DANUBIUS HOTELS GROUP

Spa Medical Complex Therapies – do they work?

Spas all across central Europe offer complex 'rehab' therapies focused around a natural resource as a basis for their spa stays, primarily for the treatment of mobility disorders such as arthritis, rheumatism and other special diseases. We at Danubius Health Spa resorts are a classic example of this. In the past there has been criticism of the lack of scientific evidence to prove the effectiveness of these therapies.

Firstly it must be clarified that the success of these spa stays or 'cures' is not due to one factor or treatment. Instead the results lie in a combination of therapies, which use a natural resource as an integral part of the treatment. In other words, a variety of treatments are prescribed in conjunction with the use of a natural resource (in the case of Danubius, this can include – depending on the country and location – hot spring mineral water or natural CO2 gas or thermo-mineral salt). It is clear to us that it is this combination of a natural resource and an arsenal of physiotherapy treatments that produces such positive results.

We know that our treatments work, not just because of the results we see in our spa medical sections, but because our guests return time and time again. In addition to improved mobility, they also benefit from a noticeable reduction of pain, thereby greatly improving their quality of life.

So convinced are we of our results that we evaluate our performance in this field on an ongoing basis, our latest study being conducted between December 2007 and May 2008. This study was carried out under the direction of our head doctors on 94 guests with cox-arthrosis in the following hotels in Hungary: Danubius Health Spa Resorts - Margitsziget, Helia, Bük, Sárvár, Aqua, Hévíz and Danubius Hotel Gellért).

It must be emphasized that we deliberately do not conduct double-blind clinical trials for the simple reason that every guest has an individual health condition and because of that, as explained, we prescribe a personally tailored course of treatments unique to each guest's situation. As a consequence, it is not possible to compare like with like because no condition or treatment plan is the same.

Clinical Study December 2007 – May 2008

The health status of the guests on the study was examined on arrival and departure, after receiving medical spa treatment during stays of two or three weeks. The guests received various treatments depending on their condition, which included traditional spa therapies such as physiotherapy, electrotherapy, mud packs, medical massage, hydrotherapy and 'balneotherapy'. The specific treatments were prescribed by a doctor on an individual basis according to the health condition of the guest, as is our custom. It is important to note that part of the treatment included bathing in medicinal water, which is recognised by the Hungarian State.

Guests who had undergone an operation on a hip/knee joint, had a total hip/knee replacement, or who suffered restricted motion due to their cardiac condition or spine complaints were not included in this study. The survey was completed by the same doctor, based on the first medical examination and assessment on the last treatment day.

The patients in the study came from eight countries, including Germany, Hungary, Austria, Switzerland and Russia, and consisted of 59 women and 35 men whose average age was 67. Of the 94 patients examined, 58 received a three-week and 36 received a two-week treatment.

We recorded alteration in five sorts of pain sensation, based on the patients' subjective opinion – at rest, at motion, start of movement, going up stairs and going down stairs. Here are some of the results:

Before Treatment On Moving	Seconds	After Treatment On Moving	Seconds
none	1	none	14
mild	29	mild	46
medium	39	medium	33
strong	25	strong	1

Before Treatment Going Up Stairs	Seconds	After Treatment Going Up Stairs	Seconds
none	6	none	9
mild	24	mild	52
medium	36	medium	30
strong	28	strong	3

Before Treatment Going Down Stairs	Seconds	After Treatment Going Down Stairs	Seconds
none	12	none	18
mild	33	mild	54
medium	31	medium	22
strong	18	strong	0

Average duration of pain in seconds after start up of movement

Gender	Average Prior to Treatment	Average After Treatment
Men	550	333
Women	180	71
All	317	167

We obtained a similarly favourable result when assessing the visual analogue scale (VAS). Operationally the VAS is a horizontal line, 100mm in length, anchored by the words 'no pain' at one end and 'very severe pain' at the other. The patient is then asked to mark the line at the point they feel represents their perception of their current state. (In eight cases, the patients indicated '0' pain upon conclusion of the treatment.)

Average of visual analogue scale (VAS)

Gender	Average Prior to Treatment	Average After Treatment
Men	48	28
Women	54	31
All	52	30

A survey of the maximum distance of pace measured in centimetres brought the following results:

Maximum Distance of pace in cm.

Gender	Average Prior to Treatment	Average After Treatment
Men	42	46
Women	41	44
All	41	45

Walking time on flat ground (25 metres) and up and down 20 stairs alike showed improvement:

Walking time on flat ground of 25 metres in seconds

Gender	Average Prior to Treatment	Average After Treatment
Men	46	41
Women	47	40
All	47	40

Time to go up 20 steps in seconds

Gender	Average Prior to Treatment	Average After Treatment
Men	47	41
Women	52	43
All	50	42

Interestingly we also discovered a similar level of improvement in guests constrained to use a mobility aid in the street or at home. Of eight patients walking with an aid at home, two were

able to abandon it, while among the 27 people using a stick or an elbow crutch, altogether four were able to abandon the aid.

Many of the patients regularly took non-steroid antiphlogistics, primarily diclofenac derivatives. By the end of the treatment period, the number of those able to reduce their dose of non-steroids was significant, and in a few cases (four out of 20 men and ten out of 38 women) they could even eliminate it entirely.

Upon conclusion of the treatment, we asked the patients how they judged their condition by comparison with their state before the treatment. Of the 94 patients, one person reported a deterioration, 30 felt their condition was the same, 20 reported a medium improvement, 31 expressed a considerable improvement and five gave account of an excellent result. It is equally important to emphasise that every overseas patient declared he/she would be happy to return to Hungary for a repeated complex cure.

In our previous clinical studies, much improvement was also noted three months after treatment. In actual fact, sometimes immediately after treatment there can be a negative reaction, the benefits only being felt at a later stage. Unfortunately in this particular study the results only show the effect immediately after treatment, so based on our past experience we can assume after three months the results would be even more positive.

In 2003 two other clinical studies were carried out in our spas in Hévíz and Sárvár. In our health spa resort in Hévíz we saw considerable improvement in motion parameters (particularly in relation to the speed of walking on flat surfaces), a considerable reduction in pain and most importantly the ceasing of consummation of pain medications (75% of patients involved in the trial stopped taking their non-steroid medications entirely after the therapy stay). Based on another study conducted in Danubius Health Spa Resort Sárvár, it was established that all three disease groups investigated (knee-joint arthrosis, hip-joint arthrosis and lower back pain) made considerable improvement after treatment. *(Clinical Studies from Danubius Health Spa Resort Hévíz/Sárvár 2003).*

Our head doctor at Danubius Health Spa Resort Margitsziget sums up nicely the effectiveness of our complex spa treatment stays:

'As a hospital doctor I was also sceptical of the real medical value of therapeutic cures. Prescribing pills seemed a lot more straightforward. However, the 17 years spent at Danubius Hotels provide an excellent testimony to how fantastic the results are. I would like to bring attention to the fact that the spa programme does not merely bring relief to sufferers, but equally plays a tremendous role in preventing the development of diseases. A week spent at a spa revitalizes body and mind, giving us the energy to go back into the world with all its stresses and problems with renewed energy'. *(Dr Márta Mogyorósi)*

Information in this article is taken from studies conducted by Dr István Fluck, Dr József Szakonyi, Dr Márta Mogyorósi, Dr Miklós Weigl, Dr Péter Horváth and their contributors, compiled by Mike Wallace (Brand Manager, Danubius Health Spa Resorts)

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