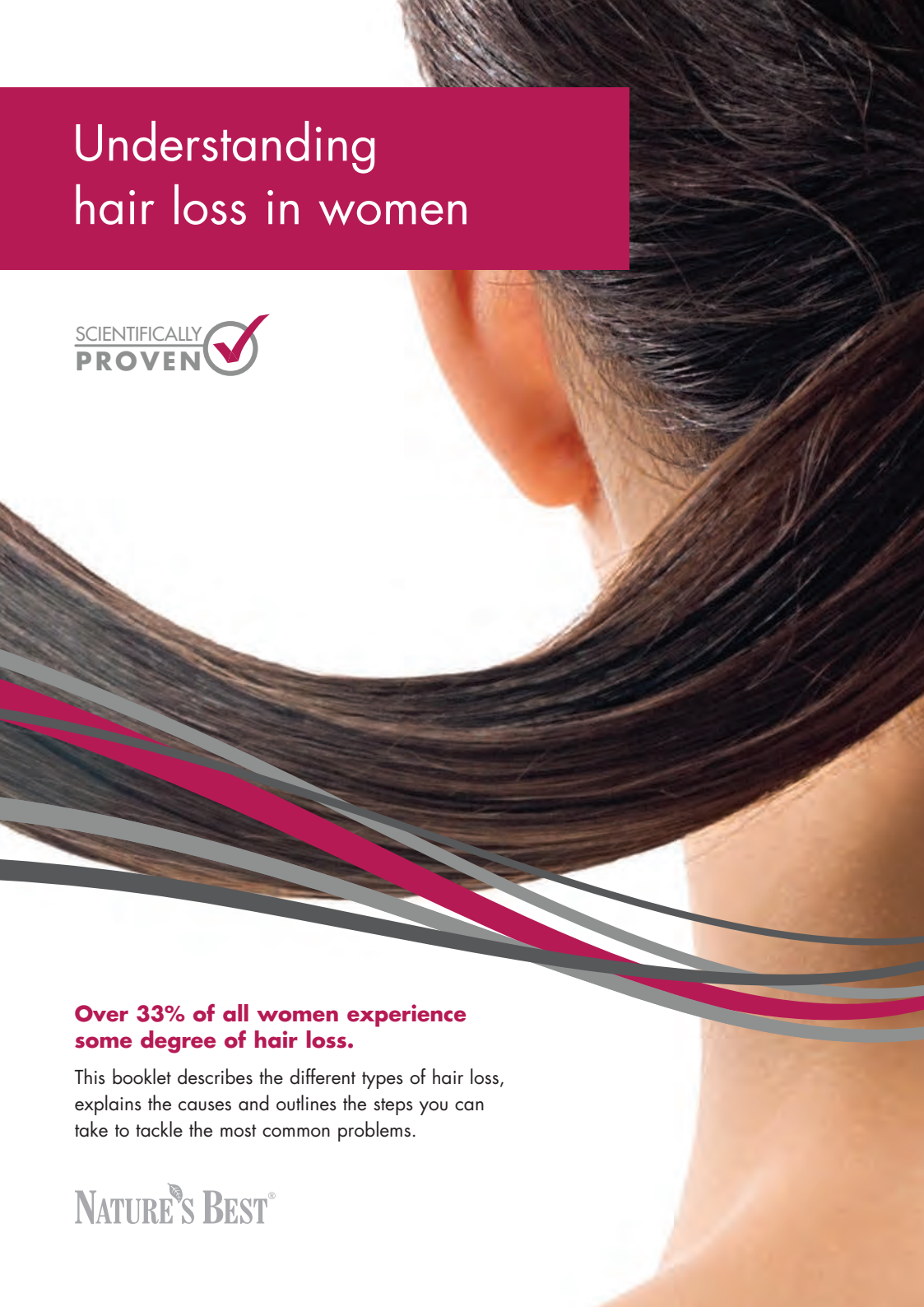
Understanding hair loss in women

SCIENTIFICALLY PROVEN



Over 33% of all women experience some degree of hair loss.

This booklet describes the different types of hair loss, explains the causes and outlines the steps you can take to tackle the most common problems.

