ProHair01

EVALUATION OF THE EFFICACY OF HCAP FORMULA NUTRITION SUPPLEMENT FOR TREATMENT OF MEN WITH ANDROGENIC ALOPECIA:
A PROSPECTIVE, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED CLINICAL TRIAL

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ProHair01 study

Objective:
To evaluate the efficacy of HCap Formula, a nutrition supplement for treating androgenic alopecia in men.

- **Study Design**: Double blinded, randomized, placebo-controlled clinical trial
- **Overview**: Total duration 6 months
- **Study population**: 33 Healthy male subjects, age 18-40 with mild to moderate androgenic alopecia
- **Randomization**: Randomized at a 2:1 ratio (23 Active, 10 placebo)
- **Blinding**: Participants, evaluators, photographer

Approvals and Study Team

- **Helsinki approval:** 252-14, 13th of April-2014
- **Registered in NIH international Clinical Trial Database**: NCT02150187 27-May-2014
- **Insurance Policy**: 4-69891234-01 20-may-2014
- **Principle Investigator**: David Friedman, MD
- **Co-Investigator**: Louis Weinrauch, MD
- **Co-Investigator and Study Director**: Lilach Gavish, PhD
- In addition: Professional photographer, hair counters, coordinator, secretaries

Methods: Recruitment, Randomization, Blinding, Compliance:

- Randomization and Blinding:
  Drawing a ticket with a number out of black bag. The number corresponded to a tablet bottle that contained either the investigational product or placebo that looked and smelled identical.
- Compliance:
  - Bimonthly telephones by coordinator
  - SMS and email reminders every other day for each volunteer.
  - Diary filled by volunteer

RESULTS

- Recruitment:

Newspaper ads, street ads, referrals:
Duration 1 month: 7th of June 2014 and ended on 11th of July 2014

- Accountability:

106 contacts=>79 prescreened=>37 assessed for eligibility at clinic=>33 randomized (23 active, 10 placebo)=>29 analyzed (3 lost to follow up, 1 protocol deviation)

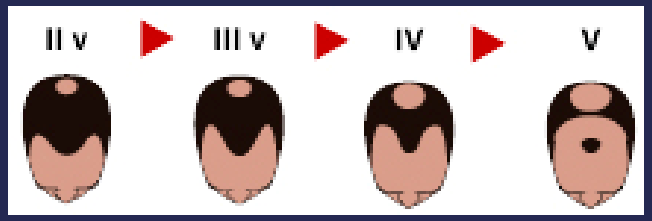
- Compliance: of 90 pills in 6 months (including vacation travels, reserve duty due to war, holidays):
  - 1 missed 9 pills of 90, 4 in a row
  - 1 missed 12 pills of 90, not in a row
  - 1 missed 8 pills not in a row

Demographics

- Age: 30.7±5.1
- Weight: 79.8±13.4
- Diet: 31 of 33 omnivorous, 2 pescetarian
- Smoking: never smoked 25; previously/currently smoking 8
- Use of medication: Yes=5 (stress/anxiety)

Hair Characteristics

- Hamilton-Norwood classification: 2-5
- Age hair loss first seen: 22.8±4.2
- White hair:
  - None=21
  - Few=11
  - Many=1
- Hair loss treatments:
  - Finasteride (Propecia)=4
  - Minoxydil (Rogain)=5
  - Other=4
  - None=20
- Dandruff: none



Methods and Results

- Global photographic evaluation
- Hair count
- Subjective evaluations
- Safety
- Personal experience

