric and macronutrient needs, as determined by Exos Journey
- Post-workout shakes with a custom blend of carbs and protein to meet each participant's recovery needs
- One 30-minute nutrition consultation with a dietitian and ongoing individual consultations as needed
- Online meal builder tool, helping participants match foods with calorie goals for meals outside of Exos

PERSONALIZED NUTRITION TO ACCELERATE PROGRESS

EDUCATION

Behavioral upgrade content via Exos Journey

Before workouts, coaches would talk through various Guided Paths, step-by-step lessons found in Exos Journey. And follow-up conversations gave participants the opportunity to say what was working well or ask any questions about what they were learning.

- **Mindset:**
  setting achievable goals, stress management, establishing a fitness routine
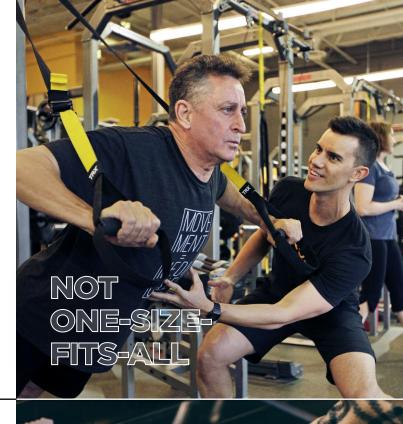- **Nutrition:**
  mindful eating, practical tips on incorporating more fruits and veggies
- **Movement:**
  improving your training routine, targeting back pain, equipment how-tos
- **Recovery:**
  sleep environment and routine, guided breathing tempos

EXPLORING TOPICS OF HUMAN PERFORMANCE

PROGRAM PARTICIPANTS

32 PARTICIPANTS

GENDER

15 Male (46.9 %)　　**17** Female (53.1 %)

OVERWEIGHT OR OBESE ADULTS （BMI ≥ 25）

28.1 Avg. BMI　　**84.4** % had a BMI ≥ 25 (n=27)

AGE

22-71 Age range　　**49** Avg. age

SUMMARY HIGHLIGHTS

After 10 weeks, participants were retested using the same evaluations administered prior to training.

Body fat

7.2 % ↓

Waist circumference

1.3 IN ↓

Demonstrating a reduced risk of potential obesity-related health conditions

> ## This study has been so helpful in my life as far as pain, nutrition, and strength goes."
>
> **— study participant**

Net Promoter Score

61.1

EXOS

-100 — 0 — 100

Indicating people found the program to be an enjoyable and worthwhile experience

Net Promoter Scores represent how likely the consumer is to recommend the services to a friend or colleague on a scale of -100 to 100. A positive score (>0) is considered good. A score ≥ 50 is considered excellent.
Industry Comparison: IHRSA clubs (average) NPS=43

Participation

2.6 Training sessions per week

A testament to the efficiency and effectiveness of the in-person training and personalized nutrition

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FITNESS AND STRENGTH

Ventilatory threshold*

11.3 % ↑

Indicating improved cardiovascular fitness and longer life expectancy

Movement quality

14.3 % ↑

Total pain volume

13.2 % ↓

The sum of all reported pain intensities from each participant

VO$_2$

10.1 % ↑

Core strength

25.8 % ↑

Balance**

27.0 % ↑

Peak power

11.6 % ↑

*Rate of ventilation, an indicator of fitness   **Twenty-second balance trials, scored by counting the errors or deviations from the proper stance, accumulated by the subject

SUMMARY HIGHLIGHTS

PERFORMANCE QUOTIENT

Performance Quotient scores show decreased behavioral risk factors and improved overal l quality of life.

70.6% ↑

Percentage of improvement in food quality, sedentary lifestyle, and ability to sustain energy levels throughout the day

Mindset
21.7% ↑

Nutrition
19.6% ↑

Movement
36.1% ↑

Recovery
18.8% ↑

SF-36

SF-36 scores show improved mental and physical health as well as overall quality of life.

Total SF-36 score
5.8% ↑

Mental component
7% ↑

Physical component
6% ↑

" **I loved the program. Definitely jump-started my health and fitness in a way that I don't think I could have done on my own.**"

— study participant

" **I really appreciated that when something hurt, I was given alternate methods.**"

— study participant

BLOODWORK

Evaluating bloodwork for a subset of 13 people over 50 years of age, risk factors were down while healthy omega-3 fatty acids were up.

