



Shampoos and Conditioners They Gotta Clean, Shine, Style, and More

An article published in *The New York Times* in May 1908, outlining ‘simple rules’ on ‘how to shampoo the hair’, expressly stated that ‘every woman likes to have her hair not only daintily and becomingly arranged, but soft and glossy in appearance and texture... [and] the shampoo is a necessary part of the treatment,’ whether the treatment was to be assembled by oneself or with the help of one’s maid or hairdresser. Well, hair care has come a long way since then, thanks to a number of innovations. While the primary attribute of a shampoo must always be effective cleansing of the hair, manufacturers today claim to address a wide array of needs, from conditioning and anti-dandruff formulas to specially styled and colour-treated hair.

Some time in the 18th century when the word ‘shampoo’ gained coinage, it used to be made from soap boiled in soda water and mixed with herbs for fragrance and health benefits. Hair care was not an easy task at all. Commercially made shampoo became available only from the turn of the 20th century. Moving away from the soap-based preparation, modern innovations have largely looked to highly surface-active cleansing agents called surfactants to break down and distribute healthy natural oils through the hair while washing away contaminants.

At a basic level, the function of the shampoo is removal of the thin layer of oily material known as sebum. Produced by sebaceous glands in the skin, it coats and protects the hair. Unfortunately, sebum also acts as a virtual magnet for dirt and residue from hair treatment products.

Modern shampoo is formulated using chemicals and fragrances that balance the ability to clean hair

WHAT ARE YOU LOOKING FOR?

Shampoos have a number of qualities that should be considered before use. There are different categories of speciality shampoos, with each type claiming to have properties beyond cleaning of hair. For example, lice-killing shampoos claim to help one get rid of lice infestations; anti-dandruff shampoos often contain fungicides, which are chemical compounds that can assist in removing white flakes in hair; clarifying shampoos apparently remove hair-care-product build-up; baby shampoos are specially formulated to be gentle; thickening shampoos purport to make hair fuller; straightening shampoos promise you hair that is less curly; and dry shampoos insist that these can be used without water. Finally, there are the two-in-one shampoos that contain conditioners.

with other factors such as reducing the risk of scalp irritation. By leaving some oil in the hair, being slightly acidic, rinsing cleanly, and not irritating the skin, the chemical composition of modern shampoo has shown itself to be far superior to that of the soap-based original.

The purpose of a shampoo is presumably quite clear, centering on these three aspects: 1) to cleanse the hair and scalp; 2) to improve appearance of the hair; and 3) to improve and facilitate manageability of the hair. What, then, is a conditioner for?

Well, for one, a conditioner makes the hair shinier, smoother to the touch, and easier to be combed. Next, it minimizes flyaway hair and helps to maintain the moisture content. Modern products also dissipate static electricity and may protect the hair from the harmful effects of excessive sunlight.

Shampoos are good cleansing agents but not particularly good at maintaining optimum hair appearance or facilitating hair management. While shampoos wash and clean your hairs thoroughly and completely dry them, what also happens is that they tend to take moisture out of your hair. Because their purpose is to clean the hair, they end up taking away dirt, oils and moisture, thereby stripping off many nutrients that a conditioner adds back. Technically speaking, the purpose of a conditioner is to balance the pH levels of hair.

THE TEST

The *Consumer Voice* (CV) test programme is mainly based on IS: 7884-2004 specification for surfactant-based shampoo. In addition to the analytical parameters, various attributes of an acceptable shampoo and conditioner (presently not

HOW OFTEN DO YOU NEED TO WASH HAIR?

Maybe not as often as you think, the experts would say, though there is no final word on just how frequently one should use shampoo. The longer, thicker and curlier your hair, the longer it can go between washes. This is because the oils from the scalp do not travel down the hair shaft as quickly, so the hair tends to be dry and requires less frequent shampooing. Frequent shampooing is only necessary if oil production on the scalp is high.

Ultimately, though, how often you wash your hair is a purely personal decision. It really depends on the scalp and hair type, and the environment around you. If you are in a very dirty environment, you will obviously wish to wash your hair frequently.

CONDITIONER AFTER SHAMPOO, IS IT?

