

FACTORFIVE

+ HUMAN STEM CELL FACTORS

we *humanize* skincare

DISCOVER STEM CELL TECHNOLOGY



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CELL SCIENCE





John Aylworth,
CEO & Founder

Greetings FACTORFIVERS!

Perhaps you are not really a “FACTORFIVER” yet, but you have chosen to read an e-book on stem cell science, so I like you already. I want to welcome you to this fascinating field of research. I hope you find the information within this book to be helpful and empowering as you seek to understand stem cells and find products and companies you can believe in.

To help introduce the promise of stem cell science, I want to share a quick anecdote...

The year was 1997. They cloned Dolly the Sheep, Steve Jobs returned to Apple, Tiger Woods had just won his first master’s and I graduated from Pleasant Valley High School, in Chico, CA. Like all my friends, I wrote fond promises in year books to keep in touch, stay sweet and never change. Then 20 years passed. In 2017, it was time for us to get together and see what kind of damage / good the time had done.

I was struck by how I felt, and how much I appreciated being among them again. I had known these people as kids. I remembered them with braces, ponytails and pimples. They looked older, sure, but they looked happy. They smiled freely, laughed

heartily and listened generously. I loved the maturity and confidence they expressed. I noticed that I felt confident in my own skin too. I knew I was older, but I felt like I still looked like the best version of me. That feeling gave me a sense of calm which made me forget about my insecurities and be able to really be in the moment, catching up with old friends. It turned what could have been scary into a really positive experience. That is what FACTORFIVE feels like!

We have put together a summary of our own journey. We didn’t follow a scripted approach vetted by a PR firm. We made the world’s greatest skincare by being authentically scientific in our approach. Our results, which are unparalleled, are included and they speak for themselves. As you read this e-book, I invite you to fact check us on everything. Our work can stand up to the scrutiny. In the end, what you will find is a science that you can believe in and a product that will help you feel beautiful in your own skin too.

Enjoy!

John



FACTORFIVE Lab
Chico, California



www.factorfiveskin.com



“aging is an extraordinary process
where you become the person you
always should have been.”

- David Bowie

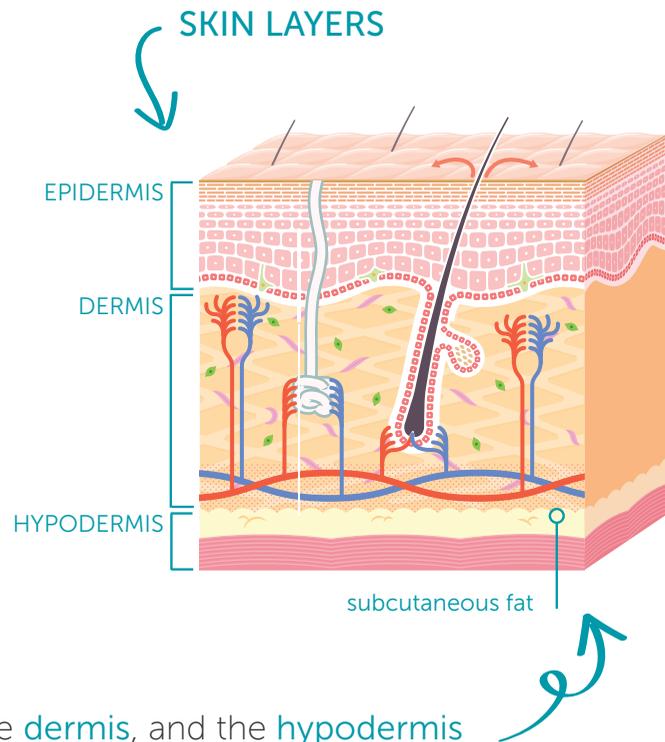


SKINCARE

LESSON #1: SKINCARE BIOLOGY

In order to understand stem cells in skin-care, you have to understand skin biology.

As the body's largest organ, skin is the best defense you have against the outside world. It protects you from UV radiation, harmful pathogens, toxic substances—and anything else with which you've ever come into contact. (So, basically, everything.)



