

Pocket Guide:

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First class prevention for a human medicine – also for MS

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# Lifestyle Strategies in MS

## Preface

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**Multiple sclerosis is** a chronic disease that is obviously influenced not only by genetic factors but also by numerous environmental and lifestyle variables. Knowledge about these influences and resultant simple and side-effect free treatments positively influence the risk of developing MS as well as its progression. This approach is independent of, and compatible with all medical therapies.

The project Life-SMS (Lifestyle Strategies in MS) has set itself the objective to collect and condense the available relevant scientific information and to publish its findings via various media. Knowledge about basic contributing factors and their interactions can free those affected from their “victimhood” and provide them with the opportunity to actively improve their health and aid their recovery.

Behind Life-SMS is an interdisciplinary and international network of researchers and practitioners who see it as their task to establish a self-help concept for people with MS in Europe.

Anno Jordan and Jörg Spitz  
Cologne and Schlangenbad, April 2014

## What is MS and what lies behind?

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**Multiple Sklerose (MS)** is an inflammatory disease of the central nervous system, the brain, and the spinal cord, which is associated with demyelination (damage to the myelin sheaths of nerve fibers). Since these lesions are located differently from patient to patient and distinct, the associated symptoms are also similarly varied. Very often, multiple sclerosis begins with inflammation of the optic nerve (Neuritis nervi optici), which is manifested by blurred vision, double vision or other vision problems. Other classic MS symptoms are paralysis of the muscles (especially in the extremities), weakness, coordination problems, impaired concentration and reduced performance, bladder weakness, abnormal sensations and rapid fatigue (tiredness) and much more. The severity of the disease varies greatly – from mild restrictions, up to the progressive disability.

Important for those affected is the question of the pathogenesis and the related question of the treatment options. Despite intensive research efforts, the answers to both questions are still unsatisfactory. Today, the MS is widely regarded as an autoimmune disease in which the mis-programmed immune system attacks and destroys body's own cells. Initially, certain immune cells (T cells) become activated. These penetrate the so-called blood-brain barrier. They find (due to programming errors) a suitable antigen in the nerve cells of the white matter of the brain. Antigens are foreign substances that trigger the formation of antibodies. Normally the body proteins are not interpreted as antigens. In addition, the T cells can stimulate further phagocytes (called macrophages) that contribute to the destruction of the nerve sheaths.

Furthermore, activated T cells, produce lymphokines (specific cytokines) as messengers which activate B lymphocytes (B cells), which are also involved

in the immune response. These B cells produce, when the appropriate antigen (in this case the proteins of the myelin sheath) binds to the receptors on their surface, more antibodies

When an antibody meets its antigen in the nerve sheath, this is blocked or neutralized and can no longer perform its tasks. Following these processes the damaged or destroyed nerve sheath (called myelin) leads to the disruption of nerve signal conduction and thus to the various symptoms described above. A smaller proportion of the activated B lymphocytes differentiate to memory B cells ("B memory cells"). These "store" the antigen information, such that after the second contact with the antigen, a more rapid immune response is available. In the case of MS, a vicious circle develops and the disease becomes chronic.

It must not be forgotten that the autoimmune hypothesis is not undisputed. Recent research suggests, for example, the **interpretation of the MS as a disease of fat metabolism** (comparable to atherosclerosis).

Irrespective of this, however is, that the incorrect programming of the immune system must have a cause or better a **combination of causes**, with results in form of an unwanted (auto) immune response. In contrast to the programming of a computer, the formation of the immune system is evolutionary and occurs over long periods. This programming is determined by the contact with the environment, the individual's metabolism, the genetic predisposition of the individual and the function of the brain itself. In this respect, the immune system is a highly complex, adaptive, non-linear control system with a variety of cell types, neurotransmitters and dependencies. This system does not allow a complete classical, rule-based description and treatment definition.

It is worth noting that the emergence and prevalence of MS are closely linked with the industrial development and urbanization in the last 200 years. The frequency of MS has increased significantly especially in the last 30-40 years. So it is time to react.