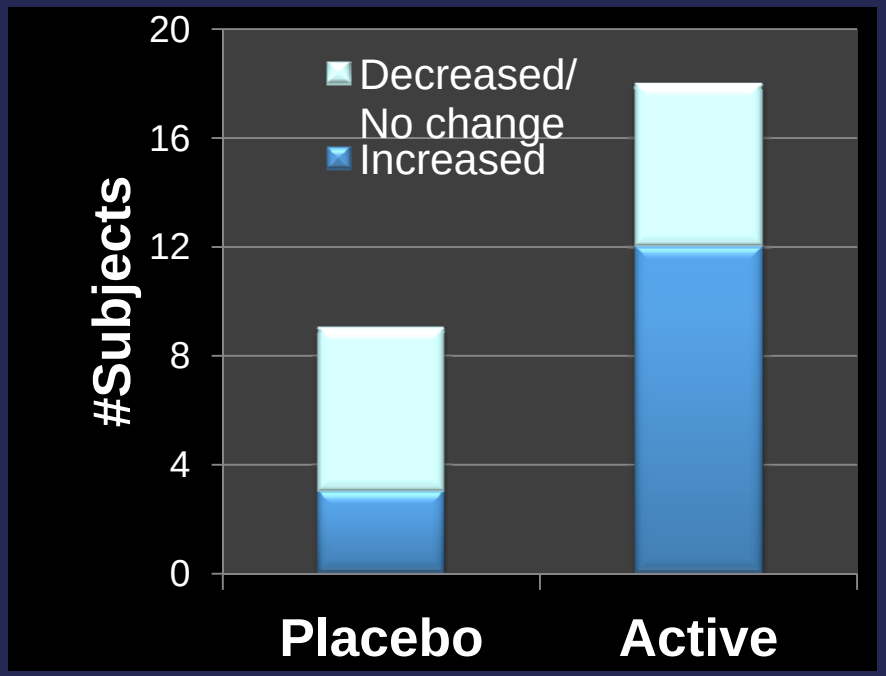
Global Photographic Assessment Method

- Photographs taken by the Omnia System (Canfield), specialized for esthetic and dermatological indications.
- Global photographs of midline and vertex of baseline vs 6 months were used for this evaluation. The regions assessed were the vertex and superio-frontal regions, as well as overall.
- Evaluation was performed by Dr. Friedman who is experienced in assessing improvement in a variety of esthetic indications.
- The validated improvement scale is used in all clinical hair studies and spans from -3=greatly decreased to +3 greatly increased.
- Accountability: 2 subjects had drastic hair cuts and were therefore not included in this analysis

Global Photographic Assessment Results – increased vs no change/decreased

- At 6 months, 12 of 18 (67%) active subjects, but only 3 of 9 (33%) control subjects demonstrated improvement relative to baseline by global photographic assessment.

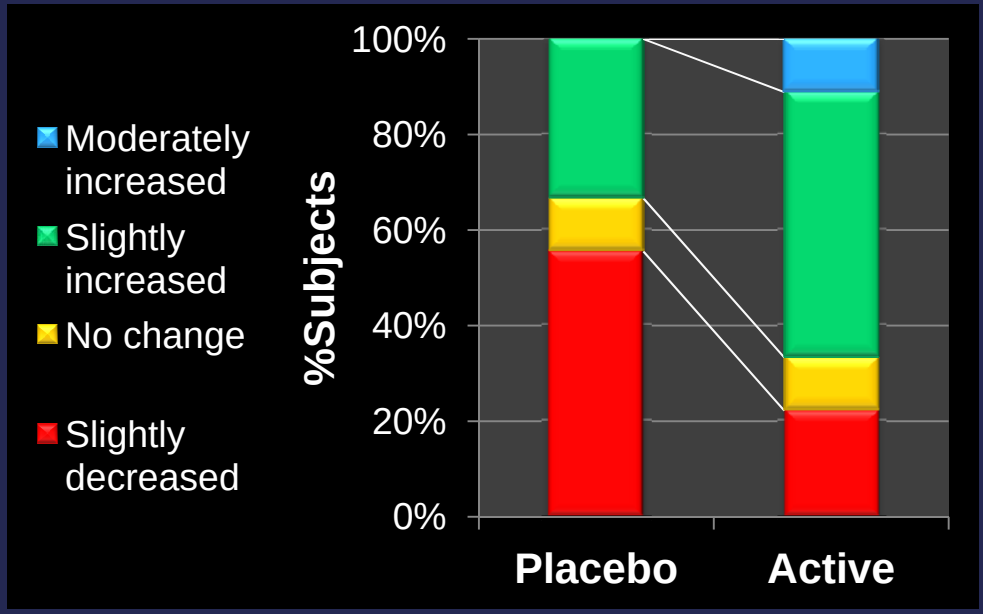
Evaluation	Placebo	Active
No change or decreased	6 (67%)	6 (33%)
Increased	3 (33%)	12 (67%)
Total	9	18



