

# Gerovital H<sub>3</sub>

(GH3)

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*A Research Summary*  
*Of the Nutritional Qualities*  
*Of Procaine*

This booklet summarizes research on Gerovital H3 as a nutrient source. This booklet is intended for informational purposes only. No conclusions are intended as to the products value as a cure or treatment for disease. The information contained in this booklet is for educational purposes only. Prior to beginning a wellness program or nutritional protocol seek competent professional or medical advice.

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## **Introduction**

This booklet provides the physician with the most current data on Gerovital H3, also referred to as “GH3”. The data presented emphasizes the possible nutritional qualities of procaine. Evidence suggests the specialized Romanian formulation of Gerovital H3 give procaine unusual nutrient possibilities.

The text is historical in nature, providing information on both the favorable and unfavorable points of interest regarding GH3. This balanced array of information provides a firm basis for professional judgments on its use.

The knowledge, hypotheses and theories of this work originate from competent and respected researchers. A question and answer format has been adopted to provide easy access to topics, which tend to arise in discussion of GH3. Footnotes direct interested readers to publications covering those same subjects in depth. Hopefully, this brief but complete synopsis affords useful data on the years of scientific investigation into GH3.

## From Past to Present

### How was Gerovital H3 Developed?

The active ingredient of Gerovital is procaine. Procaine is a local anesthetic first synthesized in 1905 by Alfred Einhorn, a German scientist. For minor surgery, dentistry and procedures near the surface of the skin, procaine was preferred. It numbed the area, broke down quickly and soon left the system. It produced no after-effects and showed few allergic consequences. As with many scientific discoveries, the regenerative potentials of procaine came to light by accident. Over the years physicians using it reported unusual and unexpected effects in patients. Arthritis sometimes would improve, hair would re-grow or recolor and skin quality often would improve. These reports came for the most part from surgeons who were not particularly interested in gerontology.<sup>1</sup>

Ana Aslan, MD was director of the National Institute of Gerontology and Geriatrics in Romania. She was the first gerontologist to seriously investigate the possibilities of procaine as a tool in the fight against aging.<sup>2, 3</sup> Dr. Aslan recognized that procaine affects the body's cells by numbing them. The body counterattacks with the enzyme *cholinesterase*. Cholinesterase hydrolyzes the procaine in about an hour ( $66' \pm 14'$ ) which degrades it. Dr. Aslan speculated that the compound could be stabilized so that it would not numb the cells. The body would then not reject it and the regenerative effects would be extended.

This notion launched her on a research mission lasting two years. In 1951, she had perfected a procaine product she called *Gerovital H3*. It contained antioxidants and stabilizing agents. Once stabilized, the procaine molecule did not react with the same swiftness in the cells. The numbness did not occur and the cholinesterase was not called up. The resulting compound stayed in the body more than six hours and had no anesthetic qualities. Presumably, this magnified any regenerative effects by a factor of at least six. It also gave the ingredients sufficient time to reach the organs.

Claims coming out of the Institute's clinics for the next few years were viewed as outlandish. Patients treated with GH3 supposedly showed improvements in circulatory function, skin elasticity, ulcers, Parkinsonism, arthritis, hair and depression. According to the reports, practically all aging phenomena diminished in severity with Gerovital H3.<sup>4</sup>

Dr. Aslan's continuing research caught the attention of gerontologists in West Germany, who invited her there in 1956. She presented her findings to a group of her peers in Karlsruhe at the Therapy Congress Meeting. The attendees treated her uncommon claims with skepticism and rejection. Still convinced of her clinical results, she continued her research in Romania for another year. This time she filmed all her results. Some months later, she received tolerant coverage in a respectable West German medical journal. She was invited back to Karlsruhe in 1957, where the assembled scientists gave her a warm response.<sup>5</sup>

### GH3: Not Accepted in America

Despite the scientific research on Gerovital, American health professionals generally have viewed Dr. Aslan with skepticism. The allopathic orientation of American medicine favors creating conditions in the body which are incompatible with the disease. Dr. Aslan's approach more aptly could be termed *homeopathic*. It aims to restore balance by mobilizing the body's existing defenses. The allopathic approach places less emphasis on preventive treatment and is suspicious of products claiming to have diverse benefits. The first American response to the Romanian reports was not long in coming. An article negative to procaine therapy appeared in 1963 in the *Journal of the American Medical Association*. This piece discussed several investigations by both English and American scientists. These research projects asserted that "GH3" was harmless and that it did little or no good.<sup>6</sup>

These conclusions differed vastly from those originating in Europe. A research team from the Chicago Medical School Institute for Medical Research sought to resolve the conflicts in 1965. It concluded that the American and English investigators did not employ the Romanian formulation.

They, instead, used a form of unstabilized procaine. Further, the results obtained with Dr. Aslan's product during the Chicago study were the same as she had claimed.<sup>7</sup> However, only the negative articles continued to receive wide attention. More than 200 positive reports on GH3 existing at that time never reached the major medical journals.<sup>8</sup>

From this point on, GH3 fell into relative obscurity in America. Part of the problem was the non-availability of the genuine formulation; the Romanians do not allow export of their product for general sale. Only a few foreign clinics could acquire it. This meant high costs for GH3 users. The rich and famous went on yearly pilgrimages to Romania.

