

Effects of a 30-day Fitness Challenge on Body Composition and Markers of Health in Women



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Health &
Kinesiology

About Curves



- Established in 1992
- Women's only fitness & weight loss program
- Largest fitness franchise in the world
- Fastest growing franchise in history
- Over 10,000 clubs in 73 countries
- 4 - 5 million members



Curves Training Program

- 30-minute circuit training program (3 / week) with stretching before and after exercise
- Resistance exercises included:
 - Leg extension/curls
 - Shoulder Press/Lat Pull
 - Leg Press
 - Seated bench press/rows
 - Hip Adduction/Abduction
 - Abdominal Curl/Back Extension
 - Squat
 - Arm curls/extensions
 - Stair Stepper / HR (2)



Curves Training Program

- Calisthenic exercises included low impact:
 - Jogging in place
 - Jumping jacks
 - Boxing
 - Knee lifts
 - Kicks forward
 - Side kicks
 - Skiing
 - Heel kicks
 - Skipping
 - Torso twists



Exercise Intensity

- Heart Rate Analysis (n=80)
 - Mean HR - 119±15 bpm
 - 79% max HR
 - 63% of HRR
- Biomechanical Analysis (n=10)
 - 61% - 73% of 1RM
 - Reliability (r=0.71 to r=0.87)
- Metabolic Analysis (n=12)
 - 63% VO_2 max
 - RER of 0.98
 - Reliability (r=0.84)
- Energy Expenditure (n=675)
 - 10 workouts, 7 Clubs - CurvesSmart
 - 310±91 kcals
- Exercise intensity meets ACSM & NSCA guidelines



Curves Women's Health & Fitness Initiative

Identify ways to optimize the health and well-being of women through various diet, exercise, and/or nutritional interventions



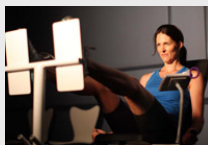
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Curves Women's Health & Fitness Initiative



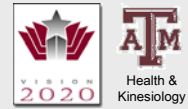
- Completed Studies
 - Curves I
 - Curves II
 - Curves Extension
 - Curves Biomechanics
 - Curves Exercise Intensity
 - Curves Calcium
 - Curves Special Populations (hypertension, diabetes, thyroid conditions, etc)
 - Curves Elderly
 - Curves Osteoarthritis
 - Curves Resistance Training (new equipment comparison)
 - Curves in Middle Schools (2 studies)
 - Curves Metabolism
 - Curves Fit "Highly Trained Subjects"
 - Curves/General Mills
- Data presented at FASEB, ACSM, NSCA, & ISSN (see <http://curves.tamu.edu>)
- Curves I published in **Nutrition & Metabolism** (6/1/23, 2009)

Purpose of Study



- Are results observed in controlled clinical trials replicable in field?
- What is the impact of initiating a national fitness program for Curves Members?
- Begin developing an online system to monitor the long-term impact of participation in the Curves program on women's health
- Beta-test development of an accessible data-base for women's health research

Methods



Curves | AVON
FITNESS STUDY



- ❑ Met with Curves and university research and IT personnel
- ❑ Obtained IRB approval to implement online data collection research
- ❑ Began developing web-based data collection and monitoring system
- ❑ Decided to launch 30-day fitness challenge for Curves members in U.S. and Canada as first online effort in collaboration with AVON
- ❑ National advertisement about study through Curves/AVON
- ❑ Interested participants invited to pick up study card voucher at local Curves club for online registration

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Online Voucher

Report Results at
CurvesAvonStudy.com

Access Code: **999ZZZ**
Access Code required for login

You will be asked to enter your numbers and answer a few additional questions.

Measurements:

Pre:	Post:
<small>Please enter the following information online after your 1st workout.</small>	<small>Please enter the following information online after your FINAL workout.</small>
Height ____feet ____inches	Height ____feet ____inches
Weight ____lbs.	Weight ____lbs.
Body Fat % ____%	Body Fat % ____%
Pre-Workout HR ____bpm	Pre-Workout HR ____bpm
Blood Pressure ____/____mmHg	Blood Pressure ____/____mmHg
BMI ____	BMI ____
Bust ____inches	Bust ____inches
Waist ____inches	Waist ____inches
Abdomen ____inches	Abdomen ____inches
Hips ____inches	Hips ____inches
Thigh ____inches	Thigh ____inches
Arm ____inches	Arm ____inches

Report ALL results by August 15, 2008.

