

## THRIVE experience by LeVel – Big Claims, Small Evidence, and Potential Harms!

Could there possibly be anything better than losing weight? How about losing weight AND making money?! THRIVE, by LeVel is a 'program' that includes multivitamins, a shake supplement, and a transdermal patch as its core program. The product touts the following benefits:<sup>1</sup>

- √ Weight Management
- √ Cognitive Performance
- √ Digestive & Immune Support
- √ Joint Support
- √ Lean Muscle Support
- √ Aches & Discomfort Relief
- √ Anti-Aging & Antioxidant Support

### What is in THRIVE?

As mentioned above, the core program consists of capsule multivitamins, a shake, and a transdermal patch. However, several adjunct products are also available but are outside the scope of this article.

### Capsules – multivitamins<sup>2,3</sup>

The product is available in a Men's<sup>2</sup> (M) and Women's (W)<sup>3</sup> formula. This despite the fact the two products are indistinguishable save for the facts the Women's formula curiously contains 1mg more of the proprietary blend and the ingredients of such proprietary blend are listed in a slightly different order. One might expect more folic acid in the Women's formula, but this is not the case! The M and W capsules contain the usual litany of vitamins with a few minerals thrown in for good measure. A full list of ingredients is available at the end of this document. The proprietary blend essentially allows the manufacturer to include ingredients without disclosing the individual strengths. A closer look at this proprietary blend:

- Probiotics
- Guarana, green coffee bean, green tea, white tea; ALL are sources of **caffeine**<sup>4</sup>
- Theobromine, synephrine. Theobromine is a less potent cousin of **caffeine**.<sup>5</sup> Synephrine? If that sounds familiar it's because it is the market's answer to a US ban of ephedra; it is a

**component of ephedra** and would be expected to carry the same or similar risks.<sup>4</sup>

- PEA - phenylethylamine (or phenethylamine) is structurally **related to amphetamines** and shares **CNS stimulant effects**.<sup>4</sup>
- Glucosamine, white willow extract – generally used for pain relief/joint inflammation. Evidence is contradictory for glucosamine. White willow extract may be effective for back pain, which is not unexpected considering its active ingredient is a salicylate. Of course, **dose is an important parameter** for effectiveness and since we're not privy to such information, assessment of potential efficacy and toxicity is impossible. As for the salicylate, it is unlikely the product contains enough to worry about the usual ASA concerns; even if the entire proprietary blend (525 mg) were willow bark, this is equivalent to ~ 3 mg acetylsalicylic acid.<sup>4</sup>
- Glutamine, L-Arginine, BCAA (branched chain amino acids)
- Ginger – may possibly be effective for osteoarthritis (OA) – again, dose-dependent...<sup>4</sup>
- Irvingia, grape seed, CoQ10, kelp – miscellaneous herbals that have no evidence to support any of the claims above<sup>4</sup>

That was just the capsules.

### Shake<sup>6</sup>

The shake supplement (apparently a powder intended to be mixed into shakes, similar to protein powder) contains more vitamins and minerals and a different proprietary blend. This particular blend includes:<sup>6</sup>

Garcinia – popularized by Dr. Oz for weight loss<sup>7</sup> but to date has shown contradictory results<sup>4</sup>

Oat fiber, rice bran – sources of fibre<sup>4</sup>

Black Tea – **caffeine**<sup>4</sup>

*Lactobacillus Acidophilus* – probiotic

Amylase, bromelain, cellulose, lipase, papain, protease – enzymes

Ginger – may possibly be effective for OA – again, **dose-dependent**...<sup>4</sup>

Cardamom, cinnamon bark – miscellaneous herbals that have no evidence to support any of the claims above<sup>4</sup>

Nutrition content per serving: 110 calories|2g fat|9g CHO|5g fibre|2g sugar|15g protein provided by ingredients such as maltodextrin, sunflower oil, protein blend

### Patch<sup>8</sup>

Now onto the patch. (A patch? Yes, a patch!)