56% ↑
Percentage of participants considered low risk

80% ↓
Percentage of participants considered moderate risk

4.9% ↓
Percentage decrease in cholesterol

27.5% ↑
Percentage increase of healthy omega-3 fatty acids

BEYOND THE NUMBERS

Participants' experience also included less tangible but important benefits that bolstered participation and sustained engagement.

- Enjoying the camaraderie with fellow participants
- Gaining practical knowledge
- Feeling a sense of accomplishment
- Increasing self-confidence

CONCLUSION

TEN WEEKS OF FOLLOWING THE EXOS METHODOLOGY CAN SIGNIFICANTLY REDUCE HEALTH RISK FACTORS.

The Centers for Disease Control and Prevention's metric for success in diabetes prevention programs is 5 percent total weight loss in 12 months. The CDC's definition of weight loss isn't specific to body fat; it also includes some loss in muscle mass, which isn't as beneficial to preventing health risks.

By comparison, in only 10 weeks, 75 percent of participants in the Exos well at risk study saw a 5-percent reduction in body fat. This means that Exos achieved more significant results, nine months sooner than the CDC's benchmark for diabetes prevention programs, as participants also improved strength, cardiovascular fitness, movement quality, and balance. These factors also contribute to long-term health benefits as well as a higher quality of life.

Overall this study showcases that offering an intensive program that follows the Exos methodology can mitigate obesity and its related health issues and create perpetual change in at-risk individuals.

ASSESSMENT RESULTS BY THE NUMBERS

		BASELINE MEAN (MIN-MAX)	FOLLOW-UP MEAN (MIN-MAX)	CHANGE	% CHANGE
	AGE (YEARS)	49.0 (31-71)			
	MALE (%)	15 (46.9%)			
	%SUB-OPTIMAL (BMI≥25)	84.4%			
	TOTAL SESSIONS ATTENDED (AVG)	25.5 (16.0-38.0)			
ANTHROPOMETRICS (N=31)					
	BODY FAT (%)	26.5 (13.0-38.0)	24.6†† (11.8-36.3)	-1.9	-7.2%
	WEIGHT (LBS)	182.5 (107.6-268.0)	179.7† (107.1-264.0)	-2.8	-1.5%
	BMI (KG/M2)	28.1 (19.1-35.6)	27.8 (19.0-35.2)	-0.3	-1.1%
	WAIST CIRCUMFERENCE (IN)	36.4 (26.0-47.3)	35.1†† (25.6-46.9)	-1.3	-3.6%
	HIP CIRCUMFERENCE (IN)	41.9 (33.5-49.0)	41.2†† (34.0-47.9)	-0.7	-1.7%
PHYSICAL PERFORMANCE (N=31)					
	STRENGTH: RIGHT GRIP (LBS)	74.7 (46.0-134.0)	77.5* (33.0-132.0)	2.8	3.7%
	STRENGTH: LEFT GRIP (LBS)	72.1 (35.0-119.0)	73.5** (26.0-133.0)	1.4	1.9%
	STRENGTH: PLANK (SECONDS)	119.4 (26.0-330.0)	150.2† (60.0-36.0)	30.8	25.8%
	BALANCE: BESS SCORE	13.0 (7.0-18.5)	9.5†† (4.0-21.5)	-3.5	-27.0%
PHYSICAL FITNESS (N=30)					
	VO2 (ML/KG/MIN)	28.7 (16.3-47.0)	31.6** (17.1-52.2)	2.9	10.1%
	POWER, PEAK (WATTS)	1035.5 (257.1-2005.7)	1156.0† (603.1-2116.9)	120.5	11.6%
	POWER, VENTILATORY THRESHOLD (WATTS)	880.8 (210.8-1724.9)	980.6 (518.6-1820.5)	99.8	11.3%
MOVEMENT QUALITY (N=29)					
	MQ SCORE	57.7 (32.0-75.2)	66.0† (42.1-82.6)	8.3	14.3%
	MOVEMENT SCORE	36.9 (33.1-40.2)	36.9 (33.8-39.4)	-0.1	-0.2%
	MOBILITY SCORE	34.9 (21.9-45.4)	37.2 (23.9-50.6)	2.3	6.7%
	STABILITY SCORE	34.0 (27.6-39.1)	33.3 (25.5-38.8)	-0.7	-2.0%
PAIN PROFILE (N=26A)					
	PAIN PREVALENCE, # (%)	17 (65.4%)	17 (65.4%)	0.0	0.0%
	TOTAL PAIN SITES, (#)	1.8 (1-5)	1.9 (1-4)	0.1	3.2%
	AVERAGE PAIN INTENSITY	2.7 (1.0-5.3)	3.0 (1.7 -6.0)	0.3	9.7%
	MAX PAIN INTENSITY	2.9 (1-7)	3.3 (2-6)	0.4	12.1%
	TOTAL PAIN VOLUME	5.8 (1.0-26.5)	5.0 (2.0-14.0)	-0.8	-13.2%