NATURE'S BEST®

contents

foreword from Dr JJH Gilkes

Many women complain of increased hair loss and thinning of their hair, which often causes considerable anxiety.

Therefore I welcome this booklet written by Dr Hugh Rushton, a leading expert in the field of nutrition and hair loss in women, which provides helpful information on a variety of female hair problems.

Dr JJH Gilkes MD FRCP
Consultant Dermatologist

This booklet is produced in association with
Dr Hugh Rushton PhD FIT, 24 Harmont House,
20 Harley Street, London W1.

Dr Rushton has a PhD in "Chemical & Morphological Properties of Scalp Hair in Normal and Abnormal States", a BA in Biochemistry and Molecular Biology and has published over 25 papers and several book chapters relating to scalp hair problems. In addition his interests in forensic science have seen him giving expert evidence in criminal cases in the UK and New Zealand.

Dr Rushton's interest in hair related sciences continues to this day. He is a fellow of the Institute of Trichologists, Royal Society of Medicine and a member of the European Hair Research Society, Society of Cosmetic Scientists and New York Academy of Science.
His academic base is the University of Portsmouth, School of Pharmacy and Biomedical Sciences where he holds an Honorary Senior Lecturer post.

how hair grows - 'the hair cycle'

To understand how changes can occur to your hair volume it is necessary to first understand the way hair grows.

Each scalp hair is attached to the scalp via a 'follicle' and there are between 100,000 and 350,000 hair follicles on the human scalp. Each follicle grows its hair for an average of 1000 days (3 years) and then rests for a period of around 100 days (3 months). This pattern of active growth followed by the 'resting' period varies significantly from person to person and is influenced by age, diet and our state of health [1,2].

The length of hair that you are able to grow is controlled by the duration of the growing phase. If, for example, you have a short growing phase of 600 days, then the hair will grow to approximately 198mm: - that is 600 days at 0.33mm per day of growth [3]. With very long growth phases the hair can grow down to your feet!

Each hair follicle acts independently so while one hair may be growing, the adjacent follicles may be in the resting phase. As a result, humans do not actually have recognised moulting periods unlike birds and some animals [4].

We all lose some hair naturally each day when we brush, comb or shampoo and as long as new hairs are being produced at the same rate as those falling out, there will be no difference in hair volume. However if the rate of shedding exceeds production the net result is hair loss. For example: if an individual has been losing 50 hairs per day and this increases to 100, twice as many hairs would be observed when combing or shampooing. Whilst 100 hairs are still within the normal range, for this individual it represents a worrying 100% increase in lost hair. Consequently the hair on their head may begin to feel thinner to them although this may not be obvious to anyone else.

(1-4) See page 15 for references

causes of hair loss

A recent survey of over 1000 women found that a staggering 33% (or 1 in 3) reported hair loss. This was observed as an increase in the amount of hair shed or a reduction in the length grown, both of which contribute to a reduction in hair volume if the problem persists for any length of time.

Hair volume varies between individuals with some people having finer (or thinner) hairs than others. As we grow older, there is a tendency for our hair fibres to become finer and shorter over successive hair cycles, but years may elapse before any obvious difference is seen.

Hair volume is determined by three factors [5, 6]:

- the number of hairs present per square centimetre
- the proportion of hair follicles in the growing phase
- hair fibre thickness

Almost all hair problems show up as a change in one or any combination of these three factors [7]. Understanding what has changed is the key to identifying the underlying cause.

It is important to understand that 95% of hair loss complaints seen in women are caused by just two conditions. These are:

- Chronic telogen effluvium (CTE)
- Genetic hair loss (androgen-dependent alopecia)

Both of these are covered in detail in this booklet and the causes of the remaining 5% of cases are also summarised.

What type of hair loss do I have?

If you think you have increased hair shedding, then you should use the chart opposite to help you determine what the cause might be. Since there are effectively only two main types of hair loss, CTE and Genetic Hair Loss, it is likely that your hair loss problem is due to one of these complaints.

The two conditions have similar symptoms but can be distinguished from each other by identifying which area of the scalp is affected.