At this point the project Life-SMS becomes concrete: Reprogramming the immune system through the consistent **minimization of harmful influences, strengthening the desired immunological reactions** and the initiation of measures that support the **regeneration of cells**. This holistic approach has an effect in terms of primary, secondary and tertiary prevention objectives both on the course of multiple sclerosis and on the outbreak or the possible progression of other chronic diseases (co-morbidities). With Life-SMS the individual has multiple chances of winning!

The path leads over to the

## First class prevention of chronic diseases

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**Talking about prevention**, experts usually focus on damaging factors like tobacco smoke, environmental pollutants (pesticides and herbicides etc.), particulate matter from industry and car traffic as well as radiation exposure (electric smog, radioactivity and sunrays). But on this long list there are also other factors like fast food, soft and hard drugs, including alcohol and abuse of legal drug, as well as insufficient physical activity.

Regardless of the extensive programs of different institutions the resulting effects are rather poor. Not only in the Western countries with a high standard of living but also in the so-called emerging economies like India and China diseases of civilization are steadily increasing – in the newly indus-

trialized countries with breathtaking speed. This statement applies also for Multiple Sclerosis.

One of the reasons why the programs have been unsuccessful so far is the already mentioned focus on the prevention of risks and damaging factors. This approach does not take into account the extraordinary capacity for regeneration our bodies have with sufficient protecting factors and life sources. This is exactly the problem. Due to the universally admired technical progress of civilization, many protecting factors have disappeared from our environment. This process happened without becoming apparent for quite a time and more than 20 of such protecting factors and life sources can be listed (Tab. 1).

Physical Factors	Biological Factors	Mental Factors
gravity	micronutrients	meaningful work
magnetic field	minerals	social bonds
sunlight	fat, protein, carbohydrates	spirituality
oxygen	energy	music and singing
clear water	ess. amino acids	meditation
electric potential of the earth	symbiosis bacteria, viruses, fungi in our gut	senses and perception
silence/darkness	hunger and fasting	rest and recreation

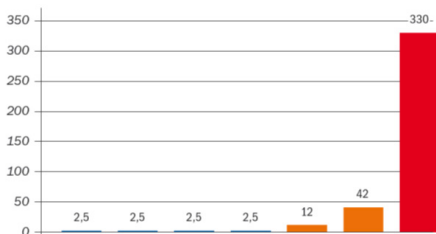
**Tab. 1:** Protecting factors and life sources for health which got lost for many people by technical progress of civilization.

As a rule for both aspects – the damaging factors as well as the protecting factors – a single parameter usually has only a limited effect. Due to the extraordinary flexibility in its construction the body is able to compensate for quite a lot of contamination and strain. But, in the end, reducing our original health resources at the same time as increasing the contamination load by

our lifestyle even the highly complex and extremely resilient construction of our body will decompensate. An impressive example for this principle is documented in the so-called “inter heart study”. This international medical investigation looked at the data of 30,000 patients worldwide from Japan to Africa, Europe and the Americas.

The first result of the analyses showed, contrary to the usual expectancy, no genetic influence on the development of cardiovascular diseases. Instead nine different risk factors were found - independent from the nationality of the affected patients. These risk factors are well known like smoking, high blood pressure, overweight, bad blood fats etc.