PAIRED T-TEST SIGNIFICANT AT *P≤0.05; **P≤0.01; †P≤0.001; ††P≤0.0001

BESS = BALANCE ERROR SCORING SYSTEM; VT = VENTILATORY THRESHOLD; MQ = MOVEMENT QUOTIENT
A EXCLUDES DATA FOR 6 OF 32 PARTICIPANTS WHO DID NOT COMPLETE THE PERFORMANCE QUOTIENT (PQ, DIGITAL ASSESSMENT INCLUDING P//AIN PROFILE) AT FOLLOW-UP. PAIN PREVALENCE IS THE # AND % OF PARTICIPANT WHO REPORT EXPERIENCING PAIN AT ONE OR MORE SITES. TOTAL PAIN SITES IS THE # OF SITES WHERE PARTICIPANTS REPORT EXPERIENCING PAIN (TOTAL SITES POSSIBLE = 12). AVERAGE PAIN INTENSITY IS THE AVERAGE PAIN INTENSITY (SCALE OF 0-10, WHERE 0 = NO PAIN) REPORTED ACROSS ALL 12 SITES PER PARTICIPANT (EXCLUDES INTENSITY = 0). MAX PAIN INTENSITY REPRESENTS THE HIGHEST PAIN INTENSITY REPORTED AT A SINGLE SITE PER PARTICIPANT. TOTAL PAIN VOLUME IS THE SUM OF ALL REPORTED PAIN INTENSITIES ACROSS ALL SITES PER PARTICIPANT (MAX VOLUME POSSIBLE PER PARTICIPANT: 12 SITES X 10 MAX INTENSITY/