If after using the chart you think you may have CTE go to page 6. If on the other hand, you feel your hair problem is the genetic type of hair loss, you should go to page 10.

(5-7) See page 15 for references

Which hair loss type best describes your situation?

Hair loss noticeable on the top of the head

Sufferers of this type of hair loss complain of seeing more scalp and if there is a parting, this will often look wider. This type of hair loss extends from the front hairline across the top of the head and is generally noticeable to others. **Names given for this type of hair loss include genetic hair loss/androgen dependent (androgenetic) alopecia or female baldness.**

SEEK MEDICAL ADVICE FOR TREATMENT

Patchy hair loss

Hair loss giving rise to distinct bald patches which develops on any area of the scalp. The commonest cause of patchy hair loss is **alopecia areata**.

SEEK MEDICAL ADVICE FOR TREATMENT

Thinner hair all over

Typically seen as diffuse hair loss all across the scalp sometimes with shorter hairs present at the hairline i.e. not patchy or localised at the top of the head. Sufferers complain of less hair available to clip or tie up, a thinner ponytail than they used to have and more hair left in brushes and in the sink. This type of hair loss may not be noticeable to anyone else. The name given to this type of hair loss is **Chronic Telogen Effluvium (CTE).**

Try NutriHair®

More hair loss in the sink or brush

Although your hair loss may be significant to you in terms of the number of hairs found in brushes, combs and in the sink, other people may not have noticed any marked difference in your hair. This is likely to be the early stages of **Chronic Telogen Effluvium (CTE)**.

Have you changed the frequency of washing your hair? **YES** → Washing your hair less often will temporarily increase hair shedding. Try shampooing daily.

NO

Have you coloured and/or permed your hair recently? **YES** → Colouring, perming or straightening hair may cause hair loss due to breakage. NutriHair® cannot help this problem.

NO

Have you recently had a baby? **YES** → Hair loss can be caused by pregnancy itself. This problem normally corrects itself without intervention. However, if your hair loss is no better after 6 months from the birth, use NutriHair® as a treatment.

Try NutriHair®

"I have about a third less hair than I used to have. Nobody believes I have a problem because I still have a lot of hair but I know it has changed and I am very worried"

Mrs C, Inverness.

chronic telogen effluvium (CTE) - the most common type of hair loss

CTE is hair loss which is evenly distributed (diffuse) across the scalp, as opposed to hair loss just at the top of the head. Often it is only the sufferer who notices that their hair is shedding more than it used to.

Women affected by this type of hair loss are usually between the ages of 18 - 50, and they generally show one of the following signs:

- An increase in the number of hairs lost when shampooing, brushing or combing.
- Less hair to clip or tie back than before.

Tests often show that women with CTE suffer from low iron stores in the body[8]. The amount of iron stored by the body can be simply measured by your doctor. He/she will take a small blood sample from you and then have it analysed for its serum ferritin level.

However the more common measurement to be taken from a blood test is the haemoglobin level but this simply helps your doctor see if you are anaemic.

Research has not established a link between haemoglobin levels and hair loss as it has with hair loss and serum ferritin values[8, 9].

In fact it is not unusual to find you have a normal haemoglobin level with lowered storage iron (serum ferritin).

Low dietary iron intakes has been known for some time to be a potential problem for millions of women, but it is only now that it is becoming recognised as an important factor that can contribute to increased hair shedding, and that this condition is really quite common[10-12].

What causes low iron stores?

Low serum ferritin levels usually result from the loss of blood during menstruation, which is just enough to cause a gradual depletion of iron stores in the body. Additionally eating a diet containing little or no red meat is likely to give rise to a lower amount of available iron.

CTE linked to low body iron stores

Research has shown that if the iron deficiency is corrected and the serum ferritin level is raised to a certain 'trigger point' then hair growth will resume. In fact, what actually happens is that the growing stage of the hair follicles is lengthened so, at any one time there are more hairs in the growing stage.

This means that hair volume will start to increase and any excessive shedding will reduce. However, this takes several months because ferritin levels can only be raised slowly. Also once the 'trigger point' is reached and hair growth starts, it takes 2 - 3 months for the shedding to reduce and another 3 - 6 months for the new hair to reach a length that contributes outwardly to fuller hair.