Transdermal patches are wonderful routes of administration as they avoid first pass metabolism, generally provide more consistent serum levels, and don't cause the anxiety induced by some 'horse pills'.<sup>9</sup> However, there is a reason few pharmaceuticals are available in patch format. Cost is no doubt one issue but another is that **drug delivery across the skin is very difficult** and limited to drugs with specific characteristics such as small molecular size and high lipid solubility; furthermore, **drugs given in doses >100 mg would likely require an unreasonable patch size and thus are not candidates**.<sup>9</sup>

The ingredients of this patch are listed in the table below. Notice there is **nothing resembling a dose** available. Also, the properties of herbal products are much less defined than those of pharmaceuticals. As such, information about lipid solubility and molecular size is unavailable for the ingredients of this product. However, we can look at the dosing aspect. Typical doses of some of the ingredients: studies of garcinia cambogia used doses of **250 mg to 400 mg** multiple times per day; green coffee bean **200 mg**; CoQ10 (50-200 mg in divided doses); white willow bark **1360-2160 mg** for OA.<sup>4</sup> As such, since the patch is not a complete bodysuit, it seems unlikely that all (any?) of these ingredients are in high enough concentrations to result in adequate serum concentrations. (Note: the actual dimensions of the patch are not available but according to photos, the patch appears to be ~5-10 cm<sup>2</sup>).<sup>10</sup> Of course, this is only an issue if the ingredients actually penetrate the dermis.

This patch, which apparently uses 'patent-pending' technology of Derma Fusion Technology, also contains two proprietary ingredients: ForsLean<sup>®</sup> and

Cosmoperine<sup>®</sup>, both made by Sabsina Corporation.<sup>11,12</sup>

ForsLean<sup>®</sup> is forskolin, which, according to Sabsina, is an aid in weight loss.<sup>11</sup> Natural Medicines notes anti-obesity properties demonstrated in rats, but includes no other discussion in terms of weight loss.<sup>4</sup> Sabsina provides a link to clinical trials, that, at the time of writing, was broken.<sup>13</sup> Promising results were demonstrated in a small trial of overweight and obese men in which those who took forskolin experienced greater reductions in body fat.<sup>14</sup> Unfortunately, these results were not replicated in women in whom no difference was found in nutritional intake, body weight, bone mineral density, fat mass, % body water, or appetite between the placebo and forskolin groups.<sup>15</sup> Both of these trials used oral forskolin.

Cosmoperine<sup>®</sup> is a product the company has developed to enhance penetration of ingredients.<sup>12</sup> While it's laudable such an ingredient is included, it is important to realize the studies with this product looked at **enhancement of absorption after oral administration** of various drugs.<sup>18-25</sup>

### What does it cost to take this product that lacks evidence and likelihood of benefit ?

The website is not so upfront about this. Different package prices are offered though it isn't completely clear just what is included in each package. One must be a customer in order to shop for (and thereby see pricing) of THRIVE, which isn't unlike most online vendors. At the time of registering as a customer, your own personal website is created<sup>10</sup> allowing the customer to be promoted to seller and able to sell this wonder product to friends and family.

**Conclusion** The website states: "THRIVE by LeVel is something that's hard to explain, and challenging to describe... it's something that can only be experienced."<sup>1</sup> Agreed. **It is a challenge to describe the science behind the product since there is none. Anecdotes are really all they have to vouch for seemingly overpriced multivitamins infused with caffeine.**

**Table 1: Content of Core Thrive Products**

Ingredients	Thrive M (Capsule)	Thrive W (Capsule)	Thrive Lifestyle Mix (Shake)	Thrive DFT (Transdermal patch)
Vitamin A	1500 IU	1500 IU	2500 IU	ForsLean®, green coffee bean extract, garcinia cambogia, CoQ10, white willow bark, Cosmoperine®
Vitamin B1	1.4 mg	1.4 mg	75 mg	
Vitamin B2	1.7 mg	1.7 mg	85 mcg	
Vitamin B3	12	12 mg		
Vitamin B5	10 mg	10 mg		
Vitamin B6	2 mg	2 mg	1 mg	
Folic Acid	800 mcg	800 mcg	200 mcg	
Vitamin B12	100 mcg	100 mcg		
Vitamin C			24 mg	
Vitamin D3	200 IU	200 IU	200 IU	
Vitamin E			10.5 IU	
Biotin			135 mcg	
Calcium			400 mg	
Chromium	200 mcg	200 mcg	60 mcg	
Copper			1 mg	
Iodine			60 mcg	
Manganese			600 mcg	
Magnesium			100 mcg	
Molybdenum			38 mcg	
Selenium	90 mcg	90 mcg		
Vanadium	25 mcg	25 mcg		
Proprietary Blend	526 mg*	527 mg*	1595 mg**	

\*Proprietary Blend = B lactis, L. acidophilus, L. casei, L. helveticus, L. salvarius, L. plantarum, L. rhamnosus, guarana, green tea, glucosamine, white willow extract, green coffee bean, PEA, irvingia extract, theobromine, ginger extract, synephrine, glutamine, l-arginine, grape seed extract, BCAA blend, CoQ 10, kelp, white tea extract