ASSESSMENT RESULTS BY THE NUMBERS

		BASELINE MEAN (MIN-MAX)	FOLLOW-UP MEAN (MIN-MAX)	CHANGE	% CHANGE
QUALITY OF LIFE (N=32)	SF-36 TOTAL SCORE	83.5 (54-99)	88.5** (68-100)	4.9	5.8%
	SF-36 PHYSICAL COMPONENT SCORE	80.5 (44-98)	85.4** (58-100)	4.8	6.0%
	SF-36 MENTAL COMPONENT SCORE	80.8 (49-99)	86.5† (71-100)	5.7	7.0%
	PERFORMANCE QUOTIENT SCORE (PQ; N=26)	49.2 (23-89)	60.7†† (37-94)	11.5	23.4%
MINDSET (N=26)	MINDSET SCORE	60.4 (28-100)	73.5† (33-100)	13.1	21.7%
	DEPRESSED, N (% 'AT RISK')	6 (23.1%)	1 (3.8%)	-5 (19.3%)	-83.3%
	LIMITED CONTROL OF HOW THINGS GO AT WORK, N (% 'AT RISK')	2 (7.7%)	2 (7.7%)	-	-
	PRE-ACTION STAGE OF CHANGE, N (% 'AT RISK')	9 (34.6%)	2* (7.7%)	-7 (-26.9%)	-77.7%
	STRESSED, N (% 'AT RISK')	2 (7.7%)	0 (0.0%)	-2 (-7.7%)	-100.0%
	SUBOPTIMAL RESPONSE TO STRESS, N (% 'AT RISK')	2 (7.7%)	2 (7.7%)	-	-
	NUTRITION SCORE	44.3 (19-89)	53.0† (23-89)	8.7	19.6%
NUTRITION(N=26)	POOR BREAKFAST QUALITY, N (% 'AT RISK')	10 (38.5%)	10 (38.5%)	-	-
	POOR FIBER INTAKE, N (% 'AT RISK')	21 (80.8%)	16 (61.5%)	-5 (-19.3%)	-23.8%
	PROCESSED/FAST FOOD INTAKE, N (% 'AT RISK')	13 (50.0%)	3** (11.5%)	-10 (-38.5%)	-76.9%
	SUB-OPTIMAL MEAL FREQUENCY, N (% 'AT RISK')	20 (76.9%)	19 (73.1%)	-1 (-3.8%)	-5.0%
	SUGAR SWEETENED BEVERAGE INTAKE, N (% 'AT RISK')	0 (100.0%)	0 (100.0%)	-	-
MOVEMENT (N=26)	MOVEMENT SCORE	41.3 (12-94)	56.2† (24-94)	14.9	36.1%
	< AVERAGE CONDITIONING FOR AGE, N (% 'AT RISK')	15 (57.7%)	12 (46.2%)	-3 (-11.5%)	-20.0%
	< AVERAGE FLEXIBILITY FOR AGE, N (% 'AT RISK')	20 (76.9%)	18 (69.2%)	-2 (7.7%)	-10.0%
	< AVERAGE STRENGTH FOR AGE, N (% 'AT RISK')	17 (65.4%)	12 (46.2%)	-5 (-19.2%)	-29.4%
	AVOID INCIDENTAL MOVEMENT, N (% 'AT RISK')	14 (53.8%)	8 (30.8%)	-6 (23.0%)	-42.9%
	REPORT PAIN, N (% 'AT RISK')	9 (34.6%)	10 (38.5%)	1 (3.9%)	11.1%
	SEDENTARY, N (% 'AT RISK')	14 (53.8%)	2†† (7.7%)	-12 (-46.1%)	-85.7%
RECOVERY (N=26)	RECOVERY SCORE	50.1 (5-100)	59.5* (19-100)	9.4	18.8%
	EXHAUSTED/SORE AFTER HARD WORKOUT, N (% 'AT RISK')	10 (38.5%)	6 (23.1%)	-4 (-15.4%)	-40.0%
	LEISURE TIME SPENT WORKING/SEDENTARY, N (% 'AT RISK')	13 (50.0%)	14 (53.8%)	1 (3.8%)	7.7%
	POOR BEDTIME ROUTINE, N (% 'AT RISK')	10 (38.5%)	9 (34.6%)	-1 (-3.9%)	-10.0%
	TIRED IN THE MORNING, N (% 'AT RISK')	14 (53.8%)	11 (42.3%)	-3 (-11.5%)	-21.4%
	TIRED IN THE EVENING, N (% 'AT RISK')	19 (73.1%)	11** (42.3%)	-8 (-30.8%)	-42.1%

PAIRED T-TEST SIGNIFICANT AT *P≤0.05; **P≤0.01; †P≤0.001; ††P≤0.0001

BIOMARKERS OF DISEASE RISK RESULTS BY THE NUMBERS

	BASELINE MEAN (MIN-MAX)	FOLLOW-UP MEAN (MIN-MAX)	CHANGE	% CHANGE
CHOLESTEROL (MG/DL)	195.2 (121-236)	185.6 (113-218)	-9.5	-4.9%
LDL (MG/DL)	107.9 (31-150)	102.4 (136-35)	-5.5	-5.1%
OMEGA 3 (TOTAL)	7.2 (5.1-12.5)	9.1†† (6.4-15.2)	2.0	27.5%
OMEGA 6 (TOTAL)	34.0 (28.4-37.3)	33.6 (26.8-37.4)	-0.4	-1.1%
OMEGA 6:3 RATIO	5.0 (2.3-7.0)	3.9†† (1.8-5.7)	-1.1	-22.5%

PAIRED T-TEST SIGNIFICANT AT *P≤0.05; **P≤0.01; †P≤0.001; ††P≤0.0001

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