Whilst iron is usually the key factor, other nutrients also play an essential role. This was highlighted by research which showed that a significant proportion of women who were given an iron supplement failed to respond, even when given a high dose with additional vitamin C (which is known to help iron absorption).

This problem was overcome when it was realised that intake of the amino acid L-lysine was very low in many people's diets, particularly those who eat little or no meat.

When L-lysine was added to the other nutrients being given, most women went on to reach the target ferritin level, and their hair volume subsequently increased. When they stopped the hair shedding resumed several months later.

(8-12) See page 15 for references

the answer to chronic telogen effluvium (CTE)

Hair loss caused by a nutritional shortfall of iron can take years to develop and so cannot be corrected overnight. In fact without a supplement it may be many years after the menopause before a woman's iron stores return to the level of a man of the same age.

From starting a supplement regimen, the minimum time before a reduction in hair shedding is noticed is about 16 weeks. It may take considerably longer to see the benefit in terms of hair volume because of the time the hair takes to grow long enough to contribute to the overall hair volume. If you see no benefit in hair volume after 6-9 months then you should seek professional help as there are probably other reasons for your hair loss.

Eating a large portion of red meat every day would certainly raise iron levels but is not an option for most people. An iron supplement will achieve the same results but research has shown that to increase ferritin levels quickly, you will need a high strength iron supplement supplying 72mg of elemental iron a day, for up to 6 months. Thereafter at least 24mg of iron a day will be needed (or double this if you have heavy menstrual bleeding). For a significant number of women this level of iron intake will not have the desired effect unless they also take L-lysine plus vitamin C and vitamin B12 to aid the absorption of the iron. A supplement which has been developed to provide those nutrients at the specific levels is NutriHair®.

Studies show that for most women NutriHair® can help overcome CTE.

	POINTS	
I have noticed an increase in the number of hairs lost when shampooing over the past 6 months, or, there is more hair in my brush/comb after brushing/combing my hair	**12**	
I have less hair in my 'pony-tail' or to clip back than previously (ie 2-5 years ago)	**12**	
My hair loss is not obvious to others (ie GP, hairdresser)	**8**	
I have noticed that my hair is thinner than it used to be (ie 2-5 years ago)	**4**	
My hair loss is evenly distributed (diffuse), it is not just at the top of my head	**4**	
I don't eat any red meat or I don't eat red meat very often	**3**	
I have heavy periods each month	**2**	
	SCORE	

Tick the relevant boxes and add the points up to determine whether your hair loss is likely to be Chronic Telogen Effluvium (CTE)

If you scored:

20 or more points, it is almost certain you have CTE

14 - 19 points, it is very likely you have CTE

9 - 13 points, to be certain its CTE it may be worth having your ferritin levels checked to see if it is below 70µg/L

8 points or less, you do not have CTE

how can I be sure that I have CTE?

As detailed on page 6 and indicated on the diagnostic chart on page 5, CTE is hair loss which is evenly distributed (diffuse), as opposed to hair loss just at the top of the head.

Other signs you may notice include having less hair in your 'pony tail' or less hair to clip up than you used to, or an increase in the number of hairs lost when shampooing, brushing or combing your hair.

Remember those with CTE are often the only ones who are aware that their hair is thinner than it used to be. So don't be surprised if no one else has noticed your hair loss.

Which women are more likely to have CTE?

You may recall from page 6 that research has established a link between CTE and low iron stores (measured as serum ferritin) in the body.

It was also explained that low iron stores usually result from the loss of blood during menstruation (monthly period). As a consequence, women with CTE are usually between the ages of 18 - 50.

Accordingly, if you suffer from heavy periods each month, you are even more likely to have low iron stores in the body, and hence CTE.

However, this does not mean that if you are not between the ages of 18 - 50 and/or don't suffer from heavy periods that you can't have this type of hair loss because there is another major factor to consider.

This is the amount of red meat you consume. Eating a diet containing little or no red meat is likely to give rise to low iron stores in the body. This is simply because red meat is one of the richest sources of dietary iron, L-lysine and vitamin B12.

