P105 STUDY REPORT

A Double Blind Placebo Controlled Trial of the Effect of *AppTrim*® on Appetite Suppression and Obesity Management

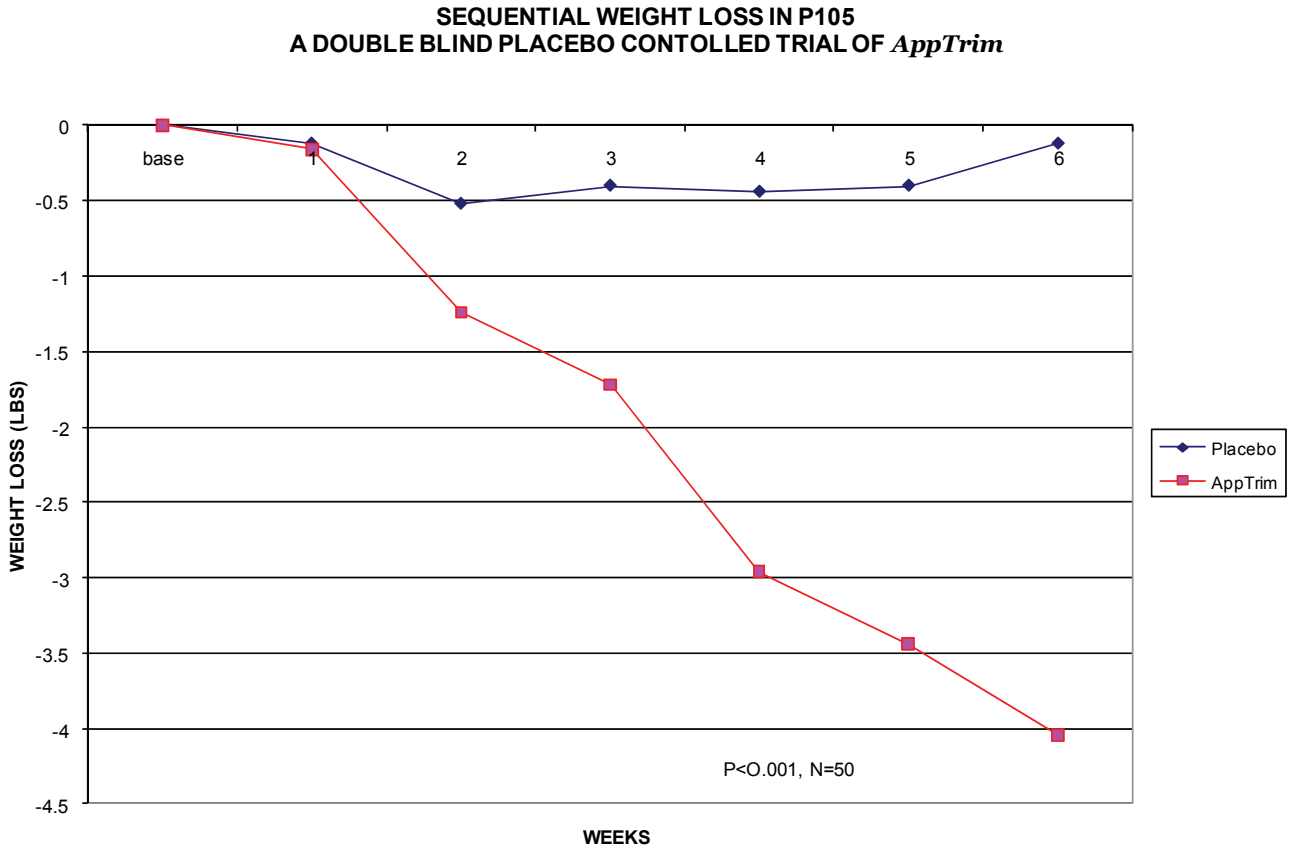
Targeted Medical Pharma Inc.

Executive Summary

Study Design: A double blind independent placebo controlled trial of ***AppTrim*** to test appetite suppression following a 14 hour fast and weight reduction after 6 weeks. The subjects at baseline were given a written diet of either 1200 cal per day for women or 1500 cal for men. The diet contained a breakfast of toast and juice. There was no other dietary counseling during the study. The subjects were neither counseled nor remunerated to stay in the study. The dropout rate was taken as a measure of the ability of either the active agent or placebo to help subjects remain on the diet.

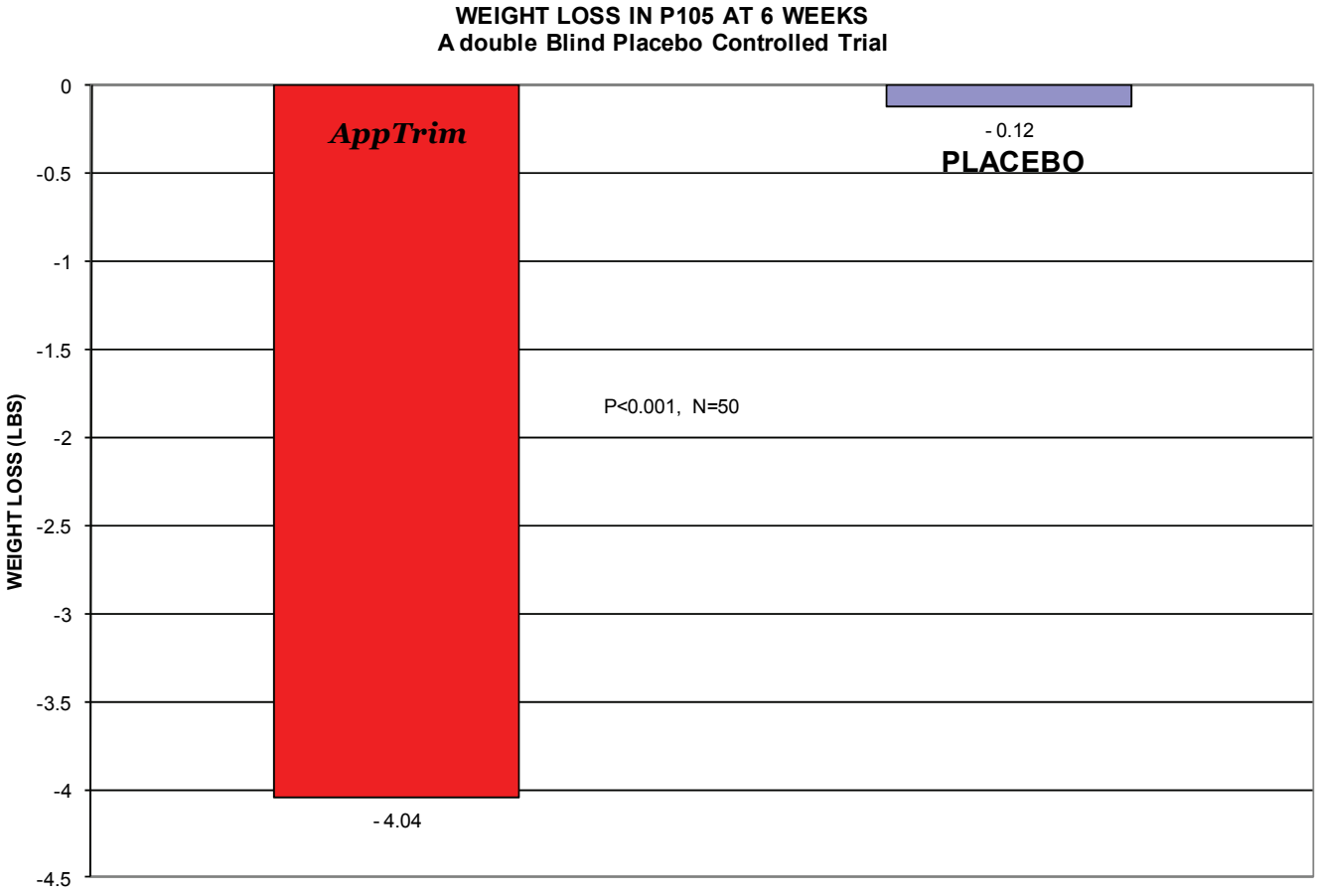
Data Analysis: There were 50 subjects studied, including 25 active and 25 placebo subjects. There was a significant reduction in the perception of hunger in the active subjects compared to the placebo group. An intention to treat data analysis was done and the dropouts were analyzed using their last available weight and other data points.

Weight Loss: Using the intention to treat analysis treatment method, there was sequential weight loss in the active group.