Not really. This is something that depends on your hair type. If you've got thick or dry hair, you'll definitely want to use conditioner post-shampoo. But baby-fine hair responds better when you switch the order. Apply the conditioner, give it 3 to 5 minutes to soak in, and then shampoo to lift any excess product from the hair. You'll end up with perfectly conditioned, clean, bouncy hair – with no residue to weigh it down or make it fall flat.

(Source: www.totalbeauty.com)

COMPARATIVE TEST

adequate for standardization by Bureau of Indian Standards [BIS]) have been covered in subjective panel tests.

Overall, 12 brands of hair shampoo and 9 brands of hair conditioner have undergone the comparative testing.

Rank	Shampoo	Variant	Conditioner	Variant
1.	Clinic Plus	Health shampoo	Clinic Plus	Soft & silky
2.	Head & Shoulders (H&S)	Silky black	Head & Shoulder	Anti-hairfall
3.	Sunsilk	Teddy thick & long	Sunsilk	Teddy Charles
4.	Dove	Damage therapy/ Intense repair	Dove	Hair therapy
5.	Pantene	Silky smooth care	Pantene	Smooth care
6.	Revlon	Gentle cleansing, extra body flex	Revlon	Panthenol oily flex
7.	Garnier Fructis	Long & strong	Garnier Fructis	Fortifying
8.	L'Oreal Paris	Smooth & intense	L'Oreal Paris	Smooth & intense
9.	Himalaya Herbals	Protein	Himalaya Herbals	Protein
Shampoo with Built-in Conditioner				
1.	Lotus Herbals	Kera veda	--	NA
2.	Jovees	Honey & apple	--	NA
3.	Biotique	Bio green apple	--	NA

BEST BUY
Clinic Plus

VALUE FOR MONEY
Clinic Plus

KEY FINDINGS

- In the overall performance, Clinic Plus is on the top and followed by H&S and Sunsilk.
- In the sensory panel tests, Clinic Plus emerges on top followed by Sunsilk and Pantene. Biotique ends up in the last place.
- Clinic Plus is the value-for-money brand.
- All the tested brands of shampoo and conditioner are safe to use, clearing the permissible range for heavy metals and also the microbial tests, thus meeting the Ecomark requirement.
- Dove (15.45) has the highest percentage of active surfactant, followed by H&S (14.65), Clinic Plus (14.23) and Sunsilk (14.02).
- Among conditioners, total fatty matter is found in highest quantity in Lotus Herbals (6.62), followed by Jovees (5.19) and Revlon (5.15).
- Foam height of shampoo is found to be above the minimum required height of 150mm. Garnier Fructis & H&S (190mm) works up the most lather followed by Clinic Plus and Revlon (185mm).

KEY PARAMETERS TESTED FOR SHAMPOO

■ Active detergent



As per Indian Standards, active detergent content such as sodium laureth sulfate (SLES), which is a foaming agent used in most commercial shampoos, or its equivalent should be a minimum five per cent by mass.

All the brands are found to have the required amount of active substance as foaming agent, but as this is the main ingredient of shampoos, the higher the amount of active ingredient solution, the higher is the score given. Himalaya Herbals has claimed to be SLES-free but the active ingredient is found with 5.85 per cent solution.

■ Non-volatile soluble matter

All the tested brands are found to be well above the specified limit of 10 per cent by mass. Himalaya Herbal has the highest

percentage of volatile soluble matter (16.9 per cent).

■ Foam height as lather generation

The amount of foam produced by a shampoo is one of the criteria that consumers use to assess how good it is—largely because it is a readily visible aspect. As per Indian Standards, foam height of shampoo for two per cent solution should be a minimum 150mm.

All the brands fulfil the minimum requirement (150mm). H&S and Garnier generated the highest quality of foam (lather) and so assigned the higher weightage.

■ Heavy metals

All the brands tested are found within the specified limit for heavy metals (like lead and arsenic) as specified in Indian Standards.

■ Viscosity

Viscosity is a fluid's resistance to flow. The higher the viscosity, the better is the quality of shampoo.

Clinic Plus, Garnier and Lotus Herbals are found with the highest values of viscosity.