"Hair loss can happen at any time of life, for a number of reasons"

other types of hair loss

Earlier in this booklet it was stated that 95% of hair loss complaints seen in women are caused by one of two problems. Chronic Teleogen Effluvium (CTE) and Genetic Hair Loss. This next section deals mainly with Genetic Hair Loss and the remaining 5% of causes are also summarised.

Genetic Hair Loss

The most common hormonal hair loss problem affecting men and women is primarily genetic in origin (androgen-dependent alopecia or male pattern baldness). In this situation, the inherited tendency towards hair loss is activated by a change in the hormonal balance within the scalp and hair follicle (the precise mechanism is as yet unknown).

Whilst, as detailed on page 6, CTE results in diffuse hair loss across the whole scalp, genetic hair loss extends from just behind the front hairline back across the top of the head to the crown area. This hair loss makes the scalp more visible and, if you have a parting, this will often look wider. A further difference is that unlike CTE, which is generally not apparent to other people, genetic hair loss is generally noticeable to others.

The onset of genetic hair loss is usually during the mid to late 20's. Effective medical treatment is available and usually involves oral anti-androgen and oestrogen therapy. Women requiring such treatment do require a referral to a medical specialist. Under such medical supervision, they can often re-grow up to 40% more hair [13, 14].

Post-Menopausal

While early adolescence and the mid to late 20's are potential problem times for women susceptible to genetic hair loss, the menopause is an equally critical time. This is because there is a natural reduction in the level of oestrogen (female hormone), resulting in a change of the balance between the oestrogen and androgen (male hormone). Consequently further hair loss is experienced or those previously unaffected by genetic hair loss during the menstrual years become affected.

Anecdotal data suggests that some current types of HRT induce hair changes similar to those seen in genetic hair loss, although some women notice improvements as a result of oestrogen levels being restored.

Thyroid

Thyroid imbalances can produce significant changes in hair growth and hair quality [15]. In the UK approximately 2% of women and 0.1% of men are affected. Only a blood test can diagnose this condition. The frequency of hypothyroidism (under active thyroid) increases significantly after the menopause, when up to 10% of women may be affected.

Pregnancy

It is well established that following childbirth 50% of women experience post-natal hair loss and this usually regrows without intervention [16]. In those few women where it does not other reasons can normally be found. The precise cause of post-natal hair loss is unknown although some hormonal and nutritional factors have been identified. If you suffered in one pregnancy you may not after a second or subsequent pregnancy and vice versa [16]

Illness

General health disturbances can cause increased hair shedding 10 to 12 weeks after the start of the problem. The hair loss usually continues for a week or longer than the time of the illness. No treatment is required unless other complications develop. Sometimes additional shedding ensues due to the medication(s) given, or if prolonged fever is associated with the illness.

Other medical conditions

There are a number of other medical conditions and diseases causing hair loss. These all require medical attention. Perhaps the most common is the loss of hair in patches, called alopecia areata (AA). Although the frequency of AA is relatively small (about 0.1% of the population) it is a condition that receives a great deal of media attention. In its most severe form total loss of scalp and sometimes body hair, can occur. Most sufferers however only develop a few isolated patches, which correct themselves without any treatment. Since the cause of AA remains unknown there is no specific treatment as yet. Current research is focusing upon the immune system which looks like leading to a better understanding and hopefully an effective treatment.

(13-16) See page 15 for references

questions and answers

My hair is lovely and thick but recently I've noticed more hairs in the sink when I wash my hair. Could NutriHair® help?

Where the cause can be identified; i.e. a recent illness or pregnancy for example, there is no need to do anything. However, if no readily identifiable problem can be found and the shedding persists then NutriHair® should be considered (see chart page 5). In studies of women complaining of persistent excessive hair shedding (chronic telogen effluvium, CTE) 95% had a deficiency in one or more of the nutrients present in NutriHair®. Most women taking three tablets per day see a reduction in hair shedding within six months, although some require a longer period due to the extent of the prevailing deficiency.

I am a woman in my thirties and I am losing my hair. I already take a multivitamin with iron. Why is my hair still falling out?