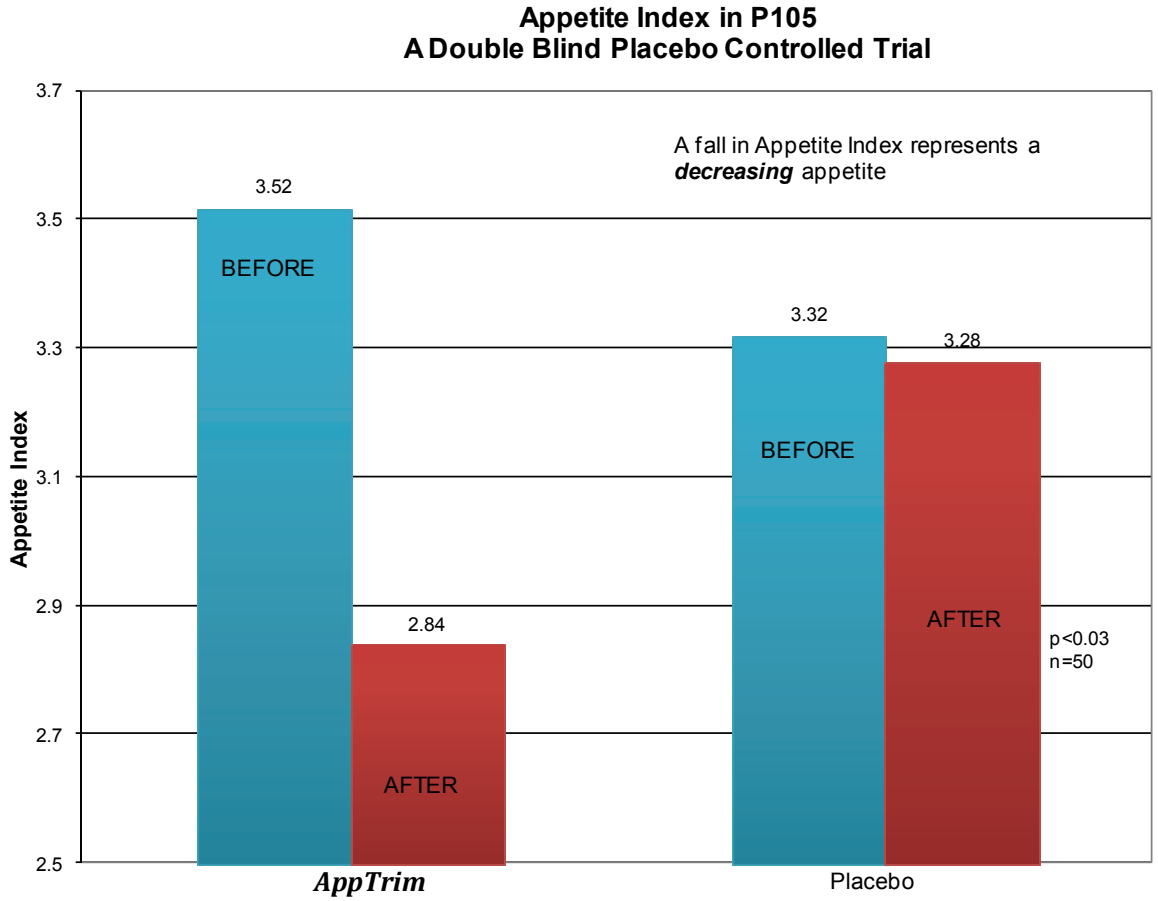
The mean weight loss in the active group was 4.04 pounds over 6 weeks compared to a 0.08 pound weight gain the placebo group ($p<0.01$).

The "Comparison of Differences" between the two groups was also significant:

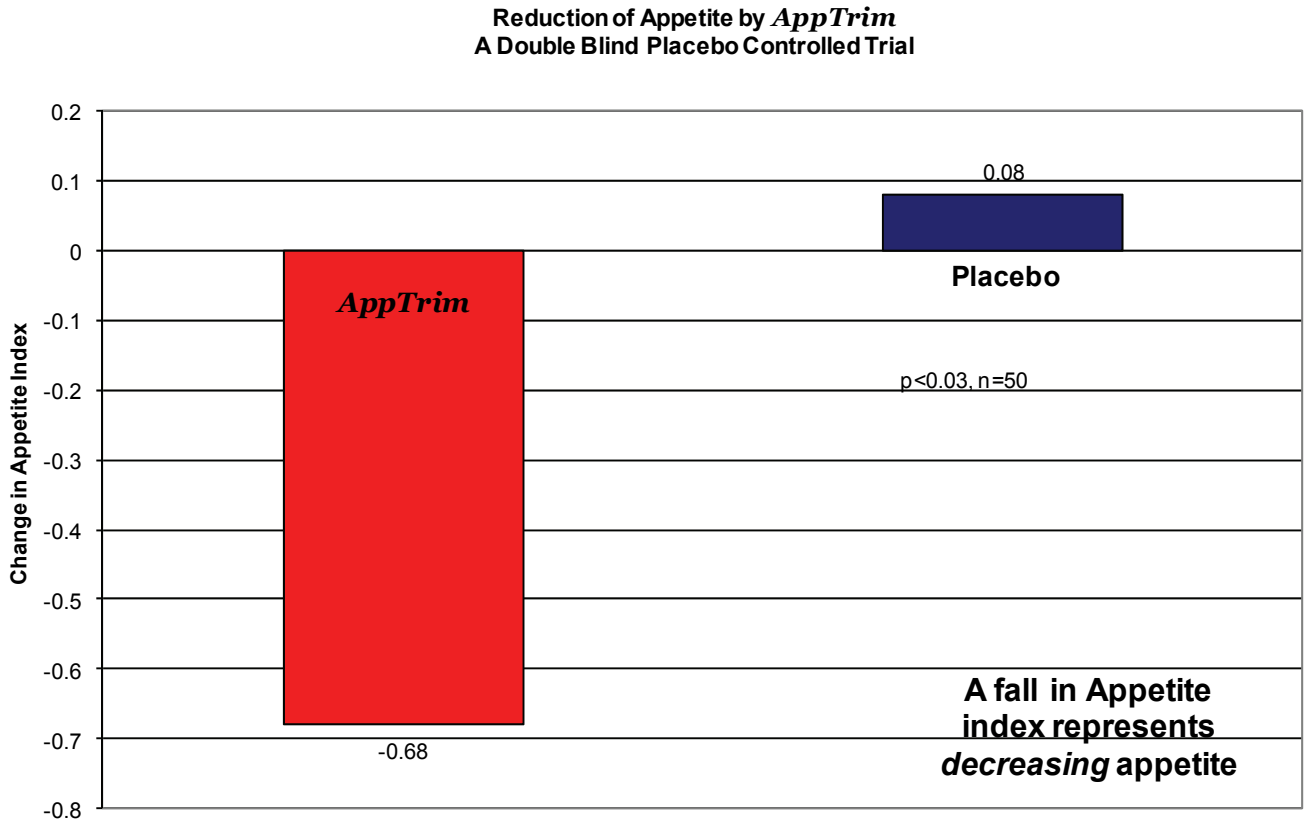


Appetite Suppression

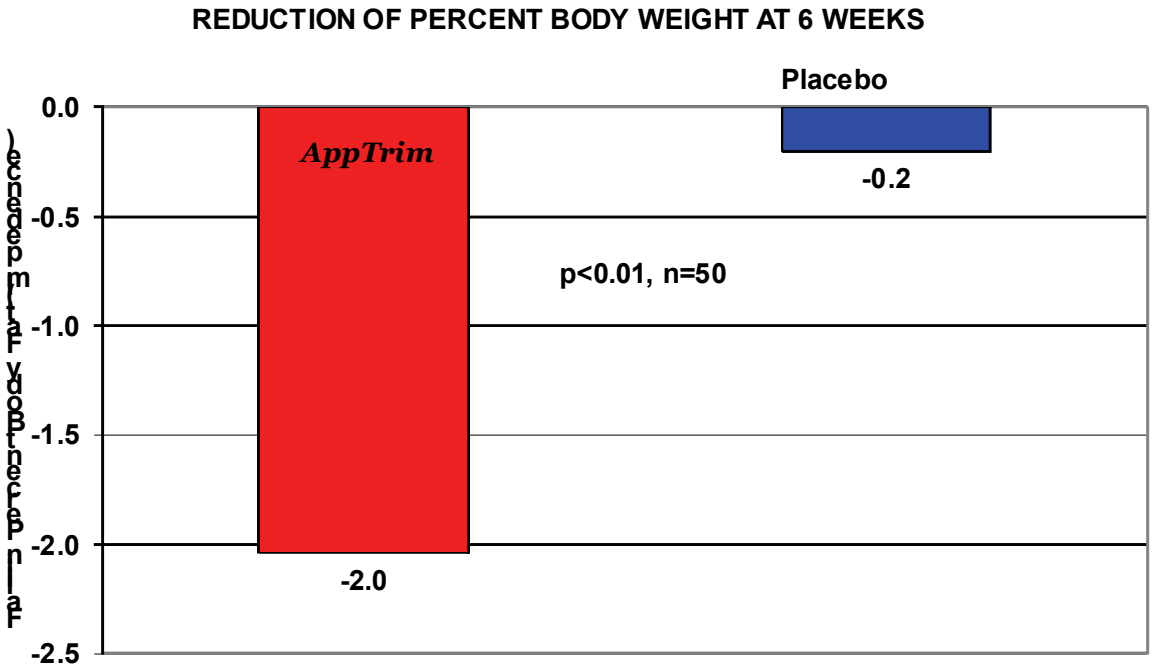
We assessed the connection between appetite suppression and weight loss by administering ***AppTrim*** or placebo twice daily for six weeks and measuring appetite by a Likert Scale questionnaire. In the group receiving AppTrim there was a statistically significant reduction of appetite during the six weeks.



The difference between the active and placebo groups at 6 weeks was statistically significant.



Percent Body Fat: In the ***AppTrim*** group there was a significant reduction in percent body fat over 6 weeks as measured by bio-electric impedance, compared to an insignificant reduction in the placebo group ($p<0.007$).



Dropout Rate: In the placebo group 13 of 25 did not complete the 6weeks while in the active group only 6 of 25 dropped out (Chi Square = 8.1, d.f.=1, $p<0.001$). Thus, subjects in the active group were more likely to stay in the study and maintain the low calorie diet.