\*\* Proprietary Blend = garcinia fruit extract, oat fiber, natural caffeine from black tea, L. acidophilus, rice bran, amylase 5000, bromelain 600gdu, cardomon seed extract, cellulase 1000, ginger root, lipase1000, papain 6000, protease 1000, protease 5000, cinnamon bark extract  
 Also contains: maltodextrin, protein blend (soy, pea, whey concentrate), cellulose, sunflower oil, sucralose, stevia  
 Provides per serving 110 calories|2 g fat|9g CHO|5 g fibre|2g sugar|15 g protein

**References:**

<ol style="list-style-type: none"> <li>LeVel. What is the thrive experience? Available at <a href="https://le-vel.com/Experience">https://le-vel.com/Experience</a> Accessed 4 Aug 2015.</li> <li>LeVel. THRIVE M. Product Sheet. Available at <a href="https://media.le-vel.com/Documents/THR001M.pdf">https://media.le-vel.com/Documents/THR001M.pdf</a> Accessed 4 Aug 2015</li> <li>LeVel. THRIVE W. Product Sheet. Available at <a href="https://media.le-vel.com/Documents/THR001W.pdf">https://media.le-vel.com/Documents/THR001W.pdf</a> Accessed 4 Aug 2015</li> <li>Ulbricht K, Basch E, editors. Online Natural Medicines[Internet]. Somerville (MA); c2015. Available from: <a href="https://naturalmedicines.therapeuticresearch.com">https://naturalmedicines.therapeuticresearch.com</a> Subscription required. Accessed 4 Aug 2015</li> <li>Timson J. Theobromine and theophylline. Mutat Res. 1975;32(2):169-78. PMID 765793</li> <li>LeVel. THRIVE Premium Lifestyle Mix. Product Sheet. Available at <a href="https://media.le-vel.com/Documents/THR002.pdf">https://media.le-vel.com/Documents/THR002.pdf</a> Accessed 4 Aug 2015</li> <li>CNN. Congressional hearing investigates Dr. Oz ‘miracle’ weight loss claims. 19 Jun 2014. Accessed 4 Aug 2015. Available at <a href="http://www.cnn.com/2014/06/17/health/senate-grills-dr-oz/">http://www.cnn.com/2014/06/17/health/senate-grills-dr-oz/</a></li> <li>LeVel. THRIVE  Premium Lifestyle DFT. Available at <a href="https://media.le-vel.com/Documents/THR003.pdf">https://media.le-vel.com/Documents/THR003.pdf</a> Accessed 4 Aug 2015</li> <li>Shargel L, Wu-Pong S, Yu AC. Chapter 17. Modified-Release Drug Products. In: Shargel L, Wu-Pong S, Yu AC. eds. <i>Applied Biopharmaceutics &amp; Pharmacokinetics</i>, 6e. New York, NY: McGraw-Hill; 2012.</li> </ol>	<ol style="list-style-type: none"> <li><a href="http://accesspharmacy.mhmedical.com/content.aspx?bookid=513&amp;Sectionid=41488035">http://accesspharmacy.mhmedical.com/content.aspx?bookid=513&amp;Sectionid=41488035</a>. Accessed August 04, 2015.</li> <li>Modernized Lifestyle. How to Order and Buy LeVel Thrive Products Step by Step. Available at <a href="http://modernizedlifestyle.com/buy-le-vel-thrive-products/?gclid=CMqg1sDLsMcFZCcaQodYV8KPw">http://modernizedlifestyle.com/buy-le-vel-thrive-products/?gclid=CMqg1sDLsMcFZCcaQodYV8KPw</a> Accessed 17 Aug 2015.</li> <li>Sabinsa Corporation. FAQ. ©2015. Available at <a href="http://www.sabinsa.com/products/faq/forsLean/">http://www.sabinsa.com/products/faq/forsLean/</a> Accessed 17 Aug 2015.</li> <li>Majeed M, Prakash L. Cosmoperine®: Q&amp;A. ©2007. Available at <a href="http://www.sabinsa.com/products/cosmeceuticals/cosmoperine/cosmoperine-qa.pdf">http://www.sabinsa.com/products/cosmeceuticals/cosmoperine/cosmoperine-qa.pdf</a>. Accessed 4 Aug 2015.</li> <li><a href="http://www.forslean.com/clinical.htm">http://www.forslean.com/clinical.htm</a></li> <li>Godard MP, Johnson BA, Richmond SR. Body composition and hormonal adaptations associated with forskolin consumption in overweight and obese men. <i>Obes Res</i> 2005; 13: 1335–1343.</li> <li>Henderson S, Magu B, Rasmussen C, et al. Effects of Coleus forskohlii supplementation on body composition and hematological profiles in mildly overweight women. <i>J Int Soc Sports Nutr</i> 2005;2(2):54-62. doi:10.1186/1550-2783-2-2-54.</li> <li>Bano G, Raina RK, Zutshi U, et al. Effect of piperine on bioavailability and pharmacokinetics of propranolol and theophylline in healthy volunteers. <i>Eur J Clin Pharmacol</i>. 1991;41(6):615-7.</li> <li>ZutshiRK, Singh R, Zutshi U, et al. Influence of piperine on rifampicin blood levels in patients of pulmonary tuberculosis. <i>J Assoc Physicians India</i>. 1985 Mar;33(3):223-4.</li> </ol>	<ol style="list-style-type: none"> <li>Pattanaik S, Hota D, Prabhakar S, et al. Pharmacokinetic interaction of single dose of piperine with steady-state carbamazepine in epilepsy patients. <i>Phytother Res</i> 2009;23(9):1281-86.</li> <li>Pattanaik S, Hota D, Prabhakar S, et al. Effect of Piperine on the Steady-state Pharmacokinetics of Phenytoin in Patients with Epilepsy. <i>Phytother Res</i> 2006;20:683–86.</li> <li>Jin MJ, Han HK. Effect of piperine, a major component of black pepper, on the intestinal absorption of fexofenadine and its implication on food-drug interaction. <i>J Food Sci</i> 2010;75(3):H93-96.</li> <li>Janakiraman K and Manavalan R. Compatibility and stability studies of ampicillin trihydrate and piperine mixture. <i>IJPSR</i>, 2011;2(5):1176-81.</li> <li>Shoba G, et al. Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers. <i>Planta Med</i> 1998;64(4):353-56.</li> <li>Kasibhatta R, Naidu MU. Influence of piperine on the pharmacokinetics of nevirapine under fasting conditions: a randomised, crossover, placebo-controlled study. <i>Drugs R D</i> 2007;8(6):383-91.</li> <li>Badmaev V, Majeed M, Prakash L. Piperine derived from black pepper increases the plasma levels of coenzyme Q10 following oral supplementation. <i>J Nutr Biochem</i> 2000;11:109–13.</li> <li>Badmaev V, Majeed M, Norkus PE. Piperine, an alkaloid derived from black pepper increases serum response of beta-carotene during 14-days of oral beta-carotene supplementation. <i>Nutr Res</i> 1999;19(3):381-88.</li> </ol>
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## MEDSASK SERVICES PROVIDE VALUE TO COMMUNITY PHARMACISTS

