

The Science of Ultratone



# The Facts About Biostimulation

Interview with Professor Gerta Vrbova,  
Study by Professor U. Becker,  
Research by Kristin Schaefer Centofanti

- Science
- Research
- Case Studies



Time pressures of modern life dictate that exercise and wellbeing must fit around all other aspects of our daily existence. With work, family and social commitments seemingly never-ending, those people with the desire to improve the way they look and feel, need to find the most time efficient methods to achieve their goals. While gyms and magazines offer time saving routines, hints and tips, leading neuroscientist **Professor Gerta Vrbova, University College London, Research Advisor to Ultratone, believes there is one true way of quickly enhancing muscle shape and strength: Biostimulation.**

**“My life’s work has been devoted to this area,” says Professor Vrbova from her University College London office. “From understanding the nature of motor units within each muscle, we have been able to take the development of electrotherapy and apply it to the world of sports and fitness. The result is, in my professional opinion, a very effective and safe way to enhance muscle development and growth and aid with overall physical fitness and training.”**

Professor Vrbova’s research, which has been conducted over the last three decades, has proved that via electronic pulse response, such as Ultratone, large body motor units are forced into action faster than through regular exercise. She has concluded that electrical stimulation can attain much higher levels of activity over time than any exercise regime, challenging the muscle system to its limits.

“Generally during ordinary exercise our larger motor units take progressively longer to be activated as the small muscle motor units are first to be recruited,” says Professor Vrbova. “It can take a great deal of serious training in the gym or aerobics class to reach the muscles you want to focus on, and unless you train seriously and regularly, the body shaping results can be minimal.”

Professor Vrbova has undertaken extensive research in muscle stimulation and growth, in particular the use of electrotherapy tallied against physical exertion. “In my research I have found it is often difficult to target slack or unused body muscles in conventional physical training,” she says. “The abdomen is a classic example; it needs specific, tiring and difficult exercises for women and men looking to shape that part of their body. The wrong muscles can be targeted and the rate of return on effort

expended is slow and dissatisfying.”

This process of electrical stimulation is called “physiosequential”, meaning a combination of automatically varying electronic frequencies, stimulation patterns and pulse widths to target specific muscles and tissues.

“In the use of physiosequential electrical stimulation programmes, muscles can be targeted individually, allowing the user or their therapist to select muscles that specifically shape the body, activating them instantly and directly, offering concentrated exercise without the stress or fatigue of intense gym training sessions.”

Despite her advocacy of biostimulation, Professor Vrbova is by no means disregarding physical activity as a means to improved wellbeing. In fact, she endorses a broad, rounded approach to improving fitness. “The fact that with biostimulation there is no stress or fatigue is an enormous plus,” she explains. “Nevertheless physical activity is needed to improve the performance of the cardiovascular system and also flexibility. The electrical stimulation allows one to perform physical activities more efficiently and therefore aid the improvement of all activity-related functions, building an increase in stamina and a heightened resistance to fatigue.”

As a result Ultratone stimulation will lead to more exercise rather than reduce it. Beyond enhancing and improving physical

fitness and wellbeing, biostimulation also assists in medical, therapeutic and non-invasive cosmetic enhancement treatments. “In a medical context, biostimulation can be used for a host of purposes,” says Professor Vrbova. “For instance, a person suffering from a musculo-skeletal injury would incur muscle wastage and loss of muscle bulk. Through the application of self-adhesive electrodes either under the cast or brace, or even in specially prepared openings in the cast, immobilised muscles are stimulated and prevented from wasting. In addition, biostimulation is used for orthopaedic treatments across the whole body, as well as in post cardiac and post stroke rehabilitation.”

In the world of cosmetic enhancement, biostimulation is used to work facial muscles, to tone and enhance appearances, all without the need for invasive surgery. “When I read about men and women who consider drastic solutions in order to alter an aspect of their facial or body appearance, I feel they should be made aware of biostimulation,” says Professor Vrbova. “It is a far safer and healthier way of creating a natural facelift, reducing unwanted flabbiness and improving fitness and muscle performance.”

### The Wellness Institute explores Biostimulation

The effectiveness of biostimulation has been studied by Professor U. Becker, a leading research scientist at the Wellness Institute for Diet and Nutrition in Münster, Germany. The study was primarily concerned with inch loss via fat reduction in problem areas, including the upper thighs, hips and waist. The institute also examined the development of musculature, though this was a secondary focus.