Conclusions

The following conclusions can be drawn:

1. ***AppTrim*** reduces hunger index after a 14 hour fast.
2. ***AppTrim*** induces greater weight loss over 6 weeks compared to placebo.
3. ***AppTrim*** induces reduction of percent body fat over 6 weeks.
4. Subjects taking ***AppTrim*** are more likely to remain on a diet because of appetite suppression.
5. There is a connection between appetite suppression produced by ***AppTrim*** and weight loss.
6. The observed weight loss is a result of the adherence to a reduced calorie diet

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The Effect of *AppTrim* on Obesity Management and Compliance with a Low Calorie Diet

Hypothesis:

Serotonin and dopamine precursors combined with food-based potentiators, through their appetite suppressing effects, will enhance compliance with a low calorie diet, resulting in weight loss in humans.

Background:

Current methods for weight reduction are inadequate. It is well established that traditional weight loss programs are ineffective in producing long lasting results. Clinical research has shown that appetite suppression is the approach most likely to produce effective weight control.

Recently phentermine and fenfluramine used in combination, or dexfenfluramine used alone, have been recommended as appetite suppressants and weight control agents. These agents act through their effects on either serotonin or dopamine. In addition to its effects on appetite, serotonin is also known to reduce carbohydrate cravings.

Tryptophan and tyrosine are amino acid precursors for serotonin and dopamine respectively. Tryptophan and tyrosine cross the blood brain barrier. Dietary ingestion of tryptophan and tyrosine has been shown to stimulate the production of serotonin and dopamine respectively.

We have developed two Medical Foods to influence these mechanisms. ***AppTrim-D*** contains tyrosine and food-based potentiators. ***AppTrim-S*** contains a specially treated protein as a source of tryptophan along with food-based potentiators. This study is designed to confirm that ***AppTrim-D*** and/or ***AppTrim-S***, through their appetite suppressing effects, enhance compliance with a low calorie diet, resulting in weight loss.

Study Design:

This is a double blind placebo controlled study of 50 subjects. One group of subjects will receive ***AppTrim-D*** and ***AppTrim-S***. A second control group will receive placebo. Prior to beginning the study, subjects' height and weight will be determined. The study will first assess the products' effects on appetite suppression and carbohydrate craving as measured by questionnaire. Initially, the subjects will undergo a 14-hour fast to induce hunger. Following the fast and prior to taking a dose of ***AppTrim-D*** or placebo, the subjects will complete a questionnaire. The subjects will then take a dose of AppTrim-D or placebo. Thirty minutes later, subjects will take a dose of ***AppTrim-S*** or placebo. The subjects will complete a second questionnaire one hour later. Upon completing this second questionnaire, the subjects will be instructed to begin following a low calorie diet in conjunction with the ***AppTrim*** products or placebo, (see below). Subjects will follow the specified diet for 6 weeks and will be weighed weekly at the Appetite Control Center.

Subject Selection:

Subjects will be identified by solicitation of Appetite Control Center clients interested in taking a Medical Food that would induce appetite suppression.

A. Subject inclusion:
1. Males and females over the age of 18 and below 65.
2. At least 10 pounds over their ideal weight according to the Metropolitan Life Insurance Company tables.

B. Subject exclusion:
1. Subjects currently taking phentermine, fenfluramine, dexfenfluramine, or other anorexic agents.
2. Subjects who have previously taken either ***AppTrim-D*** or ***AppTrim-S***.
3. Patients with known endocrine disease.
4. Patients who have lost more then 10% of their body weight in the preceding 6 months.
5. Pregnant females.

Study Protocol:

Subject Enrollment:

A. Subjects will complete the participant identification form.

Pre-First Dose Diet:

B. Subjects will be instructed to refrain from ingesting any food or drinking anything other than water after 9:00 p.m. the night prior to the study. Subjects will continue these restrictions until 12:30 p.m. on the first day of the study.

First Dose and Questionnaire One:

1. At 11:00 a.m. subjects will complete "Questionnaire One." After completing the questionnaire, subjects will take a dose of ***AppTrim-D*** (Dose "A"), or placebo with a glass of water.

Second Dose:

2. At 11:30 a.m. subjects will take a dose of ***AppTrim-S*** (Dose "B"), or placebo with a glass water.

Questionnaire Two:

3. At 12:30 p.m. subjects will complete "Questionnaire Two." After completing this questionnaire, subjects may eat ad lib following the low calorie diet specified below.

Diet:

4. Subjects will be instructed to refrain from ingesting any food or drinking anything other than water after 9:00 p.m. the night prior to the study. Subjects will continue these restrictions until after completing "Questionnaire Two" at 12:30 p.m. on the first day of the study.

5. Female subjects will be instructed to follow a 1200-calorie per day calorie-exchange diet. Male subjects will be instructed to follow a 1500-calorie per day calorie-exchange diet. All subjects will be instructed to limit their breakfasts to the following; a 4 ounce glass of juice, coffee or tea with skim milk, and one slice of toast with jam or jelly. Subjects may eat less than the items specified for breakfast, but

may not substitute other items, nor eat more than the items specified. Sugar may be used in coffee, but no artificial sweeteners may be used at any time during the study.

6. Subjects will be instructed to follow the following schedule for ingesting either the ***AppTrim*** products or placebo. Subjects will ingest 2 tablets of ***AppTrim-D*** or 2 placebo tablets each day at 11:00 a.m. followed by 3 tablets of ***AppTrim-S*** or 3 placebo tablets 30 minutes later. Subjects will additionally ingest 2 tablets of ***AppTrim-D*** or 2 placebo tablets each day at 4:30 p.m. followed by 3 tablets of ***AppTrim-S*** or 3 placebo tablets 30 minutes later.

Data Collection:

1. Study Entry
    a. weight
    b. height
    c. percent body fat; determined by bio-electrical impedance and skin calipers
    d. age
    e. sex
    f. degree of physical activity
    g. subjects' weight pattern
    h. previous 6 months' weight history
    i. estimate of caffeine intake history
2. Week One
    a. weight
    b. percent body fat
    c. adverse effects
3. Week Two
    a. weight
    b. percent body fat
    c. adverse effects
4. Week Three
    a. weight
    b. percent body fat
    c. adverse effects
5. Week Four
    a. weight
    b. percent body fat
    c. adverse effects
6. Week Five
    a. weight
    b. percent body fat
    c. adverse effects
7. Week Six
    a. weight
    b. percent body fat
    c. adverse effects

Data Analysis:

The questionnaire data will be analyzed by both continuous and discontinuous parametric statistics. The data from the 5 levels of choices will be converted from discontinuous to continuous variables and Student's t-test will be performed. Subjects' weight data for pre-study weight and final study weight will be analyzed using Student's t-test for paired variables. Contingency tables will be used to analyze the discrete variables. Dunnet's t-test will be used to make serial comparisons of continuous variables.

Dropouts will be analyzed on an intention to treat basis. For each patient entered and randomized, the last available weight will be used in all subsequent weeks. For example, if "Patient A" only completes the Study Entry and Week One weights, then weeks 2,3,4, 5, and 6 will be taken as their Week One weight. The primary variable for this study will be a comparison of subjects' study-entry weight to their final weight.

The choice of 25 subjects per group was based on the assumption that the placebo group will lose one pound per week while the active group will lose 1.5 pounds per week and that a standard deviation of 6 pounds would occur.

Randomization:

A randomization scheme will be created using a random number generator. The subjects will be entered sequentially. If there is a dropout, there will be no replacement. Data from all subjects will be analyzed on an "intention to treat" basis. Records will be kept of all dropouts and their data will be analyzed as if they had experienced no change.

Principal investigator:

_____ _____

William Shell, M.D. Date

_____ _____

Witness Date

AppTrim Research Study
Participant Information

Please print the following information:

First and Last Name _____

Address _____

City, State, Zip Code _____

Phone _____

Age _____ Male ____ Female ____

Height _____ Weight _____

Are you currently taking the weight loss medications known as Fen-Phen?
(fenfluramine and phentermine)
_____ Yes _____ No

Are you currently taking the weight loss medication known as Redux (dexfenfluramine)?
_____ Yes _____ No

Are you currently taking any other weight loss medications?
_____ Yes _____ No

Have you ever taken AppTrim-D or AppTrim-S before?
_____ Yes _____ No

Signature _____

Date _____ Subject ID Number _____

Instructions to Follow

Preparation:

The night before starting the study, do *not* eat anything after 9:00 p.m. or drink anything other than water. Do *not* take Fen-Phen, Redux, or any medications with amphetamine-like components after 9:00 p.m. and until the study is completed.

Do *not* take any other products that are designed to suppress appetite after 9:00 p.m. until the study is completed.

Do *not* eat anything for breakfast. Do *not* eat or drink anything other than water until after completing the second questionnaire. After completing the second questionnaire you may eat according to the enclosed diet instructions.

Schedule:

11:00 a.m. Complete "Questionnaire One."
After completing the questionnaire chew 1 capsules of ***AppTrim-D***.

11:30 a.m. Chew 1 capsules of ***AppTrim-S***.

12:30 p.m. Complete "Questionnaire Two."
After completing the questionnaire, you may eat according to the enclosed diet instructions.

For the remainder of the 6-week study, take the products according to this schedule:

11:00 a.m. Chew 1 capsules of ***AppTrim-D***.

11:30 a.m. Chew 1 capsules of ***AppTrim-S***.

4:30 p.m. Chew 1 capsules of ***AppTrim-D***.

5:00 p.m. Chew 1 capsules of ***AppTrim-S***.

Questionnaire One: 11:00 a.m.