Various researchers sought and failed to earn FDA (Food and Drug Administration) approval for Gerovital. Then, as now, the pharmaceutical market was geared for patent products. The money needed to satisfy standard protocols was not available for an un-patentable product such as Gerovital. The contention that, as a nutrient, GH3 has never needed such approval will be detailed later. However, the mire of prevailing circumstances insured that Gerovital H3 generally would not be available outside Romania.

With changing awareness about nutrition and preventive health care, Gerovital gradually has become more recognized. Methods of determining representatives of the true Romanian formulation will be discussed in a later section. However, first, we need to develop a picture of its possible actions and benefits.

## **The Nature of Gerovital H3**

### **What are the General Actions of Gerovital?**

As previously mentioned, the active ingredient of GH3 is procaine. Procaine is an ester composed of PABA (para-amino benzoic acid) and DEAE (diethyl amino ethanol). Both of these are water soluble B-vitamins. PABA stimulates the production of folic acid and vitamins K and B1. It has its greatest beneficial effects in the hair, glands and intestines. DEAE is a precursor to choline and acetylcholine. These factors are well known for their importance in nerve function.<sup>9</sup>

Esters typically are joined by weak covalent bands. In the case of Procaine, the looseness of the bonds allows the PABA and DEAE to enter the body easily. Once inside, they separate and pursue their singular missions. PABA has an electrical charge, which makes it difficult to absorb. When joined together in the procaine molecule, however, PABA and DEAE become ionized. Since they no longer have a charge, the body readily attracts and absorbs them.<sup>10</sup>

### **Are The Ingredients of Gerovital Natural?**

Yes. PABA and DEAE occur naturally in the human body.<sup>11</sup> The covalent bonding allows the two ingredients to travel further in the body before they break down. PABA and DEAE taken separately could have beneficial effects. However, the results would not be the same as GH3 since these substances alone would not enter as effectively. Thus, Gerovital is more than the sum of its parts.<sup>12</sup> A similar comparison could be made with the components of water. Trying to drink two parts hydrogen and one part oxygen would do little to quench thirst. These two separate elements become drinkable only when a spark causes them to join chemically.

Finally, Dr. Aslan succeeded in adding an antioxidant to her product. This provides a slow release mechanism for the procaine. It is believed that the higher acidity (pH 3.3) keeps the procaine molecule stable. This results in an absence of the numbing effect common to procaine. It is probable then that the two basic ingredients will endure long enough to reach the organs and produce substantial nutritional benefits.<sup>13</sup>

## Is Gerovital H3 A Drug?

Protocols for approval as a “drug” have never been satisfied. In terms of its known actions, GH3 can be regarded as either a vitaminic compound or a nutrient. PABA and DEAE are both B-vitamins. Evidence recently brought forth indicates that both elements are actually nutrients. PABA stimulates the production of several vitamins in the intestines. DEAE is a precursor to choline, which is a B-vitamin complex. Both elements thus form links in developmental chains resulting in these basic building blocks of the body. Therefore, they can be considered nutrients.<sup>14</sup> The Merck Index lists GH3 as vitamin H3.

## Will GH3 Replace Other Vitamins?

No. Even though the active ingredient is composed of B-vitamins, it is not known to replace vitamin supplementation.

## What is the Full Ingredient List of Dr. Aslan’s Formulation?

Her product contains 0.1 g. procaine hydrochloride, 0.006 g. benzoic acid, 0.005 g. potassium metabisulphite and 0.0005 g. disodium phosphate in a coated tablet. The potassium stabilizes the procaine molecule and extends its action. The sodium likewise acts as a buffering agent to protect the procaine from rapid hydrolyzation. The benzoic acid combined with the potassium metabisulphite helps to stabilize the resulting compound at a pH value of 3.3.

## Why Do Many Imitations of GH3 Lack Effectiveness?

This probably results from poor stabilization of the procaine molecule. When properly stabilized, it appears to remain longer in the system. It then better communicates its nutrient qualities throughout the body.<sup>15</sup> Some manufacturers claiming to have “GH3” may use the same ingredients as Dr. Aslan’s product. Any chemist can discover the “formula” through laboratory analysis, however, the processing method itself seems to be at the heart of the increased pharmacologic action.<sup>16</sup> “Generic” drugs made by various pharmaceutical houses usually do not function as well as the original product. This appears to be the case with GH3 and its many imitators. As with drugs, the processing method undoubtedly makes the difference.

## Research and Speculation On Possible Benefits

### What are the Known Actions of GH3?

As with many health products, the pharmacologic action of Gerovital H3 is not entirely understood. However, 32 years of laboratory research and clinical investigation have been compiled. Therein we can identify three main areas of health maintenance in which GH3 is reported to have empiric or practical benefits:

**I. Balance:** Balance among the complex and interactive systems of the human body is a key to health. Imbalances can lead to breakdown or disease. There are three major bodily systems in which Gerovital appears to have an unusual ability to facility balance.