Your skin has three layers: the **epidermis**, the **dermis**, and the **hypodermis** (aka the top, middle, and bottom layer). Each layer of skin serves its own important purpose, but we've got a vested interest in the hypodermis. That's because the hypodermis contains a layer of subcutaneous fat—or adipose tissue. Adipose tissue has the highest concentration of adult stem cells in the body (no other tissue type has as many stem cells per millimeter).

As your skin ages, it naturally loses:



HYALURONIC ACID

Hydrates, smooths, and softens the skin while calming redness and inflammation.



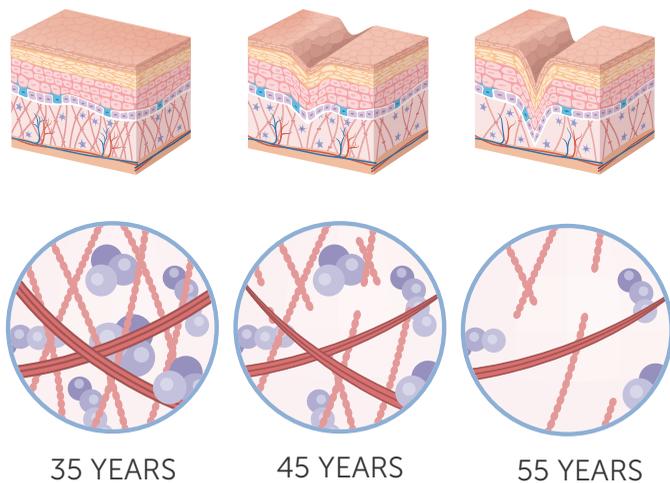
COLLAGEN

The main structural protein found in skin.



ELASTIN

A key protein of the extracellular matrix that provides elasticity and suppleness to your skin.



LESSON #2:

WHAT'S A STEM CELL?

Now that we've talked about skin biology and adipose tissue, let's discuss stem cells. Some people have a murky idea of what stem cells are—or at least they've heard the term being tossed around in the medical community.

Stem cells are a category of cells that help generate, regenerate, and renew.

Stem cells are made all the more impressive by their ability to self-renew—meaning, they divide and multiply. There are three main classifications: embryonic, tissue, and adult mesenchymal stem cells or ASCs. FACTORFIVE uses a type of ASC derived from adipose tissue, called Adipose Derived Stem Cells or ADSCs.

FACTORFIVE uses ADSCs not only because they are ethical, but because when it comes to skin renewal, they perform best.



Payton Laurie
Cell Culture Specialist

PLANT VS. HUMAN STEM CELLS

Humans, animals, and yes, even plants, all have stem cells. You've probably seen a few plant stem cell products floating around the market. On the face of it, they seem like a good option, but what's beneficial for a tree is not beneficial for a human because cellular signals from plant cells cannot be recognized by human cells. Simply put, plant stem cells are not equal to human stem cells when it comes to skin regeneration and renewal.

MORE ON ADSCs:

Based on a huge body of research, we know that ADSCs assist in healing. If you get a minor injury—like a cut or scrape, ADSCs are your first line of defense.

ADSCs and the growth factors expressed by them have consistently been shown to decrease and control inflammation while guiding and improving healing. It goes without saying that ADSCs are the preferred stem cell choice for wound healing and skin remodeling.

Skin remodeling: that's how this relates back to skincare. Think of skin remodeling as the stimulation of new collagen, elastin, and hyaluronic acid (see: page 5). New collagen and elastin = softer, smoother, tighter skin. Softer, smoother, tighter skin = a more radiant appearance.

Dr. David Stachura
Chief Scientific Officer



Dr. Annie Bowles
Director of Research & Development

LESSON #3:

GROWTH FACTORS

By now you know ADSCs express growth factors to help your skin remodel. But what is a growth factor? And where do growth factors come from?

Cells communicate with each other through a “language” of protein signals. One cell “speaks” by sending a signal out into the immediate area, and another cell “listens” when the signal, attached to its cell wall, deposits the contents of the message.