Subject ID Number _____

Print your initials _____ Date _____

Please rate how hungry you feel at this time.
___ very hungry
___ moderately hungry
___ mildly hungry
___ minimally hungry
___ not hungry

Please rate your desire for carbohydrates *last night.*
(chips, cake, cookies, ice cream, etc.)
___ very strong desire
___ moderately strong desire
___ mild desire
___ minimal desire
___ no desire

Please rate your *usual* desire for carbohydrate snacks.
___ very strong desire
___ moderately strong desire
___ mild desire
___ minimal desire
___ no desire

Please rate your level of desire for carbohydrates at this time?
(cookies, bread, chips, ice cream, etc.)
___ very strong desire
___ moderately strong desire
___ mild desire
___ minimal desire
___ no desire

Please describe any other effects you may have noticed

_____

_____

_____

_____

Questionnaire Two: 12:30 p.m.

Subject ID Number _____

Print your initials _____ Date _____

Please rate how hungry you feel at this time.
___ very hungry
___ moderately hungry
___ mildly hungry
___ minimally hungry
___ not hungry

Please rate your level of desire for carbohydrates at this time?
(cookies, bread, chips, ice cream, etc.)
___ very strong desire
___ moderately strong desire
___ mild desire
___ minimal desire
___ no desire

Did you experience any unwanted effects?
___ no unwanted effects
___ headache
___ itching
___ nausea
___ skin rash
___ other (please describe or use the following space for any other comments)

The *AppTrim* Diet

The ***AppTrim*** diet is a "calorie exchange" diet that is easy to follow and gives you tremendous flexibility in your food choices. Instead of counting calories or grams of fat, you simply count *portions* of food. All you need to do is keep track of how many portions you eat of 3 groups of food;

- meat/milk/protein..... (100 calories per portion)
- bread/pasta/cereal..... (100 calories per portion)
- fat/oil..... (50 calories per portion)

You can eat as much fruit or vegetables as you like.

IMPORTANT: Being aware of proper portion sizes is the key to the *AppTrim* diet.
It's very simple to remember:

One portion of meat/milk/protein or pasta/cereal is the size of a deck of playing cards or the size of the palm of your hand.
One slice of bread is one portion.
One portion of fat or oil is the size of a pat of butter.

Once you learn to focus on portion size, you can exchange one kind of food for another. It's as if you were making change for a ten-dollar bill. You could use five-dollar bills, one-dollar bills, or quarters. It's the same with calories; any calorie equals any other calorie.

IMPORTANT: During this 6 week research study you may have any or all of the following items for breakfast. You may *not* substitute other items. You may eat fewer than all of the items, but you may *not* eat more than this for breakfast.

One 4-ounce glass of juice and/or, coffee or tea with non-fat milk and/or, one slice of toast with jam or jelly (approximately 150 calories).

* DO NOT USE ARTIFICIAL SWEETENERS OR DIET SOFT DRINKS DURING THIS STUDY.

For Women:

1,200 calories per day can be...
4 portions of meat/protein (400 calories)
6 portions of bread/pasta (600 calories)
4 portions of fat/oil (200 calories)
or you can eat...
5 portions of meat/protein (500 calories)
6 portions of bread/pasta (600 calories)
2 portions of fat/oil (100 calories)
or you can eat...
3 portions of meat/protein (300 calories)
8 portions of bread/pasta (800 calories)
2 portions of fat/oil (100 calories)

For Men:

1,500 calories per day can be...
5 portions of meat/protein (500 calories)
8 portions of bread/pasta (800 calories)
4 portions of fat/oil (200 calories)
or you can eat...
6 portions of meat/protein (600 calories)
6 portions of bread/pasta (600 calories)
6 portions of fat/oil (300 calories)
or you can eat...
8 portions of meat/protein (800 calories)
6 portions of bread/pasta (600 calories)
2 portions of fat/oil (100 calories)

or... any other combination of portions that provide the number of calories you wish to eat

DATA ANALYSIS

Patient Demographics

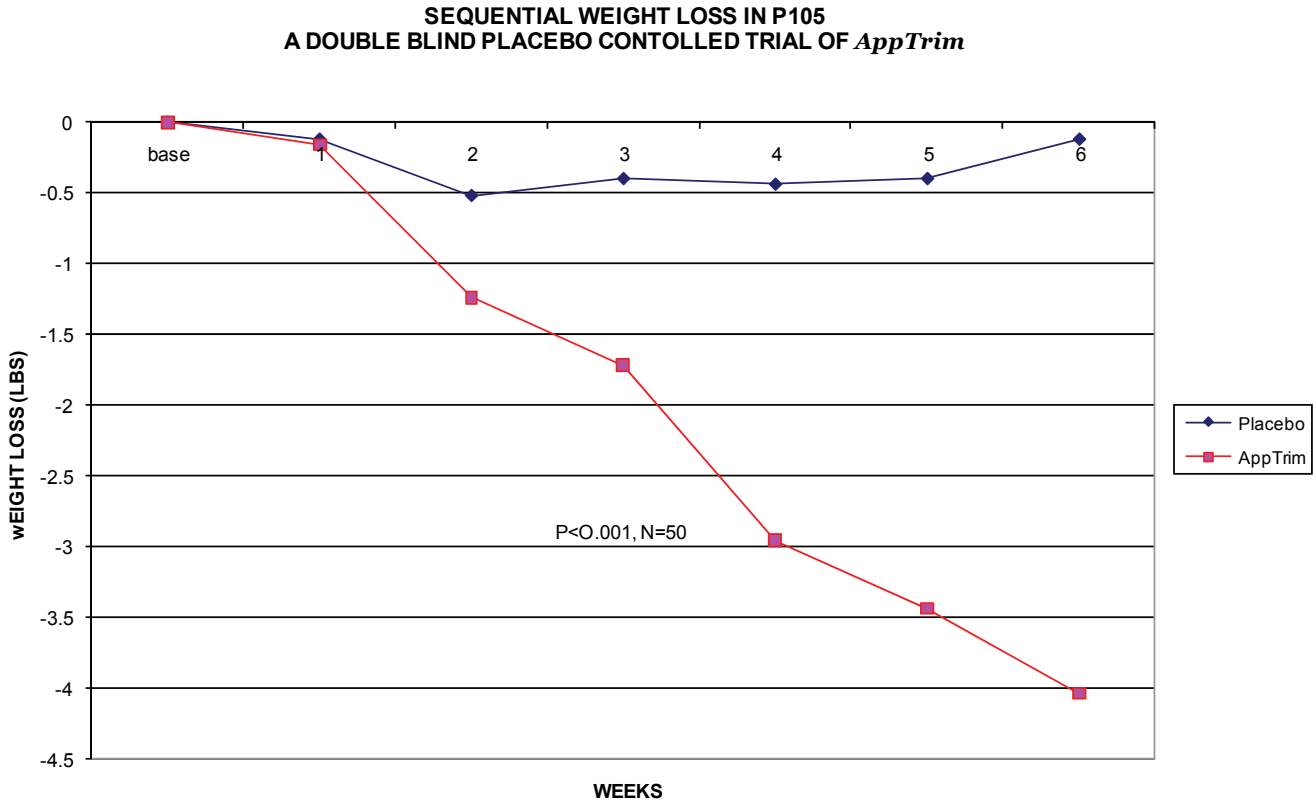
There were 50 patients randomized to 25 active and 25 placebo subjects. There were 19 females in the active group and 21 females in the placebo group (p;ns). The average age was 45.9 years in the active group and 43.8 in the placebo group (p;ns). The mean baseline weight in the active group was 175.6 +/-46 lbs. In the placebo group, the mean baseline weight was 169.8 +/- 56 lbs. (p=0.33).

WEIGHT LOSS IN ACTIVE AND PLACEBO PATIENTS

Body weight was measured at baseline and then weekly for six weeks. For the 25 active subjects the results were:

weight in pounds	Weight-week 1	Weight-week 2	Weight-week 3	Weight-week 4	Weight-week 5	Weight-week 6
204	204	204	204	204	204	204
203	203	204	201	197	195	193
172	171	171	170	170	170	170
248	246	247	242	238	236	237
154	156	152	152	152	151	151
174	174	175	171	170	169	164
163	164	166	166	167	163	163
158	158	158	158	156	155	152
174	174	172	173	171	172	173
139	139	138	137	137	137	135
157	158	154	153	153	155	153
214	212	213	212	210	212	214
199	199	195	198	190	189	186
154	153	154	154	153	153	154
127	128	128	129	130	128	128
184	183	181	184	176	175	178
265	270	264	264	264	264	264
152	152	152	150	150	148	147
123	123	119	120	121	122	123
170	168	167	168	167	169	170
171	173	173	174	172	172	172
129	129	129	129	129	129	129
136	134	131	129	127	127	125
241	239	238	237	240	239	235
173	170	168	166	166	164	163
175.36	175.2	174.12	173.64	172.4	171.92	171.32
0	-0.16	-1.24	-1.72	-2.96	-3.44	-4.04

The sequential changes in weight, normalized for baseline, are depicted in the next graph:



The weight changes between baseline and week 6 weight in active and placebo were compared using paired Student's t-tests. The statistical comparison of the active group was:

Active group--***AppTrim***
t-Test: Paired Two Sample for Means

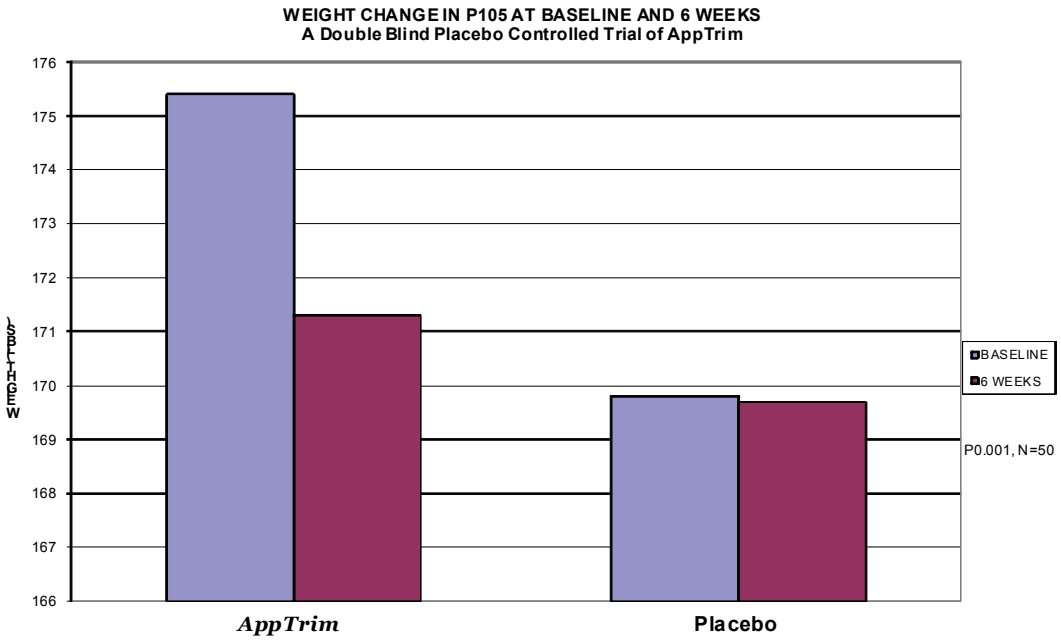
	baseline	*week 6*
Mean	175.36	171.32
Variance	1406.24	1344.06
Observations	25	25
Pearson	0.992907	

Correlation	
Hypothesized Mean Difference	0
df	24
t Stat	4.4937
P(T<=t) one-tail	**7.53E-05**
t Critical one-tail	1.710882
P(T<=t) two-tail	0.000151
t Critical two-tail	2.063898

The comparison of baseline and week 6 in the placebo group showed:

Placebo Group
t-Test: Paired Two Sample for Means

	baseline	*Week 6*
Mean	169.84	169.72
Variance	2917.39	2929.127
Observations	25	25
Pearson Correlation	0.999513	
Hypothesized Mean Difference	0	
df	24	
t Stat	0.354787	
P(T<=t) one-tail	**0.362924**	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.725848	
t Critical two-tail	2.063898	



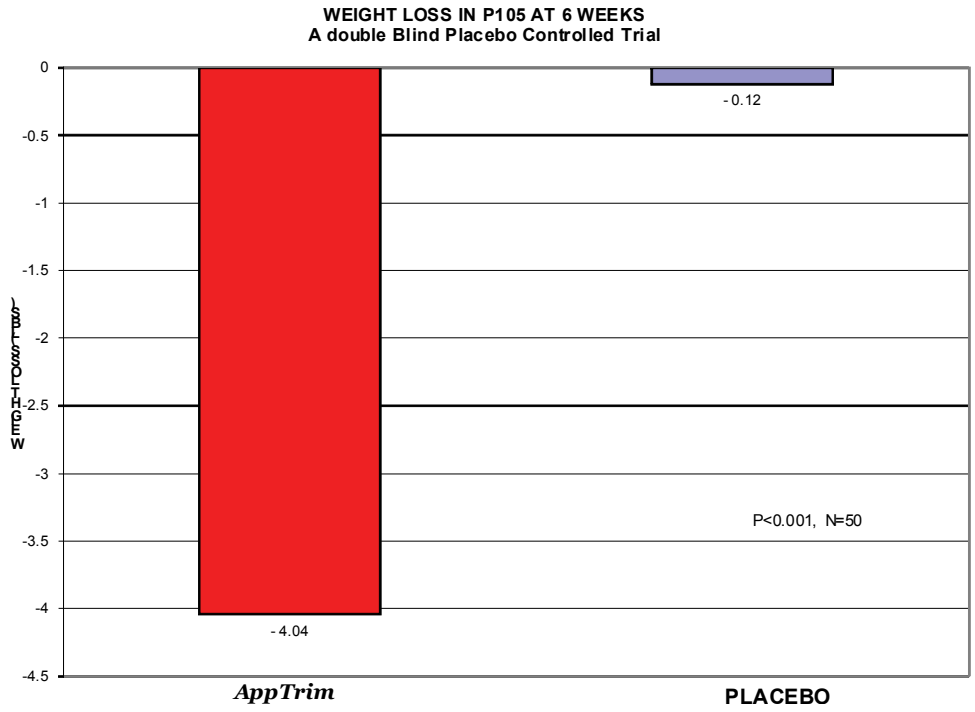
The graphical representation of these differences is depicted in the graph:

Importantly, the differences between baseline and week 6 in active and placebo were compared using a non-paired Student's t-test with equal variances. The results showed:

comparison of differences
t-Test: Two-Sample Assuming Equal Variances

	active	*placebo*
Mean	-4.04	-0.12
Variance	20.20667	2.86
Observations	25	25
Pooled Variance	11.53333	
Hypothesized Mean Difference	0	
df	48	
t Stat	-4.08097	
P(T<=t) one-tail	**8.43E-05**	
t Critical one-tail	1.677224	
P(T<=t) two-tail	0.000169	
t Critical two-tail	2.010634	

The graphical depiction of these changes is depicted in the following graph:



Thus, compared to baseline the active group lost 4.04 pounds in 6 weeks compared to 0.12 pounds in the placebo group. The p value was less then 0.000001 for this relationship.

HUNGER INDEX ANALYSIS IN ACTIVE AND PLACEBO PATIENTS

The hunger index was calculated from the 11:00 a.m. and 12:30 p.m. questionnaires. In this analysis, we assigned the following values:

Please rate how hungry you are at this time:

____Very hungry	5
____Moderately hungry	4
____Mildly hungry	3
____Minimally hungry	2
____Not hungry	1

This response to this question was obtained at 11:00 a.m. and 12:30 p.m. The scale was called the hunger index. When the 12:30 p.m. value was subtracted from the 11:00 a.m. value, the calculated value was called the difference. When subjects became hungrier their hunger index fell and the difference increased.

For the 25 active subjects, the results were:

1130 HUNGER INDEX	1230 HUNGER INDEX
4	4
4	1
1	2
1	1
4	3
5	4
4	2
4	5
4	2
4	1
5	3
4	5
3	5
3	3
4	1
1	3
4	4
3	2
4	2
4	3
3	4
2	2

4	3
5	2
4	4
3.52	2.84

Comparison of the hunger index at 11:30 a.m. to 12:30 p.m. showed a statistically significant reduction in hunger by 12:30. The statistical comparison was done using a paired t-test. The p- value was less then 0.02.

Group 2 appetite index

t-Test: Paired Two Sample for Means
AppTrim

	11:30	*12:30*
Mean	3.52	2.84
Variance	1.343333	1.64
Observations	25	25
Pearson Correlation	0.19875	
Hypothesized Mean Difference	0	
df	24	
t Stat	2.197745	
P(T<=t) one-tail	**0.018928**	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.037856	
t Critical two-tail	2.063898	

The mean fell from 3.52 to 2.84 with a p-value of 0.018. Thus, in the active subjects the AppTrim resulted in a fall in perceived hunger.

In the placebo subjects, there was no significant difference in the perception of hunger between 11:30 a.m. and 12:30 p.m.:

1130 HUNGER INDEX	1230 HUNGER INDEX
3	4
4	4
1	4
4	3
5	4
3	3
5	3
2	2
4	4
2	3
5	3
5	3
1	1
1	1
4	5
5	5
3	2
3	2
4	4
4	4
1	1
3	4
4	3
4	5
4	5
3.36	3.28

A paired t-test was used to assess the difference:

Group 1 appetite index

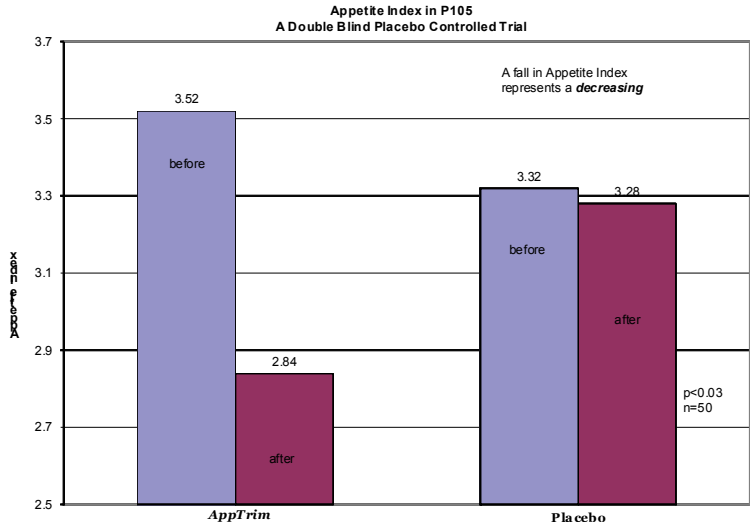
t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.32	3.24
Variance	1.81	1.606667

Observations	25	25
Pearson Correlation	0.612793	
Hypothesized Mean Difference	0	
df	24	
t Stat	0.347279	
P(T<=t) one-tail	**0.365704**	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.731408	
t Critical two-tail	2.063898	

The mean appetite index at 11:30 was 3.32 and was 3.24 at 12:00. The p value was 0.37, ns. Thus, the placebo group did not experience appetite suppression.