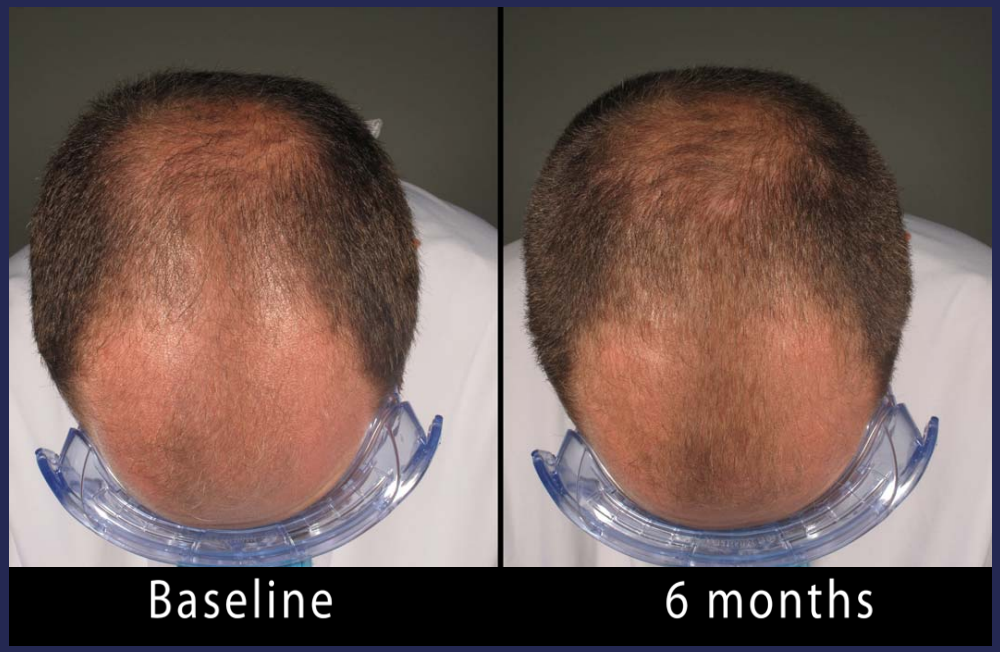
Global Photographic Assessment Results - graded

- Note that only active group includes subjects that were graded as “moderately increased”.
- See cases below

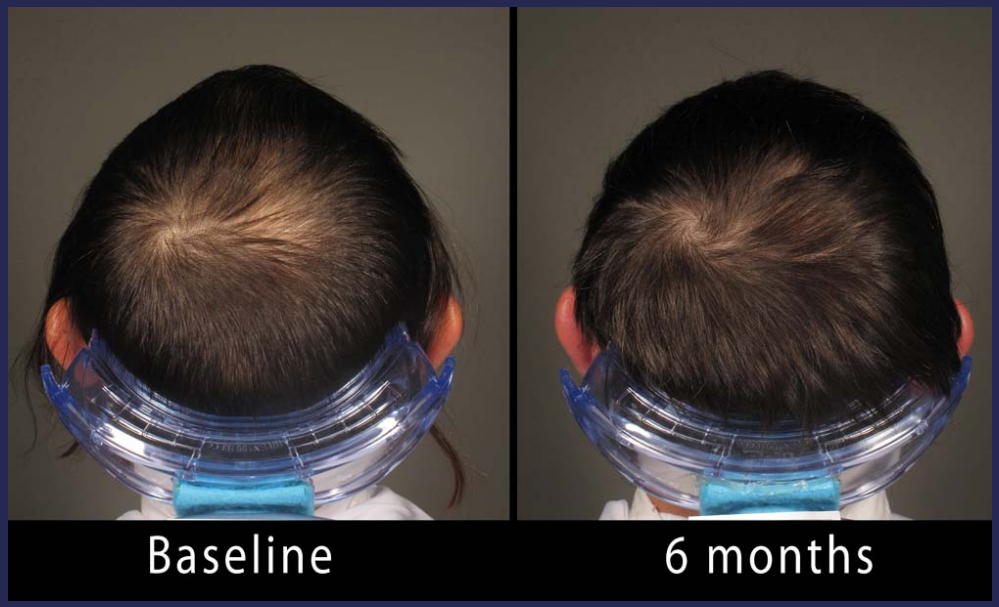
Score	Placebo	Active	Placebo	Active
Greatly decreased	0 (0%)	0 (0%)	6 (67%)	6 (33%)
Moderately decreased	0 (0%)	0 (0%)		
Slightly decreased	5 (56%)	4 (22%)		
No change	1 (11%)	2 (11%)		
Slightly increased	3 (33%)	10 (56%)	3 (33%)	12 (67%)
Moderately increased	0 (0%)	2 (11%)		
Greatly improved	0 (0%)	0 (0%)		