1. The first area is the circulatory system. Dr. Aslan coordinated a two-year control study of 15,000 subjects. She observed that more than 80% in the GH3 treated groups experienced improvement toward blood pressure normalization. Both hypertension and hypotension showed desirable adjustments. More than 90% of the GH3 treated subjects in this same study also recorded a normalization of heart rate. Both tachycardia and bradycardia responded favorably.<sup>17</sup>

2. The second major area of balance with regards to GH3 is the endocrine system. Dr. Sidney Cohen of the University of California at Los Angeles<sup>18</sup> and Dr. Aslan and associates<sup>19</sup> conducted lengthy scientific studies on this subject. They concluded that the product can facilitate a functional balance in the endocrine system and can normalize hormone levels. Dr. Cohen was struck by the elevated emotional tone in most of his GH3 treated subjects. He theorized that this uplift reverberated on the neuron-endocrine system, thus prolonging vigor and health.
3. Dr. Aslan and her associates decided that Gerovital tends to restore a functional balance in the central nervous system.<sup>20</sup> A 1965 study by Gordon, Fudema and Abrams concluded that GH3 increased the nervous conduction speed.<sup>21</sup> The conduction rate tends to decrease with age. It can account for some of the “slowing” of aging people. Functional adjustments on the vegetative nervous system also have been reported with subjects on GH3. Lung capacity often increases, or at least maintains with advancing age.<sup>22</sup>

**II. Circulation:** Circulation is the second major area of health maintenance believed to be improved by GH3. Studies show that Gerovital tends gently to dilate and cleanse blood vessels.<sup>23</sup> Obviously, many conditions of decaying health accompany a reduction in circulation. In some cases, cardiac patients may improve from the vasodilating action of GH3. Gerovital also can increase the oxygen supply through coronary vasodilation.<sup>24</sup> Improved circulation may lead to a cleansing of toxins from the body, partly because of increased organ function.<sup>25</sup> Importantly, the vasodilating properties of the product are mild. Blood acts as a messenger in the body by communicating nutrients, oxygen, hormones and other healing factors throughout the system. It also facilitates the excretion of toxins which otherwise could damage the cells. GH3 may speed these functions by increasing circulation to all parts of the body.

Other conditions, such as senility, also may improve from Gerovital. It generally is believed that a majority of senility symptoms arise from arteriosclerosis or atherosclerosis in the brain capillaries. If these tiny passages become hard or clogged, blood flow may decrease. Activity in those parts of the brain then may decline. GH3 experiments suggest that it is effective in alleviating senility symptoms by reversing this trend.<sup>26</sup>

**III. Enzyme Action:** The third major area of health maintenance involves the vital enzyme monoamine oxidase (MAO). It plays important roles in blood pressure equilibrium, liver function and nervous system activity. Though MAO is necessary, it also can become a problem. Age 45 often marks the beginning of a rise in MAO levels in the blood and brain, although this may occur sooner. MAO is a dominant substance and tends to displace factors related to youth and vitality. Many gerontologists theorize that a rise in MAO levels can be seen as a biological law of aging. As MAO goes up, youth and vitality go down.<sup>27</sup> Individuals with high MAO levels thus may experience pessimism, depression, fatigue, irritability, fluctuating moods and reduced interest in life. These changes define aging with respect to emotion and mental status. More than any other area of balance, GH3 appears to have beneficial effects on MAO levels. It is believed to inhibit excess MAO and push the level toward normal.<sup>28, 29, 30, 31</sup> This one property may have much to do with its reduction of aging symptoms.

### **What Will Gerovital Do For...**

Since it is a nutrient, the exact improvements are not predictable for any one person. It works at a cellular level and therefore the action is general rather than specific. The changes arising from GH3 are usually subtle. Individuals used to the dramatic effects of synthetic drugs may not notice any difference day to day. In assessing the benefits, experience shows that it is preferable to look back over several months. Changes in physical and mental status then can be evaluated. Some users of the product report no benefits of any kind. This may be due to a lack of physical problems to begin with. In this case, the nutrient qualities can be regarded as a prophylactic measure at best. Some users simply do not absorb or utilize the ingredients to the extent that health benefits are realized.

### **Can GH3 Increase Sexual Potency?**

Some researchers believe that decreased levels of the neurotransmitter *serotonin* lead to impotence.<sup>32</sup> Serotonin is a substrate of MAO. Ideally, MAO metabolizes the serotonin so it will not become too prominent. Rising levels of MAO which may appear after age 45 thus accompany falling levels of serotonin. Gerovital has a demonstrated ability to inhibit excess MAO. Thus it may tend to normalize serotonin levels and restore sexual potency .

Estrogen and androgen production can be a factor in sexual characteristics and performance as well. Parhon, Aslan and Danila<sup>33</sup> and Untea<sup>34</sup> conducted studies in this area. They concluded that GH3 tends to increase deficient estrogen and androgen levels. It appears that this stimulating effect only occurs where these factors are subnormal.