For a significant proportion of women the amount of iron found in a multivitamin alone is insufficient to reach the required ferritin level for optimal hair growth. The unique formulation of NutriHair® is optimised to maximise the uptake of iron and other essential nutrients that are required for hair growth. In addition, the key amino acid L-lysine in NutriHair® has specific benefits of its own with regard to scalp hair metabolism. It is advisable not to take any other iron containing supplements whilst taking NutriHair®.

My hair is falling out but my GP says that I'm not anaemic so I do not need to take iron.

While you may not be anaemic by current medical criteria, it is well recognised that for non-essential tissue such as hair, you can be nutritionally deficient without having any outward medical symptoms. Research has shown that NutriHair® can correct the iron imbalance found in 95% of those affected with CTE. It would be worthwhile trying NutriHair® for six months. If you are still concerned about your hair after this period then professional help should be sought.

My hair is thinner than it was, but it is not falling out. Is there anything I can do to get it back to how it used to be?

While there are several causes of thinning hair a significant proportion of women have a nutritionally based problem. Although NutriHair® will not correct any hormonal imbalance, it will correct thinning hair arising from having less hair in the active growth phase than you should. It would be worth trying NutriHair® for six months. If you are still concerned about your hair after this treatment period you should seek medical advice.

I am a sixty-year-old woman with a good diet but I am really worried because I am losing my hair. Is NutriHair® suitable for me?

If you have noticed an increase in hair shedding it would be advisable to see your GP to have your serum ferritin checked. If it is below 70µg/L you should take NutriHair®. If you are seeing more scalp it would be advisable to check your thyroid and oestrogen status to see if there is an imbalance.

I have heard it could be dangerous to take iron for long periods of time.

By following the dosage instructions for NutriHair®, normal individuals can suffer no ill health or "iron-overload". However, anyone suffering from Haemochromatosis should not use NutriHair® as this disorder leads to unnaturally high iron levels in the blood. Because of the iron content of NutriHair®, this preparation would not be recommended.

My hair seems to lack shine and life. I've tried lots of different shampoos but nothing seems to work. What should I do next?

NutriHair® does not help improve the shine and/or "life" in hair. We would suggest that you shampoo your hair frequently i.e. at least twice a week or daily if you live in a large city. Rinse with warm water and use a good quality conditioner as necessary. Avoid harsh towel drying, over chemical processing, and hot hair dryers.

I seem to suffer with split ends no matter which conditioner I use. Help!

Split ends are a problem that involves loss of water from the hair fibre, together with a loss of the outer cell covering (cuticle), which is then subjected to abrasive and drying effects. You have to examine how you shampoo and dry your hair. As a guide, you should shampoo at least twice a week or daily if you live in a large city. Use warm water and two applications of shampoo (one if shampooing daily), rinse thoroughly and use a conditioner to the ends of the hair. Pat the hair dry; do not rub the hair vigorously with a towel. Try to minimise the use of heated rollers, hair dryers and other heat generating processes.

I am a thirty-year-old man who is rapidly going bald. I have heard about NutriHair®. Will it help me?

NutriHair® is not suitable for the treatment of genetic hair loss in men or women - unless there is also an underlying nutritional problem.

product information

Presentation

NutriHair® is a red/brown tablet providing the following nutrients:

Each tablet provides:		%NRV
Vitamin C	24mg	30
Vitamin B12	3µg	120
Biotin	50µg	100
Iron (as ferrous fumarate)	24mg	171
Selenium	10µg	18
L-Lysine	500mg	-

** NRV = Nutrient Reference Value*

NutriHair® is suitable for vegetarians.

Uses

NutriHair® has been formulated to provide certain essential nutrients to help maximise hair growth in women.

Research has shown that a section of the female population; particularly between the ages of 18-50 have increased hair shedding (chronic telogen effluvium) and that there is a strong correlation between this hair loss and low iron stores (measured as serum ferritin).

NutriHair® is especially recommended for women who have reduced hair volume (compared with several years ago) or who have recently noticed hair shedding as seen by more hairs in the brush, comb or when shampooing.

When NutriHair® is taken at the recommended daily intake it can take up to 26 weeks, before the hair shedding is reduced. From that point, hair volume will start to increase but it will take several further months for the hair to grow to a length that contributes to hair volume.