Incorporating 44 women, the testing

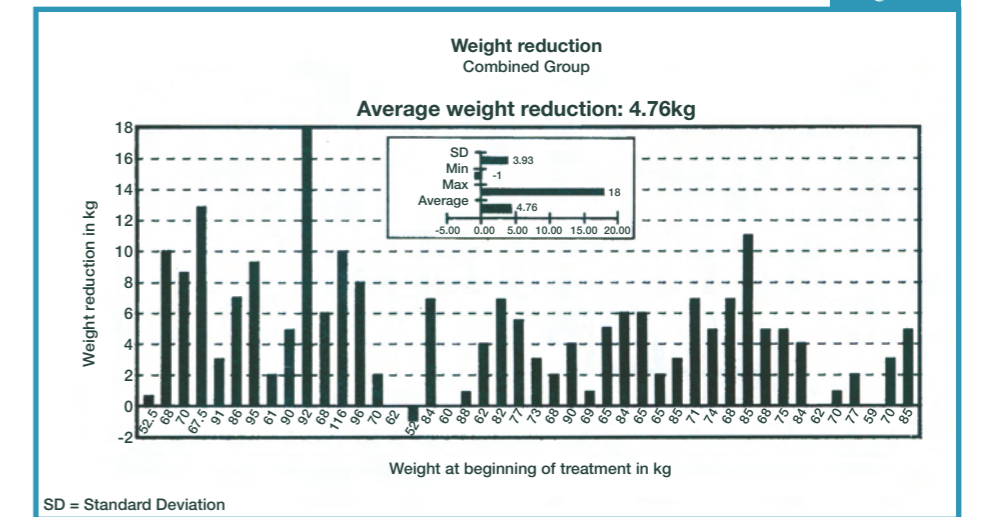


Figure 1

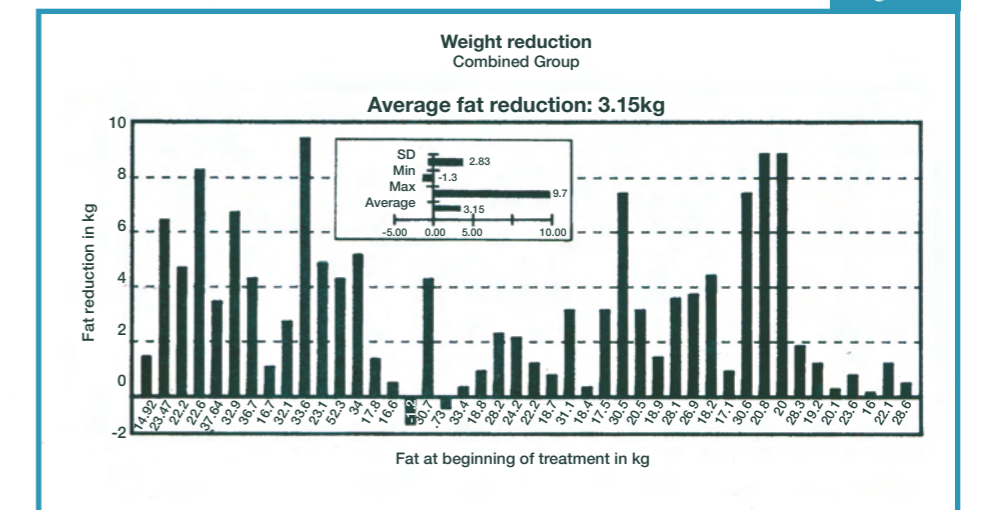


Figure 2

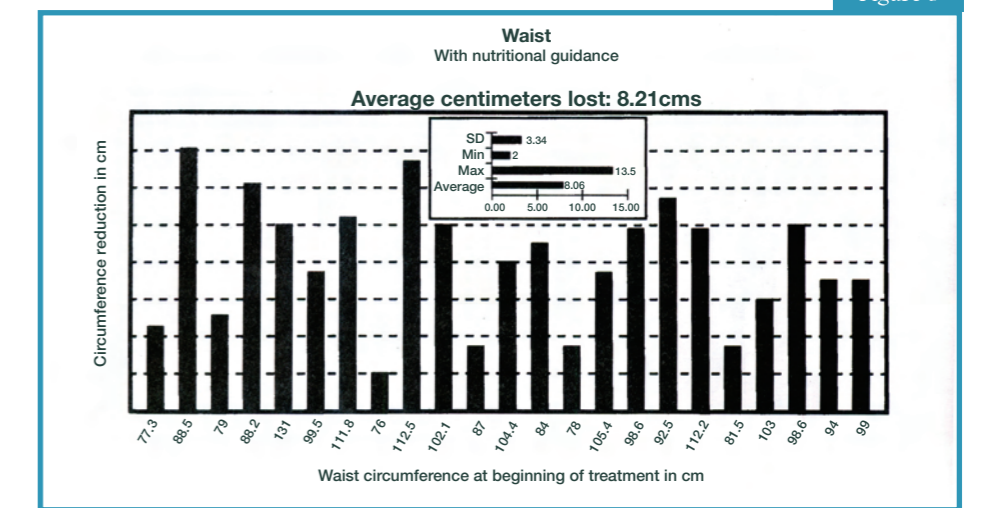


Figure 3



period included 60 days, with each subject given 15 electronic stimulation treatments of 45-50 minutes’ duration using the Ultratone 20. The subjects were divided into two groups – one set who took part without any sport or nutrition programme, the other was involved in a Wellness Institute program

directed towards exercise and nutrition. Professor Becker and his team used two methods of measurement for the study: the BIA measure and the circumference measure. The Bioelectrical Impedance Analysis (BIA) entails a computerised measurement of the body composition into

## Ultratone – leaders in biostimulation

Other companies around the world may have taken on board the biostimulation technology pioneered by Ultratone, but the company remains the standard-bearer and leader in the application of biostimulation for muscle toning and beauty therapy.

- Herman Frederick Schaefer produced the first battery operated portable muscle stimulators in the 1960s. These were quickly adopted by sportspeople, doctors and therapists for toning and tightening purposes

- Schaefer met and collaborated with Professor Gerta Vrbova, a leading neuroscientist who had pioneered scientific research of the benefits of biostimulation
- Their work led to the evolution of new, highly effective apparatus and the creation of the Ultratone brand in 1989
- Professor Vrbova now advises Kristin Schaefer Centofanti, the daughter of Herman Schaefer, who incorporates the latest research into the design of a new generation of Ultratone biostimulation systems

fat, muscle and water. Using four surface electrodes, this non-invasive measurement sends a weak high-frequency alternating current through the body. The component resistance to conductivity is measured and the body fat, muscle and water composition is measured through ohm and capacitive resistance. The circumference method measures problem areas using a special tape measure to provide the most precise measurements possible.