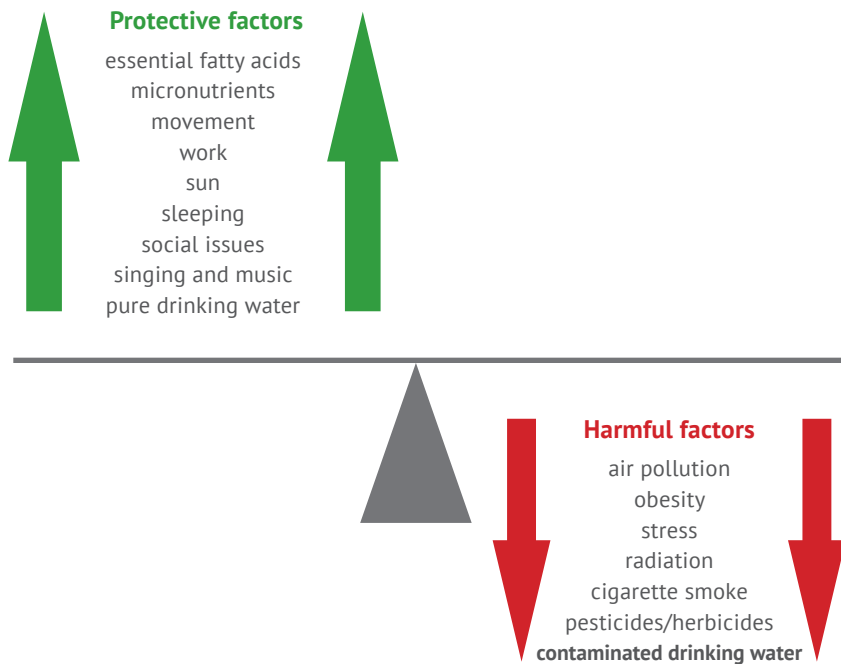
Each single risk raises the probability by a small factor of 2 to 3. But if somebody shows up with four factors the risk does not rise by a factor of 10 ( $4 \times 2.5 = 10$ ) but already 40 fold. In case of all nine risk factors the probability rises by a factor of 330! This sounds unbelievable but is true (Fig. 1).



**Fig. 1:** Disproportionately high increase of probability to develop a myocardial infarction depending on the individual number of risk factors.

In the context of these figures it is obvious that we have not only to look after the reduction of damaging factors but also take care of the recurrence of protecting factors (Fig. 2). With this double strategy we will succeed to keep the individual risk of a person as low as possible for developing a new disease of civilization or for experiencing a deterioration in an existing one.

One should not forget however that a second-best solution which works every day is better than a theoretical best solution which cannot be applied in practice. Hence the key data of cutting edge prevention are defined and will be presented within the framework of the Life-SMS concept.

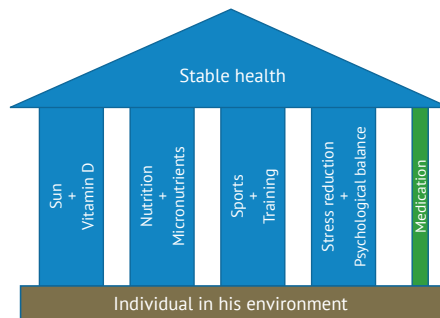


**Fig. 2:** The loss of protecting factors and the rising number of damaging factors in our environment play a key role for the development of diseases of civilization – this is also true for Multiple Sclerosis.



## The Life-SMS concept

**From the preceding** considerations result the “4-plus-1-columns” of active support for stabilizing and recovery of our body as depicted in figure 3.



**Fig. 3:** Man and health: from the variety of factors in table 1 four aspects emerged with a special importance for the disease of MS.

The schematic picture depicts clearly that stable health and recovery can only depend to a small extent on the pharmaceutical therapy of chronic disease. This column alone cannot give stability to the construction and its relevance depends on the stability of the rest of the columns. On the other hand, we can abstain from this column in an ideal setting without risking destabilization of the construction.

This picture by the way is also valid for almost all chronic diseases. Based on this finding the following reflections and suggestions are valid in most cases not only for the special problems of multiple sclerosis but also for the health of the body as a whole.

## Sunshine and Vitamin D

**The dramatic reduction** in outdoor time is one of the essential changes introduced by the Industrial Revolution to the relation between people and the natural environment. As a result the exposure of our skin to the sun is reduced to a few minutes per day for all people working indoors. The consequence of this completely unnatural behavior is serious: approximately 60 to 80% of the people in industrialized nations show a vitamin D deficiency in their blood <20ng/ml – especially in wintertime. This low level of vitamin D promotes various kinds of cancer, cardiovascular diseases, osteoporosis, respiratory diseases and different autoimmune diseases. In addition, the lack of sun exposure leads to a higher responsiveness to the radiation of the sun resulting in sunburn, and non-melanoma skin cancer. Finally additional influences of the sunlight with regard to the regulation of special hormones are suppressed as well (i.e., serotonin<sup>1</sup>, melatonin<sup>2</sup>).

**Regulation of our immune system and cell growth** are the most important fields of influence for Vitamin D in our body by limiting inflammation in autoimmune diseases. Vitamin D deficiency is one of the known risk factors to develop multiple sclerosis.