### **Will GH3 Affect Herpes?**

To date, there is nothing which will eliminate herpes. However, a relevant research study was conducted by J. Earle Officer of the University of Southern California. He showed that herpes I and herpes II virus did not become active in the presence of Gerovital H3.<sup>35</sup>

### **Will GH3 Reduce the Risk of Cancer?**

There is no definitive answer to this question yet. Studies by J. Earl Officer also showed that the C-type (cancer producing) viruses did not become active during GH3 experiments.<sup>36</sup> Dr. Aslan reported a statistical decrease in the appearance of neoplasm in patient populations using Gerovital long-term.<sup>37</sup>

### **Will GH3 Prevent Heart Attack or Stroke?**

The evidence remains inconclusive. Studies by Cohen and Ditman<sup>38</sup> and by Alsan<sup>39</sup> indicated a lowering of cholesterol levels in patients using Gerovital. The tendency for the product to normalize arterial pressure and heart rate also may play a role in preventing damage to the circulatory system.

At the National Congress of Professors in Italy, 1974, the assembled scientists praised GH3's effectiveness against the accumulation of blood clots and cholesterol. They also agreed that it does not pose any health risks.<sup>40</sup> Soon after beginning to take GH3, some patients show an *increase* in cholesterol. Importantly, this level is measured in the blood. A temporary rise may indicate a mobilization of the arterial deposits.<sup>41</sup>

### **Can GH3 Reduce Psychotic Symptoms?**

Psychosis is defined as delusions, hallucinations or bizarre behavior. Current psychiatric research is focusing on chemical imbalances related to the reticular activating system (RAS). The RAS usually functions adequately in its role as the neural "switchboard," routing messages to different parts of the brain and nervous system. However, the routing process may become confused due to chemical imbalances or other factors. It may become impossible for the affected individual to determine whether sensory or memory impressions originate inside of him or outside. This possibly could account for hearing voices from imaginary people. It may result in believing ideas which others know obviously could not be true. It may lead the victim to behave in a bizarre manner to deal with a world which others cannot perceive.

Chemists have not proven how anti-psychotic medications work. The same is true for Gerovital. However, studies by John Saunders and Luigi Bucci at Rockland State Hospital in New York<sup>42</sup> and later again by Bucci<sup>43</sup> indicate that GH3 helps to reduce psychotic symptoms. It may do so without the side effects known to anti-psychotic drugs currently in use.

### **Does GH3 Have Any Affect On Allergies?**

The body's immune system responds defensively to the presence of various substances from the environment. However, it may become sensitized to one of these antigens and over-react. The normal protective response can get out of hand. The chemical consequences of this natural function gone awry may become an even larger problem. *Histamine* output increases and this may create many of the classic symptoms of an allergic reaction. Additionally, stress may leave the body open to an allergic crisis when the adrenal glands must respond more often. This can lead to a depletion of vital chemical defenses. Gerovital may moderate these problems in several ways: 1.) Researchers Ghali, Cohen and Aslan assert that GH3 is an anti-histaminic<sup>44</sup> 2.) Bucci has demonstrated that it moderates the adrenal response.<sup>45</sup> 3.) Acetylcholine is a counterpart of adrenaline. Since DEAE is a precursor to acetylcholine, it may promote a parasympathetic response during times of stress.<sup>46</sup>

### **How Does GH3 Make Hair Grow and Recolor?**

There is certainly ample scientific evidence that Gerovital may help recolor and re-grow hair.<sup>47, 48, 49</sup> Once again, the pharmacologic action is not clearly understood. It is known that endocrine imbalances and reduced circulation can lead to the weakening and thinning of hair. Poor nutrition or nutrition inadequately communicated to the scalp may result in poor hair quality. As already documented, GH3 reportedly helps restore endocrine balance. It improves circulation to all parts of the body through vasodilation. PABA also is believed effective in improving hair quality.<sup>50</sup> The ionized and stabilized nature of GH3 may allow the PABA to perform even more effectively. The re-growth or re-coloring of hair does not occur at all in some patients. Even when it does, several years may pass before appreciable results are obtained. Nutrient or endocrine deficiencies may not be the cause in some instances of poor hair quality or hair loss. In these cases the product may not help.

### **Can Pregnant Women Safely Take Gerovital?**

Studies by Aslan and associates<sup>51</sup> and by Bucci and Saunders<sup>52</sup> reveal that Gerovital does not cross the placental barrier. Notably, pregnant women are not recommended to take standard anti-depressant drugs. Under physician supervision, the nutrient qualities of GH3 may alleviate some of the symptoms.