■ Microbiological contamination

Shampoo is a cosmetic product that directly comes in contact with the human scalp; hence, it is expected to be free of any microbiological contamination. Microbes as gram-negative bacteria and total viable count (TVC) of microbes are absent in all the shampoos tested.

KEY PARAMETERS TESTED FOR CONDITIONER

■ **Thermal stability:** All the brands of conditioner are found to possess good thermal stability.

■ **Microbiological contamination:** Microbes as gram-negative bacteria and TVC of microbes are found absent in all the conditioners.

■ **Total fatty substance:** The fatty substance in conditioners is the key ingredient that helps

dry/porous hair become soft and pliable. When hair is washed with shampoo a lot of natural sebum from hair is removed, and the conditioner's fatty substance is then required for the replacement of that sebum.

PACKAGING QUALITY

As per Indian Standards, shampoo shall be packed in a glass or plastic container or any other suitable container.

Shampoo

In the case of hair shampoos, Consumer Voice has looked out for these aspects:

- type of packing material,
- tamper-proof ability,
- convenience in use, and
- reusability.

The packing determines how convenient it is to use the shampoo. CV has observed two types of packing: the flip-type cap and the screw-type cap, with the former being more convenient to use. Except for



Biotique, Jovees and Lotus Herbals, none of the other brands are found to be properly sealed.

Conditioner

As there is no Indian Standards specification for conditioners, CV has applied the same parameters as for shampoo. Most of the tested brands are packed in a PVC flexible tube. Some others – namely Garnier Fructis, Himalaya Herbals, L’Oreal Paris, Pantene and Revlon – are packed in HDPE-type material (bottle). None of the tested brands of conditioner has tamper-proof packaging.

An HDPE bottle can be recycled for many household purposes like storage of hair oils or any other liquid material that poses storage problems

MARKING/LABELLING

Shampoo

Most of the brands fulfil the general requirement. However, while Jovees has not mentioned the list of ingredients, Lotus Herbals has not mentioned the date of manufacturing. Startlingly, Revlon has not mentioned the MRP – as a result, the

retailer has pasted his own MRP sticker on the product.

Conditioner

Again, Revlon has not mentioned the MRP, leading to the retailer pasting his own MRP sticker on the product.

APPLICATION TEST

A performance test is conducted on hair swatches and is considered to be primary to judging the overall performance and acceptability of regularly used hair shampoo products. This is an in-vitro study of 12 regular selling brands of shampoo and conditioner for their performance on hair swatches. The national standards body had developed the guidelines/method to judge the performance. (The method is currently at a draft stage and is under finalization.

To the extent possible, Consumer Voice has followed the draft guidelines developed by BIS. The test lab sourced the virgin hair through a Chennai-based agency, which collected freshly cut female

hairs from the Tirupati temple. Five expert panellists conduct the sensory test for shampoo application.

All the products applied on the hair swatches in a lab condition are tested for ease of application, cleansing, rinsing, foam quality, easy combing, manageability, lustre/shining effect, fragrance masking and product fragrance perception, and conditioning effect. Each product is tested on five sets of hair swatches consisting of an equal quantity and length of hair.

FIRST AMONG EQUALS

The key sensory tests enable us to conclude that on the whole all the brands are able to cleanse the hair swatches quite satisfactorily. It must be noted,

USER TEST METHODOLOGY

Firstly, the hair swatches are treated with five per cent SLES solution, washed and analysed in terms of ease of combing, hair shine, manageability and hair volume. Then hair oil (about 0.5ml per hair swatch) is applied thoroughly to the swatches, which are left to dry for an hour. Next, the hair is properly wet with slightly warm water and a gram of shampoo applied thoroughly. The foam generated is retained for about one minute. The judgement at the time of shampoo application is based on the parameters of ease of spreading, speed of lathering, foam quantity and ease of rinsing.

The hair is washed gently with running water and the quantity of water taken for rinsing is noted. The wet-hair assessment is done along the parameters of cleansing, oil odour removal and fragrance intensity.

In the next stage, one gram of conditioner is applied on all the hair swatches for all the brands and spread evenly for one minute. The parameters examined during the time of conditioner application are ease of spreading, ease of rinsing and fragrance intensity. The swatches so conditioned are left for about five minutes. After complete absorption of required nutrients by hair roots, the swatches are rinsed with water. Once more, the required water quantity is measured.