Recommended intake

INITIAL INTAKE Take one tablet three times a day for up to six months or until excessive shedding stops. If after six months no reduction has occurred, professional help should be sought or contact our Helpline on **01892 554348**.

MAINTENANCE INTAKE For maintenance purposes take one tablet daily but if you have heavy periods or eat little or no red meat, then your maintenance dose may need to be 2 tablets daily.

NutriHair® should be taken with water half to one hour before food or on an empty stomach.

Try to avoid drinks containing milk or tea and coffee within an hour of taking NutriHair® as these drinks affect the absorption of the nutrients.

Do not exceed recommended daily dose.

Please read the leaflet for full details (available on website).

EU Patent Number 0914078 Product Code: 119-90

Contra-indications, warnings, etc.

Do not take any other iron containing supplements whilst taking NutriHair®.

If you are taking prescribed medication, breast-feeding or pregnant consult your doctor before taking NutriHair®.

Do not take NutriHair® if you are taking oral antibiotics.

NutriHair® should not be taken within 2 hours of taking any medication, including indigestion remedies.

Nutrition Advice

We have a large team of friendly, knowledgeable Nutrition Advisors who will be more than happy to discuss what's best for you. This service is totally confidential and the advice is FREE.

To speak to a member of the Nutrition Advice team, please call: 01892 552175

references

1. Ebling FJG (1987) The biology of hair. Dermatol. Clin. 5; 467-481.
2. Rook A, Dawber RPR (1991) Diseases of the hair and scalp. Oxford: Blackwell Scientific Press.
3. Myers RJ, Hamilton JB (1951) Regeneration and rate of growth of hair in man. Annals of the New York academy of Sciences 53; 562.
4. Randall VA, Ebling FJG (1991) Seasonal changes in human hair growth. British Journal of Dermatology 124; 146-191.
5. Rushton DH, James KC, Mortimer CH (1983) The unit area trichogram in the assessment of androgen-dependent alopecia. British Journal of Dermatology 109; 429-437.
6. Ruston DH, Ramsay ID, James KC, Norris MJ, Gilkes JJH (1990) Biochemical and trichological characterisation of diffuse alopecia in women. British Journal of Dermatology 123;187-197.
7. Rushton DH (1988) Chemical and morphological properties of scalp in normal and abnormal states. PhD Thesis, University of Wales.
8. Rushton DH (1993) Investigating and managing hair loss in apparently healthy women. Canadian Journal of Dermatology 5; 455-461.
9. Ruston DH (1993) Management of hair loss in women, cited in: Dermatologic Therapy Maddin S, McLean DI, Saunders NB. Philapelphia USA; 47-53.
10. Puolakka J (1980) Serum ferritin in the evaluation of iron status in young healthy women. Acta Obstet Gynecol Scand Suppl 95; 35-41.
11. Cook JD, Skikne BS, Lynch ST et al., (1986) Estimates of iron sufficiency in the US population. Blood 68; 726-732.
12. Gregory J, Foster K, Tyler H, Wiseman M (1994) The Dietary and Nutritional Survey of British Adults. HMSO London, UK.
13. Mortimer CH, Rushton DH, James KC (1984) Effective medical treatment for common baldness in women. Clin Exp Dermatol. 9; 342-350.
14. Rushton DH, Ramsay ID (1992) The importance of adequate serum ferritin levels during oral cyproterone acetate and ethinyl oestradiol treatment of diffuse androgen-dependent alopecia in women. Clinical Endocrinology 36; 421-427.
15. Ramsay ID (1986) A synopsis of endocrinology and metabolism. 3rd ed. Bristol. Wright, UK.
16. Ruston DH, Firth PSs, Abrahams R, Lyons GM, James KC (1986) Scalp hair, facial skin and pregnancy. J. Obstet. And Gynaecol. 7; 51-2.

5 055148 402259

NL0915

Nature's Best Ltd
Century Place, Tunbridge Wells, Kent, TN2 3BE

Hair Helpline **01892 554348**
www.**nutrihair.co.uk**

NATURE'S BEST®