### **Will Gerovital Fortify the Body Against Common Illness?**

Dr. Aslan and her associates noted that 38% of subjects using Gerovital H3 showed a reduction in absenteeism from work.<sup>53</sup> A two year study by Untea and Bercu revealed that 76% of laborers doing piece work increased their incomes during the study if they were on GH3. These same workers experienced better concentrations on the job and an absence of fatigue.<sup>54</sup>

A serious influenza epidemic swept Europe during on of the Romanian studies. Dr. Aslan reported a mortality rate of 3.2% in patients on Gerovital. In the untreated group, the mortality rate was 13.9%.<sup>55</sup> An American report noted similar results. 3.3% mortality was found among GH3 treated patients, while the untreated group showed a 12.0% rate.<sup>56</sup>

### **What is the Role of MAO in Depression? Can GH3 Correct it?**

The neurotransmitters *serotonin* and *norepinephrine* apparently are needed for proper neural responses. Most researchers believe that deficient levels result in depressive syndromes. This soon leads to fatigue, pessimism, withdrawal and inadequate functioning. MAO is believed to metabolize these neurotransmitters so they will not become too prominent. If they were, it might result in excess neural firing and "manic" behavior. Conversely, if MAO builds up to a higher level, there may be a deficit of neurotransmitters as the MAO does its job too well. Gerovital's reported capacity to balance MAO action may reduce the problem.

Marplan, Nardil and Parnate are MAO inhibitor drugs used in psychiatry. They are believed to disable the MAO by forming strong covalent bonds with it. This reduces the metabolism of the serotonin and norepinephrine, thus hypothetically alleviating the depression. At the same time, this may prevent the MAO from performing other functions.

Specifically, the MAO substrate tyramine can pose dangers. If unchecked by the MAO, it can lead to fatal hypertension when the liver is forced to absorb it. MAO inhibitors stop the metabolization of neurotransmitters. However, they also prevent the MAO from safely metabolizing the tyramine. Many patients on these anti-depressants died before the tyramine effect was understood. A tyramine restricted diet is indicated.

In contrast, GH3 acts as a reversible inhibitor of MAO. It isolates the MAO from the neurotransmitters and thus prevents their metabolization. Under stress or in the presence of tyramine, the procaine reverses this action so the MAO can again perform its function. Apparently, this addresses the problem without adding further hazards to the patient's life.<sup>57</sup>

### **What About the Actions of Other Anti-depressants?**

MAO inhibitors compose only one class of anti-depressant drugs. Another type even more commonly prescribed is known as the tricyclics. They address a different set of circumstances related to depression. Normally, neurotransmitters return to the presynaptic sites for temporary storage. This reuptake process may occur too rapidly or too completely in some instances. Similarly, in such a case, it is hypothesized that there can be a deficit of neurotransmitters. The tricyclics (Elavil, Tofranil, etc.) coat the presynaptic nerve endings and selectively block re-uptake. Ideally, this permits a sufficient level of neurotransmitters to become available at the synapses. Some tricyclics primarily block the re-uptake of serotonin, while others primarily block the re-uptake of norepinephrine, while others primarily block the re-uptake of norepinephrine.

The complicated set of circumstances often requires several changes of medication to achieve desired results. Even then, the physician ideally phases out the anti-depressant once the nervous system has stabilized. While each such drug is different, up to 50% of patients taking tricyclics can experience undesired side-effects.<sup>58</sup>

William W. K. Zung, MD, one of the foremost psychiatric authorities on depression, studied Gerovital in a double-blind investigation. He compared it to Imipramine, an anti-depressant of choice. He concluded that GH3 reduces depression better than Imipramine.<sup>59</sup> Vladimir Jancar, MD, conducted similar clinical trials. He decided that Gerovital H3 acts as efficaciously as Elavil (a tricyclic), and Nardil and Parnate (both MAO inhibitors) when used in depressed patients.<sup>60</sup> It is noteworthy that these two types of drugs hypothetically work in entirely different ways. GH3 seemed to improve the problems addressed by both. It did so without negative side effects. It would be inaccurate to say that GH3 always reduces depression. Indeed, some depressed patients show no positive response to the product at all. Once again, its cellular action makes the benefits unpredictable. The most attractive advantage seems to be its total lack of problematic side-effects.

### **How Does Osteoporosis Respond to Gerovital?**

Osteoporosis is primarily caused by a breakdown of bone structure and a loss of calcified tissue. It generally advances with age and therefore usually is identified with geriatric patients. However, NASA physicians report that space travelers in the weightless condition show an alarming advance of osteoporosis. The reasons for this are unclear. Gerovital-treated patients have shown a significant reduction in osteoporosis. Results have been reported both in preventing and reversing it.<sup>61</sup> GH3 apparently encourages the body to retain calcium.<sup>62</sup> Further, researchers report that over a period of several years remineralization of the whole skeleton can occur. A general thickening of the bones has been noted in patients treated with GH3 as well.<sup>63</sup> Gerovital H3 may improve osteoporosis by its stimulation of the estrogens and androgens as previously documented. These two hormones currently are used as treatments for the condition.

