1 SUPPLEMENTARY MATERIAL 2 3 **APPENDIX I – STATISTICAL ANALYSIS** 4 5 The current study consists of 100 patients for whom Garcinia Caplets have been prescribed and 6 8 variables were measured before and after consumption of the Caplets. These variables were 7 Weight, Triceps, Subscapular, Midaxillary, Cholesterol, Triglycerides, HDL and LDL. 8 Moreover, the BMI values were also calculated before and after the trial. The aim of the 9 statistical analysis was to identify the presence of significant differences in the variables before 10 and after the medicine was given to the patients. The paired t-test is a commonly used test to check if the mean of a dependent variable is the same in two related groups. In this case the 11 12 dependent variables would be the 8 chosen variables and the two related groups would be before and after consumption of the medicine. The paired t-test has the following assumptions 13 14 that need to be satisfied in order for the test results to be valid: 15 16 i. The dependent variable must be continuous. ii. The independent variable must consist of two categorical related groups (or same 17 18 subjects in both groups). iii. There should be no significant outliers in the difference values between the two related 19 20 groups. 21 iv. The distribution of the differences between the two groups should be approximately 22 normally distributed. 23 The assumptions i. and ii. are satisfied by the current dataset. Assumptions iii and iv were 24 checked for using STATA. In order to check for assumption iii, box plots of the difference 25 values were plotted and checked for outliers. It was observed that the most of the variables 26 showed a few outliers. Also, the assumption iv was checked by using the Shapiro-Wilk normality test for each of the variables. Since the Shapiro-Wilk normality test was also not 27 28 significant for all the variables, variable transformation was done. All the difference variables 29 were transformed to: 30 $LOG(Y + 1 - MIN(Y_p))$ (1) 31 $MIN(Y_p)$ is the minimum value among the differences. The log transformation gives a better 32 estimate of the distribution and presence of outliers in the difference variable. Therefore, box 33 34 plots and shapiro wilk test was once again conducted for these transformed values. The 35 assumptions were satisfied except for a few more failures, which were dealt with by removing

assumptions were satisfied except for a few more failures, which were dealt with by removing
either 5% or 10% of the lowest and highest end of the spectrum. Since the difference values
satisfied the assumptions after transformation and data trimming, the paired t-test was done for
the variables. The tests were evaluated at a 0.05 alpha level.

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40 The summary of the results of the t-test have been displayed in Table 1.

Table I. Suilli	lary of t-test for	the eight variables			
No of	Variable	Mean value	Mean value	Difference	P-value
Observations		Before	after		
100	Weight	84.25	82.52	-1.73	<10-4
100	Triceps	27.67	25.53	-2.14	<10-4
100	Subscapular	32.16	30.83	-1.33	<10-4
100	Midaxilliary	31.26	30.01	-1.25	<10-4

42 **Table 1.** Summary of t-test for the eight variables

100	Triglycerides	127.11	107.10	-20.01	<10-4
100	Cholesterol	162.30	157.83	-4.47	<10-4
100	LDL	105.38	100.70	-4.68	<10-4
100	HDL	37.97	35.49	-2.48	<10-4

The paired t-test results showed that the mean value of all the 8 variables measured after giving Garcinia Caplets was lesser than the mean values measured before. The p-values for the mean difference being negative was less than 10^{-4} for all the cases. The same was verified with the help of box plots showing the before and after groups for the variables as shown in Figures 2 & 3. Corresponding tables depicting the results of statistical analysis for each of these 8 variables along with BMI values before and after the trial is shown below in Tables 2 - 10.

Table 2a. Statistical analysis of initial weight (kg) for 100 subjects.

Percentile	Weight	Percentile	Weight	Median	85
1%	78	75%	88	Mean	84.2
5%	78	90%	89	Std. Dev.	4.14
10%	78	95%	89	Skewness	-0.2124
25%	81	99%	90	Kurtosis	1.49

Table 2b. Statistical analysis of final weight (kg) for 100 subjects.

Percentile	Weight	Percentile	Weight	Median	82
1%	72	75%	87	Mean	82.5
5%	72	90%	94	Std. Dev.	6.80
10%	73	95%	94	Skewness	-0.17
25%	79	99%	95	Kurtosis	2.25

Table 3a. Statistical analysis of initial skinfold measurement of triceps (mm) for 100 subjects.

