

ALLADIN

A Helping Hand For Making The Right Choice In Neuro-rehabilitation

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"I am paralysed on my left side, barely able to speak, stunned, depressed, tearful and confused; wondering what the future would hold for me."

It is quiet in the room. She grabs her left hand and replaces it in a more comfortable position. I can see that she is still struggling to find words to my question.

"I can't move my left leg, my left arm is hanging from the socket like a dead rabbit, I can't stand upright, and even my speech is hard to understand ... will I ever be able to drink tea with my friends again?"

Staring at her left side like it is an intruder, something unknown has suddenly become a part of her

Every year there are about 20 million new stroke incidents in the world. This means that one in every thousand walking around you, including your family, friends and even yourself, may get a stroke. What would the future hold for you if this were to happen?

Science is running fast. Let us say that we could compress 100.000 years of development into 24 hours. This means that in three hours you journeyed from chiselling your message on a stone to sending your encrypted message through mobile phone.

Also stroke-rehabilitation moved rapidly and has followed a path travelling from myth to evidence based practice.

Let us show you the main facts and update you on important issues worth knowing about stroke rehabilitation

What Is Stroke?

Stroke has several synonyms: **Cerebro Vascular Accident (CVA)**, brain attack, hemiplegia, etc...

A stroke occurs when a blood clot blocks the blood circulation in the brain or when a blood vessel ruptures. The cells in the affected area are then destroyed and the patient experiences a loss of control in the respective body parts.

Evolution In Stroke Rehabilitation

Hundred years ago stroke patients were bedridden and occasionally received a few simple exercises. The general belief was that the outcome was very poor and nothing substantial could be done for them.

Today we know that physical and functional activities are of paramount importance in stroke rehabilitation. This approach has tremendously improved the level of independency after a stroke.

Over the past years new therapies and improved evaluation methods have been developed, but the questions every patient always wonders about are still not given a reliable answer. *"Will I be able to walk again; may I ever have the ability to drink tea with my friends?"* Vague estimations can be given but these statements highly depend on the subjective expertise of the professionals.



Some years ago, Jo Van Vaerenbergh, Senior Researcher at the **Arteveldehogeschool in Gent (B)**, realized that this situation

could be improved by studying daily living activities from a new perspective. He gathered a respectable network of people interested in the idea and found collaborators in Belgium, Hungary, Slovenia, Italy, Greece, England and Ireland. This was the start of the **ALLADIN** project.

The ALLADIN Project

ALLADIN is a European Community funded project that started in January 2004. A completely new diagnostic device was designed and developed together with software to evaluate stroke patients.



AZ Maria Middelaes - St. Jozef Hospital in Gent (B) is one of the three hospitals that decided to endorse in this project. This hospital is reputed for the rehabilitation of stroke patients.



The rehabilitation staff led by Dr. Marc D'Haese was intrigued by the philosophy of the project that maintains the development of an international and reliable structure for scoring stroke patients on their functional abilities. The aim of the project is to guide physiothera-

pists on what kind of therapy should be given and to offer the patient grip on their future.

"We take your everyday life into the laboratory..."

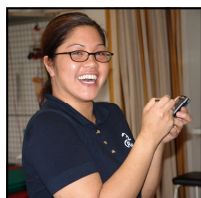
Drinking, turning a key, lifting a bag... etc, are measured with modern sensors, placed in contact with the foot, trunk, seat, arm and fingers. The forces the patient produces are represented as graphical pictures that are shown directly after the session.



Junior Researcher Sigried de Ruijter says: *"We take their everyday life situation into the laboratory and the patients enjoy it!"*

"The solution that will serve you both as patient and therapist..."

In another session, patients already measured by the new diagnostic device, are assessed and described by Junior Researcher Jorunn Lamson, making a comparison between quantitative and qualitative measurements possible. The assessment outcomes are spoken directly and in a natural way into a PDA (Personal Digital Assistance). The spoken message is automatically converted into a written language. The PDA is a small and portable device that can be carried around in your pocket. Paperwork is no longer necessary, which leaves more time to spend with each patient.



Jorunn believes that this is a user-friendly device that is beneficial for both patients and physiotherapists.

It is scheduled about one hour for each patient. Within this hour a measurement in the diagnostic device and a classical assessment take place. Sometimes it is hard for them to understand what we exactly measure, but once they

see the graphs on the computer and with simple explanations added, we usually get a nod and a smile. *"It seems like there is more activity in my fingers this time, if you compare it to last week...?"*

Family and loved ones might also have questions. We dispose our time, and see the importance to inform the people around the patient. Time is also spent to inform eager colleagues and students who show interest. Several of them wish to participate as "normal controls", meaning that they undergo the same measurements as a stroke patient. These measurements will be used to see how much the symptoms of a stroke patient differ from a person with no stroke.

"I will miss the sessions on Thursdays from now on!" Twice a week the patients attend these sessions, and after eight weeks it is down to only once a week. In a particular assessment case, Jorunn sets up the last ten minutes of the assessment to take place by the table, drinking coffee and enjoying cookies. In this manner she gets to observe how the patient handles everyday tasks around the table and enjoys it at the same time!

The patient describes the ALLADIN sessions as different, but pleasurable. *"You give me factual insight on how I am doing. Even though it has not changed too much lately, it has given me the opportunity to dwell on the fact that I maybe have to learn how to live with this and to compensate with my "good" side. The extra time you have to talk and listen to me means a lot. Things are not the same at home anymore, but when I come here you seem to understand and you do not pity me, so I leave the sessions with something to look forward to. What do you say,should I bring the Belgian egg- cookies next time?"*

The two researchers may not view each other's results, but every sentence and all data are sent to be stored in Hungary. After sixteen months, the partners from England will interpret and compare the results on how the patients have performed.

Introducing The Future

In the future, ALLADIN will make diagnosing and rehabilitation for both stroke patients and therapists "satisfying".

After assessing the patient, the PDA will recommend that he/she is on a level 'B1' and we should continue with a treatment called 'X'.

Then the therapist will explain to the patient in a simple order what this means, what exactly the contents of the therapy are, why this kind of therapy has to be done and that he or she will have the possibility to walk to the local café and have tea with friends again within the end of this year.



As a result of this project, after having a stroke, most patients will find that reliable predictions concerning their future are encouraging and give a feeling of serenity within. The therapy is no longer focusing on the symptoms of the affected body, but therapy recommendations will be given with the purpose to make the patient feel independent and involving in their everyday life again.

Now a custom-made rehabilitation plan will guide the therapist to give the best treatment in order to make the growth of independency possible. ALLADIN will open the doors to a truthful and honest communication between professionals and patients.

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Drawing was made by Jorunn Lamson

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