## **What Does Research Say About Gerovital and Parkinson's Disease?**

The tremors and muscular rigidity of Parkinson's disease occur to some degree in nearly all aging people. The traditional treatment levodopa (L-Dopa) affects the deficient dopamine level, which in turn affects nerve function. Many users of L-Dopa suffer side effects. Still, L-Dopa or similar compounds such as Sinemet must be used. Dopamine administered directly would not reach the cerebral-spinal fluid. GH3 may be advantageous because it penetrates the blood/brain barrier. It works directly by going from the blood supply through to the cerebral-spinal fluid.<sup>64</sup>

J. Earle Officer, mentioned earlier in reference to GH3 research, himself suffered from a severe case of Parkinson's disease. He was unable to take L-Dopa at all because of the side-effect. He reached a state of complete remission using GH3 alone.<sup>65</sup> Dr. Aslan reported favorable results in combating the condition in her patients as well. She added Gerovital to the current treatment plan or used it solely.<sup>66</sup> Some cases of parkinsonism show minimal response to the standard drug treatments. The same is true for Gerovital H3. The only major advantage appears to be that GH3 produces no unpleasant side-effects.

## **Can GH3 Do Anything For Sickle-Cell Anemia?**

Researchers in one laboratory study showed that, when exposed to procaine, sickle cells would re-oxygenate. They concluded that procaine competes with calcium for membrane binding sites. Calcium is believed largely responsible for the brittle form of the hemoglobin. This was a laboratory study only. However, the investigators took the position that procaine holds promise for controlling the sickle-cell deformity.<sup>67</sup>

## **Does Gerovital Effect Blood Sugar?**

There is no extensive data on the subject. One study showed easier management of blood sugar level in diabetics using GH3 as an adjunct to insulin. It also suggested that blood sugar levels tended to become normal in cases where the values were aberrated slightly.<sup>68</sup>

## **Will GH3 Help Reduce Effects of Stress?**

Gerovital exhibits anti-adrenergic properties and functions as a muscle relaxant.<sup>69, 70</sup> Both these factors may provide greater resistance to stress. As already explained, DEAE participates in the production of acetylcholine, the counterpart of adrenaline. GH3 facilitates both the elimination of toxins and the inhibition of excess MAO. Researchers consider these factors aspects of stress reduction as well.<sup>71</sup>

## **Does Gerovital Help Multiple Sclerosis Patients?**

Dr. Gohbrandt, a West German surgeon, conducted a clinical trial with 87 multiple sclerosis patients. The GH3 treated subjects showed "remarkable improvement." No extensive clinical investigation has been undertaken in this area.<sup>72</sup>

## **What Will GH3 Do To Body Weight?**

Once again, Gerovital may act as balancing factor. Clearly, patients in a state of degeneration may fail to maintain a minimum safe body weight. Some geriatric patients, for example, gradually "waste away" as they lose lean tissue. Studies demonstrate that the anabolic properties of GH3 can promote weight gain.<sup>73</sup> At the same time, a slow metabolic rate can result in the failure to catabolize undesired body fat. Clinical inquiry suggests that GH3 increases a deficient basal metabolism rate.<sup>74</sup>

## **How Does Gerovital Affect The Skin?**

Medical research indicates that Gerovital H3 may contribute to the disappearance of age spots and wrinkles. It may improve skin elasticity and promote faster healing. These changes may result largely from improved circulation to the skin surface.<sup>75</sup> Many users of GH3 are reported to have that “youthful” appearance which belies their chronological age.<sup>76</sup> These observations are not necessarily far-fetched. We can assume that first impression of aging arise primarily from the appearance of the hair and skin. Both these surface measures of age seem positively affected by GH3. Scientific reports as a whole suggest that the product may prolong and to some extent restore the skin quality.

## **Additional Clinical Considerations**

### **Will Gerovital Extend Life?**

The most significant studies on increased life span were conducted by Professor Berger in France<sup>77</sup> and by Richard Hochschild of Corona del Mar, California.<sup>78</sup> They undertook independent rat and mice studies. Their results demonstrated that male animals treated with GH3 ingredients lived approximately 30% longer than the controls. Interestingly, extension of lifespan in the females was much less. Dr. Aslan’s longitudinal studies showed a reduction in mortality rate in humans as well.<sup>79</sup> It is important to remember that the human form has a limited lifespan potential. Only so many “generations” of body cells can be reproduced. The human system is designed to survive approximately 120 years. After that, the cells rapidly lose their reproductive capacity. To whatever extent someone lives less than this may be the result of stress, accidents or poor overall health management. Dr. Aslan does not claim that her work makes possible the extension of life beyond this limit. She rather believes that it may be possible for people to “die young” but at an advanced age. The goal is to reach an extended age without the degenerative problems which too often detract from the *quality* of life.

### **Is GH3 Safe?**

Romanian Gerovital H3 has been tested in nearly 300 scientific investigations and in several thousand laboratory studies. This scientific inquiry as well as its use by several million people shows no harmful side effects.<sup>80</sup> Further, GH3 does not interact chemically with any medications. It therefore will not potentiate the properties of drugs taken with it. This safety record, however, cannot be assumed for the many undocumented imitations of the Romanian formulation.

