Speaker 1: Welcome to Webinar Wednesdays. Today, with Hair Loss Innovations presented by Dr. Angela DeRosa and Dr. Samantha Lebsock, and is sponsored by Belmar Pharma Solutions. We thank you for joining us today, and now let me turn it over to Dr. DeRosa.

Dr. Angela DeRo...: [00:00:30] Good evening everyone, and thank you so much for participating in tonight's Webinar Wednesday. We're just so delighted to be here to have the opportunity to present hair loss innovations. We just are very graciously humbled by AFRM and their staff for allowing us to participate in the wonderful events, so thank you to them. Without further ado we'll get started. But as our producer had mentioned, I'm Dr. Angela DeRosa, and I'm the founder and president of the Hormonal Health Institute, but on a more generalized basis, I'm a board certified internist, but did a specialty fellowship in women's health, and have largely really specialized in [00:01:00] hormonal medicine and women's health for almost 30 years.

Largely due to the collision of a professional and a personal crisis of going through perimenopause and then menopause at the age of 35, which meant I was having all my symptoms during medical school and residency. All of this area of regenerative medicine and hormonal medicine has been a passion of mine for many, many [00:01:30] years. I'm always so delighted whenever I have the opportunity to share some learnings that I've had along the way, which are largely fueled by a lot of learnings, the hard way, as we shall say.

But I've also published and done a lot of research, but most notably I'm also one ... The opportunities I've been so proud of is being the Belmar Pharma Solutions Medical director, and I have the opportunity to present on various levels, but it's just such a great collegial and symbiotic relationship to be able to work for such a [00:02:00] wonderful company, and then partner with groups such as AFRM, so thank you so much for allowing me to present tonight, and in a topic that I always find very fascinating because, although I have not been hair challenged per se, but I'm also been hormonally balanced.

I know that this is an area in particular is treating tens of thousands of patients over the decades, that this is something that is very significant, more prevalent than a lot of folks even imagine, and something that causes quite a bit of distress for our [00:02:30] patients, but I couldn't go on without at least giving a shout out to Belmar Pharma Solutions for, not only being just a wonderful compounding pharmacy that has a global recognition for the quality that they have, but also really the fact that they have been really dedicated to medication, education and consultation in the areas of regenerative and restorative medicine.

Or the words anti-aging hormonal integrative therapies. You can see that Belmar [00:03:00] has been on a mission to dominate the space and really provide quality services to a large breadth of folks. This whole conglomerate now is not only Belmar Pharmacy, but Belmar Pharmacy Select Outsourcing, Belmar Pharmacy and Green Mountain Pharmaceuticals. We've now added Belmar Research, and just recently acquired Women's International Pharmacy. You can see that, not only am I on a

personal mission, but Belmar is as well, and I'm delighted to be a part of that.

[00:03:30] This is really just started as a local company in Denver, Colorado about 40 years ago, and certainly what a difference a couple of decades make because that they are really dominating the space and it's just really impressive to see what they're accomplishing, and they really have become experts in compounding non-sterile, sterile office use medications. And I'm just, as I mentioned, delighted to be a part of it because it is really just fascinating to watch its growth. But also, in my opportunity as a medical director, I also get to work with incredible talented
[00:04:00] women and men, and Sam Lebsock, one of our pharmacists at the company is no exception.

That she is an exceptional young lady who is just also incredibly brilliant and just a very hard worker, who obviously is qualified from getting a bachelor's in human biology and a doctorate of pharmacy from the University of Montana, but she's also been with Belmar Pharmacy for quite some time now since 2014. Most
[00:04:30] recently, she's taking on a role as a director of the clinical trials for Belmar Pharma Solutions and really kind of being our resident expert on low dose naltrexone. But she's going to be presenting at the end of the lecture a little bit about some of the formulary that is involved in some of the hair loss, innovative solutions.

But I know that she, if you have the opportunity to talk with her, she's just a wealth of information. I mean, she's become one of my go-tos, and she's certainly helping with some of the research initiatives we have going. I'm really just delighted to be
[00:05:00] able to co-share this presentation with her. Without further ado, whenever you start to talk about hair loss, treatments and innovations, sometimes it's just important to get back to the basics, because when I always talk about hormonal health or thyroid health or all those other things, it's really important to get to the root cause of what's driving in particular disorder.

As you start to look at treatments for hair loss, it's really important to know where the breakdown of the hair growth cycle is occurring. In order to do that, you need
[00:05:30] to know what normal looks like. When we are born, we are born with about a hundred to 150,000 follicles on our head that are actively going to grow throughout our lifetime. This hair cycle is in constant transformation as any other living system, and there's different phases to this growth cycle that are undergoing transformation at any particular time. And you're going to have hair follicles in
[00:06:00] various stages at different points throughout our life.