This process is called **paracrine signaling**. There are thousands of protein carriers and signals being passed between each other in your body, all the time.

Growth Factors: *noun*
Growth factors are naturally occurring proteins that communicate crucial messages to other cells and stimulate cell and tissue function.

Growth factors are some of the most potent of all the signals sent out. Growth factors are protein signals who possess an oversized ability to make changes in the “listening” cell.

In fact, scientists have linked **growth factors to healthy cell function** in:

- Producing collagen and elastin
- Fighting off oxidative stress through potent antioxidant processes
- Promoting a healthy immune response to certain stimuli
- Healing cells
- Dividing cells
- Fighting off infection
- Preventing scar tissue formation
- Restoring even coloration
- Reducing unwanted inflammation
- Remodeling old and weak tissue into strong and vibrant tissue
- & more

It is difficult to overstate the role of growth factors as messages of skin health wherever they are applied. However, as we grow older, we experience a decline in the growth factor production and messaging within our cells. We need a way to get those powerful signals back!

FACTORFIVE scientists work with the most active producers of growth factors in the human body, adult stem cells (ASCs). Through our process of growing and working with ASCs, we put them in an environment which gets them “speaking” by sending out a tremendous amount of growth factor signaling.

We then collect those powerful growth factor signals and include them as the main active ingredient in all our products so that when you apply FACTORFIVE to your skin, it replenishes your diminished supply and enables your cells to “listen” and **restart those important skin health processes**. This represents a 100% natural and biological way for your skin to return to vibrant health.



GROWTH FACTORS, CONT.

What about other kinds of growth factors?

One of the most common sources of growth factors is a cell from the skin called a *fibroblast*. Fibroblasts are not stem cells. They are an important member of the skin cell family and have been used as a source for growth factors in skincare since 2001. Public support for fibroblasts in skincare has waxed and waned for years.

One of the main areas of public unease pertains to the source from which skincare companies get their fibroblast cell stock. Various groups have taken ethical stances on the use of tissue from infants and the areas of concern have resulted in several class action lawsuits.



Fibroblasts enjoyed a rebound in popularity in 2013 when Oprah Winfrey endorsed a fibroblast-derived skincare product. And while the popularity of fibroblast products has ebbed since that time, FACTORFIVE scientists do believe that fibroblasts are a good source of some types of protein signals. They just aren't the best source. **Adult human stem cells (ASCs) are. ASCs express about 5x the portfolio of proteins as compared to a fibroblast.** As an analogy, if all the protein signals were letters in the alphabet, a fibroblast could give you A through G. An ASC could give you A-Z.

This is an important difference in skin health because many of the most important signals for things like the creation of elastin, antioxidants, immune responsiveness, and tissue remodeling are not found in fibroblast signals. For that reason, FACTORFIVE scientists have looked to ASCs as their tissue source for safe, ethical, and human derived proteins.

protein signals in FACTORFIVE:

Adipose derived stem cells express ~200 proteins related to skin health, including:

SERPINE1	COL1A1	IGFBP5	RBP4	ANXA2
CALR	COL12A1	IGFBP7	ADIPOQ	KGF
CALU	COL1A2	ISLR	PTGDS	EGF
CFD	COL2A1	LAMC1	SRPX	EGF-1
CLEC3B	COL3A1	LDHA	ICAM-1	IGF
DPT	COL4A1	LTBP2	HPAI-1	PEDF
FSTL1	COL4A2	LUM	IL-1RA	aFGF
IGFBP6	COL5A1	GEL-A	IL-4	FGF2 (bFGF)
LGALS1	COL5A2	NID1	IL-6	HGF
LGALS3BP	COL6A1	SOD2	IL-7	NGF
PTX3	COL6A2	PCOLCE	IL-8	TGF-B1
SERPINF1	COL6A3	PPIA	IL-10	TGF-B2
SERPING1	ELASTIN	OSOX1	IL-12	TGF-B3
SPARC	FIBRONECTIN	SERPINE2	IFN-a2	VEGF
THBS1	LAMININ	TAGLN2	IFN-B	MMP1
TIMP1	DBI	CAD-2	ENDOSTATIN	MMP2
CST3	EFEMP1	THBS2	PLGF	MMP3
MCP-1	FBLN1	TIMP2	PDGF-AA	MMP7
SPAG9	FBN1	PDIA3	CTGF	MMP13
APOE	FN1	P4HB	FGF-1	MMP19
C1R	MCSF	TXNDC5	G-CSF	
C1s	HSPG2	CTSD	GM-CSF	
CLU	IGFBP4	HSP90B1	PAI-1	