Graphical depiction of the two groups:



To more precisely compare the differences between the two groups, a difference was calculated. The differences were then compared by a non-paired t-test with equal variances.

hunger index difference

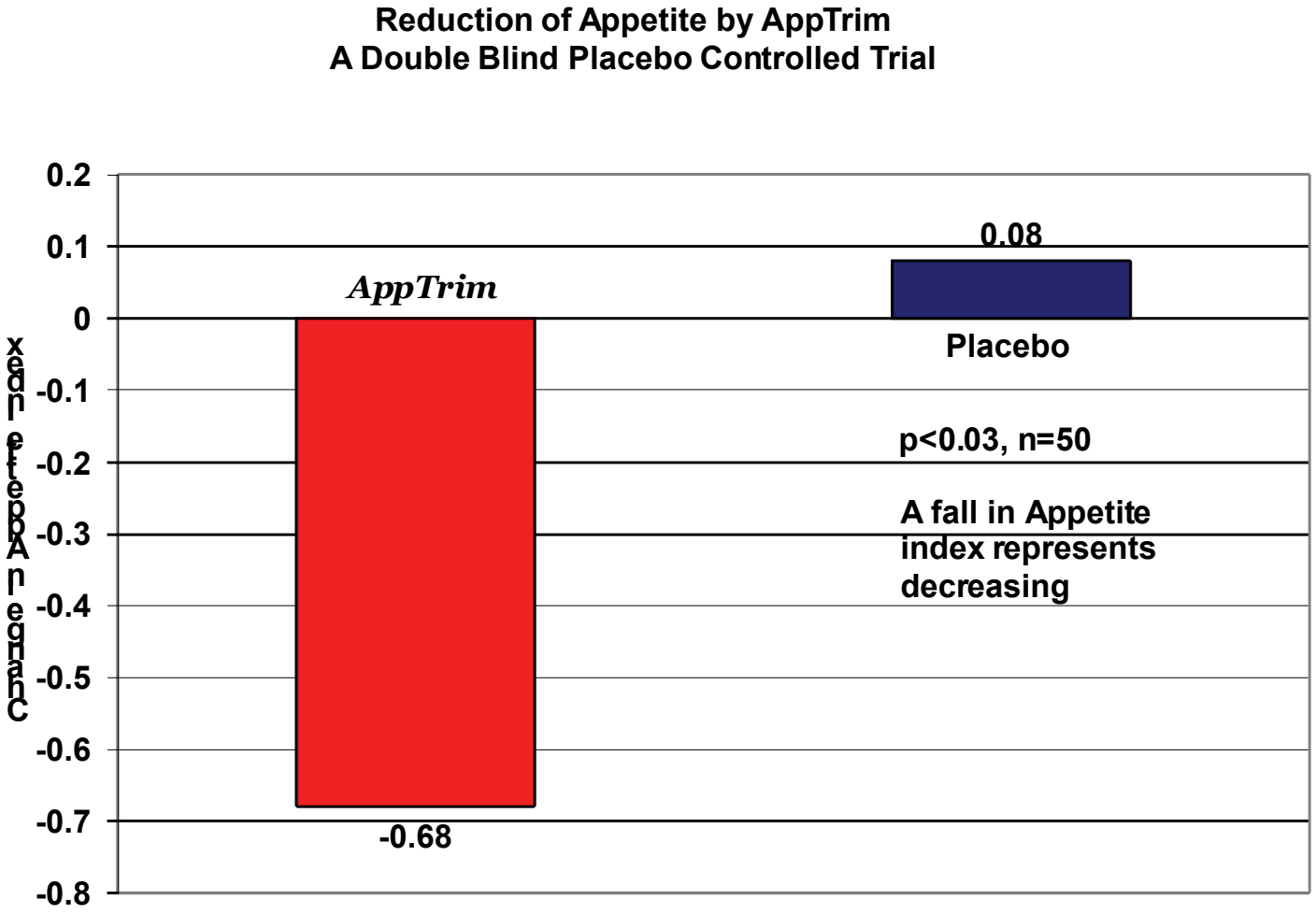
t-Test: Two-Sample Assuming Equal Variances

Comparison of appetite index differences

	AppTrim	*Placebo*
Mean	0.68	-0.08
Variance	2.393333333	1.326667
Observations	25	25
Pooled Variance	1.86	
Hypothesized Mean Difference	0	
df	48	

t Stat	1.97020822
P(T<=t) one-tail	**0.027299045**
t Critical one-tail	1.677224191
P(T<=t) two-tail	0.054598091
t Critical two-tail	2.01063358

The appetite index fell by .68 units but rose by 0.08 units in the placebo group. This difference was significantly different (p<0.027).



Thus, one can conclude that following a 14 hour fast, AppTrim reduced appetite.

COMPARISON OF CARBOHYDRATE CRAVING IN ACTIVE AND PLACEBO SUBJECTS

To analyze the desire for carbohydrate craving, the questionnaire at 11:30 and 12:30 were used. A carbohydrate-craving index was calculated from the questionnaire:

Please rate your level of desire for carbohydrates at this time
(cookies, bread, chips, ice cream, etc.).

___ very strong desire	5
___ moderately strong desire	4
___ mild desire	3
___ minimal desire	2
___ no desire	1

If the subjects desire for carbohydrate fell, the index decreased.

Active Subjects:

1130 CURRENT CHO INDEX	1230 CHO INDEX
1	1
4	4
1	1
1	1
4	2
4	3
4	1
3	5
4	2
5	5
5	4
4	4
3	4
2	3
2	3
1	1
3	4
3	2
4	3
4	4
3	3
2	2
4	2
3	1

4	4
3.12	2.76

Comparison of the carbohydrate index at 11:30 a.m. to the 12:30 p.m. questionnaire showed a reduction in carbohydrate craving in the active group. The statistical comparison was done using a paired t-test. The p-value was 0.07.

t-Test: Paired Two Sample for Means
CHO craving Active group

	11:30	*12:30*
Mean	3.12	2.76
Variance	1.526667	1.773333333
Observations	25	25
Pearson Correlation	0.575347	
Hypothesized Mean Difference	0	
df	24	
t Stat	1.517668	
P(T<=t) one-tail	**0.071081**	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.142161	
t Critical two-tail	2.063898	

The mean fell from 3.12 to 2.76 with a p-value of 0.07. Thus in the active subjects there was a decrease in the craving for carbohydrate which approached statistical significance.

In the Placebo subjects, there was no significant change in carbohydrate craving.

1230 HUNGER INDEX	1130 CURRENT CHO INDEX
4	4
4	4
4	4
3	4
4	4
3	3
3	5
2	3
4	2
3	2
3	5
3	3
1	1
1	1
5	4
5	4
2	2
2	2
4	3
4	3
1	1
4	1
3	4
5	3
5	4
3.28	3.04

A paired t-test was used to assess the difference:

t-Test: Paired Two Sample for Means
Carbohydrate craving group 1

	11:30	*12:30*
Mean	3	2.8
Variance	1.5	1.583333
Observations	25	25
Pearson Correlation	0.78407	
Hypothesized Mean Difference	0	
df	24	
t Stat	1.224745	
P(T<=t) one-tail	**0.116278**	
t Critical one-tail	1.710882	

P(T<=t) two-tail	0.232557
t Critical two-tail	2.063898

There was no significant difference in the means.

To more precisely compare the differences between the two groups, a difference was calculated. The differences were then compared by a non-paired t-test with equal variances.

t-Test: Two-Sample Assuming Equal Variances
carbohydrate craving differences

	Active	*Placebo*
Mean	-0.32	-0.2
Variance	1.393333333	0.666667
Observations	25	25
Pooled Variance	1.03	
Hypothesized Mean Difference	0	
df	48	
t Stat	-0.418039809	
P(T<=t) one-tail	**0.33889117**	
t Critical one-tail	1.677224191	
P(T<=t) two-tail	0.677782341	
t Critical two-tail	2.01063358	

PERCENT BODY FAT MEASURED BY BIO-ELECTRIC IMPEDANCE

Percent Body fat was measured by electrical impedance using the Tanta Device. The percent body fat was measured at baseline and each weekly visit.