When you start here at the top, the antigen, which is actually the active growth phase, it's actually where we have the majority of our hair at any given time, about 80% to 90% of the hair follicles, and it's really in that grow within phase and it's really what determines our hair length. This phase actually lasts a long time, about three to six years on average. After you go through this active growth phase, then
[00:06:30] the hair transitions into this catagen phase, which only about 5% of our hair is in at any one point, and it's really when the hair follicle starts to shrink and it's really starting to prepare itself to separate from the dermal papilla, which is then going to

allow it to shed. Then that phase takes about two to three weeks.

Once it starts to shrink and it moves into the telogen phase, which then becomes what we call the resting phase, and that's ... You have about 5% to 10% of your
[00:07:00] hairs in that phase. It's really now separated from the follicle and it's getting ready to shed. Then they move into the exogen phase, where the hair actually shut on a regular basis, and then it starts the whole cycle over. You can see you as the hair is shedding in the exogen phase, there's actually a small matrix at the base that is now starting to form the new hair that's ready to kind of take its place. When you're in that exogen phase, that's where we're losing hair and shedding hair.

[00:07:30] On average, normal hair loss is about 50 to 150 hairs per day. If it gets to exceed that, that is obviously problematic and you're gonna not be able to keep up with normal renewal, and then patients are going to start to notice thinning hair or hair loss, which is going to be problematic. Now, if you kind of were thinking and listening about the different phases and the timeframe, so if you think the anagen is three to six years, but then if you take catagen, telogen and exogen phase, those
[00:08:00] three phases alone, on average, take about three to four months.

Whenever you start treatments for hair loss, you need to give it at least three to four months to see any kind of improvement. Unfortunately, patients these days, which is getting worse, are certainly are looking for things to occur much more rapidly, but we have to teach that patience is a virtue concept, because whatever we do, even the best therapies, are still going to take a minimum of 90 to 120 days
[00:08:30] to show any noticeable benefit, and they have to kind of stay the course. As we start to talk about hair loss too, it's important to kind of address some of the myths that are out there.

Probably the number one myth is that patients think that they're shampooing too much and that they should shampoo very, very little, and that will help with hair loss. But actually shampooing is actually, in particular, when we start to talk about
[00:09:00] androgenic hair loss from too much 5 DHT in the scalp, actually shampooing removes that hormone and actually helps with hair loss. Patients often say, well, I'm not going to shampoo cause I'm worried every time I shampoo, it's going to come out and I'm going to have worsening hair loss, but it's really important to get some of the chemical derivatives that may be sitting on the hair and scalp that are causing it. Shampooing too much should not cause hair loss.

Stress will cause permanent hair loss. Actually, stress typically does not. It's usually
[00:09:30] temporary while the stressor is in place. But stress does a lot of horrible things to our body, as you know, not only from adrenal problems or weight gain and various other things, but also can lead to hair loss. But if the stress can be removed, that can certainly come back. Patients also worry that if they shave the hair, it's going to grow back twice as thick and/or darker. Actually, that is a false hood. Usually, when they shave, it becomes an optical illusion, because instead of the hair coming out with the fine tip that usually is at the top, then you cut it, it actually creates a
[00:10:00] greater diameter because it's cutting it shorter in the base, which creates the

illusion that the hair is actually twice as thick, but it's actually not.

Brushing your hair a hundred strokes a day will make your hair healthier. Although it feels really good, and I know my cats in particular love to have their hair brushed, and I absolutely love to have some of the massages and brush my hair. It's certainly not going to make your hair healthier. It may spread some oils from the scalpel and do the hair shaft and making it shiny here, but it certainly may not make it
[00:10:30] healthier. There's always concern about hats and wigs that can cause hair loss. Typically, unless there's a traction component to that, that should not be problematic. I'd thought it was kind of interesting that they only say the intellectual women lose more hair or men who have hair loss are highly virile, and neither one of those facts have been proven to be true.

When you start to talk about the impact of hair loss it seems to be, at least
[00:11:00] societally more acceptable for men to have hair loss, and in some instances, we think that, going back to that myth, that they're more virile, or they're more smart. But it also seems to be more acceptable in men. Although, a lot of the men that I've seen, they distress over it quite a bit, but now you start to see more men shaving their head, and that's deemed sexy, so that we tend to give men more of a break when it comes to hair loss in society, and they seem to accept it more readily.

[00:11:30] Now, women, on the other hand, are not forgiving. I mean, women can have even normal hair loss, and I see them really ruminate about it and obsess over it, but it is distressing for women. I know I'm guilty as charged. I mean, a lot of women, they rate how their day is going based on how they start with their hair. If you're having a bad hair day, forget about it, this is not going to be a good day. Or if you get a bad haircut. There just seems to be more association with our self esteem to our hair
[00:12:00] than in men. This certainly tends to have more of a distressing impact on women than men.