**Column 1:** *We should try to get more often outdoors and to stay in the sun with a large area of unprotected skin for 10 to 15 minutes and to do this regularly. For example physical activity is a proven practice and comfortable mean to reach this goal. Sunburn has to be avoided however.*

1 hormone of happiness

2 sleep hormone



## Nutrition and micronutrients

**Nutrition is a factor** which has developed slowly over millions of years. People have learned to differentiate between toxic and offending food and developed a nutritional profile which is adapted to the local environment. This development, focusing on the question of which foods had a positive influence on health and longevity continued until the beginning of the 19th century and then ended almost completely with the introduction of processed food.

Today there is growing evidence in the scientific literature that **traditional food (vegetables fruit, mushrooms, nuts etc.)** contains micronutrients and trace elements which directly influence the function of our immune system or **suppress cancer growth and inflammation**. Unfortunately, modern food contains only 30% of what our ancestors have been eating. As a result, there is a substantial deficiency of these micronutrients in large parts of the population (selenium, zinc, folate, magnesium, etc.). In addition, the processed food of the Industrial Revolution has led a shift in the spectrum of fatty acids in our blood promoting inflammation throughout the body.



**Column 2:** *The goal of our nutrition is to supply the body with a cocktail of micronutrients with special regard to regulating the anti-inflammatory components for our immune system. In case the individual nutrition pattern does not supply the necessary panel of micronutrients, fatty acids and trace elements, these ingredients have to be supplemented to guarantee the regular functioning of our bodies.*

## Sports and physical activity

**The third sin** of Industrial Revolution is the growing inactivity of the people. Our ancestors (and, by the way, still existing tribes like the African San and the Australian Aborigines) have been running at least 20 km per day to find something to eat. In industrialized nations, we only move something like 600 - 800 m per day as an average – resulting in a reduction of physical activity by a factor of >20. Beside the well-known effects of being overweight with adiposity and the growing incidence of cardiovascular diseases, the lack of physical activity results in a **direct influence on our immune system**: more inflammation promoting second messengers and less anti-inflammatory substances are produced in the body so that the balance is disturbed resulting in an increased incidence of inflammatory diseases worldwide.

**Column 3:** *In this situation countermeasures have to be taken to realize a high level of physical activity even though MS patients often enough are a limited by their disease. Physiotherapy and individual training are an essential must!*




## Stress reduction and mental balance

**Finally, the fourth** critical factor has to be talked about: negative stress and chronic overload of body and mind. In such a situation, a whole cocktail of negative second messengers is produced by the brain and sent to the body. Originally evolution has created means to overcome these stressful situations. Mental aspects like the development of self-expression – be it

in painting, sculpture, music, singing and dancing, etc. – always have been a counterweight to the purely materially orientated supply of goods and food. Happiness, with the associated production of hormones and positive secondary messengers, depends, above all, on experiencing inner calm, self-esteem and confidence for the future. The means to reach this condition are not restricted to self-expression but may also include meditation, contemplation and the already mentioned physical activity – especially in the context with an intensive experience of nature.

*Column 4: Represents measures which overcome negative stress and supply body and mind with the necessary balance.*



Each column has its own significance and cannot be replaced by another.

From these basic considerations results the following preventive catalogue has been established within the framework of the Life-SMS project.

## Preventive Measures for MS

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**The Life-SMS catalogue** of preventive measures is based on the review and analyses of a large number of medical studies which have been published in recent years. Unfortunately they have not yet been integrated in a holistic concept of treatment for multiple sclerosis – at least in the German-speaking countries. Looking at the medical data base “Pubmed” more than 470 papers have been published about vitamin D and multiple sclerosis since 2007. Another 268 papers appeared about antioxidants and

MS, and 1375 papers about mental aspects and MS. The value of this treasure increases steadily and it is worthwhile to utilize it as soon as possible.

Due to these advances in science we portray a relatively clear image with regard to the key elements which influence chronic diseases. Fig. 4 documents an extract from the catalogue of Life-SMS measures together with their specific grade of evidence in treating MS and other severe chronic diseases.