Midline photograph



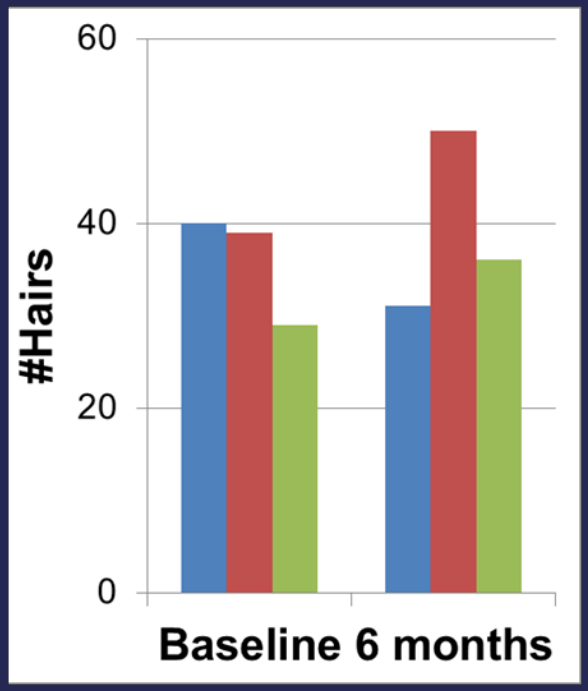
Vertex photograph



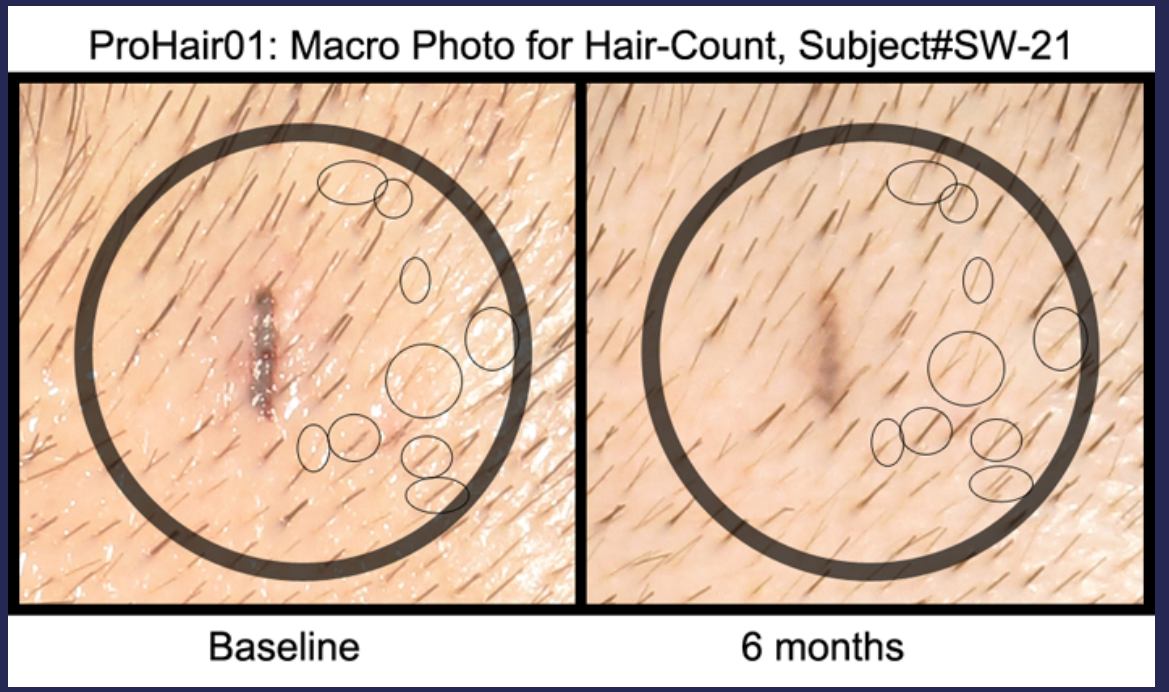
Hair Count - Method

- The target area of hair count (TAHC) was selected from the anterior edge of the balding area, hairs were clipped, and the area was marked with a small medical tattoo.
- A macro-photograph of the TAHC was taken. The photograph included a reference scale.
- Hairs were manually counted in a 1 cm^2 circular area of clipped hair at baseline, 3 months, and 6 months.
- Hair counters (n=2) were blinded to group allocation.
- White/blond hairs were not counted.
- Hair counts included terminal hairs. In several cases it was possible to differentiate between terminal and vellus hairs.

Terminal vs Vellus hairs



In the graph note that vellus hair counts (blue) are decreased, while terminal hairs counts (red and green) are increased. In macro-photograph note how terminal hairs replace vellus hairs.



Subjective Evaluation: Hair Condition Questionnaire

- At the beginning of the visits, subjects filled a questionnaire pertaining to their satisfaction with different aspects of the appearance of their hair
- Grading was from -3=very dissatisfied to +3=very satisfied
- The questionnaire was filled without seeing pictures or questionnaires from previous visits
- Question referring to hair color was not relevant because only 1 subject had white hair that bothered him.
- Since this was a subjective questionnaire I excluded from this analysis 1 volunteer that was an investor.

Subjective Evaluation:
Hair Condition Questionnaire – baseline vs 6 months

- Subjects of the active group felt significantly more satisfied with all aspects of hair appearance, whereas the placebo group did not.

This included:

- Overall appearance (p*=0.002 vs 0.14, active vs placebo by Wilcoxon sign ranks test)
- Appearance of “Thinning Areas” (TAs) on your head (p=0.006 vs 0.22)
- The amount of scalp in the TAs (p=0.025 vs p=1)
- The amount of hair in the TAs (p=0.028 vs p=1)
- The growth of hair in the TAs (p=0.002 vs p=0.66)

*The result is considered significant when the p value < 0.05.

Subjective Evaluation: Improvement questionnaire based on before/after photos

- Subjects filled an improvement questionnaire pertaining to their satisfaction with different aspects of the appearance of their hair