→ Participant Responsible ←

Track Your Workouts

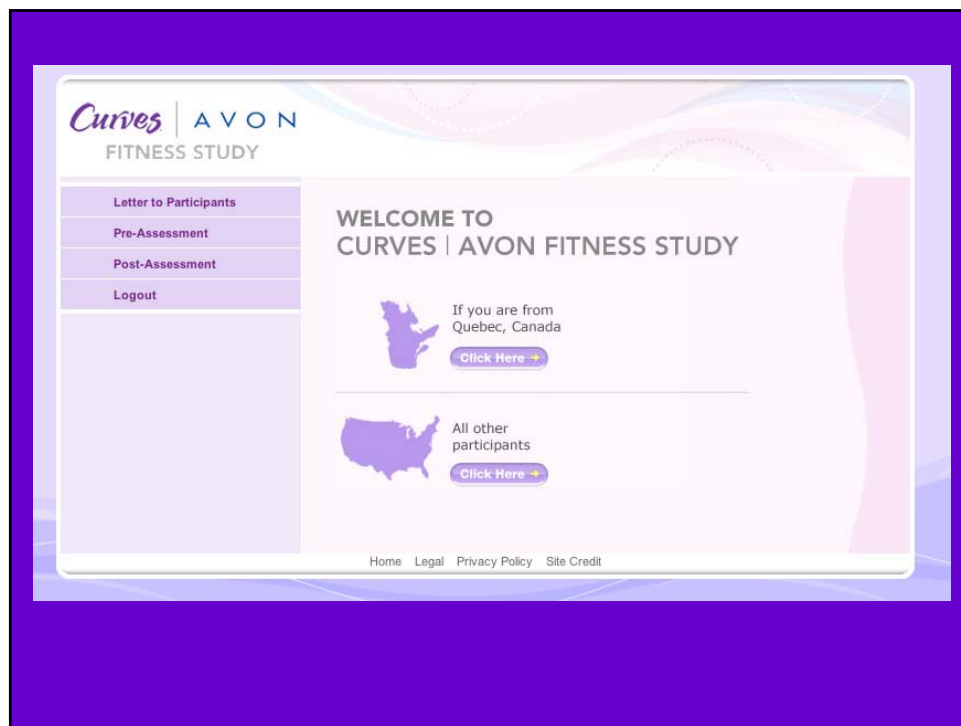
M	T	W	TH	F	S
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Curves Complete

For 30 FREE days of access to our online weight management site, visit CurvesComplete.com/offer

Ask your Curves Trainer for a voucher TODAY!

Report all results by August 15, 2008. Requested information will be used for research purposes. Your participation is voluntary and your personal information will be kept confidential. ©2008 Curves International, Inc.



Curves

AVON

FITNESS STUDY

Letter to Participants

Pre-Assessment

Post-Assessment

Logout

Registration

This site is solely for participants of the Curves Avon Fitness Study. To register, you will need a club code from your participation voucher. If you do not have this information, please contact the Curves location where you are registered for the study. If you are not a participant and are interested in learning more information, please contact your local Curves. [Click here](#) to find a Curves location near you.

Register with us

Email Address:*

Create Password:*

Password Again:*

Club code from voucher:*

Where did you hear about the Curves Avon Fitness Study?

☐ Avon catalog ☐ Newspaper ☐ Flyer ☐ Postcard ☐ Online

☐ I am interested in receiving information and/or offers from Curves.

☐ I am an Avon representative.

* Required Field

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Letter to Participants

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Thank you for registering for the 2009 Curves Avon Fitness Study.

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Consent Form

CONSENT FORM

Effects of the Curves Fitness and Weight Loss Program in Curves Members

Introduction

The purpose of this form is to provide you information that may affect your decision as to whether or not to participate in this research study. If you decide to participate in this study, this form will also be used to record your consent.