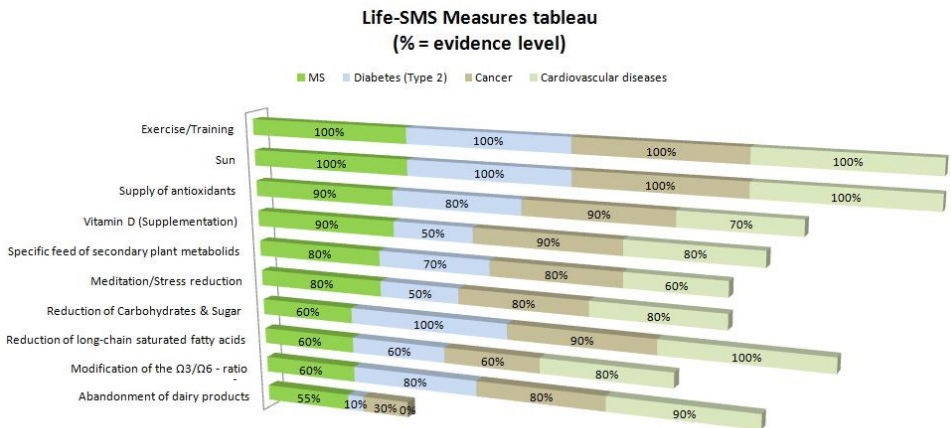


Fig 4: Life-SMS-measures and their grade of evidence for treating MS and other chronic diseases (Life-SMS 2013).

Naturally this table shows only a rough estimate of the recommended measures. Details and the individual realization including their specific effectiveness will be documented in elaborate Life-SMS publications as well as oral presentations and seminars. In addition attention has to be paid to the fact that everybody is different with regard to his risk factors and the

necessary preventive measures. In consequence new diagnostic tools will be implemented in the concept of Life-SMS.

It is planned to document the individual courses of the disease of the patient and to evaluate the results of the measures of the life SMS concept. This feature is a necessary prerequisite for quality control and offers the basis for future adaptations according to new scientific findings.

## The Australian example: “Overcoming Multiple Sclerosis”

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**There is at** least one successful international project which has allowed many MS patients to mitigate the pending sword of Damocles. Prof. G. Jelinek from Melbourne, Australia, affected himself by the condition, has been free of relapse since he was first diagnosed with MS 14 years ago. In 2009 he has published an evidence-based guideline with the title “Overcoming Multiple Sclerosis” (OMS) to help patients with this disease. In addition, he organizes so-called “retreats” to teach affected patients how to implement the preventive measures into their everyday life (see <http://www.overcomingmultiplesclerosis.org/>). George Jelinek was able to document remarkable improvements in many patients and even cases of healing. By doing so he initiated a change of paradigm in the therapy of MS.

In a current international study, Prof. Jelinek showed that the quality of life improved by 19,5 % in patients with MS who were followed up for five years (Fig. 5). This is more than remarkable as usually the quality of life for affected patients gradually decreases due to the progressive neurodegenerative changes in MS. The Life SMS is based on these results from the OMS guidelines and it will develop them further.

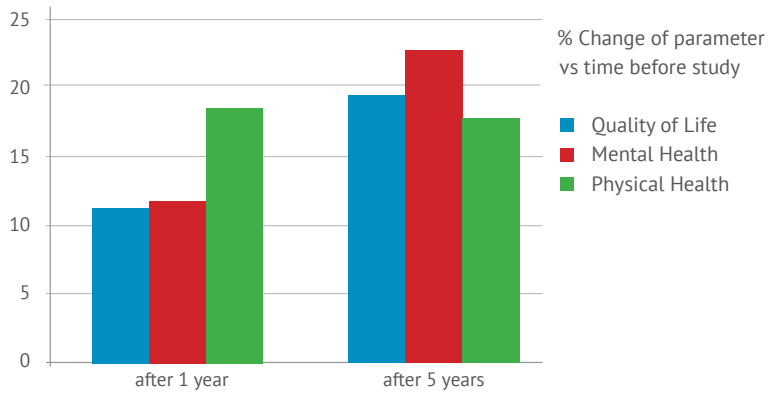


Fig. 5: Not only is the progression of MS stopped but lost abilities may be regained (Jelinek et al: Neurol Sci Jan. 2013)