protein signals in fibroblast products:

SERPINE1	COL1A1	IGFBP5	RBP4	ANXA2
CALR	COL12A1	IGFBP7	ADIPOQ	KGF
CALU	COL1A2	ISLR	PTGDS	EGF
CFD	COL2A1	LAMC1	SRPX	EGF-1
CLEC3B	COL3A1	LDHA	ICAM-1	IGF
DPT	COL4A1	LTBP2	HPAI-1	PEDF
FSTL1	COL4A2	LUM	IL-1RA	aFGF
IGFBP6	COL5A1	GEL-A	IL-4	FGF2 (bFGF)
LGALS1	COL5A2	NID1	IL-6	HGF
LGALS3BP	COL6A1	SOD2	IL-7	NGF
PTX3	COL6A2	PCOLCE	IL-8	TGF-B1
SERPINF1	COL6A3	PPIA	IL-10	TGF-B2
SERPING1	ELASTIN	OSOX1	IL-12	TGF-B3
SPARC	FIBRONECTIN	SERPINE2	IFN-a2	VEGF
THBS1	LAMININ	TAGLN2	IFN-B	MMP1
TIMP1	DBI	CAD-2	ENDOSTATIN	MMP2
CST3	EFEMP1	THBS2	PLGF	MMP3
MCP-1	FBLN1	TIMP2	PDGF-AA	MMP7
SPAG9	FBN1	PDIA3	CTGF	MMP13
APOE	FN1	P4HB	FGF-1	MMP19
C1R	MCSF	TXNDC5	G-CSF	
C1s	HSPG2	CTSD	GM-CSF	
CLU	IGFBP4	HSP90B1	PAI-1	

WHAT ABOUT BOTANICALS?

The Oxford Dictionary defines a **botanical** as “relating to plants.” This open-ended definition describes one of the main problems with understanding and defining the botanical landscape in skincare products. After all, using Oxford’s definition, a “botanical” can range from opium poppies to aloe vera. This ambiguity adds extra layers of difficulty when trying to understand botanical infused skincare products and their possible benefits or side effects.

Recently, with the **organic and all-natural movement**, botanicals have enjoyed a surge of popularity and attention. Consumers are moving away from the chemicals, parabens, alcohols, and aldehydes that largely characterized skincare of the 90’s and early 2000’s.

In general, we at FACTORFIVE believe this to be a good thing for everyone. While many botanical ingredients are **extremely limited in their capacity to do good for skin**, they are largely far less dangerous than their chemical counterparts of skincare’s past.



Botanical: *adjective*
Relating to plants.

At FACTORFIVE, we take botanical ingredients on a case by case basis. We believe some of them are great additions to our skin care formulations.

For example, we use **green tea extracts, aloe vera, and plant-derived caffeine** in our products. Each adds value to the respective formulation. However, when we refer to the “active ingredients” in our products, we generally do not reference the botanicals. That’s because the positive changes expected from our stem cell conditioned media outpace the impact of any botanical. Frankly, the comparison is unfair.

We love plants and will continue to include the scientifically validated ingredients derived from them, but for human cells, like those in your skin, human derived proteins are the best and most active ingredient you can find.