You have been asked to participate in a research project studying the Curves International fitness and weight loss program. The purpose of this study is to collect online health, fitness, and weight loss data from women participating in the Curves program.

What will I be asked to do?

If you agree to participate in this study you will be asked to accept an Informed Consent statement in compliance with the Human Subjects Guidelines of Texas A&M University and the American College of Sports Medicine. You will be deemed healthy enough if you meet the Curves membership entry guidelines as determined by the club health assessment protocol and/or a personal physician that has approved participation in the program. If you qualify to participate you will be familiarized to the program and assessments

☐ By checking this box, I hereby acknowledge and agree to all information provided in the Curves Avon Study Overview above. I also acknowledge that this program does not provide health-care services or advice, and I agree to consult my own physician if health advice is required.*

☐ I do not want my information submitted to researchers at Texas A&M.

* Required Field

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Pre-Assessment

Please provide the requested information that will be used for research purposes. Your participation is voluntary. Our use and protection of your personal information will comply with the Curves.com Privacy Policy, which you can read at <http://curves.com/privacy.php>. Please note that we are not providing you with health-care services or advice, and you should consult your own physician if you require health advice.

Age: *

Ethnicity:*

☐ Caucasian
 ☐ Hispanic
 ☐ African American
 ☐ Asian
 ☐ Other

Measurements:*

Bust* <input type="text"/> in.	Height* <input type="text"/> ft. <input type="text"/> in.
Waist* <input type="text"/> in.	Weight* <input type="text"/> lbs.
Abdomen* <input type="text"/> in.	Body Fat %* <input type="text"/> %
Hips* <input type="text"/> in.	Body Mass Index* <input type="text"/>
Thigh* <input type="text"/> in.	
Arm* <input type="text"/> in.	

- Trained club personnel performed measurements
- Data recorded on study card
- Subjects entered baseline data
- Omron HBF-306 hand-held BIA analyzer used to assess body fat (validated to DEXA)

- Encouraged to see physician for pre- and post-blood work
- HR & BP measured at club using automated analyzers
- Membership / Adherence Questionnaire

If known, within the last 3 months:

Total Cholesterol mg/dL
 Glucose Levels mg/dL
 Pre-Workout HR bpm
 Blood Pressure Systolic mmHg Diastolic mmHg

Please answer YES or NO to the following questions:

I am a non-exerciser.* ☐ Yes ☐ No
 I am currently a member at Curves.* ☐ Yes ☒ No
 If Yes, how long have you been a Curves member?* Yr. Mo.
 I exercise at Curves 3+ times per week.* ☐ Yes ☐ No
 I currently exercise at a gym other than Curves.* ☐ Yes ☒ No
 If Yes, how long have you been exercising at another gym?* Yr. Mo.
 I currently utilize the Curves Complete website.* ☐ Yes ☐ No
 I have previously participated in a Curves Fitness & Weight Management Class* ☐ Yes ☐ No
 I have previously participated in a weight management class.* ☐ Yes ☐ No
 How long did you participate? Yr. Mo.
 What program did you participate in?*
 Are you currently participating?* ☐ Yes ☒ No

- Exercise History / Comfort Questionnaire

Check the boxes below that describe your involvement at Curves (Check all that apply).*

☐ This is my first time at Curves.
☐ I have never heard of Curves before now.
☐ I have heard of Curves, but have not attended
☐ I have attended Curves in the past, but not at this facility.
☐ I exercise at this Curves location 3 or more times per week.
☐ I am a member at Curves, but have not exercised for more than 3 months.
☐ I feel welcome at Curves.
☐ I am involved in club activities/contests/promotions.