A fourth year summer research pharmacy student developed a survey designed to assess the usefulness of medication information provided to community pharmacists by medSask and determine to what extent the service improved patient care and promoted positive patient outcomes. The link to the on-line questionnaire was sent to 79 pharmacists who had called medSask during the month of July, 2015; 59 (76 %) filled out and submitted the survey. The results of the survey are outlined below:

**Table 1: Use of information** (more than one option could be selected)

USE	Count, N=55	%
To inform or reassure the patient	41	75
Reassure self or confirm existing therapy	28	51
Modify existing therapy	19	35
Learn about alternative/ new therapy	15	27
Initiate new therapy	15	27
Update medical records	2	4
Identify potential adverse event	8	15
Identify potential drug interaction	8	15
Stop existing therapy	2	4
Other	4	7

**Table 2: Patient outcomes** (more than one option could be selected)

OUTCOME	Count, N=37	%
Prevention of disease/symptom	7	19
Medication administration optimized	24	65
Reduction/ elimination of symptoms	7	19
Resolution of therapeutic problem	11	30
Arresting or slowing of disease process	2	5
Other	1	3
Negative outcome	0	0

**Table 3: Impact on pharmacist / pharmacy image** (more than one option could be selected)

IMPACT	Count, N=59	%
The information enhanced my ability to provide service to my customer	55	93
The information enhanced my reputation with other healthcare professionals with whom I work	29	49
The information had no effect on the image of my pharmacy	1	2 %

**Summary:**

Information provided to pharmacists by medSask consultants is used for direct patient care (education, treatment decisions) and results in positive outcomes for patients. In addition, pharmacists felt that this information enhanced their image with patients and other healthcare professionals.

*Please feel free to contact medSask with any questions or issues related to drugs and drug therapy. Our hours are M – F 8:00 AM – midnight; weekends & holidays 5:00 PM – midnight.*