FACTORFIVE is:



FOR ALL
SKIN TYPES



VEGAN &
CRUELTY FREE



IRRITANT-FREE
& SOOTHING

INGREDIENT SPOTLIGHT



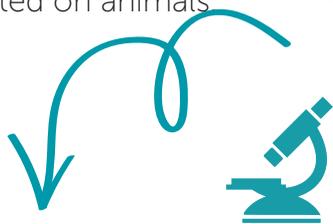
ETHICAL STEM CELLS

FACTORFIVE uses ethically sourced adipose derived stem cells from healthy, consenting donors that contain the widest array of growth factors with hundreds of additional proteins that assist in healthy skin cell reproduction.



MADE WITH HUMANITY IN MIND

Free from parabens, phthalates, urea, DEA or TEA. Vegan and never tested on animals



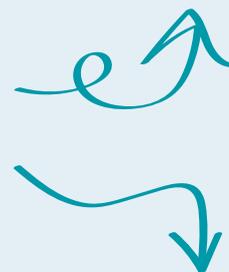
FACTORFIVE-OWNED LAB

Cultivated, created, manufactured, and lab-tested in our own USA-based FACTORFIVE lab in Chico, California.



HYALURONIC ACID

hydrates, smooths, and softens skin while helping calm redness and inflammation. Our low molecular weight hyaluronic acid helps retain moisture while locking in other beneficial ingredients.



VITAMIN C & COPPER PEPTIDES

brighten the appearance of skin and aid in the rebuilding of collagen, while minimizing fine lines and wrinkles.



NO HARSH INGREDIENTS

FACTORFIVE is hypoallergenic with soothing ingredients for even the most sensitive skin. Our eye cream does NOT contain prostaglandin, so it will not change the color of your eyes.



STEM CELL SKINCARE BUYING GUIDE

We want you to know what sets us apart from the others. When deciding between stem cell skincare lines, here's what to look out for:

HUMAN STEM CELL DERIVED

We are human stem cell experts. Do not be fooled by plant stem cells or vague claims around 'stem cell activation' or 'support.'

FIRST OR SECOND INGREDIENT

Human stem cell conditioned media is always one of our first ingredients.

ETHICAL, ADIPOSE STEM CELLS

FACTORFIVE uses ADIPOSE derived stem cells, which are ethically sourced & proven to be the most effective for mature skin.

PROTECTED PROTEINS

FACTORFIVE uses a liposomal encapsulation system to protect our proteins from denaturing during and after formulation—and we never suspend our peptides in alcohol, which many companies do. This means our formula isn't overloaded with alcohol, which can be drying and troublesome for mature or sensitive skin.



FACTORFIVE lab
Chico, Ca

COMPANY OWNED LAB

FACTORFIVE is manufactured using a cold-formulation technique in our own lab in California.

CRUELTY-FREE CELL CULTURE

Most labs use Fetal Bovine Serum (FBS) in their cultures. We do not.

PHARMACEUTICAL-GRADE TESTED

Our products have been independently tested to ensure growth factor protein density and quality.

NATURAL FORMULA

All FACTORFIVE products are made in the U.S.A., cruelty free, and free from parabens, mineral oil, sulfate detergents, phthalates, urea, DEA, or TEA.



don't let age change you.
change the way you age.



SKINCARE

QUANTIFIABLE RESULTS

At the FACTORFIVE lab in California, we use VISIA®, a highly advanced skin analysis system to measure results. This ensures that we can quantify results on real people. The VISIA® can measure changes in wrinkles, redness, pores, texture, lash length/volume, and more.

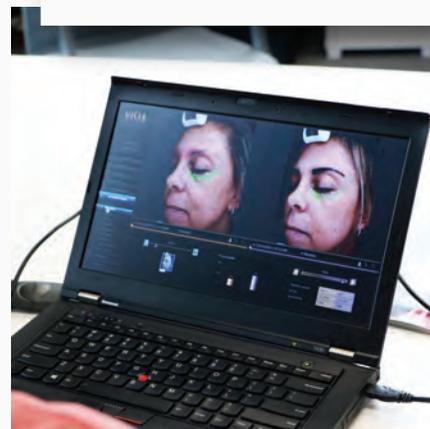
“What I love about FACTORFIVE is that I can actually see the results with my own eyes. Even my husband can see that my fine lines and wrinkles are improving. The VISIA scan confirmed what we were already seeing, assuring me that it’s not the placebo effect.