- Here we excluded 2 volunteers that had a drastic hair-cut
- The questionnaire included the following questions:

#	Question	
Q1	Since the start of this study I can see my bald spot getting smaller	
Q2	Because of the treatment I have received since the start of the study, the appearance of my hair is	
Q3	Since the start of the study, how would you describe the growth of your hair	
Q4	Since the start of the study how effective do you think the treatment has been in slowing down your hair loss	
Q5	Compared to the beginning of the study, which statement best describes your satisfactions with the appearance of	
	Q5a	front
	Q5b	top
	Q5c	overall

Subjective Evaluation: Improvement questionnaire based on before/after photos

- There is a trend for improvement in the overall satisfaction category in the active groups.

Subjective Evaluation: Personal Experience Questionnaire

- What is the maximum price you are willing to pay for a 3 month supply worth of HCap formula pills (120$[450nis], 150$[600nis], 185$[750nis], 225$[900nis]?

	Placebo	Active	Total %
Not willing to pay	2	1	10%
$120	6	12	62%
$150	2	6	28%
Total	10	19	100%

Safety and Miscellaneous

- One (n=1) adverse event was reported in the placebo group – dull pain in 1 of the testis (YB-9). The pain resolved without intervention several days later.
- No adverse events were reported in the active group.
- Some bottles contained pills that had variable smells/tastes/texture. The manufacturing process has to do QA.
- Subjects would prefer smaller tablets with a daily ration instead of large tablets every other day

Limitations of the study

1. Only young men with mild to moderate androgenetic alopecia were included. The results may not be applicable to other patient groups
2. Hair counts should be done with the trichoscan technique in order to differentiate between vellus and terminal hair.

Take home message:

Study results are encouraging but not conclusive

- The fact that subjects reported seeing vellus hairs in places that they didn't have before indicates that a longer time is required to maximize the effect.
- Moreover, subjects in the active group felt overall better about their hair appearance.
- Only in the active group did we detect moderate increase.

Comparing these preliminary results to competition (drug/device/nutraceuticals) that conducted large (hundreds of volunteers) studies might be too early.