Check the boxes below that describe what may prevent you from regular exercise (Check all that apply).*

☐ No time / Inconvenient ☐ Unsure how to start
☐ Gym membership too expensive ☐ Embarrassed / Uncomfortable
☐ Too tired ☐ Exercise enough already
☐ Exercise is boring / unimportant ☐ I need to try it / think about it
☐ Don't need to lose weight ☐ Other
☐ Physical disability
☐ I need to ask husband/significant other

- Exercise Barrier Questionnaire

- Food Frequency Questionnaire

- Alcohol Frequency Questionnaire

Check the boxes below that describe your dietary intake. (Check all that apply)

- ☐ Foods high in calcium (such as dairy products or calcium supplement)
If checked, times per week.
- ☐ Foods high in sugar (such as pies, cakes, cookies, candy, etc.)
If checked, times per week.
- ☐ Foods high in fiber (such as fruits or vegetables, whole grain breads or cereals, dried peas or beans, etc.)
If checked, times per week.
- ☐ Foods high in fat (such as chips, fried foods, red meats, cheese made from cream or whole milk, egg yolks, etc.)
If checked, times per week.
- ☐ Alcoholic beverages (12 oz bottle or can of beer, 5 oz glass of wine, 12 oz wine cooler, shot of liquor)
If checked, drinks per week.
☐ times per month 5 or more alcoholic beverages consumed.

- Physical Activity Questionnaire

Check the boxes below that describe your exercise lifestyle and indicate frequency in the provided spot. (Check all that apply)

- ☐ Physical activity (30 Minutes without stopping, hard enough to make you breathe more heavily.)
If checked, times per week.
- ☐ Vigorous Activity (Examples: bicycling, brisk walking, jogging, basketball, swimming, or other aerobic activities.)
If checked, times per week.
- ☐ Stretch Muscles in order to gain flexibility.
If checked, times per week.
- ☐ Curves 30 Minute Workout
If checked, times per week.
- ☐ Light Activities (Examples: bowling, softball, golf, slow walking, yard work, or other non-aerobic activities.)
If checked, times per week.
- ☐ Strength Train Activity (such as weight lifting)
If checked, times per week.

- Medical / Family History

Check the boxes below that pertain to either a natural brother, sister, child or parent. (Check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Alcoholism | <input type="checkbox"/> High Cholesterol |
| <input type="checkbox"/> Endometrial/Ovarian Cancer | <input type="checkbox"/> Colon or Rectal Cancer |
| <input type="checkbox"/> Intestinal Polyps | <input type="checkbox"/> Genetic Abnormalities or Problems |
| <input type="checkbox"/> High Blood Pressure | <input type="checkbox"/> Melanoma (Mole Cancer) |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Inherited Problems (such as Tay-Sachs Gene, Thalessemia Genetic Gene, Sickle Cell) |
| <input type="checkbox"/> Stroke | |
| <input type="checkbox"/> Glaucoma | |
| <input type="checkbox"/> Heart Attack before age 60 | |
| <input type="checkbox"/> Other (Please Specify Below) | |

* Required Field

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- Participation incentive

THANK YOU
YOUR PRE-ASSESSMENT INFORMATION HAS BEEN RECEIVED

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FREE GIFT
From Curves and Avon.

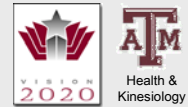
Make sure to come back at the end of the study to submit your post-assessment information so that you get your free gift.



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Methods



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Return Results to:
CurvesAvonStudy.com
Avon Code: 999222

You will be asked to enter your numbers and answer a few additional questions.

Measurements:

Day	Weight	Bust	Waist	Hips	Thigh	Arm	Weight	Bust	Waist	Hips	Thigh	Arm	Weight
1													
2													
3													
4													
5													
6													
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31													

Report #12, results by August 15, 2008

For 2008, you will receive a complimentary Curves Complete workout DVD.

Add your Curves Trainer for a possible \$1000!

Curves AVON FITNESS STUDY

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Post-Assessment

Please provide the requested information that will be used for research purposes. Your participation is voluntary. Use the information that you provided at your previous assessment and compare with the information that you provide now. If you are not sure of the answer, please leave the question blank. If you have any questions, please contact your Curves Trainer.