Hair shedding is really a natural balance. So, you get some hair falling out, others grow in, but typically, when the hair falls out and less hair grows in, hair loss happens. Hair loss is really different than hair shedding. The metro medical term, as we've alluded to for hair loss, is alopecia, and it's really due to a disruption of that
[00:12:30] normal hair growth cycle. You can have that disruption occur at any one of the different components. Typically, when you look at the top three, you have anagen effluvium, telogen effluvium, and then the androgenic alopecia, which is kind of the male pattern baldness per se.

Typically, the anagen effluvium is poisoning really hair during the growth cycle, so
[00:13:00] in that anagen growth phase. The telogen phase is really when you get increased pathological number of hair follicles reaching the telogen phase, where the hair then continues to fall and not grows back. Then the androgen alopecia is really probably the most common cause of hair loss in men and women, and it's due to a hereditary sensibility, which we'll kind of go through each one of these in more detail. And then you have miscellaneous causes like the traction alopecia,
[00:13:30] autoimmune, alopecia areata, scarring alopecia, and trichotillomania, which we'll

talk about again in detail, all of these.

Let's start with anagen effluvium. Anagen effluvium is really the one that we associate with patients who are undergoing chemotherapy and the cancer patients. This is really a pathological loss of hair of the antigen or in that growth phase. That's that three to six year kind of timeframe where the hair is growing in and then being they're available to replace those that are naturally falling out. This
[00:14:00] phase of hair loss is really classically due to radiation to the head or more commonly systemic chemotherapy, and in particularly the ankle ... Excuse me, the agents that are really toxic.

When you start to talk about chemotherapy induced alopecia, it's probably one of the most shocking aspects of the oncological patient. And really, it's really highly
[00:14:30] underestimated by physicians. It negatively influences body image, sexuality, self-esteem, and actually even up to, in some studies, I've seen as high as 8%, 10%, 15% of patients will refuse, in some cases, life altering and potentially life saving therapies with chemotherapy if they're going to lose their hair. It's early estimated to be about 65%, even in the prevalence and severity of hair loss related to the
[00:15:00] drug category and the number of administered drugs.

It gets very high up to 80% in the anti-microbial agents, and in some studies, even up to 80%, and then you look at the [inaudible 00:15:14] ACE inhibitors, alkylators, and the antimetabolite. There's a whole host of different chemotherapeutic agents that are really going to be the real heavy hitters in causing hair loss. Certainly, when
[00:15:30] you start to look at other factors that, not only the administration of those drugs cause, but if the patient also has other co-morbidities like age or presence of another type of alopecia, if they're hormonally balanced, or have nutritional aspects, it's certainly going to up the ante for the potential for them to lose their hair.

When you start to, if we consider that up to 90% of the scalp hairs that are
[00:16:00] normally in anagen phase, it's really easy to understand that scalp hairs will be the ones that are frequently affected. And now, it's not to say that patients who undergo chemotherapy are going to lose it in other areas, it's most noticeable on the scalp, and you can also see hair loss in the axillary region, eyebrows, eyelashes, men with their beards. So, it can be more generalized, but again, the scalp is the most actively involved. The other thing is, is that a lot of patients are worried that
[00:16:30] this is going to be permanent. Good news is, it's most often generally reversible, and it will regrow after treatment.

But interestingly, a lot of patients experience a different type of hair. Women who may have had straight hair now come out with curly hair, so they get to try the other side of the fence. It's kind of interesting how the hair texture collage, and the way it even falls, is just different. It's a fascinating kind of response, and in a lot of
[00:17:00] ways, we don't understand why. It's good news, as I suggested though, is that most patients, it's going to come back. Now, the other more common class is the telogen effluvium. Now, this is really when you're talking about where you have stressors in

the body that are causing hair to more commonly come out in the resting phase.

[00:17:30] It's going to basically allow those hairs that are sitting there to be just kind of come out more readily. It's really, as I like to say, that you're causing shock and awe or stressors to the body, and simple things like surgery illnesses, even getting a cold can induce this, but you can also see that smoking, certain medications, information, but I often see in my practice due to hormonal imbalances, just going through menopause is going to cause more active involvement of this, or pregnancy. A lot of women lose a lot of their hair during pregnancy, but also you're [00:18:00] going to see it in stress, rapid weight loss, changes in diet, toxic metals, allergies, food intolerances.

[00:18:30] But I highlighted here, thyroid disorders are probably one of the most common things I treat in our practice that causes hair loss. As you start to look at perimenopausal women in particular, they get the axis of evil, where you have the estrogen deficiency, which can lead to hair loss, and then also, a lot of those women are having either subclinical thyroid functional hypothyroidism or overt hypothyroidism on top of it, which can then lead to even more hair loss. And it's bad enough for sitting there struggling with hot flashes at night, so it's in that sleeping, but then, all of a sudden, you start to lose your hair.