Dry-hair assessment is done keeping in mind the parameters of ease of combing, hair shine, flyaway manageability, smoothness of hair, hair volume, oil odour removal and fragrance intensity. After drying the hair, hourly evaluation is done and oil odour removal and fragrance intensity aspects are noted.

MOST EXPENSIVE/LEAST EXPENSIVE

We calculated the cost of 10ml of shampoo usage and found that Lotus Herbal was the most expensive, followed by Biotique and H&S. The least expensive was Revlon followed by Clinic Plus.



though, that a few brands – namely Biotique, Jovees and Lotus Herbals – have performed on the lower side. On the other hand, Clinic Plus, Pantene and Sunsilk sit firmly on the top due to the higher ratings they have garnered on the key sensory test parameters of rinsing, dry-hair assessment and post-wash fragrance after an hour of assessment.

Biotique, Jovees, Lotus Herbals, Himalaya Herbals and Revlon have a mild fragrance as per the

judgements of panellists. They have given higher ratings to Clinic Plus, Garnier, Head & Shoulders, Pantene and Sunsilk, on account of their having a lasting and appealing fragrance. Interestingly, in the rinsing test for water consumption, Biotique, Lotus Herbals and Jovees have consumed lesser amounts of water, while Himalaya Herbals and Garnier Fructis consumed higher amounts.

In the overall sensory tests, Clinic Plus (25.84), Sunsilk (25.11) and Pantene (24.4) are the top performers. Biotique,

Jovees and Lotus Herbals take up the bottom places.

Finally, all the three brands of shampoo-cum-conditioner – namely Biotique, Jovees and Lotus Herbals – are rated on the lower side by the panellists. While it cannot be denied that the application of such two-in-one products saves time as well as consumption of water, the fact that they have performed relatively poorly mainly in dry-hair assessment should serve as food for thought.

RESULTS OF SENSORY PERFORMANCE OF SHAMPOOS & CONDITIONERS

Brands Criteria	Score out of	Clinic Plus	Sunsilk	Pantene	Head & Shoulders	Revlon	L'Oreal Paris	Dove	Himalaya Herbals	Garnier Fructis	Jovees	Lotus Herbals	Biotique
1. At the time of shampoo application	40	35.4	35	34.2	34.6	34.6	27.4	33.8	32.4	33.4	31.8	34.4	25.8
2. Wet hair assessment	30	24.8	21.6	19.4	22.6	19	21.2	20.6	22.8	17.6	22.2	20	16.4
3. At the time of conditioner application	30	22.8	25.4	22.2	23.4	23.2	20.2	20	21.6	18.8	NA	NA	NA
4. Dry hair assessment	70	48.2	50	50.2	43.2	46.8	49.4	42	41.6	46.2	37.8	37.4	34
5. Fragrance evaluation	20	15.4	16	12.8	12.4	13.2	12.4	13.2	12.2	13.4	10.8	8.8	6
6. Water quantity used*(ml)		203.6	233.28	200	207.6	223.26	251.12	261.9	277.08	268.7	94.2	150.18	122.92

*Water quantity used is the total water used after shampoo and conditioner application.

NA: Not applicable as the shampoo has built-in conditioner

Note: Mean scores presented in the above table are based on the scores given by the panellists.

ATTRIBUTES OF THE VARIOUS TEST CRITERIA

At the time of shampoo application: Ease of spreading; speed of lathering; foam quantity; ease of rinsing

Wet hair assessment: Cleansing; oil odour removal; fragrance intensity

At the time of conditioner application: Ease of spreading; ease of rinsing; water quantity; fragrance intensity

Dry hair assessment: Ease of combing; hair shine; flyaway – manageability; hair volume; hair smoothness; oil odour removal; fragrance intensity