Measurements:

Day	Weight	Bust	Waist	Hips	Thigh	Arm	Weight	Bust	Waist	Hips	Thigh	Arm	Weight
1													
2													
3													
4													
5													
6													
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30													
31													

If results within the last 2 months:

Day	Weight	Bust	Waist	Hips	Thigh	Arm	Weight	Bust	Waist	Hips	Thigh	Arm	Weight
1													
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3													
4													
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6													
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- ❑ Required to exercise a minimum of 3-days per week
- ❑ Optional Diet (6-Week Solution)
 - 1,200 kcals/d for 1 wk
 - 1,600 kcals/d for 3 wk
 - Higher CHO [45% CHO, 30% PRO, 25% F] diet
 - Higher PRO [45% PRO, 30% CHO, and 25% F] diet.
- ❑ Post-test assessments obtained by club personnel and recorded on study card
- ❑ Subjects entered post-study data

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Curves Avon Fitness Study Individual Results

Measurements:	Pre-Data	Post-Data	Change:
Bust	12 in.	12 in.	+0 in.
Waist	12 in.	12 in.	+0 in.
Abdomen	12 in.	12 in.	+0 in.
Hips	12 in.	12 in.	+0 in.
Thigh	12 in.	12 in.	+0 in.
Arm	12 in.	12 in.	+0 in.
Weight	12 lbs.	12 lbs.	+0 lbs.
Body Fat	12 %	12 %	+0 %
Total Cholesterol	12 mg/dL	12 mg/dL	+0 mg/dL
Glucose Levels	12 mg/dL	12 mg/dL	+0 mg/dL

[Print](#)

If you would like to receive the national results via email at the end of the study, please click the button below.*

[Receive National Results by Email](#)

Results will not be ready until the end of August.

Click below to register for your free gift from Curves and Avon.

[Claim Your Free Gift](#)

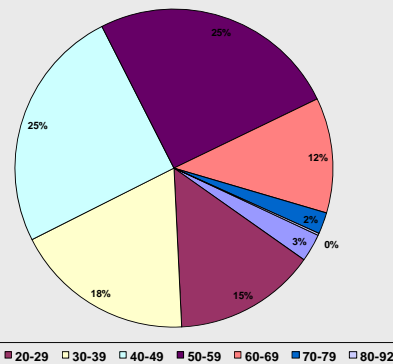
*By requesting to receive results, you will be opting in to receive information from Curves. However, you will be able to opt-out from future mailings in the email sent with the result information.

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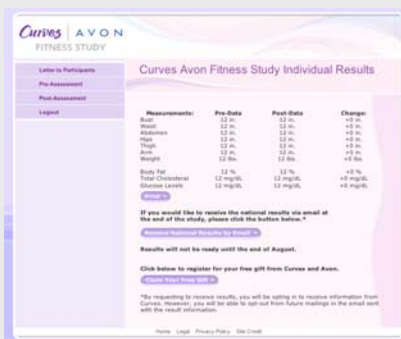
□ Participants (43,764)

- 44.5±14 yrs
- 82.6±20 kg
- 164±7 cm
- 31.1 BMI
- 37.7±7 % body fat (BIA)
- 42 / 37 / 44 in
- 76±11 bpm (19,765)
- 123±17/79±10 BP (20,675)
- 196±42 mg/dl CHL (3,549)
- 102±27 mg/dl Glucose (2,039)

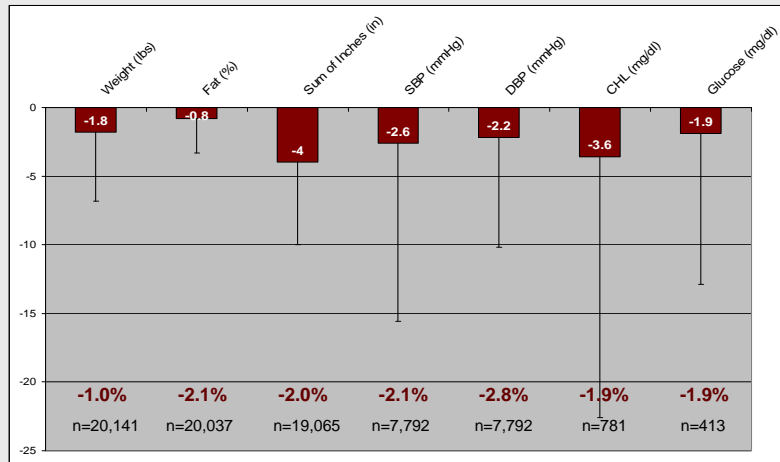
Age Distribution



Methods



- Post-study data collected from 1,370 clubs and 20,182 participants through mainframe computer and exported into an Excel spreadsheet
- Data analyzed using SPSS 16.0 using dependent t-tests and Pearson correlations
- 14% of subjects reported following the diet