[00:19:00] I mean, we're just ready to jump off. I mean, it's very, very traumatic for our patients. The good news is some of this stuff is very easily corrected. When you look at these disorders, when you have this kind of hair loss, it's usually fairly uniform all over the scalp, which really kind of differentiates from other causes, in particular like androgenic hair loss. When this typically occurs, it's usually over two to four months after the triggering event. Because remember, it takes awhile for the hair growth to re-kick in and catch up. If it's temporary, most often, it's going to last about six months, whatever the stressor is, is resolved. But patients are going to describe thinning the hair or hair coming out in clumps. It's not uncommon for it [00:19:30] to be associated with eyelash or eyebrow hair loss.

[00:20:00] When I'm looking at, in particular assessing patients for thyroid disorders, not only did they get the kind of the thinning or the, I call it like straw man here, or it's coming out in clumps, but then they also get that lateral eyebrow thinning, which is very, very pathognomonic in my opinion for thyroid disorders. This also can be really insidious or subtle. But what's interesting, one of my colleagues mentioned, by the time a woman or a man starts to notice significant hair loss, they've already lost about 33% of their hair which is really kind of alarming, and so it's really important to kind of keep an eye on it so that things don't get out of hand too quickly and then it takes a lot longer to resolve.

[00:20:30] Androgenic alopecia is probably defined as the most common type of hair loss that you're going to encounter in your practice. Typically, this is caused by an excessive conversion of testosterone to 5 DHT in the skin. This affects not only men, but also women. It's really that 5 DHT, which causes hair follicles to shrink and gradually disappear. The term androgenic alopecia is used when the cause of the hair loss is

typically hereditary, or as we can say, it has a genetic base for it, but you can also put on things on top of that to make it worse. For instance, in women, if they have
[00:21:00] a genetic predisposition to this, and then all of a sudden we load them up with testosterone for their testosterone deficiency symptomology, they're going to be more prone to the androgenic hair loss that's going to occur from those therapies.

So, it's really a hypersensitivity of the hair follicle to the masculine hormones, the androgens, and there are really various causes of alopecia. There's no clear answer as why there different areas associated with this baldness on this scalp, but it really
[00:21:30] originates in the hair follicle below the skin. But these vulnerable hair follicles have an increased number of connection areas or receptors for testosterone or the 5 dihydrotestosterone hormones. It really is an interaction with genetically affected receptors and hair follicles, which really shorten that growth phase and thus accelerate the hair growth recycle, which then causes it to lose its thickness and
[00:22:00] finally, the hair follicle disintegrates. This process is really called micronization.

You can see here in a pictograph, at the bottom where you can see here, you have the terminal hairs where they start to miniaturize, so they get shorter. Then they start to get thinner overall, which then leaves, obviously visible areas of patchy loss, so it can be diffused. It can be or thinning, it can be thin on the top, thick in
[00:22:30] the back. There's really no specific bald spots, but in general, in most patients, we would get what we call that Christmas tree pattern upfront, or if in severe cases, it can become more global and create significant loss. When you start to look at this, as I mentioned, this is a very, very predominant cause of hair loss in patients.

Over 98% of hair loss is due to having an underlying hereditary or genetic aspect of
[00:23:00] the androgenic alopecia. As I mentioned, this not only affects men, but it also affects women as well. And there's over 50 million men and 30 million women in the USA that are affected by this. Unfortunately, it can start as early as some persons in their teens, and the risk goes up with increased age and/or in particular as other significant changes can occur with age such as hormonal imbalances. When you start to talk about men, in particular over the age of 50, when you start
[00:23:30] to look at numbers over 50% of men over the age of 50, have some degree of hair loss.

It's usually male inherited gene from mother, father or both. Now, women, on the other hand, over 50% will experience some kind of noticeable hair loss in their lifetime, and most often it's either triggered by stress or changes in hormones. Again, pregnancy, perimenopause, menopause, thyroid. Also, in affected patients, you can take patients who have this predilection and you give them testosterone,
[00:24:00] it's going to obviously make it worse, but then there can also be folks who have not had this kind of genetic predilection and we give them too much testosterone, and it can certainly make this problematic as well.

There's also, when you start to look at kind of male pattern baldness and female pattern moments, you can see that there are many different types of patterns that can occur, and the Ludwig and Norwig scales are really designed to help describe

[00:24:30] the different patterns of baldness and patterns of kind of what the hair discrepancies look like. As I mentioned early on, there's also some miscellaneous causes that are worth noting and mentioning. Traction alopecia is becoming more prevalent, and this is really due to that constant pulling on the hair.

[00:25:00] It's either due to braids, ponytails, or what we've been seeing a lot more lately, or hair extensions as a lot more women are putting these types of hair extensions into their routines for beautification. It's unfortunately, although it looks really nice when they have them in, it can cause a lot of damage to their underlying natural hair, and in some ways, defeats the purpose of what the hair extensions are designed to do, is to really thicken and fill out the hair. It becomes a fine balance, and if they're going to go down that route, I always make sure that they are really well aware of the risks of doing this, and making sure that they're using good

[00:25:30] product, focusing on what they're doing, and trying to minimize the traction that is being placed on the hair follicles.