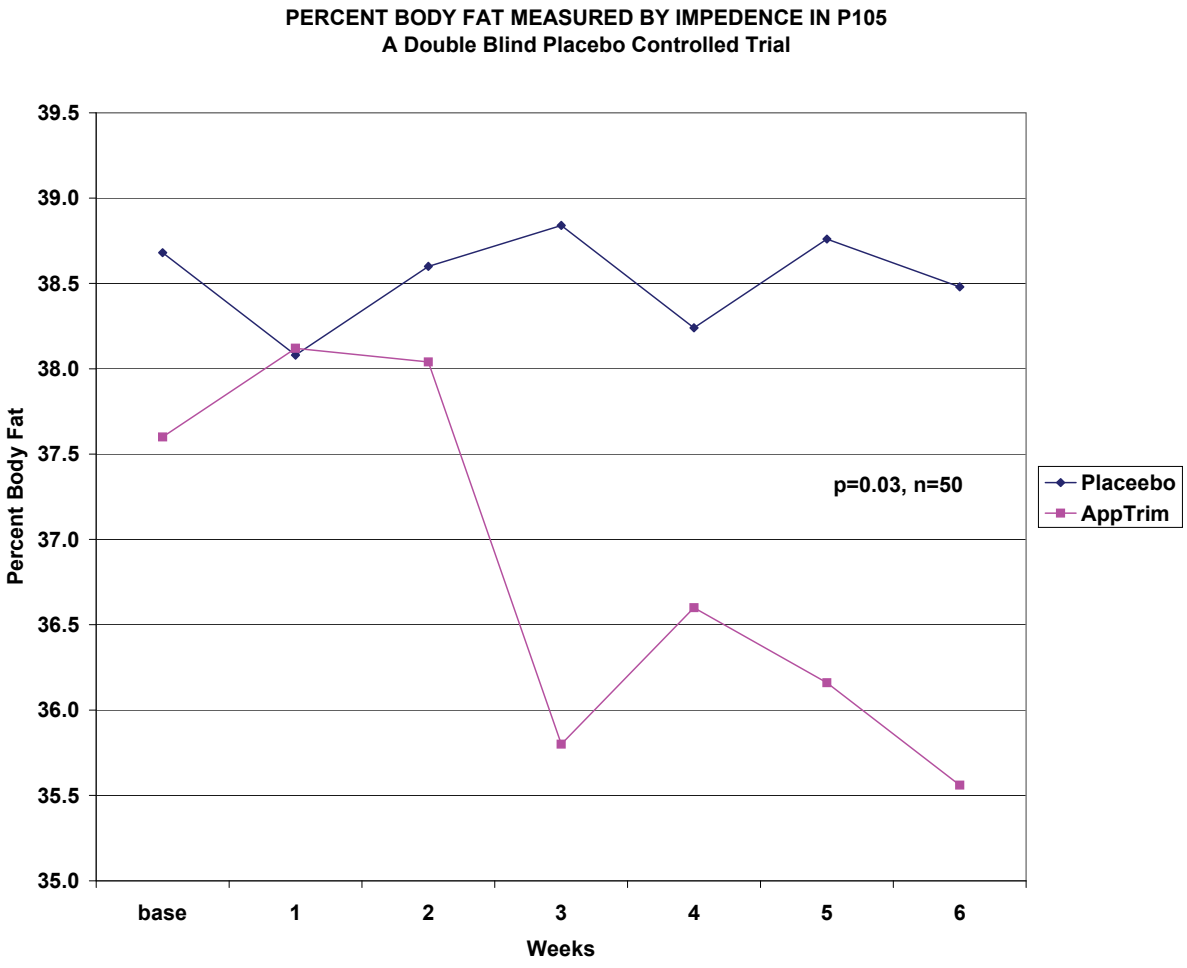
The sequential percent body fat changes in the 25 active subjects were:

baseline	1 week	2 weeks	3 weeks	4 weeks	5 weeks	6 weeks
25	25	25	25	25	25	25
25	25	24	24	23	23	23
45	45	45	37	44	40	43
73	73	80	66	68	67	64
38	37	30	35	34	33	32
23	25	24	22	21	21	21
41	42	41	38	36	36	36
42	44	44	43	42	43	41
37	36	36	33	36	35	32
44	49	44	45	44	44	40
34	33	33	32	34	32	31
44	46	46	43	45	45	44
32	32	33	33	32	33	32
34	32	31	32	31	29	32
26	27	28	27	25	25	25
45	44	45	42	43	42	41
33	34	37	18	34	34	35
42	42	42	41	39	41	41
34	42	40	38	40	38	35
53	48	54	54	54	54	54
35	35	35	35	35	35	35
29	30	29	27	27	28	28
31	31	31	31	31	31	31
41	41	40	41	40	38	38
34	35	34	33	32	32	30
37.6	38.1	38.0	35.8	36.6	36.2	35.6
0.0	0.5	0.4	-1.8	-1.0	-1.4	-2.0

The sequential percent body fat for the 25 placebo subjects were:

baseline	1 week	2 weeks	3 weeks	4 weeks	5 weeks	6 weeks
30	22	29	31	28	29	29
44	46	45	45	45	45	44
37	36	36	35	35	37	37
54	54	54	54	54	54	54
31	30	29	30	28	30	29
25	25	26	26	26	26	26
42	43	43	42	42	40	39
35	36	34	34	34	34	34
34	35	35	35	35	35	35
37	34	33	37	37	37	37
34	18	32	32	33	32	32
31	30	30	31	31	31	31
75	75	75	75	75	75	75
31	30	30	31	30	29	30
30	32	31	31	31	31	31
30	29	30	30	30	30	30
38	41	42	42	42	42	42
39	44	38	38	38	38	38
34	36	34	33	33	36	32
34	37	35	35	34	36	34
57	57	57	57	57	57	57
44	45	45	45	40	43	45
31	31	33	33	30	33	32
41	37	40	40	39	40	40
49	49	49	49	49	49	49
38.7	38.1	38.6	38.8	38.2	38.8	38.5
0.0	-0.6	-0.1	0.2	-0.4	0.1	-0.2

The graphical depiction of the two groups is:



A comparison of baseline to week 6 using a paired t-test showed statistical significance:

AppTrim
t-Test: Paired Two Sample for Means

	baseline	*6 weeks*
Mean	37.6	35.56
Variance	109.9167	90.17333
Observations	25	25
Pearson Correlation	0.972477	
Hypothesized Mean Difference	0	
df	24	

t Stat	4.014172
P(T<=t) one-tail	**0.000254**
t Critical one-tail	1.710882
P(T<=t) two-tail	0.000508
t Critical two-tail	2.063898

The percent body weight fell from 37.6% to 35.6% in six weeks and the p-value was 0.000254.

The changes in the placebo group between baseline and week 6 were also compared by a paired t-test:

Placebo
t-Test: Paired Two Sample for Means

	Baseline	*week 6*
Mean	38.68	38.48
Variance	117.7267	120.4267
Observations	25	25
Pearson Correlation	0.992016	
Hypothesized Mean Difference	0	
df	24	
t Stat	0.722315	
P(T<=t) one-tail	0.23854	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.477081	
t Critical two-tail	2.063898	

There was no significant difference between base line and week 6 in the placebo group.

Importantly, we compared the differences between baseline and week 6 in the active and placebo group to one another using an unpaired t-test:

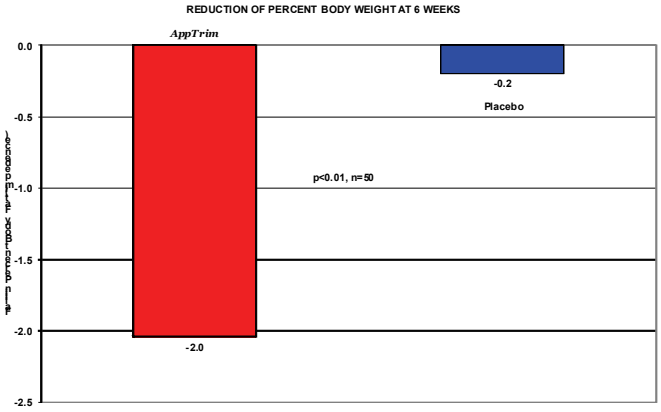
Comparison of differences
t-Test: Two-Sample Assuming Equal Variances

	Active	*Placebo*
Mean	-1.68	-0.2
Variance	6.643333	1.916667
Observations	25	25
Pooled Variance	4.28	
Hypothesized Mean Difference	0	
df	48	
t Stat	-2.52927	
P(T<=t) one-tail	**0.007385**	
t Critical one-tail	1.677224	

P(T<=t) two-tail	0.014769
t Critical two-tail	2.010634
t Critical two-tail	2.010634

The percent body fat fell by 1.67% in the active group and by 0.2% in the placebo group. The difference was significant with a p value of 0.0007. This data is graphically displayed:

Thus, AppTrim induced a 1.67% fall in percent body fat in 6 weeks.



Sequential BMI

Body mass index (BMI) was measured sequentially at baseline and weekly for 6 weeks.

The sequential data for the 25 active subjects is:

Baseline	1 wk	2 wks	3 wks	4 wks	5 wks	6 wks
29	29	29	29	29	29	29
29	29	29	29	28	28	28
32	32	32	28	32	32	32
39	39	39	38	37	37	37
25	26	25	25	24	25	25
27	27	27	26	26	26	26
26	26	27	27	27	27	27
26	26	26	26	26	26	26
28	28	28	28	28	28	28
28	28	28	28	28	28	28
25	25	25	25	24	25	25
32	32	32	32	32	32	32
29	29	28	29	29	28	29
24	24	24	24	24	24	24
25	25	25	25	26	25	25
29	29	28	29	28	29	29
31	31	31	31	30	30	30
43	43	42	42	42	42	42
27	27	27	27	27	27	27
22	22	21	21	22	22	22
24	24	23	23	22	22	22
30	31	31	31	30	30	30
23	23	23	23	23	23	23
28	27	27	26	26	26	26
36	36	35	35	36	35	35
28.68	28.72	28.48	28.28	28.24	28.24	28.28

The sequential BMI observations in the 25 placebo patients are:

Baseline	1 wk	2 wks	3 wks	4 wks	5 wks	6 wks
25	26	25	25	26	26	25
20	18	20	21	21	20	20
25	25	25	25	25	25	25
27	27	28	28	27	27	27
25	25	25	24	21	25	25
43	43	43	43	43	43	43
22	22	22	22	22	22	22
31	31	31	31	31	31	31

30	29	29	29	28	28	29
23	23	23	23	23	23	23
24	24	24	24	24	24	24
23	23	23	23	23	23	23
28	29	29	29	29	29	29
46	46	46	46	46	46	46
28	28	28	28	28	27	28
24	24	23	24	24	24	24
23	22	22	23	23	23	23
25	25	25	25	25	25	25
28	28	28	28	28	28	28
44	44	44	44	44	44	44
28	28	28	28	28	28	28
21	21	21	22	21	21	22
29	29	29	29	29	30	29
33	33	33	33	33	33	33
24	24	24	23	23	23	24
27.96	27.88	27.92	28	27.8	27.92	28

We compared the baseline to week 6 in the active group using a paired t-test:

Group 2
t-Test: Paired Two Sample for Means

	baseline	*6 weeks*
Mean	28.64	28.24
Variance	24.07333	21.69
Observations	25	25
Pearson Correlation	0.988595	
Hypothesized Mean Difference	0	
df	24	
t Stat	2.618615	
P(T<=t) one-tail	**0.007528**	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.015056	
t Critical two-tail	2.063898	

The BMI fell from 28.64 to 28.24, P=0.0075.