All data significant ($p < 0.003$)

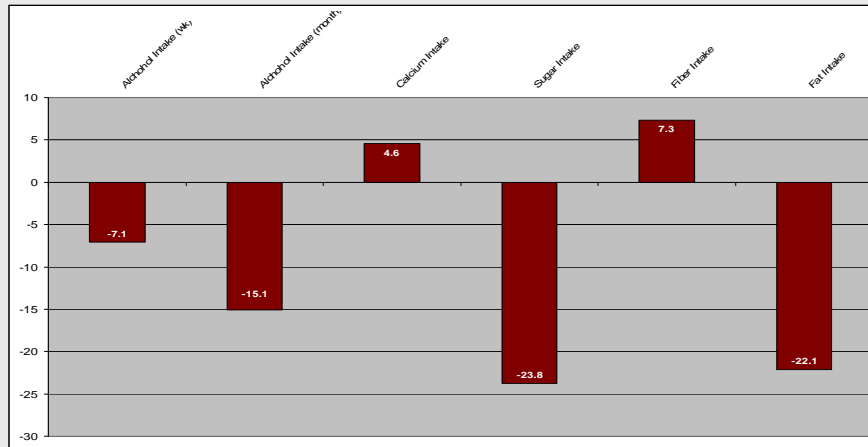


□ Weight loss correlated with:

- exercise adherence (-0.032; $p = 0.000$)
- diet adherence (-0.193; $p = 0.000$)
- Curves Complete online tracking (-0.016; $p = 0.027$)



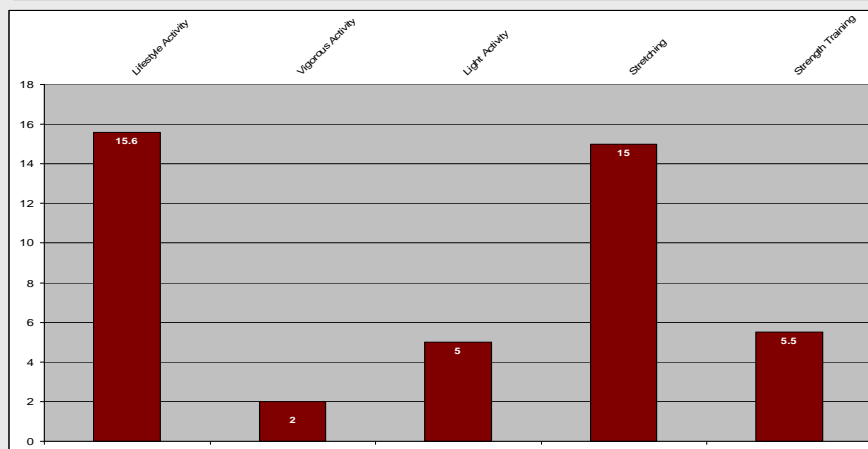
30-Day Fitness Challenge



Pre- to Post Percent Changes ($p < 0.05$)



30-Day Fitness Challenge



Pre- to Post Percent Changes ($p < 0.05$)



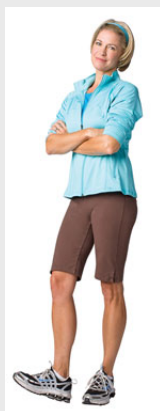
30-Day Fitness Challenge



Attitudes about Exercise	Impact of Curves Pre / Post
Exercise - Unsure	12.7% / 1.5%
Exercise – Uncomfortable	19.7% / 3.9%
Exercise – Too Tired	36.4% / 15.5%
Exercise – Too Boring	8.9% / 2.7%
No Need to Lose	1.7% / 0.6%
Exercise – Disability	4.0% / 2.4%



30-Day Fitness Challenge



curves.tamu.edu

*Significant improvements
in body composition,
markers of health, and
positive health behaviors
can be achieved through
short-term national fitness
initiatives*

13,420 New Members!



Exercise • Nutrition • Health • Performance



Exercise & Sport Nutrition Lab



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