[00:26:00] Also, it's not ... There's a lot of different autoimmune variants that can lead to hair loss, and it's really due to kind of a weakened immune system, a lot of internal inflammation that can be coming from underlying autoimmune disorders. It can be from just dietary inflammation, gut health problems, all kinds of things that can lead to inflammation can also cause hair loss in any hair bearing areas, such as the scalp, the face on the body and everywhere else. And these typically are autoimmune based, and stress can exacerbate this just like anything else in the system. But in particular, when a patient has autoimmune disorders, throwing stress is really like throwing gasoline on a fire.

[00:26:30] Some of the more common autoimmune kind of patterns are the alopecia areata, which are bald spots and patches which you see in this picture here. You have the alopecia totalis, where the patient would end up with no hair on the head with the scalp, eyebrows, eyelashes or facial hair. Or also I've seen a few cases of this where the have alopecia universalis, where they have no hair on their body whatsoever. Of these though, the alopecia areata is the most common, but good news is, of all of these, they're fairly uncommon. This is really a non-scarring variant. So, which

[00:27:00] we'll separate it from the scarring variant, but it's non-scarring, autoimmune inflammatory scalp and really body hair loss condition.

[00:27:30] It really shows up in very patchy hair loss as show right here in this picture. This is to note that there is not typically a psychological component to that. Now, the scarring alopecia, which is actually a little easier to diagnose because of based on how it presents, but it's really caused by a diverse, good news, rare disorders that destroy the hair follicle and replaces it with scar tissue and a more permanent hair loss, which is very unfortunate. You can see there's several conditions that can be more predisposed to this like scleroderma, which affects the body's connective tissue, which results in hard puffy kind of itchy skin, and then the scarring.

[00:28:00] The lichen planus, which is an itchy rash, which can affect the area and then also causes kind of scarring. Discoid lupus, folliculitis decalvans, which is a rare form of

alopecia and more predominant in men which causes scarring, and then the frontal fibrosing alopecia, which is a variant that predominantly affects post-menopausal women, where the hair follicles become damaged. The hair falls out, and then unfortunately, is not able to grow back. Also, another interesting condition, the
[00:28:30] trichotillomania, which is really an obsessive compulsive disorder, which has this recurrent irresistible urge to really pull their hair out from the scalp, eyebrows, eyelashes, and they really can't help themselves to do that, and they want to stop, but they can't seem to do this.

It's really defined as a mental disorder under the obsessive compulsive and related disorders. It's really a problematic disorder. In some patients, it can be managed, in
[00:29:00] particular with psych meds, but for others, it becomes a very challenging disorder to control, and it can be completely overwhelming as a lot of OCD like conditions can lead to as well. Just to round this out too, it's really kind of important to talk about tinea capitis, which is more common in children than adults, but it's really a pruritic scaly area of hair loss. This tinea capitis is really a dermal by ptosis which
[00:29:30] affects children. It can be contagious and epidemic.

When you start to look at the causes, it's typically trichophyton and the microsporum are the two most common that are causing this. And it's really causes a gradual appearance of brown patches of dry scale and of alopecia that gets associated with it. Now, the trichophyton causes black dot ringworm, which the
[00:30:00] hair shaft breaks off the scalp surface. Whereas the microsporum causes kind of the gray patch ringworm, where the shafts break above the surface, leaving short stub, which is kind of the appearance here in this picture. This can commonly manifest with some scaling and dandruff flake, but most of the time, it's going to lead to some patchy hair loss in our patients.

That is really kind of discussing the more common causes of the different types of
[00:30:30] hair loss. There's all kinds of other information when you start to talk about innovations in testing and diagnosis, when you start to look at genetic snip testing, looking at different kind of whole test, tug tests, and even micronutrient testing. There's a lot of different innovations to go through this, as well as identifying where those breakdowns occurs, as I talk about, is that it's important to kind of figure out where the hair loss is coming from, and then if there's anything genetically
[00:31:00] contributing to that, so then you can properly customize treatments for your patients.

Because we can sit there and throw kind of generic things at our patients, but if you don't know what's driving it, it's not going to be as effective. Now with this TrichoTest that I talk about in another lecture, it's really kind of cool to look at these different snips that can aid in identifying, what are going to be the best treatments for the patients based on their kind of genetic predilection? At the end of this, there's going to be an opportunity to gain more information, but there is
[00:31:30] other webinars that I do at the Hormonal Health Institute that talks about those innovative testing and diagnostic and what you need to really be doing as far as blood work analysis and various other things to just really kind of hone in on hair

loss.