### **Is It Possible To Overdose On Gerovital?**

Dr. Bernard Wagner of Columbia University conducted animal studies on this subject. He gave laboratory rats more than 60 times the normal equivalent human dosage of GH3 for more than four months. He determined that there is no buildup of procaine in the cells.<sup>81</sup> In this sense, the procaine acts no differently than other water soluble B-vitamins.

Dr. Wagner and most other investigators agree that Gerovital H3 acts on sites in the body in a benign fashion. It does not damage tissues or alter the basic structure of the organism. In this regard, it is worth noting that suicidal patients sometimes overdose on their medication. This involves an anti-depressant in most cases. If used for depression, Gerovital can relieve the physician of this additional worry.

### **Can Young People Take Gerovital?**

The basic ingredients of GH3 occur naturally in the body. On the basis of 32 years of research, we safely can assume that the Romanian formulation will not hurt the patient. At the same time it may lead to beneficial results. Young people who take the product under physician supervision usually do so for specific conditions not related to aging. This may include juvenile arthritis, depression, ulcers and allergies. Carl Pfeiffer of Princeton reported a decrease in hyperkinetic symptoms in children given DEAE.<sup>82</sup>

### **Does Gerovital Cure Health Problems?**

The word cure is improper because we are discussing a nutrient. Any conditions which change will improve only as long as the individual in question continues using the product. Once this person stops, the body in most cases gradually reverts to its original condition. Dr. Aslan points out that the real value of Gerovital H3 is that it can be used nutritionally to reinforce specific medical treatments. It also may provide a measure of protection against health problems which otherwise could develop.<sup>83</sup>

### **Why Do Some Patients Feel Euphoric On GH3?**

Certain patients report euphoria for a few days or weeks. Gerovital H3 does not cause any effects in the body common to cocaine and other stimulant drugs.<sup>84</sup> A more likely explanation lies in a reduction of depressive symptoms. It is possible for someone to be affected by depression and not even know it. People tend to adjust to their current symptoms and hence may be unaware of the depression until something acts to lift it.

**CAUTION:** Several imitation "GH3" products have been reported to contain varying quantities of strychnine. In small doses, strychnine acts as a stimulant and produces a "high". These manufacturers probably add the strychnine in order to mimic the anti-depressive effects common to Dr. Aslan's formulation.

### **Is Gerovital Habit Forming?**

Some users report strong attachments to its health benefits. However, they cannot become physically dependent on it. Pharmacological investigation by Goodman and Gilman concludes that procaine is incapable of causing addiction.<sup>85</sup>

### **Why Are Sulfonamides and Niacin Contraindicated For GH3?**

Both sulfa drugs and straight niacin (not niacin as part of a multi-vitamin) can neutralize the effects of procaine. However, GH3 does not interact with them in a harmful manner. PABE is antagonistic to sulfonamides and therefore will cause a mutual decrease in effectiveness. Niacin dilates the blood vessels to such an extent that the procaine is forced quickly out of the system.

### **Will Patients Allergic To Novacaine Be Allergic to Gerovital?**

Procaine is indeed similar to Novacaine. As explained earlier, procaine acts rapidly on the cells and numbs them. This rapid action may account for the allergic rate of one in 50 people common to procaine and Novacaine. The allergic reaction for the Romanian GH3 is one in 6,000, possibly due to its mild action and slow release.<sup>86</sup> The most severe reactions on record are mild skin rashes. Frequently, imitation "GH3" shows an allergic rate of one in 50. This points to improperly stabilized procaine which may antagonize the immune system. The regenerative effects of the nutrients decrease proportionately.

### **What Is The Difference Between The Parenteral And Tablet GH3:**

The tablets are called Gerovital H3 while the injections simply are referred to as H3. The injections act more rapidly in conditions related to central nervous system activity. On the whole, however, the tablets are preferred. They stimulate the intestinal flora to produce several vitamins, while the injections do not. Dr. Aslan herself supports this position.<sup>87</sup>

### **What Are The Actions Of Aslavital?**

Aslavital contains additional antioxidants as well as the GH3 ingredients. It is considered to be more potent than GH3 and to be used in addition to GH3 for chronic situations. It is acceptable to take a combination of GH3 and Aslavital.

## **How Is GH3 Crème Used?**

The GH3 crème is designed for topical use only. It is believed to be absorbed directly into the cells. Dr. Aslan reports that its benefits include the reductions of wrinkles and attenuation of the skin, faster healing of minor burns and the correction of surface abnormalities. She also reports that it facilitates positive changes in the maintenance of dry skin and the reduction of acne.<sup>88</sup> There are no reliable verifications of these results from non-Romanian sources.

## **Can GH3 Promote Detoxification?**

Yes. The mild toxins which accumulate in the body from food and water may be purged on GH3. This detoxification resembles that experienced on a sudden change of nutritional intake, fasting or a vitamin program. Such a “healing crisis” usually features head-ache, mild nausea or flu-like symptoms. Somewhat less than 20% of new Gerovital users experience these reactions.