Following the conclusion of the tests, the results made for enlightening reading. Both groups saw significant results from their treatment, with a combined average weight reduction of 4.76kg (figure 1) and average fat reduction of 3.15kg (figure 2). Both groups recorded excellent improvements, with the nutritional guidance group obviously obtaining the best results. Weight loss averaged at an astonishing 6.2kg, with one subject losing as much as 18kg from the treatment. Fat reduction was also convincing, with an average loss of 4.81kg and a high of 9.7kg. Although muscle tone was not a primary consideration, excellent results were achieved, with an average muscle mass increase of 1.05kg, with a high of 5.78kg (figure 3).

Measurements across problem areas including the waist, hips and upper thighs

all saw circumference reductions, some with huge improvements in body shape. One subject recorded a 14cm reduction in her waist size; another lost 10.5cm around her hips.

Following the completion of the test, the team of researchers, led by Professor Becker commented: "It has been established conclusively that very good results can be achieved with Ultratone treatments. The results showed conclusively that Ultratone stimulation is an effective and reliable way to lose fat, reduce inches and tone up muscles, especially with additional exercise and nutritional support."

### Ultratone– Embracing Biostimulation

The studies of Professor Vrbova have formed the foundations of Ultratone, the pioneers of portable and professional stimulators. Ultratone products are infused with decades of study and research, making them the most complete and effective stimulation systems on the market.

Ultratone Biostimulation produces a range of impulses which mimic neurological signals that are transmitted to specific organs. These electrical impulses produce a range of different results including slimming,

muscle tone, workout and so on, causing muscles to contract and relax, without the overall body fatigue.