But also go through very, once you identify those, the best treatment modalities. But one of the reasons I invited Sam to talk with us today is I wanted her to kind of
[00:32:00] go through some of the more common APIs and formulations that we see at Belmar. She can kind of go through and discuss the different modalities, to give you kind of a top line so you're not left hanging with on all of those and what you can use. But again, we encourage you to either talk with the Belmar pharmacists or seek information from the HHI about more diagnostic and other things beyond this. And we certainly want to help you, and you'll be having opportunity to gain that through requests at the end of this. But without further ado, I'm going to turn it
[00:32:30] over to Sam who can then take you through the most common APIs and formulations that we offer at Belmar.

Dr. Samantha Le...: Thanks, Dr. DeRosa. Like she said, I'm going to go over some common APIs informs and some formulations. So I'm just going to walk you through some APIs and kind of what they do. Minoxidil is obviously a vasodilator. It's historically an antihypertensive, and it's really been shown to slow hair loss and promote hair regrowth. Common dosages, usually with males, I see about a 5%, females, 2%. The
[00:33:00] next Finasteride, Dr. DeRosa touched on this, it's a type two five alpha reductase inhibitor. What this is doing is it stopping the conversion of testosterone to that 5 DHT, that dihydrotestosterone.

Therefore, it's going to really help inhibit that hair thinning. I do like to make note
[00:33:30] on this one, that we don't like to use this in premenopausal women. It has been shown to ... It's contraindicated basically in pregnancy due to some abnormal fetal development, so we try to really avoid it in premenopausal women, just really not to touch it or to be handled at all. The next one, spironolactone, it's a DHT blockers as well, and it's commonly prescribed as an oral formulation, usually at least 100
[00:34:00] milligrams. It's slows the production of androgen and slows down the progression of hair loss caused by that androgenic alopecia. Topical formulations, usually I see between one to 5%.

Ketoconazole is great. In topical hair formulations, it's primarily used to eliminate scalp conditions. So, we're talking things like dandruff. It's going to kill any fungi or
[00:34:30] yeast that is growing on the scalp, and it can also be used for hair loss by countering that effects of DHT. A topical application of about 2% and a shampoo can actually help stimulate some hair growth. Next one, latanoprost. Latanoprost is, basically mimics naturally derived prostaglandins. This is where we really see an increase in hair density. That's what it's really helping with.

[00:35:00] Generally, with dosing, I'm seeing about a 0.005% to 0.01%. Tretinoin is really interesting actually. It helps with cell turnover, but it also is going to help, used in combination with minoxidil, to get the minoxidil to penetrate into the hair follicle better. In the next slide, you'll see some formulations, and we can go into that, about if your patient calls you saying the minoxidil is working, but not so great, it
[00:35:30] might be a good idea to add some tretinoin in for that.

Azelaic acid, this is a DHT blocker, but it also has the antibacterial property, and so it can strengthen the spells that line the follicles, and reduce bacterial growth on the scalp. Usually, with azelaic acid, I'm seeing about a 5% dosage. Biotin obviously is in a ton of different hair supplements, usually over the counter. It's boosting hair
[00:36:00] health. Usually, it's about a 10 milligram, generally an oral dosage. It's also vitamin B7. Medication forms, we have lotions, oral capsules, oral tablets, topical solutions, foam, shampoos, sprays, and really, it's kind of a patient preference on what they prefer what they're going to use, because we need these patients to use these products at least every day, mostly twice a day.

[00:36:30] But it's really dependent on what their indication is and based on what they like and what they'll use to find the correct form. I will stay, as a clinical pro, lotion gelatin cream patients don't like that. They make their hair greasy, gunky, and they don't want to be walking around with grease and gunk in their hair all day long. Usually, I don't see those very often. On the next slide we'll go through some
[00:37:00] different formulations that I commonly see.

These are some frequently used hair loss formulations at Belmar Pharmacy. Minoxidil 5%, finasteride, 0.1%. Here's where we're trying to promote hair growth. Then with that finasteride, we're going to try and just stop the conversion of testosterone to that 5 DHT. The minoxidil and azelaic acid one, that one we're
[00:37:30] really trying to help with the antibacterial properties. The second one down, you'll see that there's that tretinoin added in there. Like I was saying previously, if you want to make your minoxidil work better for your patient, add some tretinoin, help it penetrate the hair follicle more.

You see on the fourth one down there, some melatonin in there. Melatonin actually has some antioxidant properties, and it's actually been shown to extend
[00:38:00] the growth phase potentially, so it could increase hair growth. We have some providers who really like to add some melatonin into their topical foams [inaudible 00:38:07]. The next one down, estradiol, we do see some estradiol used in hair formulations. Here, it's really to help keep the hair in the growing phase. There's some limited data, but we do see some used out of estradiol being in combination with some of these products.

[00:38:30] I do like the mention on this one down, that's spironolactone in topical foams or solutions [inaudible 00:38:37]. A lot of our patients don't like when we put spironolactone into a topical solution or a foam. If you look at the last one down, we can solve that by just putting an oral capsule, a spironolactone and maybe adding some biotin to really help promote hair growth. We've seen that
[00:39:00] formulation kind of pick up recently. With your foams and solutions, these are great. They only have a beyond use date of 30 days.