We compared the BMI at baseline to week 6 in the placebo group using a paired t-test:

t-Test: Paired Two Sample for Means
Group 1

	Baseline	*6 weeks*
Mean	28	28.04

Variance	48.08333	47.45667
Observations	25	25
Pearson Correlation	0.998731	
Hypothesized Mean Difference	0	
df	24	
t Stat	-0.56949	
P(T<=t) one-tail	0.287156	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.574313	
t Critical two-tail	2.063898	

The changes were insignificant.

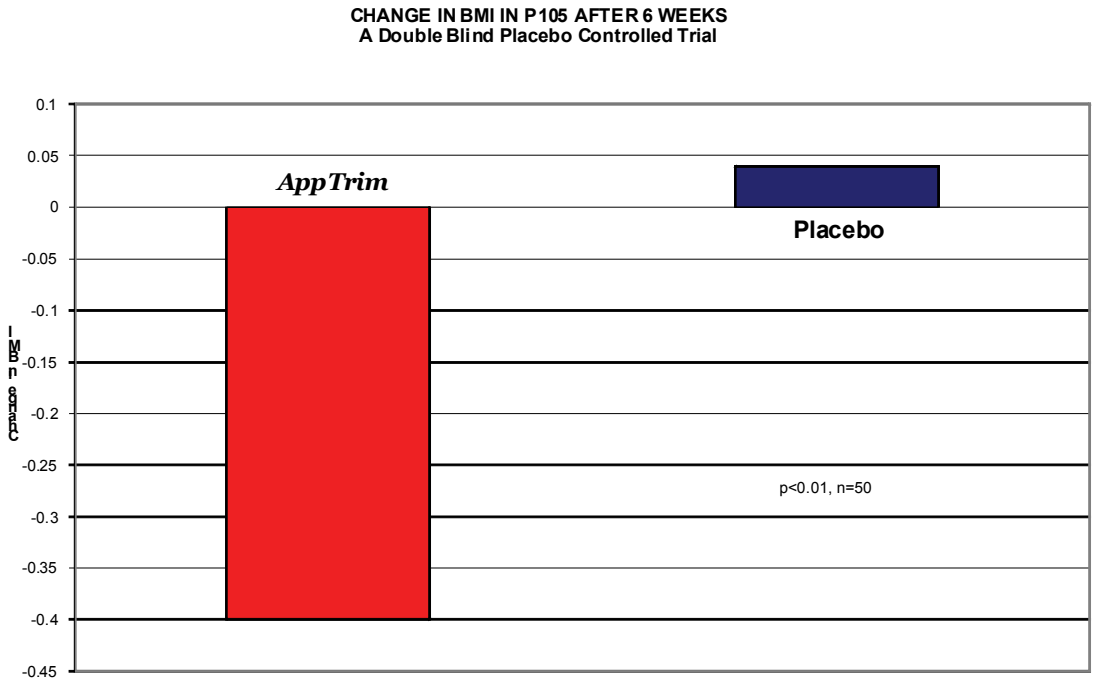
We then compared the differences between baseline and week 6 in the active and placebo group by non-paired t-test:

t-Test: Two-Sample Assuming Equal Variances
Mean difference

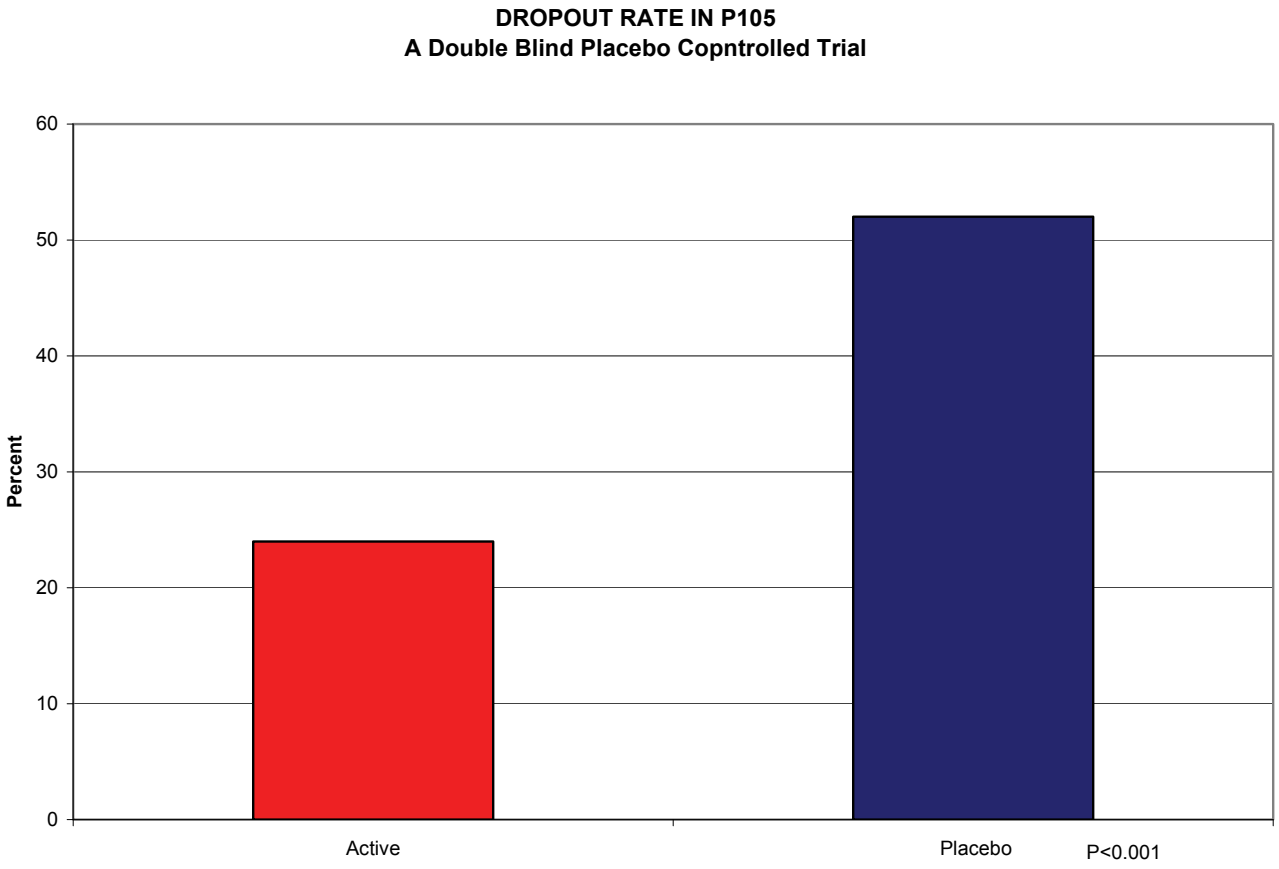
	Group 1	*Group 2*
Mean	-0.4	0.04
Variance	0.583333	0.123333
Observations	25	25
Pooled Variance	0.353333	
Hypothesized Mean Difference	0	
df	48	
t Stat	-2.61707	
P(T<=t) one-tail	**0.005913**	
t Critical one-tail	1.677224	
P(T<=t) two-tail	0.011826	
t Critical two-tail	2.010634	

BMI in the active group fell by 0.4 kg/m2 in the active group but by only 0.04 kg/m2 in the placebo group, p=0.0059. The graphical representation of these differences is:

Thus, ***AppTrim*** induced a fall in BMI over 6 weeks.



DROPOUT RATE AS A MEASURE OF DIET COMPLIANCE



The subjects underwent simple diet instruction at the baseline visit and were given a diet sheet. There was no further diet counseling. The subjects were not encouraged to remain in the study. If they expressed a wish to drop, there was no attempt to cajole the subjects to remain. It was anticipated that this approach would lead to a large dropout rate and that the dropout rate could be used to measure the ability of either the active or placebo group to help the subjects stay on the diet and thus remain in the study. The dropout rate in the active group was 6 of 25 and was 13 of 25 in the placebo group. When this data was compared by Chi Square analysis the Chi Square was 8.1 with 1 d.f. leading to a p value of less then 0.00001.

Thus, there was a higher dropout rate in the placebo group. Interviewing the subjects who dropped out the major reason for dropout was the " product did not work", there was no appetite suppression. From these data we conclude that subjects taking ***AppTrim*** are more likely to experience appetite suppression and thus stay on a diet.

CONCLUSIONS

The following conclusions can be drawn:

1. ***AppTrim*** reduces hunger index after a 14 hour fast.
2. ***AppTrim*** induces weight loss over 6 weeks
3. ***AppTrim*** induces reduction of percent body fat over 6 weeks
4. Subjects taking ***AppTrim*** are more likely to remain on a diet because of the Appetite suppression
5. There is a connection between appetite suppression and weight loss
6. The observed weight loss is a result of the adherence to a reduced calorie diet