Fragrance evaluation: Oil odour removal; fragrance intensity

Comparative Performance Ratings of Shampoos and Conditioners

Test Parameters	Brands	% Weightage	Shampoos & Conditioners										Shampoo with in-built conditioner		
			Clinic Plus	Head & Shoulders	Sunsilk	Dove	Pantene	Revlon#	Garnier Fructis	L'Oreal Paris	Himalaya Herbals*	Lotus Herbals*	Jovees	Biotique*	
1.0 SHAMPOO															
MRP (Rs)/Volume (ml)		165/380	129/170	108/200	128/200	120/180	195/591.4	117/200	135/200	115/200	165/200	175/250	159/210		
Cost per 10 ml (Rs)		4.34	7.58	5.40	6.4	6.67	3.29	5.85	6.75	5.75	8.25	7.0	7.57		
1.1 Packaging		3	2.75	2.25	2.5	2.75	2.75	2.75	2.25	2.75	2.5	3	2.25		
1.2 Marking/Labeling		2	2	2	2	2	1.6	2	1.8	2	1.8	2	2		
1.3 Viscosity		3	2.79	2.24	1.92	2.11	1.32	2.6	1.00	0.73	2.55	0.77	1.67		
1.4 Active ingredients		14	12.45	12.26	13.51	11.07	9.73	9.58	7.40	5.11	9.08	8.03	8.53		
1.5 Non-volatile soluble matter		3	2.89	2.95	2.97	2.89	2.77	2.94	2.92	2.98	2.79	2.69	2.80		
1.6 pH		2	1.60	1.98	1.78	1.79	1.78	1.60	1.57	1.57	1.78	1.99	1.59		
1.7 Foam height		5	4.91	5.00	4.83	4.83	4.91	5.00	4.58	4.66	4.75	4.66	4.83		
1.8 Heavy metals (Pb, As)		2	1.95	1.85	2	1.80	2	1.80	2	2	2	2	2		
Microbiological		2	2	2	2	2	2	2	2	2	2	2	2		
I. Sub-Total Score (1.1 to 1.9)		36	33.34	33.65	32.22	33.32	31.35	28.67	25.52	23.8	29.25	27.14	27.67		
2.0 CONDITIONER															
MRP (Rs)/Volume (ml)		Clinic Plus	Head & Shoulder	Sunsilk	Dove	Pantene	Revlon	Garnier Fructis	L'Oreal Paris	Himalaya Herbals					
Cost per 10 ml (Rs)		47/80	69/90	108/180	64/90	59/75	195/591.4	130/180	150/180	130/200					
2.1 Packaging		5.87	7.67	6	7.12	7.87	3.29	7.22	8.34	6.5					
2.2 Marking/Labeling		2	1.35	1.50	1.35	1.75	1.75	1.75	1.50	1.75					
2.3 Viscosity		2	2.00	1.8	2.00	1.8	1.6	2.00	1.8	2.00					
2.4 Thermal stability		3	1.96	1.8	1.68	1.46	1.51	2.28	2.9	2.52					
2.5 Water as moisture		2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					
2.6 Spreadability & homogeneity		5	3.97	3.83	4.92	4.49	3.32	4.01	3.99	4.02					
2.7 pH		1	1	1	1	1	1	1	1	1					
2.8 Microbiological		2	1.60	1.78	1.68	1.76	1.65	1.27	1.32	1.92					
2.9 Total fatty substance		2	2	2	2	2	2	2	2	2					
II. Sub-Total Score (2.1 to 2.9)		8	5.20	5.89	4.77	5.03	6.12	4.60	4.84	5.95	8.00	6.22	5.81		
III. Sensory Panel Tests (Shampoos & Conditioners)		27	21.08	21.6	21.4	21.09	20.76	21.74	20.89	23.16	8.00/8	6.62/8	5.81/8		
Total Score (I+II+III)		37	28.7	26.67	27.76	24.79	26.73	26.19	24.95	25.08	18.33/30	19.57/30	16.14/30		
Total Score (I+II+III)		100/74	83.12	81.92	81.38	79.2	78.84	76.6	76.11	72.22	55.58/74	53.33/74	49.62/74		
Total Score, % (Rounded off)		100	83	82	81	79	79	77	76	72	75	72	67		

Rating: >90: Very good****, 71-90: Good****, 51-70: Fair****, 31-50: Poor**, <30: Very Poor

*Brands labelled as herbal-based

#Cost is lower due to larger family pack size

NA: Not applicable as shampoo has built-in conditioner