Each Ultratone Program has multiple biostimulation sequences, all tailored to the user's needs. The changing patterns of pulse widths, frequencies, timings and intensities reproduce the body's natural signalling system. All Programs include a warmup and cooldown mode, ensuring total relaxation before and after each session.

Ultratone's range is split between four categories. The **Futura** range consists of a fully computerised face and body-shaping programme for men and women. **Facial Plus** is a compact biostimulation unit for the face, providing a non-surgical facelift



and toning to maintain a younger and healthier appearance.

For athletes and keen sportspeople the **Sports** range offers the ultimate in physical performance and fitness enhancement. Through the Ultratone Athletic and Sportif biostimulators muscles can be flexed up to 900 times per hour, delivering exceptional results. Performances in the gym, in training

and in competition are improved, as is overall stamina, making users alert and full of energy.

Ultratone's latest innovation is the **Futura Pro**, which introduces a new bioptic impulse that combines 44 Waveform images with more than 150,000 programmed phases for the ultimate total body and face biostimulation experience. Six specific plans exist to meet the targeted needs of the user: Slimming, Toning, Detox & Repair, Sport Training, Therapeutic and Face. Each plan includes a host of targeted programmes, making the treatment efficient and highly effective.



The Futura Pro

### New all in one system from Ultratone: The Futura Pro

This system offers Multi Body Programs that allow three different treatments for the body and face at the same time so you can reduce cellulite on your thighs, take inches from your waist, have a bust lift

and an anti-ageing facial lift, all in one 30 minute session.

The system also personalises treatments so that every customer has his or her own specific Biostimulation Program adapted to his or her needs and body profile.

### Kristin Schaefer Centofanti – Carrying a family legacy

The Schaefer family is synonymous with the development of biostimulation; engineer and physicist Frederick Schaefer pioneered the development of portable muscle stimulators in the 1960s, now Kristin, his daughter, continues extending the family legacy.



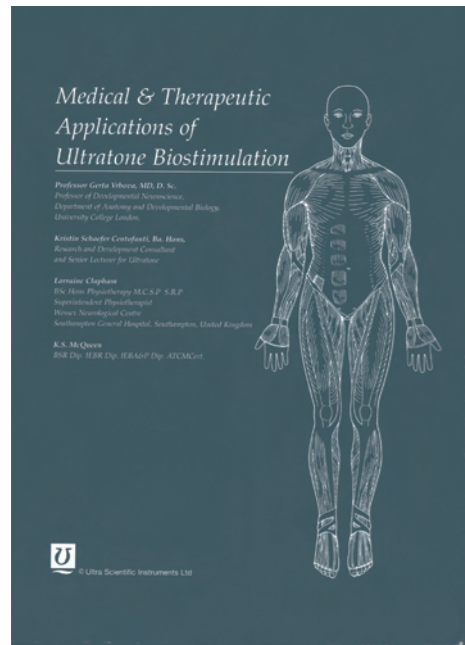
Kristin has absorbed the knowledge and experience of her father and is consistently conceiving new ranges and updates to biostimulation apparatus through the Ultratone brand. Employing the services of leading clinical and medical scientists, including Professor Gerta Vrbova, Kristin has channelled the latest research into the development of the Ultratone range, making them the premier products of their type on the market.

In addition to her role in the Ultratone story, Kristin has authored a number of articles and books relating to the engrossing world of biostimulation. She also continues to provide expert seminars

and lectures regarding biostimulation to physiotherapists, beauticians and scientists around the world.

"The investment Ultratone makes in applying the very latest scientific developments into our apparatus ensures our products are the very best available. Other companies are keen to cash in on the effectiveness of biostimulation but their products are produced without the wealth of experience and research we have at our disposal."

**Kristin Schaefer Centofanti, Ba. Hons, Research and Development Consultant and Senior Lecturer for Ultratone**



New medical book from Ultratone

## Ultratone launches medical and Biostimulation book

Medical and Therapeutic Applications of Ultratone Biostimulation is the title of a 62 page, A4 book written by Professor Gerta Vrbova and Kristin

Schaefer Centofanti, with collaborations by Physiotherapist Lorraine Clapham and Therapist Kay McQueen. It has 16 separate sections dealing with Skeletal Muscles and Motor Points (drawings specially created by the Anatomical Dept of St Bartholomew's Hospital), General and Clinical Applications of Biostimulation, Transcutaneous Electrical Neuro Stimulation (TENS), Orthopaedics, Range of Motion, Paralysis, Facial Palsy, Electro Acupuncture and Reflexology as well as featuring a Q&A and a full list of medical references.