Percentile	Triceps	Percentile	Triceps	Median	27.1
1%	17.8	75%	32.2	Mean	27.6
5%	19.0	90%	38.3	Std. Dev.	6.6
10%	19.9	95%	39.5	Skewness	0.46
25%	21.7	99%	42.7	Kurtosis	2.21

Table 3b. Statistical analysis of final skinfold measurement of triceps (mm) for 100 subjects.

Percentile	Triceps	Percentile	Triceps	Median	24.6
1%	15.8	75%	30.2	Mean	25.5
5%	17.4	90%	36.3	Std. Dev.	6.6
10%	17.9	95%	37.7	Skewness	0.54
25%	19.7	99%	41.2	Kurtosis	2.28

Table 4a. Statistical analysis of initial skinfold measurement of subscapular (mm) for 100

63 subjects.

Percentile Subscapular Percentile Subscapular Median 30.5

1%	22.0	75%	35.9	Mean	32.2
5%	23.3	90%	43.1	Std. Dev.	6.8
10%	24.5	95%	45.2	Skewness	0.68
25%	26.7	99%	49.1	Kurtosis	2.62

Table 4b. Statistical analysis of final skinfold measurement of subscapular (mm) for 100

67 subjects.

Percentile	Subscapular	Percentile	Subscapular	Median	29.1
1%	20.6	75%	34.6	Mean	30.9
5%	22.2	90%	41.7	Std. Dev.	6.7
10%	23.3	95%	43.7	Skewness	0.69
25%	25.5	99%	47.5	Kurtosis	2.62

Table 5a. Statistical analysis of initial skinfold measurement of midaxillary (mm) for 100

71 subjects.

Percentile	Midaxillary	Percentile	Midaxillary	Median	29.6
1%	18.5	75%	36.9	Mean	31.1
5%	21.3	90%	45.0	Std. Dev.	8.4
10%	21.6	95%	46.4	Skewness	0.58
25%	24.0	99%	50.2	Kurtosis	2.22

73 Table 5b. Statistical analysis of final skinfold measurement of midaxillary (mm) for 100

74 subjects.

Percentile	Midaxillary	Percentile	Midaxillary	Median	28.5
1%	17.8	75%	35.5	Mean	29.9
5%	20.2	90%	43.4	Std. Dev.	8.2
10%	20.8	95%	44.7	Skewness	0.57
25%	23.0	99%	48.4	Kurtosis	2.20

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77 Table 6a. Statistical analysis of initial measurements of serum triglyceride levels (mg/dL) for

78 100 subjects.

Percentile	Triglyceride	Percentile	Triglyceride	Median	126.3
1%	87.8	75%	142.0	Mean	127.4
5%	96.5	90%	158.1	Std. Dev.	20.3
10%	99.1	95%	161.2	Skewness	0.17
25%	112.8	99%	170.8	Kurtosis	2.36

Table 6b. Statistical analysis of final measurements of serum triglyceride levels (mg/dL) for

83 100 subjects.

Percentile	Triglyceride	Percentile	Triglyceride	Median	104.9
1%	75.9	75%	118.1	Mean	107.4

5%	83.4	90%	132.6	Std. Dev.	17.6
10%	86.2	95%	146.9	Skewness	0.58
25%	94.2	99%	148.7	Kurtosis	2.79

- 86 Table 7a. Statistical analysis of initial measurements of serum cholesterol levels (mg/dL) for
- 87 100 subjects.

Percentile	Cholesterol	Percentile	Cholesterol	Median	163.0
1%	108.0	75%	178.0	Mean	162.2
5%	118.5	90%	195.5	Std. Dev.	26.9
10%	130.5	95%	212.5	Skewness	-0.35
25%	141.0	99%	235.5	Kurtosis	3.14

90 Table 7b. Statistical analysis of final measurements of serum cholesterol levels (mg/dL) for

91 100 subjects.

Percentile	Cholesterol	Percentile	Cholesterol	Median	158.6
1%	105.1	75%	173.2	Mean	157.7
5%	115.2	90%	189.9	Std. Dev.	26.3
10%	124.8	95%	206.7	Skewness	-0.34
25%	137.2	99%	229.1	Kurtosis	3.08

Table 8a. Statistical analysis of initial measurements of LDL levels (mg/dL) for 100 subjects.

Percentile	LDL	Percentile	LDL	Median	106.3
1%	69.5	75%	116.6	Mean	105.3
5%	75.3	90%	127.3	Std. Dev.	17.4
10%	84.3	95%	136.3	Skewness	0.24
25%	92.7	99%	152.1	Kurtosis	3.07

Table 8b. Statistical analysis of final measurements of LDL levels (mg/dL) for 100 subjects.