Each time I use the serum, I love the way it leaves my face feeling fresh and clean!

- Ty, FACTORFIVE user



Ty, Jan '20 @FACTORFIVE lab



BEFORE



33% REDUCTION
IN EYE WRINKLES

AFTER
4 WEEKS

MORE RESULTS*

73%
texture improvement

84%
less porphyrins (clearer skin)

61%
redness reduction

29%
wrinkle reduction

25%
eyelash volume increase

44%
reduced UV damage

*In 4 weeks, results made quantifiable by VISIA systems.

MORE RESULTS

Here you can see even more great results in just four weeks.

BEFORE



53% PORE
REDUCTION

AFTER
4 WEEKS

BEFORE



61% REDUCTION
IN REDNESS

AFTER
4 WEEKS

BEFORE



73% TEXTURE
IMPROVEMENT

AFTER
4 WEEKS

BEFORE



73% SMOOTHER
TEXTURE

AFTER
4 WEEKS

BEFORE



23% EYELASH
LENGTH

AFTER
4 WEEKS

BEFORE



26% SMOOTHER
TEXTURE

AFTER
4 WEEKS

USER TESTIMONIALS

“You don’t have to get Botox when you have FACTORFIVE regenerative serum. Using only natural ingredients not only helps fight premature aging, it also helped me with my dark spots. And guess what, it’s VEGAN AND CRUELTY FREE.”

- Rush, [@foreign.ru](#)



Brigitte Patton,
[@brigittepatton](#)

“I was really impressed with [FACTORFIVE]. The products go on really smooth and moisturize my skin. I have sensitive skin and usually new products give me hives, FACTORFIVE did not do that.”

- Angela Webber, [@_mynameismama_](#)



“Crushing on this new anti-aging skincare from FACTORFIVE!...Quick spoiler alert though their eyelash serum helps to enhance your lashes and brows!”

- Sarah, [@blondedbybeauty](#)



AVERAGE 4.6
STAR REVIEWS
ON AMAZON



“My story = No sunspots anymore, that is why I love FACTORFIVE.”

- Paulina, FACTORFIVE user

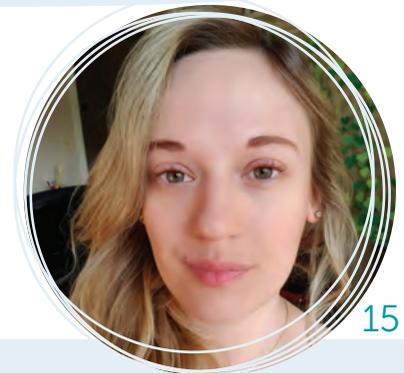


“After struggling with acne as a teen I have spent my adult life trying to repair damage to my skin. I was referred to FACTORFIVE by my aesthetician and use the serum and cream every morning and night. I loved seeing results after my first use and have seen dramatic changes; diminished acne scars, less redness and inflammation, reduced fine lines and wrinkles.”

- Samuel Anthony Harwit, [@samuelanthony](#)

“I can’t believe how quickly my lashes grew with the FACTORFIVE eye/lash cream. Honestly my skin has never looked better, and I love being able to not have to wear makeup all the time.”

- Kelsey, FACTORFIVE user



AVERAGE 4.6
STAR REVIEWS
ON AMAZON



SKINCARE PROFESSIONALS



“FACTORFIVE serum is my go-to for all skin types and ages. Not only is the first ingredient stem cell growth factors, but it also targets all 5 signs of aging. It helps texture, smooth fine lines, and reduce acne on my patients.”

- Kayla Hernandez, Aesthetician
[@luxuryskinscottsdale](#)

“My clients are noticing plumping of their skin and a brighter look. One client puts [FACTORFIVE regenerative serum] on her lips and she said it made her lips look fuller!”