Really, you're going to see 60 MLs of these probably dispensed at one time. Usually, the patient is going to apply this twice a day, and so they're going to ... Obviously we want you to shower before you'd apply the product. You can apply it

[00:39:30] to wet or dry hair, and then you're going to want to keep it on your scalp as long as possible. Usually you're going to want to apply this in the morning and then at that time. Usually a 60 ML is about a 30 day supply. I also like to know, just for a formulation pro, that when you try to push the minoxidil dose above 5%, usually you're going to get ... The minoxidil might come out of solution, and so you might
[00:40:00] get calls like from your patients, oh, the pump dispenser doesn't work, or it looks cloudy in the solution.

Well, that's probably, if you push the minoxidil dose too high, it might come out of solution, and so we really try to keep the minoxidil dose around 5%. Some other just quick clinical pearls about different APIs, clobetasol, fluocinolone are also very
[00:40:30] popular, especially with any type of autoimmune disorder. Those APIs, obviously those aren't as frequently to cause hair loss, but when they do, those are the ones we like to pick from. Also, recently caffeine has been being used between 2% to 3%. We're seeing a pickup up of caffeine and [inaudible 00:40:49] formulation. This is just a rough overview of a lot of the hair formulations we're seeing at Belmar, but it really depends on the underlying reason that the patient are having hair loss or
[00:41:00] which treatment and which formulation you're really going to want to pit. Now I'm just going to give it back over to Dr. DeRosa, and we can go through some questions if anyone has any.

Dr. Angela DeRo...: Great. Thank you so much, Sam, that was wonderful information to share. I always find those practical clinical pearls, because I mean ... At the beginning, sometimes as men often think, more is better. Not that women don't think that either, but sometimes we say, well, I'm going to increase the minoxidil, but then the product
[00:41:30] kind of loses its ability to function, and therefore it is not effective anymore. It's really important to work with people like Sam who really understands some of those nuances to make sure that you're able to treat the patients effectively, but also practically. We're going to open up for questions. Feel free to type questions into the chat section if anyone wants to do that and we'll start going through them, but we do have a few questions that have already come in. First one is, how do you know what's causing the patient's hair loss?

[00:42:00]

Well, that really starts with a good investigative search to make sure that you're properly assessing the patient's hair loss. Sometimes they can get challenging, but most often, through just a good fit history, looking at the hair, and then looking at a host of labs, which my discussing the innovations of evaluation portion of the lecture, which we unfortunately didn't get to cover today. That really goes through
[00:42:30] what labs you should order, so it often involves laboratory testing. In some patients, it may involve on biopsy. It may involve poll tests.

There's various things that can be done to assess the cause of hair loss, if it's not already obvious. And then particularly with some basic lab work and history. But also I had mentioned the TrichoTest, which can really get into genetic variance and what may be driving it and really hone in what's causing the problems for the
[00:43:00] patient so that it can be really interesting to kind of get into that. It's really important to really identify what's driving it, because then you can really

customize, as you can see, there's all kinds of combinations of things to help with patients hair loss.

If you find out, let's say on their genetic snip, that they have a predominance of the conversion of testosterone to 5 DHT then obviously using something that has finasteride in it, it's going to be very important. Or if you find that the patient has
[00:43:30] circulatory or lack of vasodilatation due to prostate gland and/or other different types of snips, that having something that vasodilates and creates increase in circulation will help like minoxidil or various other things. It becomes important to narrow that down and really work through that.

Next question, can they be ordered for office and dispensed from office? I'm not exactly sure what you're referring to as far as can be ordered for office use and
[00:44:00] dispensed from office, but if you're talking about the TrichoTest, that's something that Belmar is going to be offering as a service to be able to have our partners obtain those test kits, to be able to have to dispense and use in their office for those patients to do. It's a really easy test. Basically, they swab their cheek and they send it off. It's really a terrific, simple little test and something that can be used for the patients or the physicians to use in their offices, to give directly to the patient and then get ... Then not only do they get a print out for the patient, but also a full
[00:44:30] report that the doctor can review with the patient, but it also gives recommendations about what components should be added to any particular solution that we want to use for those patients.

Including either oral supplements and/or product supply directly to the scalp. It's a cool little test and you certainly can inquire through your Belmar rep to find out about those and how to obtain those.

[00:45:00]
Dr. Samantha Le...: And just one other note on that, Dr. DeRosa, the formulation prescriptions, those can't be done for office use. They have to be patient specific. Anything out of a 503(a) pharmacy, which is the majority of compounding pharmacies, do have to be patient specific prescription and so they can go right to the patient's home.