Percentile	LDL	Percentile	LDL	Median	101.0
1%	64.6	75%	111.9	Mean	100.6
5%	70.0	90%	122.1	Std. Dev.	17.1
10%	79.3	95%	130.8	Skewness	0.20
25%	88.3	99%	146.0	Kurtosis	3.04

Table 9a. Statistical analysis of initial measurements of HDL levels (mg/dL) for 100 subjects.

Percentile	HDL	Percentile	HDL	Median	37.8
1%	23.2	75%	42.2	Mean	38.0
5%	25.4	90%	46.6	Std. Dev.	7.0
10%	29.9	95%	50.3	Skewness	-0.11
25%	33.2	99%	55.5	Kurtosis	3.00

100	Table 9b. Sta	atistical analysis of fir	nal measureme	ents of HDL levels (mg	;/dL) for 100 subjects.

Percentile	HDL	Percentile	HDL	Median	35.3

1%	21.6	75%	39.2	Mean	35.5
5%	23.8	90%	43.6	Std. Dev.	6.5
10%	28.2	95%	47.0	Skewness	-0.12
25%	31.1	99%	51.8	Kurtosis	3.07

Table 10a. Statistical analysis of initial BMI levels (Kg/m²) for 100 subjects.

Percentile	BMI	Percentile	BMI	Median	35.5
1%	28.7	75%	38.4	Mean	35.7
5%	30.6	90%	40.2	Std. Dev.	3.3
10%	31.5	95%	40.8	Skewness	0.09
25%	33.6	99%	43.2	Kurtosis	2.43

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Table 10b. Statistical analysis of final BMI levels (Kg/m²) for 100 subjects.

Percentile	BMI	Percentile	BMI	Median	34.4
1%	28.1	75%	37.5	Mean	35.0
5%	29.1	90%	40.7	Std. Dev.	3.9
10%	29.7	95%	41.7	Skewness	0.36
25%	32.1	99%	44.4	Kurtosis	2.51

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Table 11. Ingredients of HCA extract.

Ingredient	Composition (w/w)		
Hydroxy Citric Acid	63 ± 3%		
Calcium	23 ± 4%		
Free Citric Acid	4 ± 1%		
Lactone	2 ± 1%		
Moisture	8 ± 2%		

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STABILITY ANALYSIS OF THE GARCINIA CAPLET

110 The stability studies were conducted at different conditions up to 3 months. The table given

below reports the colour changes (if any), disintegration time, loss on drying, hardness, total
 HCA content, TLC fingerprint, total viable aerobic count and total yeast and mould count in

113 the caplet for different storage time points upto 3 months. All the measured values were

114 within the specified limits.

115

116 **Table 12.** Stability study for a particular batch of Garcinia caplets.

Daramatar		60 º C				50 º C		
s	Limits			15	30			
		0	7 days	days	days	1M	2M	3M
Description	Light brown to brown coloure d caplets	Compli es						

Disintegrat ion Time (minutes)	NMT 60	13min 12secs	11min 53secs	12min 04 secs	12min 04secs	18min 11secs	14min 20secs	13min 50secs
Loss on drying (%w/w)	NMT 6.0	5.3	5.07	5.21	5.19	5.13	5.01	5.06
Hardness (kg/cm ²)	NLT 3	5.5-6.5	5	5	4	6	5	6
Assay – Total Hydroxy Citric acid (%w/w)	NLT 84%	100	90.31	93.15	89.68	96.38	95.50	96.32
TLC Fingerprint	The fingerpri nt of the sample should match with the standar d	Compli es	Compli es	Compli es	Compli es	Compli es	Compli es	Compli es
Total Viable Aerobic Count (cfu/g)	NMT 10000	30	Not done	Not done	<10	<10	<10	<10
Total Yeast and Mould Count (cfu/g)	NMT 1000	10	Not done	Not done	<10	<10	<10	<10

NLT: Not Less Than; NMT: Not More Than; TLC: Thin Layer Chromatography.



Figure S1. Schematic of metabolic network in Hepatocytes¹.



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Figure S2. Box plots representing changes in Body Mass Index (kg/m^2) in population due to HCA - Initial- 33.56, 35.45, 38.43; final- 32.07, 34.39, 37.52. Initial and final (measurements taken after 90 days of study) box plots are shown with labels '0' and '1' respectively on the x

145 axis. Values for each box plots are given in the order – Lower Quartile, Median and Upper

- 146 Quartile respectively.
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148 **References**

149

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