## Outlook for German-speaking countries, Europe and beyond

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**This short document** presents Life-SMS as a new and integral support tool for patients with MS in Germany, Europe and beyond. It is based on a variety of lifestyle measures. The procedure is independent of and compatible with any pharmaceutical treatment. All patients affected by this disease are invited to use the opportunity for trying these new lifestyle strategies. In addition, all institutions in Germany and Europe are invited to take part in implementing this concept. The program of life SMS can support their efforts to promote and support their patients in many ways. As an example, there exists already a cooperation with Prof. Stefanie Kürten, Chair of Anatomy of the University in Wuerzburg, for studying the effect of lifestyle measures on the immune system.

As people in most countries of Europe are affected with multiple sclerosis, it is planned to work cooperatively on an EU-wide basis. This process of networking has started with the establishment of a link with Dr. Marie D'hooghe, National Multiple Sclerosis Center in Brussels, Belgium. In addition, OMS-Australia is promoting a parallel organization in England (OMS-UK).

Therefore, concerted activities at the EU level are being prepared in addition to establishing the life SMS concept all over Germany and Europe. A combined effort could not only reduce the workload of individual national organizations and, by that improve the efficacy, but also establish the scientific analyses of the results of life SMS measures on a broader basis. We invite all interested institutions and people in the EU to take part in to this process.

## Weblinks

Deutsche Stiftung für Gesundheitsinformation und Prävention (DSGIP),  
Schlangenbad: <http://www.dsgip.de>

OMS-Foundation, Australia: <http://www.overcomingmultiplesclerosis.org>

Defeating Progressive MS without Drugs, Dr. Terry Wahl, USA:  
<http://www.terrywahls.com/>

Sylvia Lawry Centre for Multiple Sclerosis Research, MS-Datenbanken  
und evidenzbasierte Therapie, Munich:  
<http://www.thehumanmotioninstitute.org/node/30>

## Further Reading

„Vitamin D – Das Sonnenhormon für unsere Gesundheit und der Schlüssel zur Prävention“, Prof. Dr. Jörg Spitz; suitable for experts and laypersons;  
ISBN: 978-3-00-027740-5; 19.50 €

„Ohne Sonne kein Leben. Die Bedeutung des Sonnenlichtes und des Sonnenhormons (Vitamin D) für unsere Gesundheit“, Prof. Dr. Jörg Spitz, written especially for laypersons; ISBN 978-3-00-039913-8; 14.95 €

When ordering any of the above books at the Foundation DSGIP  
(info @dsgip.de), you will receive the Life-SMS Fact Sheet:  
Vitamin D and MS free as addition (Do not forget the keyword: Life-SMS!)

“Overcoming Multiple Sclerosis: An Evidence-Based Guide to Recovery”,  
Prof. Dr. George Jelinek, ISBN-10: 1855861119

“Minding My Mitochondria 2nd Edition: How I overcame secondary progressive multiple sclerosis (MS) and got out of my wheelchair”,  
Joanne Asala, Terry L. Wahls M.D. and Tom Nelson, ISBN-10: 0982175027

## Funding and Sponsorship

**The project Life-SMS (lifestyle strategies in MS)** has set itself the objective to collect information and scientific background of the connection between lifestyle factors and multiple sclerosis, and to publish the results via various media. Knowledge of the basic relationships frees people affected from their “victimhood” and gives them the chance to act proactive with regard to their healing process.

Behind Life-SMS is an interdisciplinary and international expert network of researchers and practitioners, which work together in the development of a methodology for self-help for people with MS, based on the above foundations. A special feature of the Life SMS network is the collaboration of those affected and non-affected with the appropriate scientific background. The network currently relies completely on private donations and the self-commitment of network members. Every donation counts!

## Donation Options

**The German Foundation for Health Information and Prevention** (DSGIP [www.dsgip.de](http://www.dsgip.de)) is promoter of Life-SMS network and asks sincerely for your project-related donation.

**Transfer directly to the donation account of DSGIP:**

Tag: Life SMS

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Bank: Nassauische Sparkasse

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On behalf of the Foundation: Jörg Spitz



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