Dr. Angela DeRo...: Next question is, what about PRP? Do you feel this is helpful for hair growth? I actually discuss this in one of my webinars on innovations for treatment, and PRP
[00:45:30] actually can be a very useful modality for patients in particular, in combination with stem cell or other topical solutions or laser, in combinations with PRP. There are some excellent results and really compelling case studies that we've seen over the years with patients who are getting into that. Also, so I think if you start to look at all the underlying problem and root causes, there's thyroid hormone imbalances, there are 5 DHT conversion issues and kind of getting to the bottom of that, and
[00:46:00] then fixing the root cause drivers. But then if you want to accelerate the hair regrowth getting into stem cell PRP and all those things can be exceptionally good for hair growth.

It's a question, that's a very commonly asked question. Many female patients who

claim to be losing their hair when they start pellets, in particular testosterone pellets, is there a direct connection between pellets and hair loss? It's not pellet
[00:46:30] specific, but it's really that testosterone and some patients, in particular, as we alluded to on the lecture, if they have a hereditary predilection to that sensitivity of the receptors and having an over conversion of testosterone to 5 DHT and the sensitivity at that follicle level, then those patients are going to be more prone to hair loss, in particular, as we increase their testosterone.

[00:47:00] Or if we find that some patients, they just clinically feel better at higher levels of testosterone, and then they have to worry about some of the potential side effects. I never ever go super physiologic to the point where you have adverse events such as like secondary erythrocytosis or other things, or a fulminant beard, but it's not uncommon for them to have a little bit increase of the black hairs on the face that they have to pluck, or in some women, they start to develop some androgenic hair loss. Most women don't like that, and we have to back off, or we would use agents
[00:47:30] to block some of that, like a spironolactone. But the reason why you're going to see it more predominantly with testosterone therapies is because we can get better levels with pellets than we can with other preparations.

When I have patients who are losing hair, first and foremost, I want to make sure and identify that it truly is an androgenic pattern to associate it with the testosterone, and then make sure that there's not any other confounders that are with that, because I often find that, if patients have subclinical hypothyroidism and
[00:48:00] we fix their estrogen and their testosterone, that somehow their thyroid gets a little bit worse in function because it's really, truly illuminating what's going on and their hair loss can get worse. It's really important to kind of sort through all the different drivers before you just assume that it's related to one thing or another.

Next question, do you have specific treatment recommendations, for example, for treatments done six a weeks of [inaudible 00:48:23]? I'm assuming you're referring
[00:48:30] to PRP. I personally refer my PRP treatments out. I don't personally do them, but I have colleagues that know the protocols and they have seen exceptional results coming with that. I'd be speaking out of turn if I were to tell you anything related specific to their treatment protocols. I just send that to people who are much, much smarter than I am in that regard. Next question, what percent of success do you see with the formulations noted?

These products, in the appropriate patients, can actually have terrific success. The
[00:49:00] key is, is that they have to be patient, as I alluded to, that they have to give it enough time to see that improvement, at least a minimum of three to four months, and they have to stay the course. The biggest thing is, how I'm going to see success is getting these products started to help with the regrowth, but also ensuring that I've shut down the driver that's causing them in the first place. But in the right combination of those aspects, you can certainly see wonderful success with these
[00:49:30] products. How do you know which delivery method to use? I mean, Sam, do you maybe you want to jump in? I know you kind of alluded to that about, which are the best methods to use?

Dr. Samantha Le...: Sure. I usually see solutions and foams being the best methods. Like I said, gels and creams and lotions. Nobody really wants gunk in their hair walking around day and night. Typically, solutions and phones are most popular and give us ... Usually, the patients are most compliant with that. Generally, I like to stick to those. Obviously

[00:50:00] oral capsules and tablets are also popular because they can just swallow it and it's easier. Those are probably our most common successful forms that we see.

Dr. Angela DeRo...: Right. Looks like we've come to the end of our questions here, unless other folks have further questions. If there's any inquiries related to this presentation, or if you want more details on any of the medications that we can provide education or

[00:50:30] consultation, we certainly encourage you to reach out to our staff@belmarpharmasolutions.com/a4m, or info@belmarpharmacy.com, or we have listed the phone number to reach our pharmacist city, 1-800-525-9473. But as I mentioned, folks like Sam, and a lot of other folks, are there ready to answer your

[00:51:00] questions, and also our account executives who can certainly help you and guide you into obtaining more information if you want it about any part of the medication, education or consultation.

But we were just so honored and delighted to have a forum host us today on the Webinar Wednesday. This has really been a blast, to be able to present today to

[00:51:30] you with Sam. Again, we just are blessed to be able to be a part of this wonderful series. So, thank you everybody for your time and attention tonight. And if there are other questions that didn't get answered and you want to address specifically again, please reach out to us, and we wish you a blessed night, and hopefully a wonderful weekend coming up. Thank you.

Dr. Samantha Le...: Thank you.

Speaker 1: [00:52:00] On behalf of the AFRM team, we thank you so much for sharing your expertise with us today. We appreciate your time. Thank you to our sponsor, Belmar Pharma Solutions, for making these webinars possible. Finally, thank you everyone for joining us today. Have a great evening.