Beautifully produced and illustrated, it explains in depth the physiological effects of Biostimulation, the rationale behind physiosequential Programs and parameters and the specific padding layouts for each condition.

A must for those interested in understanding the exclusive principles of Biostimulation and its advanced uses. Copies are available for journalists upon request.

## NEWSFLASH – New academic book preview

Academic Publishers Springer have commissioned a book from Professor Gerta Vrbova, Professor Olga Hudlicka and Biostimulation expert Kristin Schaefer Centofanti, which is due to appear in early 2008.

Under the title Applications of Muscle Nerve Stimulation in Health and Disease, it sets out to explain how and why muscles can be activated beneficially for a variety of purposes and to treat a number of conditions; details the medical and clinical background of each application, be it on healthy or denervated muscles; lists the many areas of research and the latest advances and aims to encompass everything that is known at present on electro-stimulation, from a practical as well as a conceptual basis.

It is the definitive book for those that want to learn: the clarity of its text, written for the lay person but with full academic



rigour, dispels any doubts, clarifies many claims and gives us much hope for the future development of this man made therapy.

## Ultratone provides a Body of Evidence

Constantly immersed in scientific and medical research to advance the pursuit of

excellence, the Ultratone Team, guided by Kristin Schaefer Centofanti, has compiled its Body of Evidence, which not only substantiates claims about Biostimulation made in promotional and instructional material, but also forms the scientific basis of its programs and protocols.

The 63-page index refers to an impressive

15,000 word document where over 500 of the most reputable medical and scientific research papers are contained.

All this valuable information is available in abstract and full text form for consultation by journalists on an appointment basis, at 36 George St, London W1.

Tel: 0207 935 0631

## Case Study

The science behind Ultratone's biostimulation programmes is put into full practical perspective with the case study of Jenny Scott. Over four weeks, Jenny undertook an intensive Ultratone programme on the Futura Pro machine, with treatments lasting one hour each time. Jenny's diet did not alter dramatically; she exercised good portion control, cut back on snacks and had three healthy meals each day.

"I was intrigued by the Ultratone experience," says Jenny. "The process itself was so simple and easy, and in many ways quite relaxing. I started noticing the results quickly and found that in combination with a slightly revised diet, which was effectively just cutting out snacking, my body responded really well to the treatment.

"Having the treatment and seeing the results so quickly gives you a real confidence boost. Not only will I keep up the treatments, but I'll also keep my new eating regime going as well – my new body is here to stay!" Jenny says.



Jenny before

Jenny after

Measurements (cm)	Before	After	Loss
Waist	86	73	13
Hips	100	95	5
Bum	107	100	7
Chest	98	87	11
Right thigh	62	56	6
Left thigh	62	55	7
<b>Total loss: 49cm</b>			

## Case Study

The benefits of biostimulation are being felt and seen across the globe. Ultratone has a growing reputation in the Ukraine, where more women are turning to total body sculpting and fat reduction methods for the most optimal beauty results.

Irina Bahmarova, 47, underwent a nine-month programme, combining Ultratone's biostimulation treatments with physical exercise and a controlled diet. Inclined to hypertension, Irina was advised to switch to a Mediterranean diet comprising fish, sea food, fruits and vegetables. She also minimised meat and dairy intake. Weighing in at 70kg, she ultimately lost 9kg, with visible reductions in measurement around her thighs, bust, waist and hips. Thanks to the combination of biostimulation and a controlled diet, Irina was delighted with her results.

"I was very impressed with it all," says Irina.



Irina before

Irina after

---

**For press enquiries**  
contact the Brandnation health and beauty team on  
0207 940 7170  
or email [helen@brandnation.co.uk](mailto:helen@brandnation.co.uk)

For further information about the range of Ultratone professional equipment  
or to book a free demonstration contact Ultratone

Telephone: (+44) (0) 207 935 0631  
E-mail: [info@ultratone.co.uk](mailto:info@ultratone.co.uk)  
[www.ultratone.co.uk](http://www.ultratone.co.uk)