- Lina Latief, Aesthetician & Owner
[@818skincarestudio](#)



“Who needs Botox when you have FACTORFIVE? Oh, and it’s cruelty free. As an esthetician, I’m very picky with products but I’ll have to admit, THIS is something else.”

- Cedestoni, Esthetician
[@cedestoni.xo](#)



“FACTORFIVE is one of my favorite products! The growth factor component stimulates collagen production to help diminish fine lines and wrinkles. You will also see a noticeable difference in the texture of the skin as well as the tone. Your complexion will be much more even. It also helps with inflammation to help decrease redness. It is a must have in my product cabinet!”

- Alicia Testaverde, Aesthetician
[@aliciamarieaesthetics](#)



“FACTORFIVE is the newest in stem cell technology...I had the chance to visit their labs and I can attest to the high standard they hold their practice [to].”

- Jessica, Aesthetician, Aesthetics Exchange
[@aesthetics_exchange](#)



AWARDS & MEDIA

as seen in...



VOGUE

NEW BEAUTY MAGAZINE

MODELISTE BELLA MAGAZINE

CVLUX® BLEU VAG CALIFORNIA VIBE



F.A.Q.



WHY STEM CELLS?

As you age, the growth factors and cytokines that maintain the youthful appearance of your skin decrease. Many of these factors are produced by stem cells, which also decrease over the years. By providing these missing factors through your daily skincare regimen, your skin cells begin to act like they did when they were younger, providing an increase in collagen, elastin, and extracellular matrix proteins.



WHAT TYPE OF STEM CELLS DO YOU USE?

We use ethically sourced adult adipose (or fat) stem cells that have been donated from patients who have undergone lipoaspirate. All cells go through multiple, rigorous safety and efficacy checks. No embryos, no human eggs (oocytes), no bone marrow or other controversial tissues are used to produce FACTORFIVE.

WHAT ABOUT PLANT STEM CELLS?

It's very simple—you are not a plant. Human derived growth factors work best on human skin. FACTORFIVE's human stem cell growth factors work like a lock and key with the receptors on your skin cells, promoting an increase in collagen, hyaluronic acid, elastin, and other beneficial skin proteins. While some plant extracts do contain vitamins and antioxidants that can help your skin, they simply do not compare to the powerful cytokines and growth factors produced by human stem cells.



DOES FACTORFIVE CONTAIN ANY CELLS?

Nope! FACTORFIVE does not contain any cells, only proteins derived from cells. The stem cells are carefully removed and filtered through a multi-step process, leaving only purified and concentrated stem cell derived factors in the final product.



F.A.Q.



I THOUGHT ONLY MY OWN STEM CELLS COULD WORK?

FACTORFIVE contains proteins produced by human adipose derived stem cells, not the cells themselves. These proteins are essentially the same for all human cells, so there are no individual compatibility issues.

DO GROWTH FACTORS INCREASE RISK OF CANCER?

No. FACTORFIVE is completely safe when used as directed. We have tested it under the recommended conditions for supporting healthy, normal skin. There is no scientific evidence linking cancer to growth factor products. In fact, there is a growing body of research that shows that topically applied ADSC growth factors may inhibit the growth of skin cancer cells (melanoma) and protect your skin.



FIBROBLASTS VS ADIPOSE DERIVED STEM CELLS?

Human skin is made up a variety of cell types that work together to maintain elasticity of the skin and protect you from external sources of damage. While fibroblasts are a primary cell type that make up skin, there are also keratin producing keratinocytes, melanocytes (which gives the skin its pigment), fat cells (aka adipocytes), as well as a variety of support cells that feed the layers of the skin with blood and nutrients.



Adipose derived stem cells (ADSCs) are involved in catalyzing healing within the body and are capable of turning into all cell types that make up the skin. Fibroblasts only produce a small fraction of the beneficial factors the ADSCs produce. See page 8 for more information.



WILL THE EFFECTS LAST OR GO AWAY AFTER USAGE STOPS?

Since FACTORFIVE is essentially replacing or boosting the factors that your skin is no longer producing, we recommend regular and continuous use to maintain the benefits to your skin.

we *humanize* aging



SKINCARE