## **What Is The Recommended Daily Dosage?**

One tablet twice daily is ideal for most patients. One tablet three times daily may be preferable for some conditions. One tablet at bedtime can moderate excessive detoxification symptoms during the initial period of adjustment. Digestive enzymes may degrade the procaine bonds prematurely: Tablets should be taken one hour before meals or two hours after.

## **Why Is A Resting Period Recommended Each Month?**

A brief resting period, where no tablets are taken is recommended for GH3. Taking any vitamins without a break may eventuate in decreased responsiveness on the part of the body. Stopping for a few days each month allows the cells time to recover their sensitivity. Some physicians find it preferable for certain patients to take the tablets continuously. In some cases, nutrient deficits improved by GH3 may be compensated more adequately in this way. Whether or not a break accompanies the monthly regime, the Romanian formulation of Gerovital is safe.

## **An Intangible Field of Resistance**

### **Why Has The Issue of GH3 Been Obscured?**

It probably has not been obscured as much as neglected. An allopathically oriented medical establishment logically would suppress an inexpensive vitamin which appears to improve a vast range of physical ills. However, the facts do not substantiate this assumption. Actually, many physicians currently support GH3 and make it available to their patients. They believe that it may do some good, while it can't do any harm.

The thousands of investigations on GH3 generally do not appear in the major medical journals in America. On the contrary, reports suggesting low efficacy have received more press. Importantly, 85% of research on Gerovital backs up Dr. Aslan's original claims. 100% of studies using the true Romanian formulation resulted in conclusions parallel to those of Dr. Aslan.<sup>89</sup>

The state of the art in medicine, as in many fields, develops through the flow of information in trade journals. If a certain advance does not appear, then the practitioners of the field cannot use it. In the medical field, failure to practice the state of the art may result in lawsuits and the lifting of one's license. In similar fashion, a licensed person who does not represent the state of the art stands above reproach.

Another distracting factor is the emphasis on patentable products. Pharmaceutical representative encourage the physician to be “up-to-date”. These primary sources of information lean toward profitable patent drugs. Expensive studies are a bad investment if a product, such as Gerovital H3 is not patentable. Lacking approval as a “drug” leaves GH3 with less glamour in the medical mind. It is then only what it is – a simple nutrient.

### **What Position Does the FDA Take On Gerovital?**

Historically, the FDA appears to take a dim view of GH3. An article appearing in the FDA Consumer raised numerous questions about the product. The author criticized certain of the longitudinal studies by Dr. Aslan. She asserted that adequate controls were not applied to those investigations. The article went on to claim that GH3 is precisely the same as un-stabilized procaine. Further, the author assumed that no American research had been conducted on the product. Finally, she contended that no reliable clinical investigations anywhere had been undertaken on Gerovital.<sup>90</sup> At least one court case determined that the FDA does not have authority to regulate GH3. It is a vitamin product and the active ingredient, procaine, is older than the FDA.<sup>91</sup> Information recently brought to light verifies this position from a different point of view: PABA is a nutrient, since it stimulates the production of vitamins in the intestinal tract. DEAE is a precursor to choline, a B-vitamin complex. It therefore also acts as a nutrient. Under United States Code, the agency does not have regulative authority in this area.<sup>92</sup>

The real issue more likely may be efficacy. The FDA certainly does have regulative powers when it comes to claims made about health products. Dr. Aslan's authentic formulation is vastly outnumbered by its imitators. Clearly, these imitations do not measure up and many have no therapeutic effects at all. Claims made by their manufacturers refer to Dr. Aslan's research and that of other prominent scientists. However, these products do not prove efficacious. No wonder the regulative authorities decided to take a second look.

### **What Can Be Done About The Imitation GH3's?**

So far, nothing can be done. Hopefully, trademark registration and legal actions eventually will protect the reputation of Dr. Aslan. She herself resents the pirating of her signature and labeling for financial gain.<sup>93</sup> It gives her, the product and the Romanian government a bad name. For now, it is advisable to accept only Gerovital endorsed in writing by Dr. Aslan herself. Alternatively, generic products can be verified by appropriate clinical and laboratory testing. Safety and efficacy are assured only with adequate verification.

## **The Future of Gerovital**

Despite research and results from around the world, Gerovital H3 marks only a beginning. Dr. Aslan (1897-1988) realized this and does not rest on her reputation. She is a product of her own pioneering research. At age 85, she had the appearance of a woman several decades younger. She continued to work up to 90 hours a week in patient care, traveling and lecturing. She developed numerous products designed for preventative health care and the control of aging symptoms.

There is a widespread but incorrect notion that modern medicine is proceeding toward wiping out the most serious illnesses. In fact, catastrophic diseases, notably cancer and heart failure, increase steadily. This development is taking place as America expands the technology in most other fields by leaps and bounds. Exact reasons for this decline in health are difficult to determine. Certainly, the United States has fallen behind the prevention of degenerative conditions.

With the widening acceptance of Gerovital H3 and other nutrients, preventive medicine should emerge as an important aspect of health maintenance. As this moment proceeds, good information makes the best defense against manipulation. It also helps ensure true freedom of choice in health care.

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